

ALTERNANTHERA PHILOXEROIDES (MART.) GRISEB.—A NEW RECORD FOR INDIA

J. K. MAHESHWARI

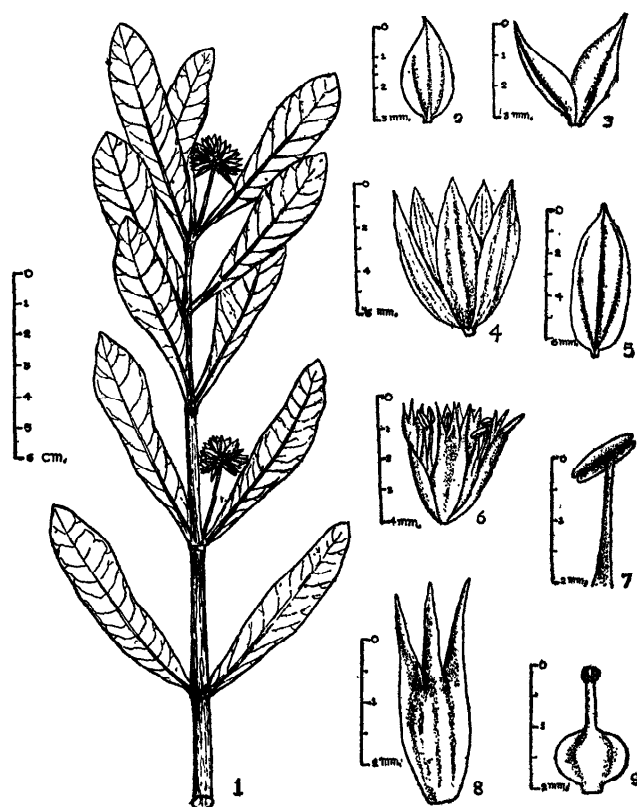
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The genus *Alternanthera* Forsk. of the family *Amaranthaceae* including over 100 species is best developed in the Americas. Many species are ubiquitous, of which some like *A. paronychioides* St. Hil. and *A. pungens* H.B.K. are rather obnoxious weeds with pungent tepals. Some species have been introduced into India, Burma, Australasia and Malaysia, e.g. *A. pungens* H.B.K., *A. paronychioides* St. Hil., *A. ficoidea* Roem. & Schult., and *A. brasiliana* (Linn.) Kuntze (Backer, 1948; Melville, 1958; Santapau & Shah, 1961; Maheshwari, 1962). *A. philoxeroides* (Mart.) Griseb., a South American weed, probably Brazilian in origin, was introduced long ago in Malaysia and at present quite naturalized in West Java (Backer, 1948). In the present note, *A. philoxeroides* (Mart.) Griseb. is recorded for the first time from the lakes and water pools in the eastern parts of India, namely West Bengal and Bihar. This species is described in detail together with notes on its synonymy, ecology, teratology, distribution and naturalization.

Alternanthera philoxeroides (Mart.) Griseb. in Abh. Ges. Wiss. Goett. 24: 36. 1879; Kuntze, Rev. Gen. Pl. 2: 540. 1891; Schinz in Engl. & Prantl, Nat. Pfam. 3. 12: 115. 1893; Koorders, Exk. Fl. Java 2: 200. 1912; Bailey & Bailey, Hort. Sec. (rev. ed.) 44. 1941; Backer in Fl. Males. Ser. I. 4 (2): 93. 1949; Duke in Ann. Miss. Bot. Gdn. 48 (fasc. 4: 43. 1961. Basi. *Bucholzia philoxeroides* Mart. in Nova Acta Acad. Leop.-Carol. 13 (1): 315. 1826. Syn. *Telanthera philoxeroides* Moquin-Tandon in DC. Prodr. 13: 362. 1849, incl. vars.; Costerus & Smith in Ann. Jard. Bot. Buitenz. 23: 12, 1910. *Achyranthes philoxeroides* (Mart.) Standl. in Jour. Wash. Acad. Sci. 5: 74. 1915. (Figs. 1-9).

Perennial aquatic or marshy herbs, 50-100 cm long, decumbent or ascending from a creeping or floating rooting base, often much-branched and forming dense masses. Stems simple or branched, fistular, longitudinally striate, with a longitudinal hairy groove on two opposite sides, otherwise glabrous. Interfascicular xylem well developed in erect stems. Leaves opposite, lanceolate, oblong to narrowly obovate, acute to rounded, submucronate, base cuneate, 4-10 × 0.5-2.5 cm, entire, thin, glabrous or glabrate, in the axils with a transverse row of white, smooth hairs; midrib prominent below; petioles 1-6 mm long. Inflorescence usually of solitary, axillary, pedunculate, ovoid to globular-ellipsoid, white heads, also terminal and sessile,

10-18 × 10-18 mm; peduncles usually 1-5 cm long, unbranched, with a longitudinal hairy groove on the adaxial side, otherwise glabrous. Flowers perfect, dense. Bracts and bracteoles subequal,

Figs. 1-9: *Alternanthera philoxeroides* (Mart.) Griseb.

