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SIDA SECTION *SIDA* IN AUSTRALIA: A REVISED KEY, A NEWLY INTRODUCED SPECIES, *S. SUBCORDATA* SPAN., AND NAME CHANGES FOR *S. ROHLENAE* VAR. *MUTICA* (BENTH.)FRYXELL AND *S. MAGNIFICA* DOMIN

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Abstract

A revised key is provided to the species of *Sida* section *Sida* of Australia. *Sida subcordata* Span., a Malesian species, is recorded for the first time from Western Australia and the Northern Territory. The species previously referred to *S. parvifolia* DC. is now referred to the earlier named *S. pusilla* Cav. and specimens assigned to *S. rohlenae* Domin var. *mutica* (Domin)Fryxell are newly named as *S. rohlenae* Domin ssp. *occidentalis* R.M. Barker, while *S. magnifica* Domin is reduced to a subspecies of *S. atherophora* Domin.

Introduction

The species of *Sida* section *Sida* were last treated in a conspectus by Fryxell in 1987. While the changes in that time are not great, except in the extensions of distribution compared with those depicted by Fryxell, in view of the economic importance of this group of plants as weeds for which biological controls are being sought in northern tropical Australia (Forno 1992) and the probable introduction of yet another species with weed potential, it is useful to bring the taxonomy up to date. Full treatments of each species will appear in the forthcoming revision of *Sida* for Australia.

According to Fryxell, whose work has been predominantly on American species of *Sida*, but with a considerable field knowlede of Australian *Sida* species, only those species which belong with *Sida* sect. *Sida* should be treated as true *Sida*. These species are characterised by calyces which are distinctly 10-ribbed at the base and by mericarps in which the upper dehiscent portion is separated from the lower indehiscent portion by a distinct "shoulder" (Fryxell 1985). The upper portion of the mericarp is often extended into a pair of spines.

Fryxell would treat the rest of the Australian species as *Sidastrum* (Fryxell 1987,1988). Initial cladograms by the author, based on morphological characters, support section *Sida* as a uniquely derived group from the unresolved mass of Australian *Sida* species, but the lack of resolution within the rest of the Australian species makes it difficult to determine just where and how the native species should be treated. American species of 4–5 genera which have been segregated from *Sida*, when added to the cladistic analysis of the Australian species also fall within the unresolved mass. There remains a great deal of work to be done in this area but further discussion of this issue will be incorporated in the revision of the Australian species.

Key to species of *Sida* sect. *Sida* in Australia

1 Mericarps with retrorsely barbed apical spines
  2 Leaves ovate to broadly ovate; flowers initially solitary but becoming crowded apically with maturity
    3 Plant obviously densely pubescent; petals 7–8 mm long, 6.5 mm wide at widest part, +/– truncate; mericarps 10–11 [northern and coastal Qld, northern NT, Kimberleys in WA, occasional in southern areas e.g. Cadney Park in SA] ..... ***Sida cordifolia***
    3: Plant not obviously pubescent although tiny stellate hairs are present; petals c. 12–15 mm long, c. 13 mm wide at widest part, decidely asymmetrical; mericarps 7–8 [sparingly collected ?introduction from monsoon or vine thickets of Kimberleys and Darwin region] ..... ***Sida subcordata***

2: Leaves narrowly ovate to elliptic; flowers solitary

4 Plants with raised stellate pubescence; mericarps 6–8, glabrous [Hughenden–Moura–Charleville, Qld] ..... ***Sida atherophora*** ssp. ***atherophora***

4: Plants with velvety appressed pubescence, sometimes mixed with longer simple hairs; mericarps 10, pubescent [central to northern Australia]..... ***Sida rohlenae*** ssp. ***rohlenae***

1: Mericarps with or without apical spines, if present not retrorsely barbed

5 Mericarps 7–11; pedicel more than 7mm long

6 Stems with long simple hairs over a close velvety indumentum; mericarps 10–11, glabrous; [modern collections from Kimberleys, Daly Waters area] ..... ***Sida rohlenae*** ssp. ***occidentalis***

