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A new species of *Capparis* L. (Capparaceae) from Sumatra (Indonesia)

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ABSTRACT

A new species of *Capparis* L., *C. irenae* Fici, sp. nov., is described and illustrated from Tigapuluh Mts., Riau Province of Sumatra, where it is known from a single locality in forest communities. The new species, belonging to *Capparis* sect. *Monostichocalyx* Radlk., is related to *C. diffusa* Ridl., differing in several characters as the glabrous twigs, longer petioles and leaves, flowers arranged in racemes with cataphylls at the base, longer petals hairy outside and longer filaments. Its affinities with other related taxa and its conservation status are discussed. Moreover a distribution map of the new species and an identification key to the species of *Capparis* recognized in Sumatra are provided.

KEY WORDS

Capparaceae,
Capparis,
sect. *Monostichocalyx*,
Sumatra,
new species.

RÉSUMÉ

Une nouvelle espèce de Capparis (Capparaceae) de Sumatra (Indonésie).

Une nouvelle espèce de *Capparis* L., *C. irenae* Fici, sp. nov., est décrite et illustrée des monts Tigapuluh, province de Riau, Sumatra, où elle est connue d'une seule localité, en communautés forestières. La nouvelle espèce appartient à *Capparis* sect. *Monostichocalyx* Radlk., et ressemble à *C. diffusa* Ridl., dont elle se distingue par plusieurs caractères comme les jeunes rameaux glabres, les pétioles et les feuilles plus longs, les fleurs en racèmes avec cataphylles basales, les pétales plus longs, pubescents sur la face externe et les filets plus longs. Ses affinités avec les taxa parents et son statut de conservation sont analysées. Une carte de distribution de la nouvelle espèce et une clé d'identification des espèces de *Capparis* reconnues à Sumatra sont en outre fournies.

MOTS CLÉS

Capparaceae,
Capparis,
sect. *Monostichocalyx*,
Sumatra,
espèce nouvelle.

INTRODUCTION

The genus *Capparis* L. (Capparaceae) includes about 140 species widespread in the tropical and subtropical regions of the Old World (POWO 2019). Following the treatment furnished in *Flora Malesiana* by Jacobs (1960) the genus was represented in Indonesia by 19 species belonging to three different sections, i.e. sect. *Capparis* L., sect. *Monostichocalyx* Radlk. and sect. *Busbeckea* (Endl.) Benth. & Hook.f. Furthermore, a new species of this genus has been recently described from the Papua Barat Province (Fici 2012). Investigations carried out during the last years in south eastern Asia and western Pacific provided new data on the diversity of *Capparis* in these areas with the description of several new species from Thailand, Vietnam, Philippines, Lao PDR and New Caledonia (Thuong *et al.* 2013, 2015, 2018; Srisanga & Chayamarit 2004; Fici 2016, 2017; Fici *et al.* 2018, 2020; Fici & Souvannakhoumane 2020; Souvannakhoumane *et al.* 2018).

With regard to Sumatra eight species of *Capparis* are so far reported, all belonging to sect. *Monostichocalyx* (Jacobs 1960, 1965). During recent researches on herbarium collections, unidentified material collected in 1988 in the Tigapuluh Mts., Riau Province, showed differential characters from other known species of *Capparis*. This material turned out to belong to a new species of sect. *Monostichocalyx*, characterized by the features of the indumentum, stipular thorns, leaf, inflorescence and flower. The new species is here described and illustrated, its affinities are discussed and a key to all the species of *Capparis* known from Sumatra is given.

SYSTEMATICS

Family CAPPARACEAE Juss.

Genus *Capparis* L.

Capparis irenae Fici, sp. nov.

(Fig. 1)

A C. diffusa Ridl. *ramunculis glabris, petiolis atque foliis longioribus, inflorescentia racemosa cum cataphyllis basalibus, petalis longioribus extus pubescentibus, staminibus longioribus praecipue differt.*

TYPUS. — **Indonesia**. Sumatra, Tigapulu [Tigapuluh] Mts, Riau Province, 5 km W of Talanglakat on Rengat-Jambi Road, Bukit Karampal area, G. Lolongan Kayu ridge, 7.XII.1988, *Burley et al.* 1946 (holo-, L1851428!).

Eponymia. — *Filia mea dilecta haec species dicata est.*

PHENOLOGY. — Flowering in December (based on available material).

