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M o n o g r a p h

Taxonomic revision of the genus *Capparis* (Capparaceae, Brassicales) in Vietnam

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Abstract. A taxonomic revision of the genus *Capparis* L. has been carried out in Vietnam. Based on the examination of 552 herbarium specimens and on field surveys, 38 species, 11 subspecies and 3 varieties, all belonging to *Capparis* sect. *Monostichocalyx* Radlk., are recognized in the study area. Among these, a new subspecies, *C. acutifolia* subsp. *macrophylla* Fici & Sy subsp. nov., is described from northern and central Vietnam (Quang Binh, Ninh Binh and Quang Ninh provinces), while *C. sikkimensis* subsp. *sikkimensis* Kurz is reported from Vietnam for the first time, based on material from Hoa Binh Province. Vietnam, with 11 endemic species occurring mainly in the central provinces, is confirmed as one of the hotspots of the genus. A key to the species is provided, along with descriptions, synonyms, distribution ranges, and ecological and phenological data. Furthermore, the provisional conservation status of the treated taxa is assessed. When available, vernacular names and their uses are also reported, based on bibliographic sources and herbarium labels.

Keywords. Distribution, ecology, endemism, phenology, sect. *Monostichocalyx*, taxonomy.

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Introduction

The genus *Capparis* L. includes about 150 species of trees, shrubs, and climbers (POWO 2025). It is widespread across a range of habitats of the tropical and subtropical regions of the Old World (Souvannakhoummane *et al.* 2020), with outlying occurrences in the Mediterranean and central Asia. As stated by Jacobs (1965), the eastern part of the Indochinese Peninsula, which includes several endemic species, should be regarded as a major centre of speciation of the genus.

In recent years, numerous new intrageneric taxa have been described from Laos, Cambodia and Vietnam (Sy *et al.* 2013a, 2015, 2016, 2017a, 2020; Fici 2016, 2023; Souvannakhoummane *et al.* 2018, 2020;

Fici *et al.* 2018, 2020, 2022a, 2022b; Fici & Souvannakhoummane 2020). However, the taxonomic treatment of *Capparis* in this area remains challenging, as several species show complex variability in both vegetative and reproductive characters (Fici 2016).

As part of ongoing research on the diversity of *Capparis*, herbarium studies and field investigations were carried out in these countries over the last decade. In Vietnam, 37 species of *Capparis* were recorded from the country by Fici *et al.* (2022b), with species richness comparable (within the Asiatic continent) only with China and India (Zhang & Tucker 2008; Maurya *et al.* 2020). Furthermore, a new species was recently described from Khanh Hoa Province, southern Vietnam (Fici & Sy 2025).

It is remarkable that all the species occurring in Vietnam belong to *Capparis* sect. *Monostichocalyx* Radlk., while other sections of the genus recorded by Jacobs (1965) in the Indo-Pacific area, i.e., sect. *Capparis* L., sect. *Sodada* (Forssk.) Endl. and sect. *Busbeckea* (Endl.) Benth. & Hook.f., are not represented in the country.

The present paper provides a taxonomic revision of the genus *Capparis* in Vietnam, based on herbarium and field investigations supported by bibliographic research.

Material and methods

Herbarium investigations were carried out on the collections of *Capparis* kept at HN, HNU, KRIB, NIMM, P, PAL, VFM, VNM, VNMN, as well as on the available online collections at A, BM, CAL, E, G, GAC, G-DC, GH, IBK, IBSC, K, KUN, L, LE, LINN, MO, MPU, NY, SING, U, US. The examination of type specimens was carried out through digital images available at JSTOR Global Plants (2025). Field surveys were undertaken in several provinces of northern, central and southern Vietnam from 2013 to 2024. The species concept adopted follows the one proposed by Jacobs (1965) in his revision of the genus *Capparis* in the Indo-Pacific area. The terminology, as well as the main diagnostic characters within the genus, are based on the same treatment (Jacobs 1965). The data on the distribution of the taxa are based on herbarium collections and on bibliographic sources (Ho 1999; Ban & Dorofeev 2003). When available, the vernacular names of the taxa and their local uses are reported on the basis of literature and herbarium labels. The species recognized in the study area are arranged in alphabetical order. The herbarium acronyms follow Thiers (2025), while authors of scientific names are abbreviated in conformity with the International Plant Names Index on (IPNI 2025). The provisional conservation status of the taxa was assessed according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Results

Class Magnoliopsida Brongn.
Order Brassicales Bromhead
Family Capparaceae Juss., nom. cons.

Capparaceae Juss. (Jussieu 1789: 242).

Genus ***Capparis*** L.

Capparis L. (Linnaeus 1753: 503). Generitype: *Capparis spinosa* L. (Linnaeus 1753: 503).

In the present treatment, 38 species of *Capparis*, along with 11 subspecies and 3 varieties, all belonging to sect. *Monostichocalyx* are recognized in Vietnam. Among these, 11 species are endemic to the country, viz., *C. annamensis* (Baker f.) M.Jacobs, *C. bachii* Sy, R.K.Choudhary & Joongku Lee, *C. beneolens* Gagnep., *C. daknongensis* Sy, G.C.Tucker, Cornejo & Joongku Lee, *C. dongvanensis* Sy, B.H.Quang & D.V.Hai, *C. gialaiensis* Sy, *C. kbangensis* Sy & D. V. Hai, *C. montis-aquae* Fici & Sy, *C. oxycarpa* Fici,

Table 1. Species of *Capparis* L. in Vietnam arranged following Jacobs (1965).

Subumbellates-Group	*C. bachii*, *C. cantoniensis*, *C. daknongensis*, *C. dongvanensis*, *C. diffusa*, *C. erycibe*, *C. fengii*, *C. floribunda*, *C. gialaiensis*, *C. khuamak*, *C. koioides*, *C. longestipitata*, *C. oxycarpa*, *C. pranensis*, *C. pubifolia*, *C. sepiaria*, *C. thorelii*, *C. tonkinensis*, *C. versicolor*
Seriales-Group	*C. acutifolia*, *C. beneolens*, *C. micracantha*, *C. pyrifolia*, *C. rigida*, *C. subsessilis*, *C. zeylanica*
Brevispina-Group	*C. annamensis*, *C. flavicans*, *C. kbangensis*, *C. radula*, *C. siamensis*
Cataphyllosa-Group	*C. assamica*, *C. montis-aquae*, *C. pubiflora*
Trinervia-Group	*C. trinervia*, *C. viburnifolia*
Moonii-Group	*C. sikkimensis*
Grandis-Group	*C. grandis*

Aver. & Sy, *C. rigida* M.Jacobs and *C. tonkinensis* Gagnep. The majority of these endemics (nine species) occurs in central Vietnam, confirming the statement by Jacobs (1965), who included "the lowlands of Indo-Chinese Peninsula, particularly of SE. Annam" among the main centres of speciation of the genus. Furthermore, a new subspecies, *Capparis acutifolia* subsp. *macrophylla* Fici & Sy subsp. nov., is here described from northern and central Vietnam (Quang Binh, Ninh Binh and Quang Ninh provinces), while *C. sikkimensis* subsp. *sikkimensis* Kurz, so far known from India, Bhutan, Myanmar and China, is firstly reported from the country in Hoa Binh Province.

All species occurring in Vietnam belong to *Capparis* sect. *Monostichocalyx*, which includes several taxa distributed in the tropical and subtropical areas of Africa, Asia, Australia and Oceania. Within this section Jacobs (1965) recognized some 'tentative' groups, mainly based on the inflorescence and flower features, which are in several cases useful in discussing the relationships among the species (Fici 2023). In Vietnam, most species of *Capparis* (19) belong to Jacobs' (1965) Subumbellates-Group (Table 1). This group is characterized by small to medium-sized flowers (sepals 2–10 mm long), mostly subumbellate inflorescences, fewer than 70 stamens, and an ovary 1–3 mm long with 2–4 placentas. Seven species belong to the Seriales-Group, characterized by small to large flowers (sepals 3–15 mm long), arranged in serial supra-axillary rows, with flowers occasionally solitary, and red-brownish indumentum when present. Five species belong to the Brevispina-Group, characterized by mostly large flowers (sepals up to 13 mm long), solitary or rarely serial, an ovary mostly longer than 3 mm with (2–)4–6 placentas, and tomentose indumentum. Three species belong to the Cataphyllosa-Group, characterized by small to large flowers (sepals 3–14 mm long), subumbellate or arranged on a leafless bracteate axis, twigs with cataphylls at the base, two-armed, hooked or acroscopically curved hairs, ascending stipular thorns, and leaves mostly over 8 cm long. Two species belong to the Trinervia-Group, characterized by large flowers (sepals 8–15 mm long), arranged in corymbs, subumbels or racemes, 30–75 stamens, a medium-sized ovary (2–3 mm long) with 4 placentas, brownish indumentum, angular twigs, recurved stipular thorns, and leaves longer than 6 cm. One species belongs to the Moonii-Group, characterized by large flowers (sepals mostly more than 10 mm long), in corymbs or subumbels, stamens more than 25, a gynophore 2–4 cm long, medium-sized ovary (2–4 mm long) with 2–4 placentas, and indumentum lacking or hoary-puberulous. One species belongs to the Grandis-Group, characterized by small to medium-sized flowers (sepals 4–11 mm long), in racemes or panicles, an ovary with 2–4 placentas, dense, velvety, long-persistent indumentum, stipular thorns mostly lacking and leaves not acuminate (Table 1).

