Bothalia 13, 3 & 4: 275–276 (1981)

The genus *Waltheria* in southern Africa

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ABSTRACT

Waltheria indica L., the only species of *Waltheria* represented in southern Africa, is revised. This species, which occurs throughout the tropics and substropics of the world, is found abundantly in the northern Cape, Swaziland, northern Natal, Transvaal and northwards through South West Africa/Namibia and Botswana. Thoughout its wide distribution the species is uniform. A scrutiny of herbarium specimens revealed that what appeared as a distinct species or subspecies was without doubt an abnormality, probably caused by insect injury.

RÉSUMÉ

LE GENRE WALTHERIA *EN AFRIQUE AUSTRALE*

Waltheria indica *L, la seule espèce de* Waltheria *représentée en Afrique australe, est révisée. Cette espèce qui se trouve d'un bout à l'autre des tropiques et sub-tropiques du monde, est trouvée en abondance au Cap septentrional, au Swaziland, au nord du Natal, au Transvaal et vers le nord, à travers le Sud-Ouest africain/Namibia ainsi qu'au Botswana. Malgré sa distribution très dispersée, l'espèce est uniforme. En scrutant les specimens des herbiers, il se révèle que ce qui apparaissait comme des espèces ou sous-espèces distinctes est sans aucun doute une anomalie probablement causée par dégats d'insecte.*

WALTHERIA

Waltheria *L.*, Sp. Pl. 673 (1753); Gen. Pl., ed. 5: 304 (1754); Harv. in F.C. 1: 180 (1860); Benth. & Hook. f., Gen. Pl. 1: 224 (1862); Wild in F.Z. 1: 536 (1960); M. Friedrich et al. in F.S.W.A. (1969); R. A. Dyer, Gen. 1: 365 (1975).

Lophanthus Forst., Char. Gen. 27, t. 14 (1776).

Astropus Spreng., Neue Entd. 3: 64 (1822).

Shrublets, subherbaceous at first, pubescent with stellate, tufted and simple hairs. *Leaves* simple, crenate-dentate, petioled, stipulate. *Inflorescence* axillary and terminal, flowers in cymes, often congested, or heads of flowers racemously or paniculately disposed. *Bracts* often present. *Calyx* 5-lobed. *Petals* 5, marcescent. *Stamens* 5, united at the base; anther-cells parallel. *Ovary* 1-celled; ovules 2 anatropus; style somewhat excentric, clavate or fimbriate at the apex. *Capsule* usually 1-seeded; seed ascending, endospermous; embryo straight.

Found in the tropics and subtropics of both the east and the west with the greatest concentration of species in South and Central America. Of the 67 known species only 7 occur in the Old World and one of these is common to the Old and New World. This common species, *W. indica,* is the only species found in southern Africa.

The generic name was given in honour of Augustin F. Walther of Leipzig, a contemporary of Linnaeus, remembered especially for his botanic garden.

Waltheria indica *L.*, Sp. Pl. 673 (1753); R. Br. in Tuckey, Narrat. Esp. river Zaire, App. 5: 484 (1818); Mast. in Fl. Brit. India 1: 374 (1874); Harv. in F.C. 1: 180 (1860) Wild in F.Z. 1: 536 (1960); F.S.W.A. 84: 28 (1969). M. K. Scott in Bothalia 12 452 (1978). Type: India, Linn. Herb. 852.2.

W. americana L., Sp. Pl. 673 (1753); Mast. in F.T.A. 1: 235 (1868); K. Schum. in Engl., Monogr. Afr. Pfl. 5: 45 (1900); Burtt Davy, Fl. Transv. 1: 268 (1926). Type: America, Linn. Herb. 852.1. — var. *indica* (L.) K. Schum., l.c. 547 (1900). Type as for *W. indica* L. — var. *subspicata* K. Schum., l.c. 547 (1900). Types: several syntypes including *Schinz* s.n., South West Africa/Namibia.

