

A new *Hibiscus* (Malvaceae) from Central Australia

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Abstract

Hibiscus arenicola sp. nov. (Section *Ketmia*) is described as new from the sand dune desert area of Central Australia. Notes on its habitat and ecology are outlined. A key is provided to the Central Australian species of the sections *Ketmia* and *Hibiscus*.

Introduction

The author is currently revising the genus *Hibiscus* (s.l.) within Australia, but because of the impending publication of the Flora of Central Australia, it is necessary to publish this new species before the completion of the revision.

Hibiscus arenicola A. S. Mitchell sp. nov. (Figures 1, 2)

Suffrutex usque 1 m altus, tomento stellato sessili; stipulae 3 mm longae; petioli 5–8 mm longi; folia orbicularia, interdum obscure 3-lobata, 10 (–14) mm lata x 10 (–12) mm longa, crenata, obtusa; flores solitarii, axillares, pedunculis petiolis aequilongis; epicalycis segmenta 12, libera, filiformia, 6–7 mm longa, pilis simplicibus parvis per tomentum stellatum interspersis; calyx circiter 11 mm longus, 5-lobatus, lobis tubo aequilongus, longe acuminatis; petala 5, 14 mm longa, 4 mm lata, basi columnae staminalis affixa, malvina vel lilacina, ut videtur maculo fusco basali carentia, convoluta, integra, obtusa, extra pilis raris simplicibus vel stellatis praedita, intus glabra; columna staminalis apice tantum antherifera, staminibus paucis (circiter 20), apice truncato-undulato; anthera cremaea; grana pollinis spinosa, lutea; ovarium 5-loculare, loculis 1-ovulatis; stylus inde ab apice columnae staminalis divisus; stigmata 5, globosa, capitata, rubro-aurantiaca; capsula globosa, circiter 5 mm diametra, loculicida (serius etiam septicida ?), membranacea, superficie leviter papilloso, glabra, pilis paucissimis simplicibus ad apicem confertis (secus dehiscencias etiam), 5-locularis; semina in quoque loculo singula, reniformia, 3 mm longa, laevia, glabra.

Type: North-west of Walter James Range 24°32' 128°33', Western Australia, 9 Feb. 1972, P. K. Latz 2361. (holo: NT; iso: AD, CANB, K, MEL, PERTH).

*Subshrub** to 1 m high, covered with sessile stellate tomentum; stipules 3 mm long; petioles 5–8 mm long; leaves orbicular, sometimes obscurely 3-lobed, 10 (–14) mm wide x 10 (–12) mm long, crenate, obtuse; flowers solitary, axillary, the peduncles equalling the petioles; epicalyx segments 12, free, filiform, 6–7 mm long, with scattered simple hairs amongst the stellate tomentum; calyx about 11 mm long, 5-lobed, the lobes long acuminate, equalling the tube; petals 5, 14 mm long, 4 mm wide, attached to the base of the staminal column, mauve or lilac, apparently without a darker basal spot, convolute, entire, obtuse, outside with very occasional simple or stellate hairs, inside glabrous; staminal column antheriferous only at the summit with few stamens (ca 20), truncate-undulate at the summit; anthers cream; pollen spiny, yellow; ovary 5-locular, locules 1-ovulate; style divided from summit of staminal column; stigmas 5, globose, capitate, orange-red; capsule globose, about 5 mm diameter, splitting loculicidally (and later septicidally ?), membranous, slightly papillose on surface, glabrous except for a few simple hairs along the lines of dehiscence and a bunch at the apex, 5-locular; seeds one in each loculus, reniform, 3 mm long, smooth, glabrous.

Distribution: Known from only five localities, three in Western Australia and two in the Northern Territory.

Habitat: The five gatherings were all collected from deep red sand on the base, side or crests of sand dunes. Other plants were seen in the general area, sometimes in dune swales (Latz, pers. comm.).

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* Field observations indicate this species develops a clonal habit (Latz, pers. comm.).



Figure 1. *Hibiscus arenicola* A. S. Mitchell.—Holotype (Latz 2361, NT).



Figure 2. *Hibiscus arenicola* A. S. Mitchell. a—portion of a branch. b—diagram of a flower in section. c—diagram of section through epicalyx, calyx and ovary.

Other collections: NORTHERN TERRITORY:—South of the Davenport Hills 23°43' 129°17', P. K. Latz 2326, 9 Feb. 1972 (NT); 35 miles north of Highland Rocks 20°50' 130°00', J. R. Maconochie 1079, 29 July 1970 (NT, PERTH).