Key to the species of *Capparis* in Vietnam

1. Flowers in supra-axillary rows 2
– Flowers solitary or in terminal or lateral inflorescences 9

2. Leaf blade up to 3.5 cm long ..... ***C. beneolens*** Gagnep.
– Leaf blade longer than 3.5 cm 3

3. Shoots without cataphylls 4
– Shoots with cataphylls at the base 7

4. Innovations glabrous; petiole up to 2 mm long ..... ***C. subsessilis*** B.S.Sun
– Innovations pubescent with often reddish or brownish, stellate hairs; petiole more than 3 mm long 5

5. Leaf blade not acuminate, with rigid, dark mucro ..... ***C. zeylanica*** L.
– Leaf blade acuminate with tip up to 1.7 cm long 6

6. Pedicels glabrous; petals glabrous or pubescent; ovary up to 2.2(–3) mm long ..... ***C. acutifolia*** Sweet
– Pedicels hairy, especially in the distal part; petals hairy-floccose; ovary 1–1.2 mm long ..... ***C. pyrifolia*** Lam.

7. Twigs firstly pubescent or puberulous, later glabrous; top of leaf often with rigid mucro ..... ***C. micracantha*** DC.
– Twigs glabrous; top of the leaf without rigid mucro 8

8. Twigs densely warty; petiole 4–6 mm long; top of leaf rounded, retuse or acute; fruit more than 4 cm long ..... ***C. radula*** Gagnep.
– Twigs not warty; petiole 7–14 mm long; top of leaf subacuminate; fruit less than 3 cm long ..... ***C. rigida*** M.Jacobs

9. Flowers axillary, solitary 10
– Flowers in umbels, subumbels, panicles, racemes or conferted at the top of twig 13

10. Leaves up to 4(–4.5) cm long 11
– Leaves more than 4.5 cm long 12

11. Petals 18–23(–25) mm long; stamens 52–60 ..... ***C. annamensis*** (Baker f.) M.Jacobs
– Petals ca 8–9 mm long; stamens 6–8(–12) ..... ***C. flavicans*** Kurz

12. Stamens ca 28–46; gynophore 1.7–2.7 cm long, pubescent ..... ***C. siamensis*** Kurz
– Stamens 57–60; gynophore 3.8–4.2 cm long, glabrous ..... ***C. kbangensis*** Sy & D.V.Hai

13. Cataphylls present at the base of twigs 14
– Cataphylls lacking 16

14. Inflorescence terminal or subterminal raceme more than (10–)11 cm long ..... ***C. assamica*** Hook.f. & Thomson
– Inflorescence short lateral raceme, or in some cases the flowers axillary on a short twig 15

15. Twigs pubescent; petals 6–10 mm long; gynophore and ovary pubescent ..... ***C. pubiflora*** DC.
– Twigs glabrous; petals 20–28 mm long; gynophore and ovary glabrous ***C. montis-aquae*** Fici & Sy

16. Sepals 8–21 mm long 17
– Sepals up to 8 mm long 23

17. Innovations densely pubescent, in some cases later glabrescent; sepals puberulous or pubescent 18
– Innovations glabrous, in some cases puberulous and early glabrescent; sepals glabrous 21

18. Leaves emarginate; sepals hairy along the margins ..... ***C. kbangensis*** Sy & D.V.Hai
– Leaves not emarginate; sepals pubescent or puberulous outside 19

19. Twigs not angular; petals up to 8 mm wide ..... ***C. sikkimensis*** Kurz
– Twigs angular; petals more than 8 mm wide 20

20. Leaf glabrescent in the lower surface, with base cuneate or acute .... ***C. trinervia*** Hook.f & Thomson
– Leaf densely pubescent in the lower surface, with base subcordate or obtuse .... ***C. viburnifolia*** Gagnep.

21. Sepals ca 16 mm long; petals 20–27 mm long; stamens ca 85–100 ..... ***C. koioides*** M.Jacobs
– Sepals up to 11 mm long; petals (8–)10–18(–20) mm long; stamens up to 70 22

22. Petals pubescent on both sides; stamens ca 35 ..... ***C. fengii*** B.S.Sun
– Petals glabrous or pubescent inside at the base; stamens 50–70 ..... ***C. versicolor*** Griff.

23. Indumentum of twigs and lower surface of leaves long persistent, dense, velvety, fulvous or greyish 24
– Indumentum of twigs and lower surface of leaves different 25

24. Stipular thorns 3–9 mm long; gynophore 1–3 cm long ..... ***C. grandis*** L.f.
– Stipular thorns up to 1 mm long; gynophore 4–4.2 cm long ..... ***C. pubifolia*** B.S.Sun

25. Petals up to 9 mm long 26
– Petals 12 mm long or more 37

26. Inflorescence short, terminal or lateral umbel or subumbel, or flowers conferted at the top of lateral twigs 27
– Inflorescence terminal panicle, constituted by smaller panicles, subumbels or racemes 33

27. Sepals 6.5–8 mm long; gynophore 2.3–3.5 cm long ..... ***C. khuamak*** Gagnep.
– Sepals up to 6 mm long; gynophore up to 2 cm long 28

28. Plants glabrous 29
– Plants pubescent or puberulous in the young parts 31

29. Leaf apex acuminate with tip 7–10 mm long ..... ***C. dongvanensis*** Sy, B.H.Quang & D.V.Hai
– Leaf apex not acuminate 30

30. Sepals 2–3.1 mm wide; petals 1.9–2.1 mm wide; filaments 1–1.6 cm long ..... ***C. oxycarpa*** Fici, Aver. & Sy
– Sepals 4–5.5 mm wide; petals 3–4 mm wide; filaments 0.7–0.9 cm long ..... ***C. pranensis*** (Gagnep.) M.Jacobs

31. Umbels up to 5(–10)-flowered, terminal or on lateral twigs; pedicels up to 5 cm long; stamens 12–15(–20) ..... ***C. diffusa*** Ridl.
– Subumbels to 26-flowered at the top of lateral twigs, rarely terminal; pedicels up to 2.4(–3) cm long; stamens more than 20 32

32. Gynophore mostly puberulous at base; ovary 1.5–2 mm long; fruit (3–)4–10(–12) mm in diameter ..... ***C. sepiaria*** L.
– Gynophore glabrous; ovary 1.1–1.5 mm long; fruit 11–18(–20) mm in diameter ..... ***C. thorelii*** Gagnep.

33. Gynophore 2–3 cm ..... ***C. longestipitata*** Heine
– Gynophore 1.5 cm or shorter 34

34. Stamens 7–9(–12) ..... ***C. floribunda*** Wight
– Stamens 19–45 35

35. Leaves 4.5–8.5 cm wide; inflorescence leafless panicle ..... ***C. erycibe*** Hallier f.
– Leaves up to 4.5 cm wide; inflorescence leafy panicle 36

36. Petals pubescent; stamens 20–45; gynophore 4–12 mm long ..... ***C. cantoniensis*** Lour.
– Petals woolly at margins; stamens 19–24; gynophore 1–3 mm long ..... ***C. tonkinensis*** Gagnep.

37. Petiole 4–7 mm long; stamens 46–50; gynophore 2.3–2.7 cm long ..... ***C. bachii*** Sy, R.K.Choudhary & Joongku Lee
– Petiole more than 10 mm long; stamens up to 22; gynophore 3 cm long or more 38

38. Twigs glabrous, pruinose; petiole 1.5–1.7 cm long; stamens 13–18 ..... ***C. daknongensis*** Sy, G.C.Tucker, Cornejo & Joongku Lee
– Twigs pubescent; petiole 1.2–1.5 cm long; stamens 21–22 ..... ***C. gialaiensis*** Sy

Taxonomic treatment

Capparis acutifolia Sweet

Capparis acutifolia Sweet (Sweet 1830: 585).

Description

Shrubs, small trees or climbers. Twigs early or late glabrous or glabrescent. Stipular thorns lacking or 1–4(–5) mm long, straight. Petiole 3–8(–11) mm long. Leaf blade chartaceous or subcoriaceous (1.5–)1.6–4(–7) times as long as wide, (4.5–)6–15(–22.5) × (1.5–)2.2–6.8(–7.7) cm; base acute, cuneate, obtuse, rounded or somewhat decurrent along the petiole, top acuminate, the tip up to ca 1.9 cm long; surfaces glabrous, in some cases the pubescence persistent along the main nerves; nerves 4–10 pairs. Flowers serial, 2–5(–6) in supra-axillary rows or solitary; pedicels (0.5–)0.7–2.5(–4) cm long; sepals 4–8(–9) × 2–4 mm, glabrous or pubescent on the surfaces; petals white, obovate, oblong or linear, (5.5–)6–12(–14) × 2–5 mm, glabrous or pubescent on the surfaces; stamens 20–35, with filaments 1.5–2.5(–3.5) cm long; gynophore

(1.2–)1.5–3(–3.2) cm long, glabrous; ovary pear-shaped, ovoid or elongate, 1–2.2(–3) × 0.5–1 mm, beaked, glabrous. Fruit globose, 0.8–1.5 cm in diameter.

