

# NOTES ON AMERICAN LOGANIACEAE II REVISION OF PELTANTHERA BENTH.

A. J. M. LEEUWENBERG

Laboratorium voor Plantensystematiek en -geografie, Wageningen

## HISTORY OF THE GENUS

*Peltanthera* has been described by BENTHAM in 1876. He based it on a single species, *P. floribunda*. In 1938 STANDLEY and STEYERMARK described *Valerioa* in the *Solanaceae*, but they were in doubt about its most natural position. Several years later, in 1951, CUATRECASAS discovered, that *Valerioa costaricensis*, the only species of the genus, belonged to *Peltanthera* and therefore he combined it with the latter genus. The present author holds the opinion, that both species cannot be distinguished, as is demonstrated below. The name *Peltanthera* is a nomen conservandum (Intern. Code of Bot. Nom. 328. 1966).

## RELATIONSHIP TO OTHER GENERA

The genus *Peltanthera* belongs to the tribe *Buddlejeae*. This tribe is maintained here in the same concept as was done by LEENHOUTS (1962). *Adenoplea* and *Adenoplusia* are considered as synonyms of *Buddleja*. *Peltanthera* shows the most resemblance with *Nuxia* and *Sanango* by the habit, inflorescence, and anthers. It could be distinguished from the other *Buddlejeae* by the following key:

1. Anther cells confluent; stamens mostly well-exserted . . . . . 2  
    Anther cells discrete; stamens often included . . . . . 4
2. Inflorescence small, few-flowered, much shorter than the leaves; corolla subrotate. *Madagascar* . . . . . **Androya**  
    Inflorescence large, many-flowered, paniculate; corolla tube nearly cylindrical . . . . . 3
3. Corolla tube and capsule included in a tubular calyx; flowers 4-merous; leaves often ternate; corolla circumscissile. *Africa* . . . . . **Nuxia**  
    Corolla tube much longer than the calyx; flowers 5-merous . . . . . 4
4. Corolla persistent; valvate aestivation; 5 exserted stamens. *Costa Rica to Bolivia* . . . . . **Peltanthera**  
    Corolla deciduous; imbricate aestivation; 4 included stamens and a staminode. *Peru* . . . . . **Sanango**
5. Inflorescence racemose; corolla subrotate. *S. Africa*. . . . . **Gomphostigma**  
    Inflorescence cymose, much-branched if corolla subrotate . . . . . 6
6. Stamens well-exserted; corolla tubular, about 3-4 cm long; leaves with large entire lobes. *Mexico and southern United States* . . . . . **Emorya**  
    If stamens exserted corolla much smaller . . . . . **Buddleja**

*Peltanthera* Benth. in Bentham & J.D. Hooker, Gen. Pl. 2: 797. 1876; Solereder in Engler & Prantl, Natürl. Pflanzenf. 4(2): 45. 1892; Bunting & Duke, Ann. Miss. Bot. Gard. 48: 269–274. 1961; Intern. Code Bot. Nom. 328. 1966; Leenhouts in Fl. Males. 1.6: 296. 1962.

Type species: *P. floribunda* Benth.

Heterotypic synonym: *Valerioa* Standl. et Steyerm., Field Mus. Publ. Bot. 18: 1098. 1938. Type species: *V. costaricensis* Standl. et Steyerm. (= *P. floribunda*).

Distribution: a single species in tropical America.

*P. floribunda* Benth., 1.c. and in W.J. Hooker, Icon. 23: t. 2298. 1894; Solereder, 1.c. p. 45 and fig. 25 D-G; Cuatrecasas, Fieldiana Bot. 27(2): 98. 1951. Fig. 3

Type: Peru: near Tarapoto, Spruce 4940 (K, holotype; isotypes: BM, BR, C, E, F, GH, K, LE, P, photographs of destroyed B sheet in F, GH, and NY).

Heterotypic synonym: *Valerioa costaricensis* Standl. et Steyerm., 1.c. p. 1099. Type: Costa Rica: Santiago de San Ramón, Calera, Río Jesús, Brenes 6700 (F, holotype; isotype: NY). Homotypic synonym: *Peltanthera costaricensis* (Standl. et Steyerm.) Cuatrec., 1.c.