6: Stems lacking long simple hairs; mericarps pubescent at least at apex

7 Stems with raised indumentum of stalked stellate hairs; leaves serrate for almost entire length; mericarps 7–9, stellate–hairy apically, lacking apical spines; petals 8–12 mm long [Walsh Ra.–Magnetic Is., Qld] ..... ***Sida atherophora*** ssp. ***magnifica***

7: Stems with smooth indumentum of minute sessile stellate hairs; leaves serrate apically, entire basally; mericarps 9–11, puberulent, with 2 apical spines; petals c. 6 mm long [weedy sp. capable of persisting in cooler areas, NSW,QLD,WA,NT] ..... ***Sida rhombifolia***

5: Mericarps 5–7; pedicel less than 7 mm long

8 Plant prostrate in coastal sands; mericarps puberulent [NT and Kimberley coast]..... ***Sida pusilla***

8: Plants erect, non coastal; mericarps glabrous or pubescent

9 Plants quickly glabrescent; mericarps 5–7, glabrous [weedy sp., tropical Australia]..... ***Sida acuta***

9: Plants pubescent; mericarps 5, pubescent [weedy sp., northern Australia] ..... ***Sida spinosa***

1. Name change for *Sida parvifolia* DC.

Sida parvifolia DC. was first recognised for Australia by Fryxell in 1987 despite the fact that it was probably amongst the plants collected by Robert Brown in 1801; Brown referred to it in his unpublished manuscript as "S. gracilis". However, since it has been discovered that there is an earlier Cavanille name available, the species is now to be referred to as *S. pusilla* Cav. (Craven & Fryxell 1993, Fuertes & Fryxell 1993, DuPuy 1993).

Sida pusilla Cav., *Diss.* 1: 6, t. 1. f. 4 (1785).

Holotype: MA-CAV 476275 n.v., fide Fuertes & Fryxell (1993).

Sida parvifolia DC., *Prodr.* 1: 461 (1824); Fryxell, *Sida* 12: 22–27 (1987); Hnatiuk, *Census Austral. Vasc. Pl.* 309 (1990).

Holotype: *Bory s.n,* s.dat., Rèunion "in insula Borbonia" [Indian Ocean] (G–DC, fiche AD).

Distribution

Beaches of northern coastal Australia in Northern Territory and Western Australia, the beaches often associated with coral reefs. Many additional collections from the Northern Territory in DNA, seen on a recent visit to Darwin, have not been cited here. Occurs elsewhere in the Mascarene (Seychelles, Réunion) and Lesser Sunda (Sumba and Timor) Islands.

Specimens examined:

WESTERN AUSTRALIA: *A.A. Mitchell 2976,* 29.iii.1993, between beach and lighthouse, Lesueur Island (PERTH).

NORTHERN TERRITORY: *R.M. Barker 804*, 25.v.1994, Black Point Ranger Stn, Cobourg National Park (AD,dupl.); *R. Brown s.n.*, 24.ii.1803, Inglis Island (island z), (CANB, NSW194528, MEL112057); *N. Byrnes 1100 & J. Maconochie,* 4.x.1968, Black Point(NT, AD); *G. Chippendale 8259*, 22.vii.1961, 3½ mls SW Danger Point, Cobourg Pen. (NT); *P.A. Fryxell & J. McD.Stewart 4877*, 22.vi.1985, 3km NE of Point Blaze(CANB); *P.A. Fryxell et al. 4922*, 25.vi.1985, Cobourg Peninsula, Port Essington on eastern shore at Turtle Point(CANB); *P.A. Fryxell et al. 4927*, 26.vi.1985, Cobourg Peninsula, Table Head on E shore of Port Essington(CANB); *T.S. Henshall 823*, 23.x.1974, Peron Island(NT); *J.R. Maconochie 2076*, 2.vii.1975, Elcho Island (DNA,NT,CANB).

2. *Sida subcordata* Span., another recent introduction to Australia?