Distribution

India, Bhutan, Sikkim, China, Taiwan, Myanmar, Thailand, Laos, Vietnam.

Taxonomic remarks

The present treatment is based on Jacobs (1965), who recognized a single, widespread species within the *Capparis acutifolia* complex, subdivided into five subspecies distributed in southern Asia from India eastwards to Vietnam. In contrast, other authors (Chayamarit 1991; Zhang & Tucker 2008; Maurya *et al.* 2020) adopted a narrower species concept for this group, recognising several distinct species in Thailand, China, and India, mostly differentiated by vegetative, often overlapping, characters.

With regard to Vietnam, four subspecies of *Capparis acutifolia*, viz., subsp. *acutifolia*, subsp. *sabiifolia* (Hook.f. & Thomson) M.Jacobs, subsp. *viminea* M.Jacobs, and subsp. *obovata* M.Jacobs, were recorded by Jacobs (1965) and Fici *et al.* (2022b). Furthermore, a new subspecies, i.e., *C. acutifolia* subsp. *macrophylla* subsp. nov., is here described from central and northern Vietnam.

Key to the subspecies of *Capparis acutifolia* in Vietnam

1. Twigs pubescent, later glabrescent; leaf base somewhat decurrent along the petiole .... subsp. ***viminea*** M.Jacobs
– Twigs early glabrous; leaf base not decurrent 2

2. Leaves (1.5–)1.6–2.3(–2.7) times as long as wide; ovary ovoid, up to 1.2 mm long 3
– Leaves (2.4–)3–4(–7) times as long as wide; ovary pear-shaped or elongate, more than 1.2 mm long 4

3. Leaf blade obovate, with base acute; sepals pubescent inside; petals pubescent inside .... subsp. ***obovata*** M.Jacobs
– Leaf blade ovate or elliptical, with base rounded or obtuse; sepals glabrous inside; petals glabrescent inside ..... subsp. ***macrophylla*** Fici & Sy subsp. nov.

4. Pedicels up to 2.5(–4) cm long; petals glabrous inside .....subsp. ***acutifolia*** Sweet
– Pedicels up to 1.5 cm long; petals pubescent inside ....subsp. ***sabiifolia*** (Hook.f. & Thomson) M.Jacobs

Capparis acutifolia subsp. ***acutifolia*** Sweet
Fig. 1

Capparis acutifolia subsp. *acutifolia* Sweet (Sweet 1830: 585). – *Capparis acuminata* Lindl. (Lindley 1830: t. 1320), non Willd. (Willdenow 1799: 1131).

Capparis membranacea Gardner & Champ. (Gardner 1849: 241). – **Type**: CHINA – **Hong Kong** • *Champion s.n.*; lectotype: K [K000380482], designated by Jacobs (1965: 427).

Capparis kikuchii Hayata (Hayata 1913: 21). – **Type**: TAIWAN • Formosa, Toko; 6 Jun. 1913; *Kikuchi s.n.*; lectotype: TI [TI 00010596], designated by Jacobs (1965: 429); isolectotype: L [L0035302].

Capparis leptophylla Hayata (Hayata 1913: 22). – **Type**: TAIWAN • Formosa, Ako, Makinsho; 24 Mar. 1910; *Sasaki s.n.*; lectotype: TI [TI 00010601], designated by Jacobs (1965: 429); isolectotype: L [L0035301].

Capparis tenuifolia Hayata (Hayata 1913: 23). – **Type**: TAIWAN • Formosa, Ako, Toko: 25 Apr. 1907; *Mori 2930*; lectotype: TI [TI00010604], designated by Jacobs (1965: 429); isolectotype: L [L0035303].

Fig. 1. Flowering branch of *Capparis acutifolia* subsp. *acutifolia* Sweet (Lam Dong Province, *Sy et al. PTV 1043*). Photo by Danh T. Sy.

Type material

CHINA • "Kwangtung" [Guangdong]; based on flowering material sent from China, Kwangtung, by J. Reeves, and reportedly cultivated by the Royal Horticultural Society, London; lectotype: Lindley 1830: t. 1320, designated by Jacobs (1965: 427).

Other material examined

VIETNAM – **Dak Lak Province** • Krong Bong District, Cu Pui Commune; 11 May 2000; *Averyanov et al. VH 6370*; HN • Lak District, Lien Son Town; 9 Jul. 2012; *Thuong et al. CTTN 133*; HN. – **Gia Lai Province** • K'Bang District, So Pai Commune; 15 Mar. 2010; *Thuong et al. Thuong 06*; HN • K'Bang District, So Pai Commune; 10 Mar. 2011; *Thuong et al. Thuong 13*; HN • K'Bang District, So Pai Commune; 15 Mar. 2011; *Thuong et al. PTV 721*; HN. – **Kon Tum Province** • Kon Plong District, Kon Plong Town; 18 Mar. 2011; *Sy et al. PTV 732*; HN • Kon Plong District, Mang Canh Commune; 25 Nov. 1978, *Bien et al. Bien 937*; HN • Dak Glei District, Dak Mon Commune; 27 Mar. 1978; *Dao et al. Dao 169*; HN. – **Lam Dong Province** • Forêt de Blao; 1960; *Schmid 9*; P [P05453786, P05453787] • Massif du Langbian Dran; 29 Apr. 1929; *Chevalier 40389*; P [P05453820] • Lam Ha District, Dam Rong Commune; 26 Mar. 2012; *Sy et al. PTV 1043*; HN. – **Tuyen Quang Province** • Na Hang District, Vinh Yen Commune; 22°20′04″ N, 105°25′44″ E; 16 Jun. 2002; *Hiep et al. HLF 242*; HN.

Description

Shrubs or climbers. Twigs early glabrous. Stipular thorns lacking or 1–3(–5) mm long, straight. Petiole 4–7(–11) mm long. Leaf blade chartaceous or subcoriaceous, (2.4–)3–4(–7) times as long as wide, (4.5–)7–13(–22.5) × (1.5–)2.2–4(–5) cm, broadest at or below the middle; base acute or cuneate, top acuminate, the tip up to ca 0.7–1 cm long; surfaces glabrous; nerves 7–10 pairs. Flowers 2–4(–6) in supra-axillary rows or solitary; pedicels 0.8–2.5(–4) cm long; sepals boat-shaped, (4–)5–8(–9) × 2.5–4 mm, glabrous, ciliate at margins; petals obovate, (6–)7–12(–14) × (2–)3–5 mm, pubescent at margins and in some cases outside towards the top; stamens 20–35, filaments ca (1.8–)2–2.3(–3) cm long; gynophore (1.3–)1.7–2.7(–3.2) cm long, glabrous; ovary pear-shaped, ca 1.5–2.2(–3) × 0.5–1 mm, beaked, glabrous. Fruit globose ca 1–1.5 cm in diameter.

Distribution and ecology

China, Taiwan, Laos and Vietnam (Jacobs 1965; Fici 2023). In Vietnam recorded from Da Nang, Kon Tum and Lam Dong provinces by Ban & Dorofeev (2003). During the present research also material from Dak Lak, Gia Lai and Tuyen Quang provinces has been examined. In forests, thickets, forest margins, open woody formations, up to ca 1200 m a.s.l. (Jacobs 1965; Ban & Dorofeev 2003; Fici 2023). In Vietnam collected at 1000–1200 m a.s.l. (*Chevalier 40389*).

Phenology

Flowering in April–May (Jacobs 1965; Zhang & Tucker 2008).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). Based on the available information and on field observations, the populations in the study area are not exposed to threats.

Vernacular names

'Cáp lá nhọn', 'Cáp nhọn', 'Màn màn' (Ban & Dorofeev 2003).

Taxonomic remarks

Jacobs (1965) doubtfully referred to this subspecies a specimen from Ba-Na in proximity of Da Nang, *Poilane 7186* (P 05453784), deviating in the flower rows sometimes arranged at the top of short axillary stalks, pedicels 4–5 cm long, internodes long, slender and glabrous, and leaves comparatively large.

Capparis acutifolia subsp. ***sabiifolia*** (Hook.f. & Thomson) M.Jacobs
Fig. 2

Capparis acutifolia subsp. *sabiifolia* (Hook.f. & Thomson) M.Jacobs (Jacobs 1965: 432). – *Capparis sabiifolia* Hook.f. & Thomson (Hooker & Thomson 1872: 179).

Capparis vientianensis Gagnep. (Gagnepain 1938: 599). – **Type**: LAOS – **Bolikhamsai Province** • Borikhane, Wieng Chan; 27 Mar. 1932; *Kerr 20748*; lectotype: P [P04022327], designated by Fici (2023: 6); isolectotypes: BM [BM000629301], K [K000643974].

Type material

INDIA – **Meghalaya State** • Khasia [Khasi Hills]; 13 Jul. 1850; *Hooker f. & Thomson 1692*; lectotype: K [K000247295], designated by Maurya *et al.* (2021: 129); isolectotype: K [K000247296].