DISTRIBUTION AND ECOLOGY. — The new species is only known from the type locality in the Tigapuluh Mts of central Sumatra (Fig. 2), at 0°46'S, 102°32'E, where it was observed and collected in forest communities with *Drepananthus biovulatus* (Boerl.) Survesw. & R.M.K. Saunders (Annonaceae), *Aphanamixis polystachya* (Wall.) R.Parker (Meliaceae), *Antidesma neurocarpum* Miq. (Phyllanthaceae), *Haemocharis integerrima* Koord. & Valetton (Theaceae), *Dillenia beccariana* Martelli (Dilleniaceae), *Celtis* sp. (Ulmaceae), *Lithocarpus* sp. (Fagaceae), *Pinanga* sp. (Arecaceae), etc.; 300-550 m a.s.l.

CONSERVATION STATUS. — Following the IUCN Red List Categories and Criteria (IUCN 2012), the new species is Data Deficient (DD) lacking information to make an assessment of its risks based on the population status. The area where the new species has been collected is close to the Bukit Tigapuluh National Park, including lowland and highland forests and refuge of several endangered mammal and bird species; this area, established as a national park in 1995, has been under relevant threat due to illegal logging and palm oil plantations.

DESCRIPTION

Climber up to 3 m long. Stem *c.* 1 cm diameter; twigs glabrous.

Stipules

Stipular thorns recurved *c.* 1 mm long, with blackish tip.

Leaves

Petioles sulcate, 5-7 mm long, glabrous. Leaf blades elliptical or narrowly ovate, wider below or at the middle, (2.3-) 2.5-2.8 (-3.4) times as long as wide, (9-) 10.2-12.4 × (3-) 3.3-4.5 (-4.8) cm; base rounded or blunt; apex acute, acuminate with tip 5-10 mm long; surfaces glabrous; veins *c.* 5-8 on each side of the midrib, thin, decurrent along the margin.

Flowers

Flowers in axillary, few-flowered racemes with slender, glabrous axis *c.* 4.5-5.5 cm long, and few cataphylls at the base; pedicels 2.1-2.2 cm long, glabrous; bracts at the base of the flowers subulate, *c.* 0.3 mm long. Sepals green, acute, 3-3.8 × 1.5-2 mm, glabrous, ciliate at margins, inner pair with cartilaginous margin. Petals white, linear-oblong, *c.* 7 × (2.5-) 3-4 mm, pubescent at margins and outside, glabrous inside, the upper pair pale purple at margins near the apex. Stamens *c.* 14-16; filaments white, 2-2.5 cm long; anthers basifixed, bluish, *c.* 0.75 mm long. Gynophore *c.* 1.5 cm long, glabrous; ovary ovoid or subglobose, *c.* 1 × 0.75 mm, glabrous, with pointed stigma.

Fruit

Unknown.

REMARKS

Capparis irenae, sp. nov. belongs to *C.* sect. *Monostichocalyx*, which includes about 18 species in Indonesia (Jacobs 1960, 1965; Fici 2012). The new species is a climber, mainly distinguished from related taxa by its glabrous twigs, short stipular thorns, leaf blades elliptical or narrowly ovate, flowers arranged in axillary racemes with cataphylls at the base, sepals small and glabrous, ciliate at margins, petals pubescent outside and ovary glabrous, small, with pointed stigma. *C. irenae*, sp. nov. shows affinities with *C. diffusa* Ridl., a shrub or climber recorded from Cambodia, Thailand, Malaysia and northern Sumatra, which however differs (Appendix 1) in the twigs puberulous when young, petioles 2-4 mm long, leaves up to 8.5 cm long, flowers in terminal or lateral sessile umbels, petals hairy inside, *c.* 4-6 mm long, and stamens with filaments *c.* 1.25 cm long (Jacobs 1960, 1965).