Tree, 5–22 m high; trunk 60–90 cm diam. (teste Lawrance 432). *Branches* unarmed, pale brown, with often sulcate bark, not lenticellate; branchlets at apex minutely puberulous with pale greyish ordinary and capitate hairs, soon glabrous, often sulcate when dry; stipules none. *Leaves* opposite, those of a pair equal, petiolate; petiole glabrous, with some minute hairs when young, caniculate above, 1–2 cm long, joined at the base to a stipular line; blade dark green above, distinctly paler beneath, papyraceous when dry, narrowly obovate to narrowly elliptic, 2.3–3.5 (4) × as long as wide, 7.5–28 × 2–11 cm, sometimes smaller, acuminate or occasionally obtuse at the apex, cuneate at the base or decurrent into the petiole, crenate-dentate to subentire, glabrous on both sides or with some minute hairs on the costa beneath; secondary veins 8–12 pairs; tertiary venation reticulate, especially beneath, not very conspicuous. *Inflorescence* axillary, seemingly terminal, paniculate, 6 × 6–12 × 12 cm, many-flowered, 4–5 × branched; branches opposite or subopposite, sparingly pubescent to glabrous as the peduncles and pedicels; last branchings irregular and often without bracts. Bracts small, linear or narrowly oblong, 1–5 × 0.3–1 mm. *Flowers* 5-merous, slightly zygomorphic. *Calyx* not subtended by bracteoles; sepals pale green (?), equal or subequal, connate at the base, valvate, narrowly triangular, 1.6–3 × as long as wide, 0.8–1.6 × 0.4–0.5 mm, acuminate at the apex, entire, glabrous on both sides or sparsely and minutely pubescent outside, minutely ciliate or not. *Corolla* in the mature bud 4–6 × as long as the calyx, 5–7 mm long, and obtuse at the apex, white or yellowish-white (changing at anthesis?), thin; tube 3–4.5 × as long as the calyx, 1.8–3 × as long as the lobes, 3.2–4.5 × 1.2–1.5 mm, nearly cylindrical, widened around the ovary, usually slightly curved, glabrous on both sides; lobes subequal, valvate in the bud, oblong, 2–3 × as long as wide, 1.2–1.5 × 0.4–0.9 mm, acute, entire, suberect, partially spreading after anthesis, densely and minutely velutinous inside and on the margin. *Stamens* exerted, equal; filaments free from each other, with