Other material examined

VIETNAM – **Ha Giang Province** • Bac Quang District, Dong Tam Commune; 20 Jun. 1976; *Ly Quoc Anh 103*; HN. – **Ha Noi** • Tonkin, Environs de Thu Phap; May 1887; *Balansa 4080*; P [P05453772, P05454028, P05454029]. – **Kon Tum Province** • Sathay District, Chu Mon Ray Protected area, Sa Nhon municipality; 1 Mar. 2000; *Harder et al. 4580*; P [P04747168], MO [MO2199563]. – **Lang Son Province** • Huu Lung District; 20 May 1969; *Nguyen Van Bien BX 751*, *752*, *753*; VFM. – **Quang Tri Province** • Huong Hoa District, Huong Phung Municipality, Sa Mui Pass; 16°48′36″ N, 106°34′44″ E; 29 Mar. 2006; *Hiep et al. HLF 5836*; P [P00991711]. – **Thai Nguyen Province** • Dong Hy District, Tan Long Commune; 18 Jun. 2008; *Nguyen Khac Khoi et al. VK 2139*; HN, KRIB • Dong Hy District, Tan Long Commune; 24 Aug. 2006; *Phan Ke Loc et al. HAL 9137*; HN. – **Tuyen Quang Province** • Na Hang District, Vinh Yen Commune; 20 Jun. 2002; *HLF 088*; HN. – **Vinh Phuc Province** • Tam Dao District, Tam Dao National Park; 31 May 1977; *Vu Xuan Phuong 180*; HN.

Description

Shrubs, small trees or climbers. Twigs early glabrous. Stipular thorns often lacking, when present straight or pointing upwards, 1.5–2(–4) mm long. Petiole 4–6(–8) mm long. Leaf blade chartaceous, 2.4–3(–4) times as long as wide, (5.2–)7.5–10(–15.5) × (2–)2.5–4(–7.2) cm, widest at or below the middle; base rounded, obtuse or rarely acutish, top acuminate, tip up to ca 1.5 cm long; surfaces glabrous; nerves (6–)7–8(–10) pairs. Flowers 2–5 in supra-axillary rows or solitary; pedicels (0.5–)0.7–1.1(–1.5) cm long; sepals 5–6(–6.5) × (2–)2.5–3 mm, ciliate at margins, glabrous or puberulous outside, glabrous or densely pubescent inside; petals oblong, 6–8(–10) × 2–3 mm, densely pubescent inside or on both surfaces; stamens ca 20–35, with filaments ca 2–2.5(–3.5) cm long; gynophore 1.8–2.4(–2.9) cm long, glabrous; ovary pear-shaped or elongate, ca (1.5–)1.7–2(–2.5) × 0.5–0.8 mm, beaked, glabrous. Fruit globose, ca 1–1.5 cm in diameter.

Distribution and ecology

India, China, Taiwan, Myanmar, Thailand, Laos, Vietnam (Jacobs 1965; Chung *et al.* 2004; Zhang & Tucker 2008; Fici 2023). In Vietnam reported from Lang Son and Ha Tay provinces by Ban & Dorofeev (2003). During the present research also specimens from Quang Tri, Kon Tum, Ha Giang, Tuyen Quang, Thai Nguyen and Vinh Phuc provinces has been examined. Thickets, shrublands, forest margins, evergreen and deciduous mixed forests up to 2000 m a.s.l. (Jacobs 1965; Chayamarit 1991; Ban & Dorofeev 2003;

Fig. 2. Flowering branch of *Capparis acutifolia* subsp. *sabiifolia* (Hook.f. & Thomson) M.Jacobs (Thai Nguyen Province, *Nguyen Khac Khoi et al. VK 2139*). Photo by Danh T. Sy.

Fici 2023). In Vietnam collected in broad-leaved evergreen forest on very steep rocky slopes at altitudes of 1300–1500 m (*Hiep et al. HLF 5836*), and in closed, evergreen forest at 650–1100 m (*Harder et al. 4580*).

Phenology

Flowering in March–May, fruiting August–October (Jacobs 1965; Chayamarit 1991).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The subspecies is widespread in several provinces of Vietnam, and no risks were detected for its populations.

Vernacular name

'Cáp lào' (Ban & Dorofeev 2003).

Capparis acutifolia subsp. ***viminea*** M.Jacobs

Capparis acutifolia subsp. *viminea* M.Jacobs (Jacobs 1965: 429). – *Capparis viminea* Hook.f. & Thomson (Hooker & Thomson 1872: 179), nom. illegit., non Hook.f. & Thomson ex Oliv. (Oliver 1868: 97).

Capparis membranifolia Kurz (Kurz 1874a: 70). – **Type**: MYANMAR • Chymenah [Choungmenah]; *Kurz 1826*; lectotype: K [K000247293], designated by Fici (2023: 7); isolectotype: CAL n.v.

Ficus marchandii H.Lév. (Léveillé 1913: 533). – **Type**: CHINA • Kweichow; *Esquirol s.n.*; lectotype: A [A00039182], designated by Jacobs (1965: 431).

Type material

INDIA – **Sikkim** • *Hooker f. 48*; lectotype: K [K000247292], designated by Fici (2023: 7); isolectotypes: GH [GH00042264], K [K000247291], L [K0035305].

Other material examined

VIETNAM – **Binh Phuoc Province** • Bu Gia Map District, Bu Gia Map National Park; 24 Feb. 2011; *Thuong et al. PTV 659*; HN. – **Gia Lai Province** • Mang Yang District, Kon Ka Kinh National Park; 13 Jul. 2012; *Hai et al. KNP* 934; HN • Mang Yang District, Kon Ka Kinh National Park; 3 Mar. 2012; *Hai et al. KNP 819*; HN. – **Hai Phong** • Cat Hai District, Cat Ba National Park; 23 Dec. 1986; *LX-VN 3371*; HN. – **Hoa Binh Province** • Cao Phong District, Muong Thon Commune; May 1936; *Petelot 0530*; HNU. – **Kon Tum Province** • Kon Ray District, Dak Ray Commune; 17 Mar. 2011; *Thuong 10*; HN. – **Lam Dong Province** • Annam, Massif de Long Bian, Djiring et environs; 1000–1100 m a.s.l.; 21–22 Feb. 1914; *Chevalier 31265*; P [P05453903, P05453904]. – **Lang Son Province** • Huu Lung District, Met Town; 26 May 1976; *Phu 16320*; HN • Chi Lang District, Dong Mo Commune; 25 May 1981; *Nong Van Tiep 2302*; HNU • Chi Lang District, Dong Mo Commune; 2 Jun. 1986; *Tran Dinh Nghia 821*; HNU. – **Nghe An Province** • Environs de Pon Cuong, route de Dolvany à Cuo Khav; *Petelot 4332*; P [P05454104)] • Que Phong District; 6 Sep. 1998; *Nguyen Nghia Thin 148*; HNU.

Description

Shrubs or climbers. Twigs densely pubescent, later glabrescent. Stipular thorns mostly present on the older branches, straight, up to 4 mm long. Petiole (4–)6–8(–11) mm. Leaf blade chartaceous to subcoriaceous, ca 1.9–2.5 times as long as wide, (5–)6–12(–13.5) × (2.8–)3–5.3(–6.7) cm, widest at or below the middle; base somewhat decurrent along the petiole, top acuminate, tip to 1.7 cm long; surfaces glabrous, with pubescence persisting along the main nerves; nerves 5–7(–10) pairs. Flowers 2–5 in supra-axillary rows or solitary; pedicels 0.7–1(–2) cm; sepals ca (4.5–)5–7 × 2.5–3.5 mm, outside and inside shortly pubescent to glabrescent, ciliate at margins; petals (5.5–)6.5–9(–10) × (2–)2.5–3 mm long, densely pubescent on both surfaces or glabrescent outside, pubescent at margins; stamens 20–35, filaments ca 1.5–2.5(–3) cm

long; gynophore (1.2–)1.5–2.3 cm long; ovary pear-shaped or elongate, 1.2–1.5 × 0.6–0.8 mm, beaked, glabrous. Fruit globose, 0.8–1.5 cm in diameter.

Distribution and ecology

India, Bhutan, China, Myanmar, Thailand, Laos, Vietnam (Jacobs 1965; Zhang & Tucker 2008; Fici 2023). In Vietnam this subspecies was recorded by Ban & Dorofeev (2003) in Bac Ninh, Ha Noi, Hoa Binh, Nghe An, Quang Trị, Thua Thien-Hue, Da Nang, Khanh Hoa, Kon Tum, Lam Dong and Dong Nai provinces. During the present research also specimens from Hai Phong, Lang Son, Binh Phuoc and Gia Lai provinces has been examined. Thickets and forests, on sandy or loamy soil (Jacobs 1965).

Phenology

Flowering January–May.

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The subspecies occurs in several provinces of Vietnam. Based on the available information and on field observations, its populations in the study area are not exposed to threats.

Vernacular names

'Cáp lá mỏng', 'Cáp dẻo', 'Bạch hoa', 'Hoa ông lão', 'Dong su dong' (Ban & Dorofeev 2003).