A few recent collections of *Sida* from the Kimberleys and Darwin area differed sufficiently from the rest of the *Sida* specimens seen to warrant further investigation. They proved to be *S. subcordata* Span., a Malesian species for which material had been borrowed from Leiden for comparative purposes since it, along with *S. cordifolia* L., is reputed to be an Old World endemic.

Sida subcordata Span., *Linnaea*, 15: 172 (1841).
Type citation: "Ins. Timor"

Isotypes: *Anon. s.n.*, s.dat., Without locality [but according to Borssum Waalkes (1966) *Spanoghe s.n.*, s.dat., Timor (L908.140–635, L908.140–609).

For a description and long list of synonyms of this species in Malesia see Borssum Waalkes (1966).

Distribution

At this stage only known from coastal Kimberley localities in Western Australia and from Mt Bundey near Darwin in the Northern Territory.

Ecology

Found in vine or monsoon thicket. Flowering specimens have been collected in March and April, with the May specimen only having mature fruits present.

Typification

Borssum Waalkes (1966) listed 3 isotypes for this species, L 908.140–642, L 908.140–635 and L 908.140–639. The latter two collections (with type labels) were included in the loan from L although the last specimen bears the number 609 rather than 639. Neither of the specimens seen bears any collector or locality details and the basis for their designation as types is not clear; it can only be presumed they were correctly selected.

Notes

1. *Sida subcordata* Span. has presumably been introduced to the northern areas of Australia relatively recently. As this species shares all of the characteristics which make *S. acuta* Burm.f., *S. rhombifolia* L. and *S. cordifolia* L. such successful weeds, it too could become a problem. Its closest relationships are with *Sida cordifolia* L. and like that species, it is apparently an Old World endemic.
2. The relationships of *S. rohlenae* Domin, *S. atherophora* Domin, *S. cordifolia* L. and *S. subcordata* Span. need to be addressed more closely with a study across their range of distribution. Differences between them relate mainly to indumentum and leaf and flower size. They all (with the exception of *S. rohlenae* ssp. *occidentalis and S. atherophora* ssp. *magnifica*) possess the long erect awns with retrorse hairs and all have distinctive 3–4–tubular–armed sessile stellate hairs on the staminal column, the latter characteristic not seen in any other *Sida* species in Australia. It seems likely that this whole group is of Old World origin, in contrast to the probable New World origin of the now pantropical weeds, *S. acuta* Burm.f., *S. rhombifolia* L. and *S. spinosa* L.

Specimens examined:

WESTERN AUSTRALIA: *G.J. Keighery 10707*, 5.iii.1989, Cape Bougainville; 10 km W of Separation Point (PERTH); *A.A. Mitchell & T. Willing 2378*, 8.iv.1992, northern side of Rothsay Water (AD, BROOME, PERTH).

AUSTRALIA. NORTHERN TERRITORY: *R. Fensham 552*, 16.v.1987, Mt Bundey East (DNA).

CHINA::*C.I. Lei 167*, 23.x.1932, Pal Shik Ling and vicinity, Ku Tung village, Ching Mai District (L).

MALESIA. INDONESIA: *Anon. s.n.*, s.dat., Java (L908.140–327); *Kornassi (Exp. Rutten.) 1283*, 12.v.1918, Eiland Boano by Seran (L); *O. Jaag 79*, 28.iv.1938, On slope above Timor–Dilly, Timor (L); *P.E. Schmutz 1310*, 6.iii.1967, West–Flores, Tjereng–Look, 500 m bis Kuste (L).

3. A new name for *S. rohlenae* Domin var. *mutica* (Benth.)Fryxell

When the type of *S. cordifolia* var. *mutica* Benth., the basionym for *S. rohlenae* var. *mutica* (Benth.)Fryxell, was examined, it was was found to agree much more closely with *S. atherophora* ssp. *magnifica* (q.v.) and to differ from Western Australian specimens which had been assigned this name. Consequently a new name for the Western Australian specimens segregated under this name is required. Since these specimens agree with *S. rohlenae* Domin in all characteristics except for the lack of development of awns at the apex of the mericarp (hence "mutica") they have been maintained as an infraspecific taxon of *S. rohlenae*, but raised to subspecific level.

