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.1.) 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 parcis 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 cremea; 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 dehiscentias 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.).

^{*} Herbarium of the Northern Territory, P.O. Box 2134, Alice Springs, N.T. 5750.

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

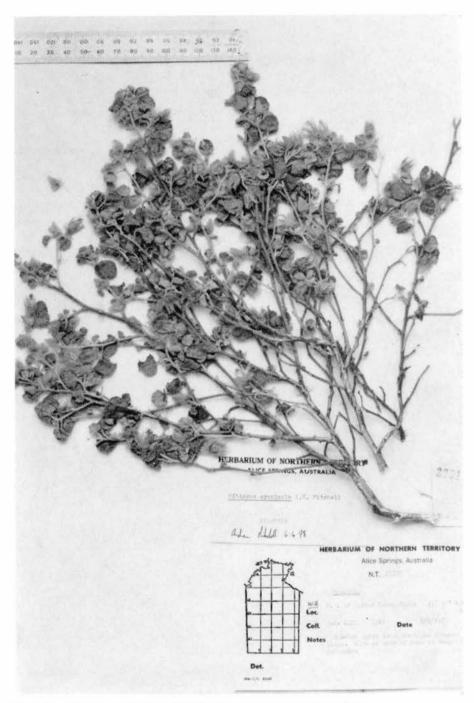


Figure 1. Hibiscus arenicola A. S. Mitchell.—Holotype (Latz 2361, NT).

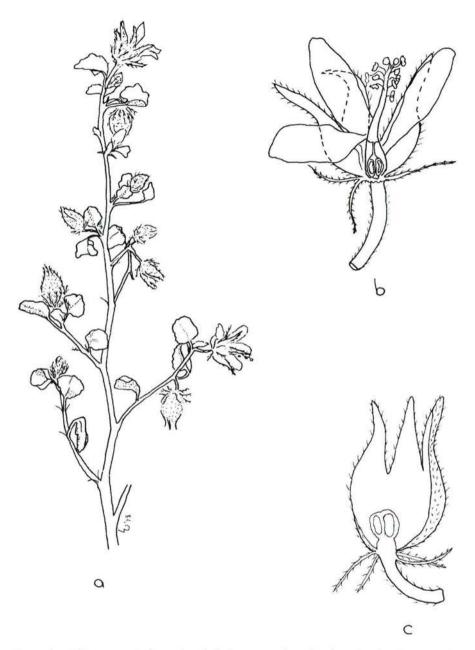


Figure 2. Hibiscus arenicola A. S. Mitchell. a—portion of a branch. b—diagram of a flower in section. c—diagram of section through epicalyx, calyx and ovary.

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		****		****		****	244	***	****	2
_	Upper or lower leaves vario	usly (divided			****	****	****	2000	****	6
2.	Epicalyx segments free		****				****	****	****		3
_	Epicalyx segments united to	form	a cup	***	****	****	CHANG	****	H. stu	tii Ho	ok.
3.	line along the septa; seeds				of long	silky	ferrugi		hairs ii	n the	ail.
-	Calyx lobes greatly exceeding septal line; seeds tomentose	or gl	osule (to labrous	twice	e as lon	g); caj	osule la	cking a	dark (green 	4
4.	Leaves orbicular; calyx and hairs; seeds glabrous		alyx sill	1150 C C C C C C C C C C C C C C C C C C C	The second second	No.		stellate arenico			hell
-	Leaves ovate-lanceolate, la silky, hairs short (< 1.5 m	nceola m) ste	ate or o	obloni	g; caly	and nentos	epicaly e or gla	x neve	r appe	aring	5
5.	Plant with a velvety white with dense, appressed, serice	tomer eous l	ntum of	f min	ute (<			llate ha			ell.
-	Plant with a tomentum of so rusty; capsule glabrous exce	catter	ed or de					pex			
	Dient I alabracanti annou	la ala	brous	often .		m. lone	- nadia		ptoclad	ius Ber	ıın.
0.	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										
	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 palmatis surpassing sinus	sect in	to three	oblo	ng-linea	r lobes	s; linea		yx segn		rcz.

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.

Acknowledgments

I would like to thank John Maconochie and Peter Latz for their comments on this article; Mr. H. K. Airy Shaw for providing the Latin description; Jim Ross, Bill Barker and Helen Aston for their stimulating discussions on the genus; Dr. Hj. Eichler for his comments and advice on nomenclature; Lois Ulyatt for providing the illustrations.

References

Bentham, G. (1863). Flora Australiensis vol. I. Lovell Reeve and Co., London.

BORSSUM WAALKES, J. VAN (1966). Malesian Malvaceae Revised. Blumea 14(1): 1-251.

CHIPPENDALE, G. M. (1971). A Check List of Northern Territory Plants. Proc. Linn, Soc. N.S.W. 96(4): 207-267.

FRYXELL, P. A. (1968). Taxonomic Notes on Australian Malvaceae. Proc. Linn. Soc. N.S.W. 92(3): 262-5.

HOCHREUTINER, B. P. G. (1900). Revision du Genre Hibiscus. Annu. Conserv. Jard. bot. Geneve 4: 23-191.

HUTCHINSON, J. (1967). The Genera of Flowering Plants. Dicotyledons, vol. 2. O.U.P.