Capparis acutifolia subsp. ***obovata*** M.Jacobs
Fig. 3

Capparis acutifolia subsp. *obovata* M.Jacobs (Jacobs 1965: 433). – *Capparis sunbisiniana* M.L.Zhang & G.C.Tucker (Zhang & Tucker 2008: 441).

Type material

VIETNAM – **Ha Noi** • Tonkin, Bord du Grand Lac, Hanoi; Apr. 1935; *Pételot 5686*; holotype: A [A00042263]; isotypes: L [L0035304], P [P04022331, P04022332], US [US00100530].

Other material examined

VIETNAM – **Gia Lai Province** • K'Bang District, So Pai Commune; 11 Aug. 2011; *Thuong 53*; HN. – **Ha Noi** • Tonkin, Hanoi; 1888; *Balansa 4079*; P [P05453882, P05454026] • Hanoi, Bac Tu Liem District, Co Nhue Ward; 31 May 1971; *s.coll. HN 0047*; HN • Hanoi, Bac Tu Liem District, Nhan Chinh Ward; 1 Jun. 1982; *Dang Thanh Son T1116*; HNU. – **Hoa Binh Province** • Luong Son District, Lam Son Commune; 12 May 1983; *Bui Duc Binh 573*; HNU. – **Khanh Hoa Province** • Dien Khanh District, Hon Ba Nature Reserve; 895 m a.s.l.; 12°06′44″ N, 108°18′10.5″ E; 12 Apr. 2012, *Thuong 37*; HN. – **Nghe An Province** • Nord-Annam, prov. de Nghe-An (Vinh), delegation de Nghia-Hung; 17 May 1914; *Fleury 32545*; P [P05453886, P05454096], VNM • Quy Hop District, Chau Thai Commune; 18 Mar. 2007; *Nguyen Van Du et al. HNK 1756*; HN • Tuong Duong District, Pu Mat National Park; 28 Jun. 1998; *Nguyen Nghia Thin 44*; HNU. – **Quang Tri Province** • Bac Huong Hoa Nature Reserve, along the road north of HQ; 16°48′13″ N, 106°35′07″ E; 1 Oct. 2018; *Razafimandimbison et al. 2409*; P [P00937277], VNMN • Rockpile; 16°46′57″ N, 106°51′13″ E; 11 Mar. 2024; *Fici et al. 2408*; PAL • Huong Hoa District, Tan Hop (Lang Khoai) Commune; 10 Jun. 1924; *Poilane 10782*; VNM • Annam: Long Quang Tri; Apr. 1919; *de Pirey 41187*; P [P05453883, P05453887]. – **Thua Thien-Hue** • Environs de Hue; *Eberhardt 3324*; P [P05454105] • Phu Loc District, Bach Ma National Park; 29 Oct. 2003; *Bach 29102003-05*; HN.

Description

Shrubs or small trees, rarely climbers. Twigs early glabrescent. Stipular thorns ascending, up to 2 mm long, or wanting. Petiole 3–6(–7) mm long. Leaf blade chartaceous, obovate, (1.5–)1.7–2.3(–2.7) times as long as wide, widest above or at the middle, (4.5–)6–11 × 2.5–5.6(–6.2) cm; base acute, top abruptly acuminate, tip up to 1.5 cm long; surfaces glabrous; nerves 4–6 pairs. Flowers 2–5 in supra-axillary rows; pedicels (1–)1.4–1.8 cm long; sepals obtuse, ca 5–6 × 3 mm, outside glabrous, inside pubescent, ciliate; petals 7–10 × 2.5–3 mm, outside glabrous, inside pubescent; stamens 20–28(–35), with filaments 2–2.5 cm long; gynophore (1.7–)2.3–3 cm long; ovary ovoid, ca 1–1.2 mm long, glabrous. Fruit globose, ca 0.8–1.2 cm in diameter.

Distribution and ecology

China, Myanmar, Thailand, Vietnam. In the last country recorded by Ban & Dorofeev (2003) from Ha Tay, Quang Tri, Quang Nam, Lam Dong and Dong Nai provinces. During the present research also material from Ha Noi, Nghe An, Thua Thien-Hue, Khanh Hoa, Hoa Binh and Gia Lai provinces has been

Fig. 3. Vegetative branch of *Capparis acutifolia* subsp. *obovata* M.Jacobs (Quang Tri Province, *Fici et al. 2408*). Photo by Silvio Fici.

examined. Open places, thickets, roadsides (Jacobs 1965; Zhang & Tucker 2008). In Vietnam collected at the edge of evergreen secondary forest, at 1045 m a.s.l. (*Razafimandimbison et al. 2409*).

Phenology

Flowering in March–May (Jacobs 1965). In Vietnam collected in fruit in October (*Razafimandimbison et al. 2409*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The subspecies is widespread in several provinces of Vietnam, and no risks were detected for its populations.

Vernacular names

'Cáp xoan ngược' (Ho 1999); 'Cap vu bo' (*Fleury 32545*), 'Truong hasch' (*De Pirey 41187*).

Capparis acutifolia subsp. ***macrophylla*** Fici & Sy subsp. nov.
urn:lsid:ipni.org:names:77379403-1
Fig. 4

Diagnosis

Differs from *Capparis acutifolia* subsp. *obovata* by the leaf blade ovate or elliptical (vs obovate), 9–15(–16.4) cm long (vs (4.5–)6–11 cm long), with base obtuse or rounded (vs acute), pedicels 0.7–1.1 cm

Fig. 4. *Capparis acutifolia* subsp. *macrophylla* Fici & Sy subsp. nov. **A**. Flowering branch. **B**. Flower. (Quang Binh Province, *Fici et al. 2402*). Photos by Silvio Fici.

long (vs (1–)1.4–1.8 cm long), sepals 4–5 mm long (vs 5–6 mm long), glabrous inside (vs pubescent inside), and petals glabrescent inside (vs pubescent inside).

Etymology

The subspecific epithet is composed of the Greek words 'makrós' (μακρός), meaning 'large', and 'phýllon' (φύλλον), meaning 'leaf'.

Type material

Type

VIETNAM – **Quang Binh Province** • Bo Trach; 17°39′8″ N, 106°14′44″ E; 5 Mar. 2024; *Fici et al. 2402*; holotype: PAL.

Paratypes

VIETNAM – **Ninh Binh Province** • Nho Quan District; 20°20.97′ N, 105°36.07′ E; 6 Oct. 2006; *Mai Van Xinh & N.H. Quang MVX 1039*; P [P00819830]. – **Quang Ninh Province** • M. Lai près Lai Chan; 13 Jan. 1938; *Poilane P. M.* 85; P [P05453802, P05453828]. – **Tonkin** • Vallé de Bua-Toi à la base de Mont Ban; 22 Oct. 1888; *Balansa 4078*; P [P05453838, P05454027].

Description

Shrubs or climbers up to 4 m long. Twigs early glabrous. Stipular thorns ascending, 1–2 mm long, or lacking. Petiole 5–8 mm long. Leaf blade subcoriaceous, ovate or elliptical, 1.6–2.2(–2.4) times as long as wide, 9–15(–16.4) × (4.3–)4.5–6.8(–7.7) cm, broadest at or below the middle; base obtuse or rounded, top acuminate, the tip up to ca 1.9 cm long; surfaces glabrous; nerves (4–)6–7(–8) pairs. Flowers 2 in supra-axillary rows or rarely solitary; pedicels 0.7–1.1 cm long; sepals acute, 4–5 × 2–4 mm, glabrous, ciliate at margins; petals linear or oblong, 6–9 × 2–3 mm, glabrescent on both surfaces, pubescent at margins; stamens ca 26–30, filaments 1.8–2.1 cm long; gynophore 1.9–2.7 cm long, glabrous; ovary ovoid, 1–1.2 × 0.7–1 mm, shortly beaked, glabrous. Fruit globose, ca 1–1.2 cm in diameter.

Distribution and ecology

Known from central and northern Vietnam, in the Quang Binh, Ninh Binh and Quang Ninh provinces. In Quang Binh Province this subspecies has been observed at margins of cultivations near the base of limestone formations, at 20 m elevation.

Phenology

Flowering in March, fruiting in October (based on the available material).

Provisional conservation status

The new subspecies is known from four localities of northern and central Vietnam. Given the small area of occupancy known, as well as the low number of individuals observed in the type locality, it is assessed as Vulnerable (VU D2) according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Capparis annamensis (Baker f.) M.Jacobs
Fig. 5

Capparis annamensis (Baker f.) M.Jacobs (Jacobs 1965: 433). – *Capparis grandiflora* Wall. ex Hook.f. & Thomson var. *annamensis* Baker f. (Baker 1921: 127).

Type material

VIETNAM – **Ninh Thuan Province** • Tourcham; May 1918; *Kloss s.n.*; holotype: BM.