Occasional specimens e.g. *Wright 45*, have only very poorly developed awns. In this particular case the awns do have a few retrorse hairs upon them, and so the specimen has been treated as ssp. *rohlenae* (q.v.) rather than as ssp. *occidentalis*. Such specimens are the reason for not separating the taxa at specific level.

Key to subspecies of *Sida rohlenae* Domin

Mericarps with long retrorsely barbed awns; stems with or without longer simple hairs [widespread across northern Australia] ..... ssp. ***rohlenae***

Mericarps with rounded apex, lacking any awns; stems always with longer simple hairs [Kimberley region and/to Daly Waters] ..... ssp. ***occidentalis***

Sida rohlenae Domin *ssp. rohlenae*

S. rohlenae ssp. *rohlenae* has two forms, one with the hair covering on all parts a short stellate, more or less appressed tomentum with a velvety appearance, the other with a similar indumentum but mixed with long simple hairs. The presence of these longer hairs seems to be clinal with the greater density of them occurring in populations from more northerly localities while they are usually completely absent from central Australian populations.

Specimen with poorly developed awns cited above: *Wright 45*, 31.v.1987, Daly Waters Access Rd, Northern Territory (BRI).

Sida rohlenae ssp. *occidentalis* R.M. Barker, ssp. nov.

Subspecies nova Sida *rohlenae* sed differt a subsp. *rohlenae* muticis apicibus mericarpiorum.

Holotype: *P.A. Fryxell, L.A. Craven & J. McD.Stewart 4551*, 29.v.1985, Western Australia, road to Beagle Bay N of Broome, 10–15 km N of Junction with Broome–Derby Hwy (AD); isotypes: CANB,NY (pf).

Sida rohlenae var. *mutica* auct. non (Benth.)Fryxell: Fryxell, *Sida* 12: 26 (1987)p.p. (at least with respect to Western Australian material); Hnatiuk, *Census Austral. Vasc. Pl.* 309 (1990) p.p.; Wheeler, *Fl. Kimberley Region* 229 (1992).

Upright *subshrub*, 50(–100) cm tall, usually narrower than high, rarely to 120 cm wide, branches erect or ascending with moderately dense long simple hairs above dense velvety layer of minute, sessile stellate hairs. *Corolla* bright yellow-orange throughout, 15–18 mm diameter; petals obovate, 8–9 mm long, 2.2–3 mm wide at claw, 8–9 mm wide at widest part, emarginate apically with tiny ?glandular hairs lining emarginate part, ciliate on claw. *Stamens* c. 50–60. *Styles* 9–10. *Schizocarp* depressed ovoid or transversely elliptic, 4–7.5

mm diameter, glabrous, hardly grooved between mericarps. *Mericarps* 10–11, 2.5–3.2 mm high, shallowly to deeply grooved apically, splitting in 2 at apex.

Distribution

Kimberley region of Western Australia, with two isolated occurrences in the Daly Waters/Larrimah area of the Northern Territory. Its occurrence in the area between these localities is unknown.

Ecology

Weed of disturbed ground, often in sandy areas, but also recorded from clay flats. Flowering March to May, rarely as late as August.

Etymology

Occidentalis is the Latin word for western, referring in this case to the occurrence of this taxon at the western end of the species range.

Notes

Specimens of this taxon from the Kimberleys in the MEL Herbarium were identified as *S. magnifica* Domin which has here been reduced to a subspecies of *S. atherophora* Domin. This identification highlights the closeness of *S. rohlenae* Domin and *S. atherophora* Domin and it may be that these too might be more appropriately treated as the one species.