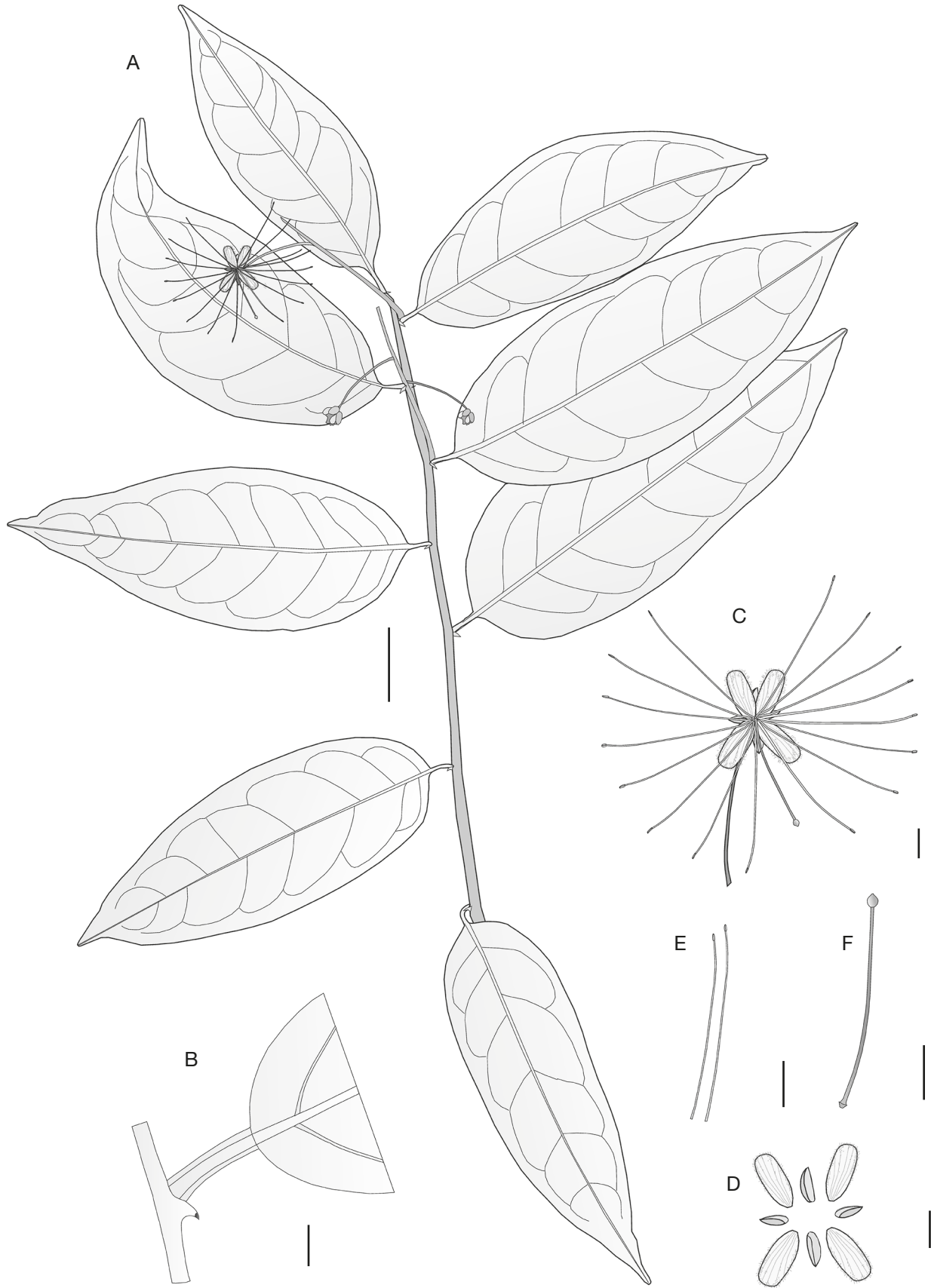


FIG. 1. — *Capparis irenae* Fici, sp. nov.: **A**, flowering branch; **B**, leaf base with stipular thorn; **C**, flower; **D**, dissected flower showing sepals and petals; **E**, stamens; **F**, gynophore and ovary. All from the holotype, *Burley et al.* 1946 (L). Drawn by S. Fici. Scale bars: A, 2 cm; B, 2 mm; C, D, F, 4 mm; E, 5 mm.

C. irenae, sp. nov. is also related with other species characterized by innovations with cataphylls (small subulate bract-like scales) at the base, included by Jacobs (1965) in the Cataphyllosa-Group. Among these *C. fusifera* Dunn, a species from India (southern part of the Deccan Peninsula), differs in the twigs densely brown-puberulous, inflorescence a small axillary axis 0.5-1 cm long, pedicels 6-16 mm long, stamens *c.* 56 and ovary spindle-shaped *c.* 1.5 × 1 mm, whereas *C. pubiflora* DC., widespread in south-eastern Asia, Philippines and Indonesia, can be easily distinguished by the

young twigs densely covered with balance-hairs, sepals 4-7 mm long, stamens 20-30 (-50), gynophore densely tomentose and ovary densely tomentose, 2.5 mm long (Jacobs 1965) (Appendix 1).

The type material of the new species belongs to rich collections carried out by Burley *et al.* on November-December 1988 in the Tigapuluh Mts., Riau Province of central Sumatra (Burley 1988). Herbarium collections constitute a fundamental source of data in such poorly explored areas, for which floristic knowledge is so far scanty or lacking.