Shrublet, subherbaceous at first, stems slender, hirsute, with stellate, tufted or simple bulbous based hairs, erect to spreading and bushy, 30 cm to 1 m tall, sometimes taller. *Stipules* linear-acute, 3–10 mm long. *Leaves* petioled; blade ovate, ovate-oblong, oblong to narrowly oblong, 2–10 cm long, 1–4,5 cm broad, crenate-dentate, rounded, subtruncate or broadly subacute at the apex, rounded, broadly cuneate or cordate at the base, nerves prominent beneath, laxly to densely stellate pubescent or hirsute with bulbous-based hairs on both surfaces; petiole hirsute, 0,6–3,5 cm long. *Inflorescence* axillary, cymose, usually tightly congested rarely (abnormal)? sublax, sometimes heads of flowers appear to be racemosely or paniculately disposed because the subtending leaves are much reduced or absent. *Bracts* usually 3 to a flower, linear acute, 3,5–5 mm long, differing slightly in width but mostly under 1 mm wide, dorsally hirsute. *Calyx* hirsute, 10-nerved; tube turbinate, about 2,5 mm long; lobes deltoid acute to deltoid acuminate, about 2 mm long. *Petals* yellow, 'orange yellow', turning reddish brown at maturity, oblong-cuneate to spathulate, about 4 mm long, 1,25 mm broad, dorsally sparsely hairy, adhering at the base to the stamen base, deciduous from the base but persisting for some time around the capsule, the lower portion held within the calyx-tube. *Stamen* opposite the petals, shorter than the full grown petals; filaments membrane-margined at the base or, more usually, almost to the apex, more or less united along the membrane edge, the apical unwinged filiform portion shortly and sparsely pubescent and at certain stages contorted; anthers erect or (especially in abnormal specimen) horizontal, cells parallel, subacute at both ends. *Ovary* 1-celled, obovoid slighly flattened, broadest at the apex, densely hirsute in upper portion; style excentric, about 3 mm long, sometimes rather contorted, fimbriate at the apex; ovules 2, ascending, anatropus. *Capsule* thin-walled, about 4 mm long, almost 2 mm broad at the apex, hirsute on upper portion, 1-seeded or rarely the second ovule developing as well; seed obovoid; embryo straight.

Found in open grassland, on rocky slopes, along rivers, in waste places, and rarely in woodland. Recorded from the northern Cape and Natal northwards through the Transvaal, South West Africa/Namibia and Botswana to tropical Africa. Also oc-

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curs elsewhere in the tropics and subtropics of the Old and New Worlds.

S.W.A./NAMIBIA.—East Caprivi: Katima Mulilo, *Killick & Leistner* 3058. Gobabis: Farm Amasib, *Merxmüller* 1088. Grootfontein: Amrib, Schoenfelder S.554. Karibib: Farm Ameib, *Kinges* 3306. Kavango: Tsotzana, *Giess* 9958. Okahandja: Quickborn, *Bradfield* 85. Owambo: Oshigambo, *Sylvi Soeni* s.n. or near Ruacana, *De Winter & Giess* 7084. Tsumeb: 50 km N. of Tsumeb, *Goldblatt* 1938.

BOTSWANA.—Central distr.: Dikolodi East, *Kerfoot* 8015. Chobe: Lower Ngwezumba, *Miller* 13187. Ganzi: Mamono Ridge, *Mason & Boshoff* 292. Kgalegadi: 16 km N. W. of Tsabong, *Leistner* 3069. Kweneng: 412 km N. W. of Molepolole, *Story* 4974. Ngamiland: Boro Floodplain, *Biggs* M. 588. Ngwaketse: Plaring, *Miller* B. 865. South East: 8 km N. of Gaborone, *Cox* 5059.