Specimens examined:

AUSTRALIA. WESTERN AUSTRALIA: *A.C. Beauglehole 52305*, 6.vi.1976, c. 5 km E of Gibb River Kalumburu Mission Rd, between Donkey Creek and Gibb River Aboriginal Paintings area (NT,PERTH); *A.C. Beauglehole 52728*, 13.vi.1976, Mella – Oobagooma Rd, 80 km by road N of Gibb River Rd (PERTH); *A.C. Beauglehole 53101*, 17.vi.1976, Geegully Creek, c. 10 km NNE of junction of Mowla Bluff – Manguel Creek – Nerrima Roads (NT); *A.C. Beauglehole 59201 & E.G. Errey 2901*, 1.ix.1978, 67 km NE of Lagrange Aboriginal Mission turn–off, Great Northern Hwy (NT); *G.W. Carr 4378 & A.C. Beauglehole 48156*, 31.vii.1974, Beagle Bay Rd, 1.5 km N of Great Northern Hwy (NT); *A.J. Ewart s.n.*,iv.1927, Derby (MEL53817); *W.V. Fitzgerald 1585*, viii.1906, nr Erskine Range, W Kimberley (PERTH); *Forrest & Carey s.n.*, 1879, between De Grey River and Lagrange Bay (MEL111654, MEL111655); *T.R. Foulkes 3*, 29.iii.1987, Lot 976 Gregory St., Broome (PERTH); *T.R. Foulkes 5*, 5.iv.1987, Lot 70, Broome (PERTH); *P.A. Fryxell 3859*, 28.iv.1983, c. 42 km N of Broome on road to Beagle Bay (33 km N of junction). (CANB); *P.A. Fryxell & L.A. Craven 3935*, 3.v.1983, Kimberley Downs Station, 100km E of Derby and Gibb River Road (CANB); *P.A. Fryxell & L.A. Craven 3979*, 7.v.1983, 30 km N of Gibb River H.S. at North Creek crossing (CANB); *C.A. Gardner 9552*, 27.vi.1950, Derby (PERTH); *C.A. Gardner s.n.*, 16.v.1951, Gogo (PERTH); *K.F. Kenneally 9823*, 12.iii.1987, Cnr of Port Drive and Guy St, Broome (PERTH); *E. Langfield 100*, 31.viii.1949, Kimberley Research Station (MEL,CANB); *J. Maconochie 1178*, 24.v.1971, 58 miles N of Broome along road to Beagle Bay (MEL,NT); *W.J.O'Donnell s.n.*, ?1887, Near Cambridge Gulf (MEL111785); *D.W. Rust 86*, 7.iii.1950, Karungie, Kimberley Research Station (CANB); *D.W. Rust 158*, 11.iii.1950, Karungie, Kimberley (CANB); *J. Tepper 100*, ii.?1890, Roebuck Bay (MEL); *J.G. Tracey 13864*, 20.v.1981, Between Broome and Jetty Wharf (BRI); *A.S. Weston 12124*, 28.iv.1980, Smoke Creek, SW of Lake Argyle (PERTH).

NORTHERN TERRITORY: *P.A.Fryxell, L.A.Craven & Stewart 4428*, c. 2 miles S of Larrimah (AD,CANB, NY, pf); *T. Wright 45*, 31.v.1987, Daly Water Access Rd (BRI).

4. Reduction of *Sida magnifica* Domin to a subspecies of *S. atherophora* Domin

Sida magnifica Domin was found to be untenable at the species level because it differs from *S. atherophora* Domin predominantly by its muticous mericarps, mirroring the situation found in *S. rohlenae* Domin and its two subspecies described above. In fact, *S. rohlenae* Domin and *S. atherophora* Domin themselves are distinguished primarily on indumentum type and it may be that in the future they would be better treated as the one species.

Sida atherophora Domin, *Biblioth. Bot.* 89: 391 (1928) p.p.; Hnatiuk, *Census Austral. Vasc. Pl.* 309 (1990).