WESTERN AUSTRALIA:—73 miles S. of New Mundiwindi, Great Northern Hwy., A. S. George 3632, 6 March 1962 (CANB, NT, PERTH); ± 65 miles N. of Warburton on road to Giles 25°29' S, 126°35' E, A. S. George 8216, 2 Oct. 1966 (CANB, NT, PERTH).

Derivation of name: The specific epithet 'arenicola' refers to the restricted habitat of the taxon, viz. sand-dunes.

Relationships: The new species has been placed in the section *Ketmia* DC., as defined by Borssum Waalkes (1966). Two anomalies arise in the generic description with the inclusion of this new species. Firstly, *H. arenicola* has locules which are uni-ovulate, whereas the genus *Hibiscus* has locules with three to many ovules (Borssum Waalkes 1966, Hutchinson 1967). Examination of other species in the sections *Ketmia* and *Hibiscus* did not reveal any uni-ovulate locules except in the case of *H. geranioides* A. Cunn. ex Benth.; further material is needed to confirm the situation in this species. Secondly, the flowers of *H. arenicola* appear to lack a darker basal spot (though no living material was available for examination), a characteristic feature of most, if not all, *Hibiscus* species. A colour slide of *H. arenicola* growing in its natural state does not provide an answer to this latter problem (slide held at NT). However, as the plant appears to match *Hibiscus* in all other respects, it has been referred to that genus. It may be necessary to critically examine this decision in future.

The section *Ketmia* is very close to the section *Hibiscus* Hochr., the main distinction being the presence or absence of an aureole of long, silky, ferrugineous hairs on the median plane of the mature seed. To avoid any possible confusion the Central Australian species from both sections have been included in the key.

Key to Central Australian species of *Hibiscus* in Sections *Ketmia* and *Hibiscus*

- | | | |
|---|------|---|
| 1. All leaves undivided .... | .... | 2 |
| — Upper or lower leaves variously divided .... | .... | 6 |
| 2. Epicalyx segments free .... | .... | 3 |
| — Epicalyx segments united to form a cup .... | .... | H. sturtii Hook. |
| 3. Calyx lobes not or only slightly exceeding capsule; capsule with a distinct dark green line along the septa; seeds with an aureole of long silky ferrugineous hairs in the median plane .... | .... | .... H. burtonii F. M. Bail. |
| — Calyx lobes greatly exceeding capsule (to twice as long); capsule lacking a dark green septal line; seeds tomentose or glabrous .... | .... | 4 |
| 4. Leaves orbicular; calyx and epicalyx silky with long (> 1·5 mm) stellate and simple hairs; seeds glabrous .... | .... | .... H. arenicola A. S. Mitchell |
| — Leaves ovate-lanceolate, lanceolate or oblong; calyx and epicalyx never appearing silky, hairs short (< 1·5 mm) stellate only; seeds tomentose or glabrous .... | .... | 5 |
| 5. Plant with a velvety white tomentum of minute (< 0·5 mm) stellate hairs; capsule with dense, appressed, sericeous hairs .... | .... | .... H. krichauffianus F. Muell. |
| — Plant with a tomentum of scattered or dense stellate hairs (> 0·5 mm), often appearing rusty; capsule glabrous except for a few scattered simple hairs at apex | .... | H. leptocladus Benth. |
| 6. Plant ± glabrescent; capsule glabrous, often on a very long pedicel | .... | H. brachysiphonius F. Muell. |
| — Plant velutinous—tomentose or hispid; capsule hirsute, never on a very long pedicel.... | .... | 7 |
| 7. Plant velutinous-tomentose; upper leaves oblong, lower leaves palmatifid into three oblong undulate lobes; subulate epicalyx segments not reaching to sinus | .... | H. solanifolius F. Muell. |
| — Plant hispid; leaves palmatisect into three oblong-linear lobes; linear epicalyx segments surpassing sinus .... | .... | .... H. drummondii Turcz. |

Synonymies of Hibiscus listed in key

Hibiscus leptocladus Benth.

H. microchlaenus F. Muell. (nom. nud.)

H. microchlaenus F. Muell. var. *leptocladus* (Benth.) Fryxell

H. krichauffianus F. Muell. var. *chippendalei* Fryxell

Hibiscus solanifolius F. Muell.

H. intraterraneus J. M. Black

H. drummondii Turcz. sens. Chippendale in Check List of Northern Territory Plants (1971)

Hibiscus drummondii Turcz.

H. elliottii F. Muell.

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