KEY TO THE SPECIES OF *CAPPARIS* L. IN SUMATRA

1. Flowers in supra-axillary rows 2
— Flowers in terminal or lateral inflorescences, or sometimes axillary 3
2. Shoots without cataphylls at the base; sepals 4-5 mm long; petals (5-) 6-8 mm long *C. pyrifolia* Lam.
— Shoots with cataphylls at the base; sepals longer than 5 mm; petals 10-25 mm long *C. micracantha* DC.
3. Inflorescence exclusively terminal on normal twigs 4
— Inflorescence axillary, on lateral twigs or sometimes terminal 5
4. Sepals *c.* 9-12 mm long; gynophore 2.7-4.5 (-5) cm long *C. trinervia* Hook. f. & Th.
— Sepals 4-6 mm long; gynophore 2-5 mm long *C. erycibe* Hall.
5. Flowers in short axillary racemes, or sometimes axillary 6
— Flowers in axillary subumbels or terminal panicles of subumbels 7
6. Young twigs densely tomentose; stamens 20-30 (-50); gynophore densely tomentose; ovary 2.5 mm long, densely tomentose *C. pubiflora* DC.
— Young twigs glabrous; stamens less than 20; gynophore glabrous; ovary *c.* 1 mm long, glabrous
..... *C. irenae* Fici, sp. nov.
7. Petiole 1-2 (-2.5) cm long; sepals 12-14 mm long; petals 22-35 mm long *C. callophylla* Blume
— Petiole 0.2-0.7 (-1) cm long; sepals 3-7 (-8) mm long; petals (3.5-) 4-6.5 mm long 8
8. Petiole 2-4 mm long; stamens 12-15 (-20); gynophore 1-1.75 cm long; ovary *c.* 1 mm long *C. diffusa* Ridl.
— Petiole (5-) 6-10 mm long; stamens 20-45; gynophore 0.4-1.2 cm long; ovary 1.5 mm long
..... *C. cantoniensis* Lour.

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FIG. 2. — Known distribution of *Capparis irenae* Fici, sp. nov.

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APPENDIX 1. — Diagnostic characters among *Capparis irenae* Fici, sp. nov. and related taxa.

	<i>C. irenae</i> Fici, sp. nov.	<i>C. diffusa</i> Ridl.	<i>C. fusifera</i> Dunn	<i>C. pubiflora</i> DC.
Habit	climber	shrub or climber	shrub	shrub
Indumentum of twigs	glabrous	puberulous, later glabrescent	densely puberulous	densely pubescent with balance-hairs, soon glabrescent
Cataphylls at base of innovations	present	absent	present	present
Stipular thorns				
Length (mm)	c. 1	1-3	up to 3	3-6
Shape	recurved	recurved or wanting	recurved or wanting	straight, slightly recurved or wanting
Length of petiole (mm)	5-7	2-4	4-10	5-8 (-11)
Leaf blade				
Size (cm)	(9-) 10.2-12.4 × (3-) 3.3-4.5 (-4.8)	5-8.5 × 2.5-4 (-5)	9.5-15.5 × 3-6	(5-) 8-16 (-27.5) × 2.5-6 (-9)
Length/width ratio	(2.3-) 2.5-2.8 (-3.4)	1.7-2.9	2-4	(1.7-) 2.7-3 (-4.4)
Leaf base	rounded or blunt	rounded or blunt	obtuse	acute, blunt or rounded
Leaf apex	acute, slightly acuminate	blunt, sometimes subacuminate or notched	tapering or rounded, acuminate	acuminate
Number of veins on each side of the midrib	c. 5-8	5-7	8-11	(6-) 7-9 (-13)
Inflorescence	axillary raceme	terminal or lateral umbel	small axillary axis bearing few flowers	axillary raceme, sometimes the flowers axillary
Pedicel length (cm)	2.1-2.2	2-5	0.6-1.6	0.5-3 (-5)
Sepals				
Size (mm)	3-3.8 × 1.5-2	c. 3-5 × 3-4	3-4 × 2.5-3	4-7 × 2.5-4
Pubescence	glabrous, ciliate at margins	glabrous, inner pair ciliate at margins	glabrous, sometimes ciliate at margins	puberulous outside
Petals				
Size (mm)	c. 7 × (2.5-) 3-4	c. 4-6 × 2	c. 5.5-6 × 1.7-3.5	7-10 × 3-4
Pubescence	pubescent outside and at margins	hairy inside	sparsely hairy	hairy outside and at margins
Number of stamens	c. 14-16	12-15 (-20)	c. 56	20-30 (-50)
Length of filaments (cm)	2-2.5	c. 1.25	c. 0.7-1	1.5-2 (-2.5)
Gynophore				
Length (cm)	c. 1.5	1-1.75	c. 0.8-1.1	1.5-2.5
Pubescence	glabrous	glabrous	glabrous	densely tomentose
Ovary				
Size (mm)	c. 1 × 0.75	c. 1 × 0.8	c. 1.5 × 1	2.5 × 1.5
Shape	ovoid or subglobose	subglobose	spindle-shaped	ellipsoid
Pubescence	glabrous	glabrous	glabrous	densely tomentose