Lectotype here designated: K. Domin 6545, March 1910, near Jericho [Queensland] (PR) isolectotype: (PR). Syntypes: *K. Domin 6542*, March 1910, Jericho (PR); *K. Domin 6543*, March 1910, Jericho (PR 2 sheets); *Bynoe (Domin 6547)*, s.dat., between Camooweal and Burketown [Queensland] (PR). Excluding specimens also collected from Jericho by Domin and labelled by him as *S. atherophora* but belonging to *S. rohlenae (Domin 6540 p.p.* (mounted with *Rostellularia* specimen), *Domin 6541 & Domin 6544*). Not based on *S. rhombifolia* L. var. *atherophora* F. Muell., *Proc. Royal Soc. S. Austral.* 9: 213 (1886) (= *S. rohlenae*). (See under notes.)

Sida atherophora var. *brachypoda* Domin, *Biblioth. Bot.* 89: 391 (1928).
Holotype: *K. Domin 6546,* March 1910, Jericho, Great Dividing Range [Queensland] (PR, 2 sheets).

Sida magnifica Domin, *Bibliothec. Bot.* 22: 392(1928); Hnatiuk, *Census Austral. Vasc. Pl.* 309 (1990) — for typification see ssp. *magnifica* below.

?Sida dallachyi C.T. White, *Proc. Royal. Soc. Qld* 47: 54 (1936); Hnatiuk, *Census Austral. Vasc. Pl.* 309 (1990) — for typification see ssp. *magnifica* below.

?Sida cordifolia var.*? mutica* Benth., *Fl. Austral.* 1: 197 (1863); F.M.Bailey, *Compr.Cat.Qld Pl.* 57 (1913) –

Sida mutica (Benth.)Domin, *Bibliothec. Bot.* 89: 391 (1928) nom.illeg. predated by *S. mutica* Delile (1812)

Sida rohlenae var. *mutica* (Benth.)Fryxell, *Sida.*12: 26 (1987)p.p. (at least with respect to type material); Hnatiuk, *Census Austral. Vasc. Pl.* 309 (1990)p.p. — for typification see ssp. *magnifica* below.

Key to subspecies of *Sida atherophora* Domin

Mericarps with long retrorsely barbed awns; flowers with petals 6.5 mm long ..... ssp. ***atherophora***
Mericarps lacking any awns, with stellate hairs along apical groove; flowers with petals 10–12 mm long ..... ssp. ***magnifica***

Sida atherophora Domin ssp. *atherophora*

Distribution

Found in south-eastern Queensland, but extending as far north as Charters Towers and as far west as Charleville.

Ecology

Ecological notes include *Eucalyptus crebra* woodland with grassy understorey, disturbed mulga, *Eucalyptus populnea* woodland with dense grass stratum in red earth. Flowering March to June (rarely Sept).

Specimens examined:

AUSTRALIA. QUEENSLAND: *E.R. Anderson 3428*, 9.vi.1983, "Kairoo" vegetation monitoring site, c. 60km north of Dingo (BRI); *M.E. Ballingall 2144*, 12.v.1986, 4.8km west of Westmar on Moonie Hwy (BRI); *S.T. Blake 7953*, 7.111.1935, Minerva, north of Springsure (BRI,CANB) *S.T. Blake 6049*, 10.vi.1934, Pentland (BRI); *S.T. Blake 8532*, 11.iv.1935, near source of Poison Creek, c. 90 miles N of Hughenden (BRI); *S.T. Blake 10236*, 27.xi.1935, Jericho (BRI); *S.T. Blake 6956A*, 22.vii.1934, Minerva (BRI); *M.P. Bolton 619*, 13.vi.1986, S of Charters Towers, Doongara Stn (BRI); *E. Bowman 2*, s.dat., Neerkool Creek (MEL53499); *A. Dietrich s.n.*, 1863–74, Without locality (NSW194545); *S.L. Everist 2514*, 3.iv.1946, Comet (BRI); *R. Henderson 229*, 4.iv.1967, Area surrounding State Wheat Board at Moura (BRI); *L. Leichhardt 434*, 14.ii.1847, Expedition Range (NSW); *R.W. Purdie & D. Boyland 26*, 23.v.1976, 23km from Charleville along Charleville–Boatman Road (BRI,CANB); *R.H. Rebgetz 467*, 1980, Warrigal Creek near Pentland (BRI); *A.C. Robinson s.n.*, 15.xii.1974, Fairbairn Dam (BRI); *L.S. Smith & S.L. Everist 971*, 24.x.1940, About 3 miles E of Jericho (BRI); *L.S. Smith & S.L. Everist 992*, 24.x.1940, About 6 miles E of Jericho (MEL,BRI); *J.E.Young s.n.*, x.1917, between Emerald