Other material examined

VIETNAM – **Binh Thuan Province** • Phanri; 29 Oct. 1924; *Evrard 1614*; P [P04746657] • Thuan Hai, Phan Ri; 11°10′ N, 108°32′ E; 31 Mar. 1987; *Averyanov & Kudryavtzeva 663*; LE [LE01077307] • Tuy Phong District, Vinh Tan Commune; 11°19′19″ N, 108°47′53″ E; 2 Apr. 2010, *Bach et al. VK 3635*; HN, KRIB. – **Khanh Hoa Province** • Nhatrang et environs; 5 Feb. 1914; *Chevalier 30525*; P [P04746654, P04746655] • Nha-Trang and vicinity; 11–26 Mar. 1911; *Robinson 1021*; P [P04746567], NY [NY04746898] • Phu Khanh, Nha Trang; 12°15′ N, 109°10′ E; 17 Apr. 1987; *Averyanov & Kudryavtzeva 1283*; LE [LE01077303, LE01077304, LE01077305, LE01077306] • Nha Trang City, Hon Tre Island; 10 Jun. 1989; *Ban et al. 54*; HN • Nha Trang City, Hon Mun Island; 12 Apr. 2011; *Thuong 02*; HN. – **Ninh Thuan Province** • Brousse sur la voie ferrée de Ba Lap et Barau; *Chevalier 30559 A*; P [P04746656] • Phan Rang – Thap Cham City; 25 Jun. 1919; *Poilane 80*; VNM • Vinh Hai District, Ninh Hai Commune; 19 Mar. 2004; *Loc et al. HLF 3155*; HN • Vinh Hai District, Ninh Hai Commune; 22 Mar. 2004; *Loc et al. HLF 4049*; HN • Ninh Phuoc District, Phuoc Hai Commune; 17 Sep. 2011; *Thuong et al. PTV 434*; HN.

Description

Climbers or low shrubs. Twigs densely pubescent, later glabrescent. Stipular thorns recurved, 2–3 mm long, strong. Petiole 4–6 mm long, pubescent. Leaf blade herbaceous, ovate, elliptic-ovate or obovate, ca 1.3–1.8 times as long as wide, 2–4(–4.5)× 1.5–2.2 cm; base obtuse or acute, top rounded, emarginate or acute, mucronulate; nerves 2–3 pairs; upper surface glabrous, lower surface puberulous when young,

Fig. 5. Flowering branch of *Capparis annamensis* (Baker f.) M.Jacobs. (Binh Thuan Province, *Bach et al. VK* 3635). Photo by Danh T. Sy.

later glabrescent. Flowers solitary, axillary; pedicels 9–15 mm long, pubescent; sepals acute, ca 12–13 × 5.5–6.5 mm, glabrous or puberulous, ciliate at margins; petals obovate, 18–23(–25) × 6–9 mm, glabrous, pale yellow, the upper pair with an orange spot; stamens 52–60, with filaments ca 2.3–2.8 cm long; gynophore 1.7–2.4 cm long, pubescent; ovary ovoid-cylindric, 8–9 × 1.5 mm, ribbed, densely pubescent, with beak ca 2 mm long and knob-shaped stigma. Fruit ovoid, ca 5 × 2.5 cm.

Distribution and ecology

Vietnam. Recorded from Khanh Hoa, Ninh Thuan and Binh Thuan provinces by Ban & Dorofeev (2003). Forest hedges at low elevation (Ban & Dorofeev 2003). In Ninh Thuan Province collected alongside a railway (*Chevalier 30559 A*).

Phenology

Ho (1999) and Ban & Dorofeev (2003) reported flowering period from September to March. Flowering material was collected in Khanh Hoa Province both in March (*Robinson 1021*) and April (*Averyanov & Kudryavtzeva 1283*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). Within its distribution range, the species has been observed in several sites, where no risks were detected for its populations.

Vernacular names

'Cáp trung bộ' (Ban & Dorofeev 2003); 'Muc a' (*Robinson 1021*).

Capparis assamica Hook.f. & Thomson

Capparis assamica Hook.f. & Thomson (Hooker & Thomson 1872: 177).

Capparis gallatlyi King (King 1896: 118). – **Type**: MYANMAR • Tenasserim, Moolar Plain; 25 Apr. 1877; *Gallatly 880*; lectotype: K [K000247298], designated by Fici (2023: 10); isolectotypes: BM [BM010769786], CAL [CAL0000005016, CAL 0000005017]. (Fig. 6).

Type material

INDIA • East Bengal; *Griffith 602*; lectotype: K [K000247299], designated by Jacobs (1965: 434).

Other material examined

VIETNAM – **Ha Noi** • Ba Vi District, Van Hoa Commune; 26 Apr. 1976; *Nguyen Van Phu HPP 172*; HN. – **Thanh Hoa Province** • Ba Thuoc District, Co Lung Commune; 20 Sep. 2003; *Hiep et al. HAL 3179*; HN. – **Vinh Phuc Province** • Me Linh District, Ngoc Thanh Commune; 26 Apr. 2004; *Vu Xuan Phuong 7574*; HN. – **Lai Chau Province** • Muong Te District, Mu Ca Commune; 25 Apr. 2026; *Cuong et al. AL5029*; LE.

Description

Shrubs or climbers up to ca 3 m tall. Twigs sparsely pubescent, but early glabrescent, with cataphylls at the base. Stipular thorns often lacking or ca 1 mm long, straight. Petiole 5–8(–9) mm long. Leaf blade subcoriaceous, 2.4–3.5 times as long as wide, (12–)15–21(–31) × (3.5–)4–7(–8.5) cm, widest at or above the middle; base acute, top acuminate, tip up to 1.3 cm long; surfaces glabrous; nerves 8–10(–12) pairs. Inflorescence a terminal or subterminal, multiflorous raceme (10–)11–20(–28) cm long, with subulate

Fig. 6. Illustration of *Capparis gallatlyi* King. **1**. Flowering branch. **2**. Flower. **3**. Dissected flower. **4**. Stamens. (From King 1896).

bracts 1–2 mm long at the base and subtending the flowers, rhachis sparsely puberulous; pedicels ca (0.5–)1–1.7(–2) cm long, puberulous; sepals 3–4(–5) × 1.5–2.5 mm, puberulous outside; petals white, ovate, 3–4 × 1.5–2 mm, puberulous at the base; stamens 12–20, with filaments ca (5–)8–10 mm long; gynophore 6–9(–11) mm long, glabrous; ovary ovoid, ca 1.5 – 2 × 1 mm, glabrous. Fruit globose, 6–9 mm in diameter, red.

Distribution and ecology

India, Bhutan, Myanmar, China, Thailand, Laos (Zhang & Tucker 2008), possibly present also in eastern Nepal (Tucker *et al.* 2012). The species was not reported from Vietnam by Jacobs (1965) or Ho (1999), while later it has been recorded in Hoa Binh Province by Ban & Dorofeev (2003). During the present research, herbarium collections from Ha Noi, Thanh Hoa, Lai Chau and Vinh Phuc provinces have been examined. Dense forests, from lowlands up to ca 1200 m a.s.l. (Jacobs 1965; Zhang & Tucker 2008).

Phenology

Flowering in (January) March–April (Zhang & Tucker 2008).

Provisional conservation status

Due to the lack of information for the study area, the species is here assessed as Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Vernacular name

'Cáp ấn độ' (Ban & Dorofeev 2003).

Capparis bachii Sy, R.K.Choudhary & Joongku Lee
Fig. 7

Capparis bachii Sy, R.K.Choudhary & Joongku Lee (*Sy et al.* 2017a: 31).

Type material

VIETNAM – **Dong Nai Province** • Tan Phu District, Ta Lai Community; 8 Mar. 2013; *S.D. Thuong 74*; holotype: HN; isotype: HNU.

Other material examined

VIETNAM – **Dong Nai Province** • Tan Phu District, Ta Lai Community; 10 Mar. 2013; *D.V.Hai 1003201301*; HN.

Description

Shrubs scandent. Twigs pubescent, later glabrescent. Stipular thorns recurved, up to 2 mm long. Petiole 4–7 mm long. Leaf blade herbaceous, 2.4–3.3 times as long as wide, 6.5–13 × 3–5.5 cm, widest at or below the middle, base cordate or subcordate, apex acute or acuminate, with tip up to 0.5 cm long; upper surface glabrous, lower surface glabrous, pubescent along the midrib; nerves 6–7 pairs. Flowers in terminal umbels; pedicels 3.2–4 cm long; sepals acute, 6–7 × 4–5 mm, pubescent at margins; petals white, oblong or oblong-obovate, 12–14 × (3–)4–5(–6) mm, pubescent; stamens 46–50, with filaments 3–3.5 cm long; gynophore 2.3–2.7 cm long, glabrous; ovary ellipsoid, 2 × 1 mm, glabrous. Fruit unknown.

Distribution

Vietnam. Recorded by Sy *et al.* (2017a) from Dong Nai Province, Tan Phu District, at 11°22′59.4″ N, 107°21′45.4″ E and at 11°22′60.1″ N, 107°21′46.2″ E, in open secondary forests at 130 m a.s.l.

Phenology

Flowering February–March.

Provisional conservation status

Capparis bachii is known from two close locations, where a few individuals were observed (Sy *et al.* 2017a). Following the *IUCN Red List Categories and Criteria* (IUCN 2012), it is assessed as Vulnerable (VU D2).