TRANSVAAL.—Barberton: Tonetti, *Thorncroft* 76. Carolina: Nelsberg, *Taylor* 1990. Groblersdal: Marble Hall, *Pienaar* 519. Letaba: Westfalia Estate, *Scheepers* 302. Lydenburg: Farm Sterkspruit, *Galpin* 12174. Marico: Lekkerlach, *Louw* 251. Nelspruit: near Pretoriuskop, *Codd & De Winter* 4917. Pietersburg: Shilovane, *Junod* 4891. Pilgrims Rest: Sabie River, *Van der Schijff* 41. Potgietersrust: Percy Fyfe Nature Reserve, *Huntley* 1679. Pretoria: N. of Pretoria at turn off te Rust de Winter Dam, *Tölken* 1224 (partly abnormal). Rustenburg: 3,2 km S. of Rooibokkraal P. O., *Leistner* 3210. Soutpansberg: Tokwe, *Dreyer in TRV* 21616 (partly abnormal); S. of Punda Milia, *Schlechter* 9291. Waterberg: Nylstroom, *Repton* 530. Witbank: Mapochsdrift, *Du Plessis* 411.

SWAZILAND.—Hlatikulu: Big Bend, *Compton* 30278. Manzini: Sipofaneni, *Compton* 29713.

NATAL.—Entonjaneni: Melmoth, *Gerstner* 4306. Hlabisa: Hluhluwe Game Reserve, *Ward* 1855. Ingwavuma: Ndumo Game Reserve, *Hancock* 7. Lower Tugela: Mandeni, *Edwards* 1360. Lower Mfolozi: Mfolozi Game Reserve, *Ward* 4614. Marico: Motswedi, *Peeters, Gericke & Burelli* 478. Ngotshe: Itala Nature Reserve, *Brown & Shapiro* 309. Ubombo: Mkuze, *Galpin* 13706.

CAPE.—Hay: Rietkloof, *Acocks* 8518. Kuruman: Seremoneng, *Acocks* 2280. Mafikeng: 'Ferndale', *Brueckner* 451. Postmasburg: Nchwaneng, *Leistner* 2205. Vryburg: Vryburg, *Mogg* 8889.

This species, which is widely spread in all tropical and subtropical regions of the world, is fairly uniform in its South African localities. Characterized by small yellow flowers, with hirsute calyces, congested in axillary glomerules, it is readily recognized. Sometimes the glomerules or 'heads' of flowers appear to be racemosely arranged or in panicles. This is because they grow on slender side branches with the subtending leaves either much reduced or absent.

Among the many specimens examined, there is one from the northern Transvaal in parts of which, the major part, the flowers are in sublax cymes up to 6 cm long. This at once gives the specimen a different aspect. It was found, too, that the parts of the flowers also differed from the normal. The filaments were not membrane-margined for most of their length, but only at the very base if at all, the anthers were horizontal, not erect, and the ovary somewhat acuminate to the oblique apex instead of broadest and more or less truncate at the top. This gave the impression that a distinct species was involved. But right at the base of the specimen on the same branch was a typical, congested cyme and the flowers on it are typical. What caused the abnormality and why it should be accompanied by a difference in flower structure remains a problem, but it may be due to insect injury.

Waltheria indica L. and *W. americana* L. were published simultaneously in 1753. Since R. Brown was apparently the first to unite the two taxa under the name *W. indica,* his choice must be followed (Art. 57 of ICBN, 1978) and this is so done in this treatment.

ACKNOWLEDGMENTS

I am indebted to members of the staff of the Botanical Research Institute for their very helpful assistance with dissections, drawings and excursions to examine the species in the field.

UITTREKSEL

Die enigste spesie van Waltheria *wat in suidelike Afrika verteenwoordig is, word hersien. Hierdie spesie wat dwarsdeur die tropiese en subtropiese dele van die wêreld voorkom, word dikwels in die noordelike Kaap, Swaziland, noordelike Natal, Transvaal en noordwaarts deur Suid-Wes Afrika/Namibia en Botswana aangetref. Hierdie spesie varieër min dwarsdeur sy wye verspreidingsgebied.*

'n Ondersoek van herbariumeksemplare het getoon dat sekere monsters wat gelyk het na verteenwoordigers van 'n afsonderlike spesie of subspesie in werklikheid sonder twyfel 'n abnormaliteit vertoon wat deur insekbeskadiging veroorsaak is.