and Longreach (BRI054219); *C.T. White 8655 p.p.*, 19.iii.1933, Torrens Creek (BRI); *C.T. White 10826*, iv.1937, Callide Range (BRI); *C.T. White 11773*, 6.ix.1941, Morven (BRI).

Sida atherophora* ssp. *magnifica (Domin)R.M. Barker, comb. et stat. nov.

BASIONYM: *Sida magnifica* Domin, *Bibliothec. Bot.* 22: 392(1928); Hnatiuk, *Census Austral. Vasc. Pl.* 309 (1990).

Holotype: *K. Domin 6548*, Feb. 1910, apud fl. Walsh River pr. opp. Chillagoe [Queensland] (PR); isotype: PR.

?*Sida dallachyi* C.T. White, *Proc. Royal. Soc. Qld* 47: 54 (1936); Hnatiuk, *Census Austral. Vasc. Pl.* 309 (1990).

Holotype: *L.J. Brass 2449*, 11.iv.1932, Mt Molloy [Queensland] (BRI, labelled as co–type by White); paratypes: *J. Dallachy s.n.*, 24.vi.1866, Herbert River [Queensland] (MEL53572); *J. Dallachy s.n.*, s.dat., Rockingham Bay [Queensland] (MEL53571) - both specimens annotated by White; ?isoparatype: *J. Dallachy s.n.*, s.dat., Rockingham Bay (MEL53570) - appears to be a duplicate of MEL53571.

?*Sida cordifolia* var.? *mutica* Benth., *Fl. Austral.* 1: 197 (1863); F.M. Bailey, *Compr.Cat.Qld Pl.* 57 (1913) – *Sida mutica* (Benth.)Domin, *Bibliothec. Bot.* 89: 391 (1928) nom.illeg. predated by *S. mutica* Delile (1812).

Sida rohlenae var. *mutica* (Benth.)Fryxell, *Sida*.12: 26 (1987)p.p. (at least with respect to type material); Hnatiuk, *Census Austral. Vasc. Pl.* 309 (1990)p.p.

Syntype (possible holotype): *F. Mueller s.n.*, s.dat. [1856], Macarthur River, Gulf of Carpentaria [Northern Territory] (K).

Distribution

S. atherophora ssp. *magnifica* is known from the Atherton to Townsville area in northern Queensland, with a single disjunct collection by Mueller from the McArthur River in the Northern Territory. This collection has closer affinities with this taxon than any other in Australia.

Ecology

Ecological annotations are almost completely lacking on the few specimens of this taxon which exist. The only information available is given is on a Magnetic Island collection where it is recorded from the landward side of coastal dunes. Flowering March – June.

Typification

1. *Sida magnifica* Domin

There are two sheets in Prague, only one of which has a label. The second sheet has the same herbarium number as that of the labelled sheet. The labelled sheet has two branches, each with long pedicelled fruits and each with a single flower with petals c. 2 cm long, while the second sheet bears a much more robust specimen with a number of branches and flowers. The labelled sheet has been treated as the holotype.