Taxonomic remarks

Capparis bachii is related to *C. diffusa* Ridl., a species known from Malaysia, Thailand, Vietnam and Indonesia. *C. bachii* differs mainly in the longer petiole, leaf blade with midrib pubescent in the lower surface, higher number of flowers in the umbels, longer petals, pubescent on both surfaces, higher number of stamens, longer gynophore and ellipsoid ovary (Sy *et al.* 2017a).

Fig. 7. Inflorescence of *Capparis bachii* Sy, R.K.Choudhary & Joongku Lee (Dong Nai Province, *S.D. Thuong 74*). Photo by Danh T. Sy.

Capparis beneolens Gagnep.
Fig. 8

Capparis beneolens Gagnep. (Gagnepain 1938: 597).

Type material

VIETNAM – **Ninh Thuan Province** • Ca-Na pro: Phan Rang; 24 Dec. 1923; *Poilane 9320*; holotype: P [P04746233]; isotypes: A [A00042266], K [K000651012], L [L0035306].

Other material examined

VIETNAM – **Binh Thuan Province** • Bac Binh District, Phan Ri Commune; 27 Mar. 1987; *Ban et al. 667*; HN. – **Khanh Hoa Province** • Ba Ngoi; Apr. 1954; *Schmid s.n.*; P [P04746218, P04746219] •

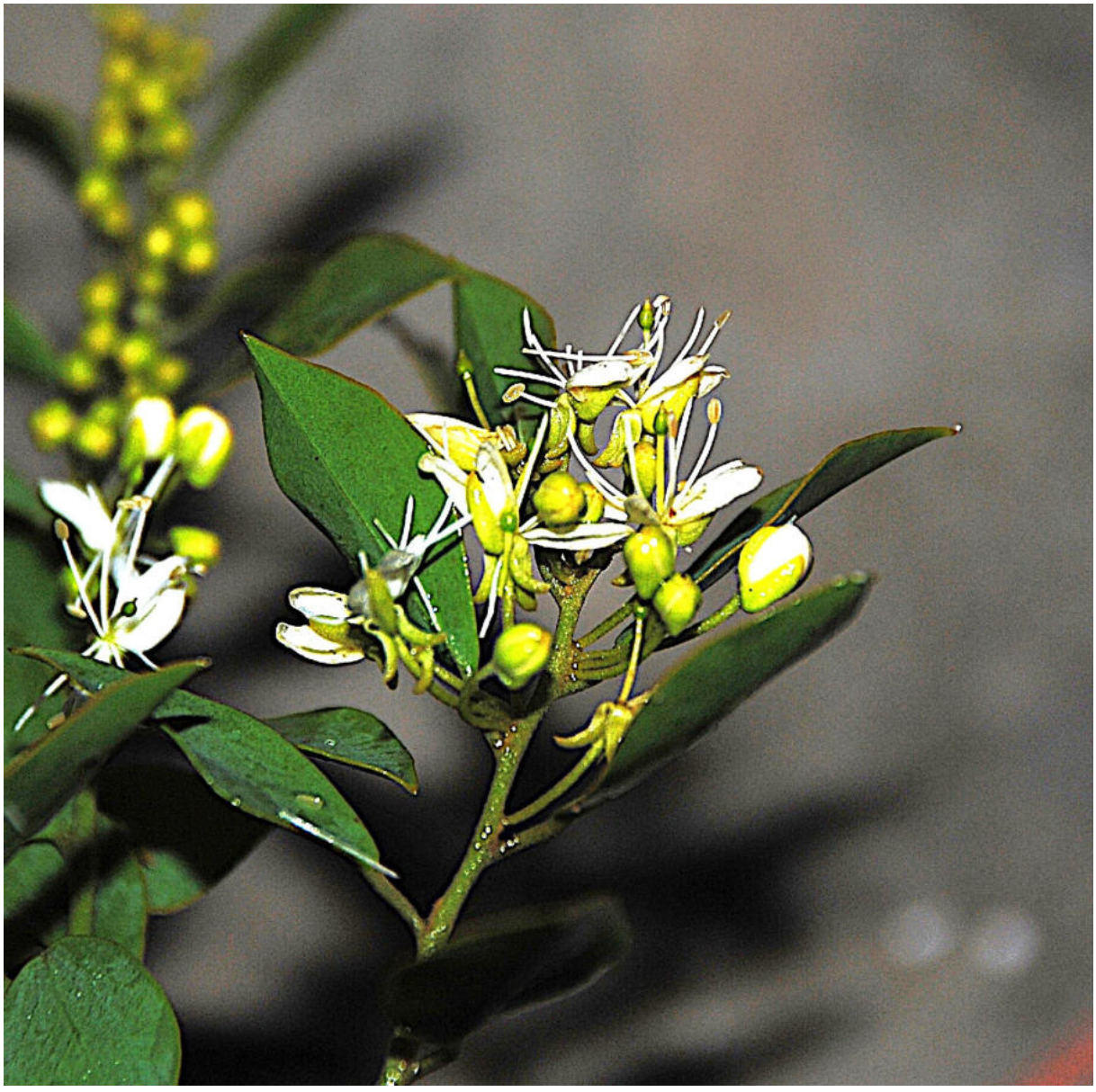

Fig. 8. Inflorescence of *Capparis beneolens* Gagnep. (Ninh Thuan Province, *Bach et al. VK 3428*). Photo by Danh T. Sy.

99 km N de Ba Ngoi; 21 Jan. 1961; *Schmid s.n.*; P [P04746221], L [L1845662] • Nha-Trang and vicinity; 11–26 Mar. 1911; *Robinson 1505*; P [P04746234], K [K005755384], NY [NY04746906] • Nha-Trang and vicinity; 11–26 Mar. 1911; *Robinson 1385*; P [P04746232], K [K005755385], NY [NY04746907] • Nha Trang City; 9 Jun. 1989; *Ban et al. 5*; HN. – **Ninh Thuan Province** • Ca-Na pro, Phan Rang; 6 Mar. 1923; *Poilane 5607*; P [P04746231], VNM • Ninh Hai District, Nui Chua National Park, Botanical Garden and slope; 11°42.53″ N, 109°10.95″ E; 700 m a.s.l.; 7 Jan. 2010; *Soejarto et al. DDS 14528*; P [P04746259] • Ninh Hai District, Vinh Hai Commune; 12°11′05″ N, 108°41′03″ E; 19 Jan. 2010; *Bach et al. VK 3428*; HN, KRIB • Ninh Hai District, Vinh Hai Commune; 24 Mar. 2004; *Phuong et al. HLF 4122*; HN • Ninh Hai District, Vinh Hai Commune; 24 Mar. 2004; *Phuong et al. HLF 4123*; HN • Ninh Hai District, Vinh Hai Commune; 27 Mar. 2004; *Tap et al. HLF 3355*; HN • Ninh Hai District, Vinh Hai Commune; 24 Jul. 2010; *Thuong et al. PTV 426*; HN.

Description

Climbers or shrubs up to 7–8 m long. Twigs densely pubescent, later glabrescent. Thorns recurved, ca 1 mm long, or lacking. Petiole 3–5 mm long, puberulous, later gabrescent. Leaf blade subcoriaceous, 1.7–2.7 times as long as wide, widest about the middle, (1.5–)2–3.5 × (0.7–)1–1.5 cm; base rounded or obtuse, top acute, mucronate; nerves 3–5 pairs; surfaces glabrescent. Flowers 2–6 in supraxillary rows; pedicels 5–8 mm long, pubescent; sepals 2.5–3 × 1–2.5 mm, pubescent outside; petals oblong, white, 3–3.5 by 1–1.5 mm, glabrous, ciliate at margins; stamens 6–7, with filaments 4–5 mm long; gynophore 3–5 mm long, puberulous at base; ovary ovoid, 1–1.2 × 0.5–0.7 mm, glabrous. Fruit globose, 6–8 mm in diameter.

Distribution and ecology

Vietnam. Recorded by Ban & Dorofeev (2003) from Khanh Hoa and Ninh Thuan provinces. During the present research also material from Binh Thuan Province has been examined. Thickets, forest margins and rocky areas (Ban & Dorofeev 2003). In Ninh Thuan Province the species has been collected in dry, thorny forest along roadside, at 100 m a.s.l. (*Soejarto et al. DDS 14528*) and in a deforested area on sandy soil (*Poilane 5607*), in Khanh Hoa Province in thickets close to mangroves on sand (*Schmid s.n.*).

Phenology

Jacobs (1965) reported that the species seems to be fertile throughout the year; based on Ban & Dorofeev (2003) the fruiting period goes from December to March. In Ninh Thuan Province the species has been collected in flower in December, January and March (*Poilane 9320*, *Soejarto et al. DDS 14528*, *Poilane 5607*), in Khanh Hoa Province has been collected in flower in January and April (*Schmid s.n.*), in fruit in March (*Robinson 1505 & 1385*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The species has been observed in several sites and in different habitats, where no risks were detected for its populations.

Vernacular names

‘Day chung rièt’ (Gagnepain 1938), ‘Cáp thơm’, ‘Cáp chưn rít’ (Ban & Dorofeev 2003).

Capparis cantoniensis Lour.