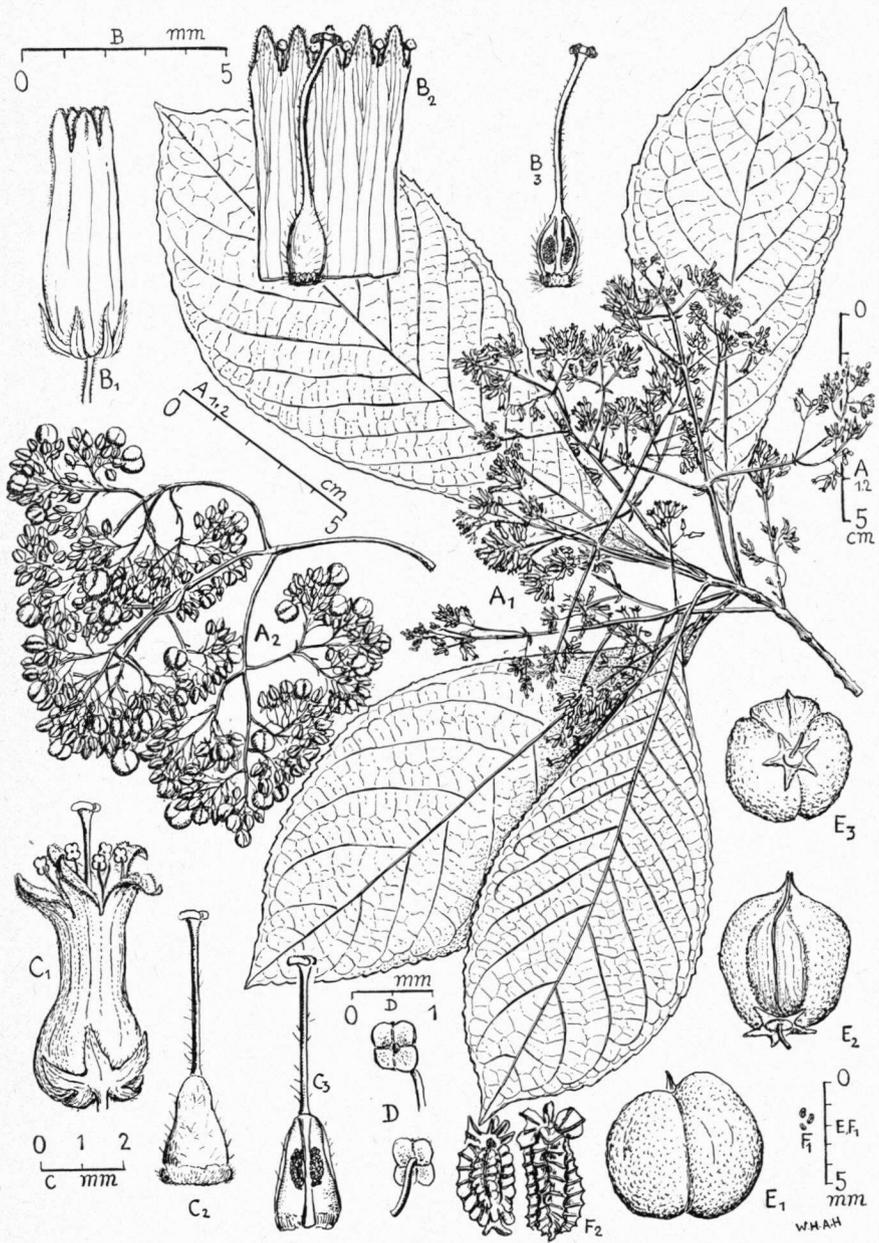


Fig. 3. *Peltanthera floribunda* Benth. A<sub>1</sub>. flowering branch; A<sub>2</sub>. infructescence; B<sub>1</sub>. flower; B<sub>2</sub>. pistil with opened corolla; B<sub>3</sub>. pistil with dissected ovary; C<sub>1</sub>. flower shortly after fertilization; C<sub>2</sub>. pistil of the latter; C<sub>3</sub>. preceding pistil with dissected ovary; D. anthers both sides; E<sub>1-3</sub>. fruits; F<sub>1</sub>. seeds; F<sub>2</sub>. seeds, much enlarged. (A<sub>1</sub> and B<sub>1-3</sub>: Spruce 4940; A<sub>2</sub>, E<sub>1-3</sub>, and F<sub>1-2</sub>: Brenes 1902; C<sub>1-3</sub>. and D: Brenes 19027).

minute glandular hairs, much longer than the anthers, elongating at anthesis, inserted at the mouth of the corolla tube; anthers introrse, with minute glandular hairs,  $0.2 \times 0.2$ – $0.3 \times 0.3$  mm, rounded at the apex, cordate at the base, basifix, 2-celled, after pollen is shed walls recurved by which they become seemingly peltate and 4-celled; cells divergent at the base, confluent at the apex, dehiscent throughout by a longitudinal split. *Pistil* 5–7 mm long, pilose with sometimes branched hairs, exserted; ovary superior, ovoid, about twice as long as wide,  $1.5$ – $2.5 \times 0.8$ – $1.2$  mm, 2-celled, with a disk-like basal part when dry; style 3.5–5 mm long, erect; stigma capitate-discoïd, minutely pubescent with glandular hairs. Disk none. In each cell one axial peltate, comparatively small (in comparison with room in cell) placenta with many ovules on both sides, attached with an oblique stipe slightly below the middle of the septum. *Infructescence* on branchlet somewhat below leaf-bearing apex. *Capsule* bivalved, loculicidal, ellipsoid, laterally compressed,  $4 \times 3 \times 2$  mm, dark brown, apiculate, surrounded by the *persisting* calyx and *corolla*; valves paler inside. *Seeds* pale brown, very small, ellipsoid,  $0.4 \times 0.2$ – $0.25$  mm, glabrous, with about 5 narrow honey-comb-like wings, reticulate like honey-comb.

Distribution: Only known from Costa Rica, Colombia, Peru, and Bolivia.

Ecology: Rain forests, not at low elevation. 650–1300 mm.

COSTA RICA: Prov. Alajuela, San Ramón (fl. Jan.–Feb.) Brenes 1902 (NY), 1920 (NY), 6637 (F), 6691 (F, NY), 6700 (F, NY, type of *Valerioa costaricensis*), 19027 (F); *ibid.* (veg.) Quirós 17 Feb. 1940 (F).

COLOMBIA: Lower Chapon Region, extreme western part of Boyaca Department (Aug.) Lawrance 432 (A, NY).

PERU: near Tarapoto (Jan.) Spruce 4940 (BM, BR, C, E, F, GH, K, LE, P, type); Huanuco Department, Tingo María (Sept.) Ramon Ferreyra 10290 (US).

BOLIVIA: Santa Cruz Department, Cerro Hosana (Aug.) Steinbach 3429 (NY, K: fragments and photograph of NY sheet).

#### NOTES

According to CUATRECASAS the types of *P. floribunda* and *P. costaricensis* are almost identical. Nevertheless he maintained both species, as they were collected very far from each other, one in Peru and the other in Costa Rica. After comparison of these types and other specimens the present author cannot follow him. The leaves of Brenes 6700 (type of *P. costaricensis*) are "coarsely dentate" as some leaves of the C sheet of Spruce 4940 (type of *P. floribunda*). Subentire leaves are available in the above sheet of Spruce 4940 and others, e.g. that of LE, furthermore in Brenes 1920 (NY), Lawrance 432, and Steinbach 3429. The variation in lengths of inflorescence branches and pedicels is gradual. The flowers of Brenes 6700 are older than those of Spruce 4940 by which their corollas are wider and stretched by the growing fertilized ovary and the stamens are longer as they are elongating at anthesis. These phenomena can be seen on several specimens, as they are usually flowering richly.