2. *Sida dallachyi* C.T.White

In the protologue, White designated the Brass collection as type, and so it has been annotated as the holotype of the species. It consists of two branches with fruiting pedicels in most of the axils and a single, somewhat broken flower, smaller than that associated with the type of *S. magnifica.*

White also listed Dallachy collections in MEL which had been collected on the 24th June 1866 as representing this species, but did not designate them as types. Five such collections exist in MEL but only two have been annotated by White and these can be considered as paratypes. Of the other three, MEL 53570 has the same information on it and the material matches that on the paratype sheet, MEL53571, and so it is probably a duplicate of that collection. Since it has not been annotated by White, it is considered to

be a probable isoparatype. One of the other two sheets has a collection date of 16th June 1865 (MEL53569) and has been annotated by Mueller as Sida melhamia[v]ea. The last sheet (MEL53567) is part of the Sonder herbarium and has been similarly annotated as Sida melhamia[v]ea; it appears to be a duplicate of MEL53567 and because of the different date, neither of these is considered to have any type status.

3. *Sida cordifolia* var. *mutica* Benth.

The type of *Sida cordifolia* var. *mutica* Benth. which is the basionym for *Sida rohlenae* var. *mutica* (Benth.)Fryxell and *Sida mutica* Domin cannot be placed altogether satisfactorily in this classification. It has the same muticous fruits as *S. atherophora* ssp. *magnifica* and *S. rohlenae* ssp. *occidentalis* as distinguished here. It differs from *S. rohlenae* ssp. *occidentalis,* where it was previously placed, by lacking any of the longer simple hairs characteristic of the WA populations having instead a similar indumentum to that of *S. atherophora* ssp. *magnifica.* Its shorter, more crowded pedicels are more like those of *S. spinosa,* from which it differs in its overall indumentum on the stems and leaves and by the lack of dense upright stellate hairs on the shoulder and awns of the mericarps. Apart from flower size, it resembles most closely specimens which have been segregated as *S. atherophora* ssp. *magnifica* in this treatment, particularly those types of *S. dallachyi* which is here treated as a synonym of S. *atherophora* ssp. *magnifica.* It is possible that *S. atherophora* ssp. *magnifica* and *S. dallachyi* are distinct taxa (see Note 1 below) since the types vary in indumentum and length of pedicels. However the number of herbarium specimens is small, they were mostly collected many years ago, and there has been no opportunity to investigate them in the field, and so the status quo is adopted here.

Notes

1. The Brass and Dallachy collections, representing *Sida dallachyi,* are relatively uniform in vestiture and habit and are at odds with the type of *S. magnifica* which has the close tomentum of ssp. *occidentalis* topped with occasional larger stellate hairs. Doubt has to exist as to whether *S. dallachyi* and *S. atherophora* ssp. *magnifica* are truly synonymous but the lack of extra collections makes it difficult to decide. Those few extra collections which do exist agree more closely with types of *S. dallachyi* than the type of *S. atherophora* ssp. *magnifica* as does the type of *S. cordifolia* var. *mutica* (q.v.).

2. Domin's *S. mutica* is based upon the same Mueller collection as *S. cordifolia* var. *?mutica* Benth. This collection has been annotated as "*S. brachypoda* ferd. Mueller" by Mueller. This is a completely different species to the *S. brachypoda* described by Holland & Reynolds (1988), which has also been attributed to Mueller in the past.

Specimens examined:

AUSTRALIA. QUEENSLAND: *Anon.(?R.C. Burton, ex herb. W.R.A. Baker) s.n.*, s.dat. Walsh Ranges (MEL112605); *Anon. s.n.*, s.dat., without locality (MEL53568); *Bancroft 34*, 1908, Stannary Hills (BRI p.p.); *Barclay Miller s.n.*,v.1891, Walsh (BRI p.p.); *C. Weld.Birch & A. Zelling s.n.*, 1892, Tait River (MEL111763); *S.T. Blake 8264*, 26.iii.1938, Magnetic Island (BRI); *R.C. Burton s.n.*, s.dat., Walsh Ranges (BRI); *J. Dallachy s.n.*, 24.vi.1866, Rockingham Bay(BRI ex MEL, MEL53570, MEL53572, MEL53569, MEL53571, MEL53567); *N.A.R. Pollock s.n.*, s.dat., Home Hill, Townsville (BRI); *Walsh s.n.*, s.dat.,Walsh Range (NSW 194543); *C.T. White s.n.*, 10.ii.1918, Magnetic Island (BRI).

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