1. Part of the stem with leaves and inflorescence. 2. Bract. 3. Pair of bracteoles. 4. Flower. 5. Tepals. 6. Androecium with normal stamens and pseudostaminodia. 7. Stamens. 8. Pseudostaminode. 9. Pistil.

ovate, 1-nerved, nerve excurrent in apicula, glabrous, white, persistent after fall of perianth. Bracts ovate-triangular, 2-3 mm long. Bracteoles ovate, acuminate, about 2.5 mm long. Perianth almost sessile above the bracteoles, dorsally compressed, shining white, glabrous. Tepals 5, subequal, three to four times as long as the bracts, oblong, acute, mucronulate, 1-nerved, subchartaceous, concave, 5-7 × 1.5-2.5 mm. Stamens 5, united below into a tube; filaments 3.5-4 mm long, linear; anthers linear, unilocular, 1-1.5 mm long. Pseudostaminodia distinct, lacerate and exceeding the stamens, oblong-linear, margin entire, their tips divided into three or more narrow teeth. Ovary

shortly stalked, turbinate-globose, dorsally compressed, rounded at the apex; style short, cylindrical; stigma globose, capitate, glandular. Fruits not seen.

A gregarious weed in stagnant or slow-moving shallow water, pools, ditches and marshes.

Flowering: May-Oct.

Common name: Alligator weed.

Herbarium specimens examined: INDIA: Dum Dum near Calcutta, 24-Parganas, West Bengal, Floyd s.n., June 26, 1940 (CAL); Ranchi Lake, Bihar (Herb. Ranchi College). BURMA: Victoria Lake, Rangoon district, C. E. Parkinson 15091, Sept. 23, 1932 (CAL).

Distribution and naturalization: Standley in N. Amer. Fl. 21: 142. 1917, gives the range of this species as from Colombia to Brazil and Argentina in South America; adventive in the Southeastern United States. Suessenguth in Fedde Rep. spec. nov. 39: 4. 1935, reports a teratological specimen from Pearl Islands in San José. The species was introduced long ago in the tropics of the Old World. It was found there for the first time in 1875 near Java, Malaysia by Otto Kuntze. It is at present quite naturalized in West Java, although not yet recorded from elsewhere in Malaysia. In the Calcutta Herbarium there is a specimen from Victoria Lake in Rangoon district, Burma collected in 1932 by C. E. Parkinson; this is probably the first record of its occurrence on the Asiatic Mainland. Apparently the species has made further ingress in the eastern parts of India, namely West Bengal and Bihar. In the absence of earlier records before 1940, it is evident that its introduction within our gates had taken place during late years. However, it is difficult to ascertain as to how it came to be introduced into India. Like several other American weeds, it seems probable that a few viable seeds of this species might have reached India along with some packing material during the Second World War years. This is conceivable in view of

the fact that this species was collected for the first time from India near an aerodrome. During recent years, a large number of neotropical weeds have been found to naturalize on Indian soil and spread like wild fire. Further, in this species reproduction takes place vegetatively by means of subterranean shoots, and thus under favourable conditions it spreads rapidly forming dense masses. It would, therefore, be worthwhile to watch the spread of this weed in other parts of the country and try to eradicate it from Indian soil. Although at present it is not yet common nor troublesome, there is a possibility that like Water Hyacinth (*Eichhornia crassipes* Solms.) it may become another powerful aquatic pest in our lakes, ponds, puddles and waterways.

Teratology: In this species the stamens are very often replaced by as many sterile spurious ovaries surrounding the true ovary. For fuller details on such malformations, see Costerus and Smith in Ann. Jard. Bot. Buitenz. 23: 12. t. 3. 1910, and Suessenguth in Fedde Rep. spec. nov. 39: 4. 1935.

LITERATURE CITED

- BACKER, C. A. Amaranthaceae. In *Flora Malesiana* Ser. I, 4(2): 69-98, 1948.
- BAILEY, L. H. AND E. Z. BAILEY. *Hortus Second* (rev. ed.), New York, 44, 1941.
- COSTERUS, J. C. AND J. J. SMITH. Studies in Tropical Teratology (with 8 plates). *Ann. Jard. Bot. Buitenz.* 23: 1-19, 1910.
- DUKE, J. A. Amaranthaceae. In *Flora of Panama* pt. 4. *Ann. Miss. Bot. Gdn.* 48 (1): 6-50, 1961.
- KUNTZE, O. *Revisio Generum Plantarum*, etc. Leipzig. Pt. 2, 535-545, 1891.
- MAHESHWARI, J. K. Studies on the Naturalized Flora of India. *Proc. Summer School of Botany, Darjeeling* 1960: 160, 1962.
- MARTIUS, C. VON. Beitrag zur Kenntnis der natürlichen Familie der Amaranaceen. *Nova Acta Acad. Leop.-Carol.* 13 (1): 209-322, 1826.
- MELVILLE, R. Notes on Alternanthera. *Kew Bull.* 171-175, 1958.
- SANTAPAU, H. AND G. L. SHAH. New Plant Record from Bombay: *Alternanthera pungens* H. B. K. *J. Bombay nat. Hist. Soc.* 58: 551-553, 1961.
- SCHINZ, H. Amaranthaceae. In Engler and Prantl, *Die natürlichen Pflanzenfamilien*, Leipzig III (1a): 91-118, 1893.