Capparis cantoniensis Lour. (Louriero 1790: 331).

Capparis salaccensis Blume (Blume 1825: 54). – **Type**: INDONESIA • Java, Salak; *Blume s.n.*; lectotype: L [L0035316], designated by Jacobs (1965: 441).

Capparis pumila Champ. ex Benth. (Bentham 1851: 260). – **Type**: CHINA • Hong Kong, Black Mts; *s.coll. 353*; lectotype: K [K 000380490], designated by Fici (2023: 12).

Capparis sciaphila Hance (Hance 1866: 206). – **Type**: CHINA • In umbrosis ad Hong Kong; Aug. 1861; lectotype: *Hance 7490* K [K000380492], designated by Fici (2023: 12); isolectotype: BM [BM010775773].

Capparis hasseltiana Miq. (Miquel 1870: 24). – **Type**: INDONESIA • Java, Bantam, G. Karang; *van Hasselt s.n.*; lectotype: L [L0035315], designated by Fici (2023: 12); isolectotype: U [U0000954]. (Fig. 9).

Capparis celebica Miq. (Miquel 1870: 26). – **Type**: INDONESIA • Celebes [Sulawesi], Belang; *Forsten 344*; lectotype: L [L0035322], designated by Jacobs (1965: 441).

Capparis ambigua Kurz (Kurz 1877: 65). – **Type**: INDIA • South Andaman; *Kurz s.n.*; lectotype: K [K000247302], designated by Fici (2023: 12).

Vanieria bodinieri (H.Lévl.) Chun (Chun 1927: 21). – *Cudrania bodinieri* H.Lévl. (Léveillé 1914: 265). – **Type**: CHINA • Hong Kong, Torrent de la Baie du Télégraphe près Bethanie; 14 Jan. 1896; *Bodinier 1413*; lectotype: E [E00327223], designated by Fici (2023: 12).

Type material

CHINA – **Guangdong Province** • Canton & vicinity; 9 Mar. 1917; *Levine 1247*; neotype: E [E00327222], designated by Jacobs (1965: 441); isoneotypes: A [A00277170], GH [GH00042251], K [000380489], L [L0035314], US [US00100536].

Other material examined

VIETNAM – **Ba Rịa-Vung Tau Province** • In montibus Dinh ad Baria, austro-Cochinchinae; Oct. 1866; *Pierre 4008*; P [P04747011, P04747012, P04747013]. – **Ha Noi** • Collines à l'ouest du Day, non loin de la route de Hanoi à My-Duc; Jan. 1891; *Balansa 4719*; P [P04747033, P04747009] • Ba Vi District; 26 Apr. 1976; *Ban et al. 131*; HN • Ba Vi District, Van Son Commune; 24 Apr. 1976; *Nguyen Van Phu HPP 124*; HN. – **Ho Chi Minh City** • Saigon; Jul. 1909; *d'Alleizette s.n.*; P [P04747024]. – **Nghe An Province** • Con Cuong District, Pu Mat National Park; 14 Jul. 1998; *Nguyen Nghia Thin 475*; HNU. – **Quang Nam Province** • Annam, confin sud de la prov. de Quang Nam, village moi de 'Mo o'; 25 Feb. 1941; *Poilane 31723*; P [P04747255]. – **Quang Tri Province** • Annam, Salung [Sa Lung]; 29 Dec. 1940; *Poilane 31245*; P [P04747224], L [L1846095], VNM • Vinh Linh District, Vinh Hien Commune; 1 Dec. 2003; *Cuong et al. VN 1214*; HN • Huong Hoa District; 17°03′59.1″ N, 107°04′42.5″ E; 11 Jun. 2007; *Bach et al. VK 1543*; HN, KRIB. – **Son La Province** • Ninh Thai, in colle Muon Lâng; 14 Dec. 1886; *Bon 3318*; P [P04746297, P04747006, P04747010]. – **Thua Thien-Hue Province** • Hue and vicinity; May–Jul. 1927; *J. & M.S. Clemens 3202*; P [P04747034], K [K005755297], NY [NY4746917] • Phu Loc District, Hung Loc Commune; 2 Sep. 1980; *Ha Tue 615*; HN • A Luoi District, Hong Kim Commune; 16°17′54″ N, 107°12′41″ E; 26 Apr. 2005; *Hiep et al. HAL 7466*; HN • A Luoi District, Huong Nguyen Commune; 7 May 2005; *Hiep et al. HAL 7997*; HN.

Description

Climbers up to 20 m long. Twigs puberulous, later glabrescent. Stipular thorns recurved or patent, 1–5 mm long, often lacking on fertile branches. Petiole 4–6(–10) mm long. Leaf blade subcoriaceous, 2.3–4(–5) times as long as wide, (3–)5.5–10.5(–12.5) × (1.5–)2–4(–4.5) cm; base acute or obtuse, top shortly acuminate, mucronate; upper surface glabrous, lower surface sparsely puberulous, later glabrescent; nerves 6–10(–12) pairs. Flowers in axillary subumbels, constituting a terminal panicle up to ca 26 cm long;

Fig. 9. Illustration of *Capparis hasseltiana* Miq. **1**. Flowering branch. **2**. Flower. **3**. Sepal. **4**. Petal. **5**. Stamens. **6**. Ovary. **7**. Section of ovary. (From Miquel 1870.)

pedicels 0.4–2 cm long; sepals 3–7(–8) × 2–6 mm, the outer pair in some cases puberulous outside, the inner pair ciliate at the margins; petals white, obovate or oblong, 3.5–6.5 × (1.5–)2–3(–4) mm, pubescent; stamens 20–45, filaments 0.8–1.5(–2.5) cm long; gynophore 4–12 mm long, glabrous; ovary ellipsoid or pear-shaped, ca 1–1.5 × 0.5–1 mm, glabrous. Fruit globose, ovoid or ellipsoid, 1–1.5 cm in diameter.

Distribution and ecology

India (including Andamans), Bhutan, China, Myanmar, Thailand, Laos, Vietnam, Indonesia, Philippines (Jacobs 1965; Zhang & Tucker 2008; Tagane *et al.* 2020). Widespread in northern, central and southern Vietnam, and reported by Ban & Dorofeev (2003) in Son La, Hoa Binh, Ha Noi, Hai Duong, Hai Phong, Ninh Binh, Khanh Hoa, Kon Tum, Gia Lai and Ba Ria-Vung Tau provinces. During the present research also collections from Nghe An, Quang Tri, Thua Thien-Hue, Quang Nam provinces and Ho Chi Minh City has been examined. Forests and forest edges, up to ca 2000 m a.s.l. (Jacobs 1965). In Quang Tri Province collected on sandy, lateritic soil (*Poilane 31245*), in Quang Nam Province on granitic soil, at 1000–1200 m a.s.l. (*Poilane 31723*).

Phenology

Flowering and fruiting throughout the year (Jacobs 1965; Zhang & Tucker 2008). Flowering material was collected in October in Ba Rịa-Vung Tau Province (*Pierre 4008*), fruiting material in February in Quang Nam Province (*Poilane 31723*), while in Quang Tri Province a specimen bearing both flowering and fruiting branches was collected in December (*Poilane 31245*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). In the study area the species has been collected in several localities and, based on the available data, no risks were detected for its populations.

Vernacular name

'Cáp thượng hải' (Ban & Dorofeev 2003).

Capparis daknongensis Sy, G.C.Tucker, Cornejo & Joongku Lee
Fig. 10

Capparis daknongensis Sy, G.C.Tucker, Cornejo & Joongku Lee (Sy *et al.* 2013a: 99).

Type material

VIETNAM – **Dak Nong Province** • Gia Nghia District, Dak Nia Commune; 5 Apr. 2010; *TT. Bach et al. VK-3675*; holotype: HN; isotype: KRIB.

Other material examined

VIETNAM – **Dak Lak Province** • Lak District, Nam Ka Commune; 28 Mar. 2012; *TT. Bach et al. PTV-1053*; HN.

Description

Shrubs scandent, up to 4 m long. Twigs glabrous, pruinose. Stipular thorns recurved, up to 3 mm long, sometimes lacking. Petiole 1.5–1.7 cm long. Leaf blade herbaceous, ca 2.8–3.4 times as long as wide, 6–8 × 3–4 cm, widest at or below the middle; base acute or rounded, top acuminate, with tip up to 1 cm long; surfaces glabrous; nerves 6–7 pairs. Flowers in terminal or axillary corymbs; pedicels 1.5–2 cm long; sepals rounded at apex, 6–7 × 2–3 mm, the outer pair pubescent outside, the inner pair pubescent outside

Fig. 10. Fertile branch of *Capparis daknongensis* Sy, G.C.Tucker, Cornejo & Joongku Lee (Dak Lak Province, *TT. Bach et al. PTV-1053*). Photo by Danh T. Sy.

and inside at the base, ciliate at margins; petals white, oblong, ca 13–16 × 3–5 mm, pubescent inside and at margins; stamens 13–18, with filaments 3.7–4.5 cm long; gynophore 3.5–4 cm long, glabrous; ovary ellipsoid, ca 2 × 1 mm, glabrous. Fruit ovoid, 1.6–1.8 × 1.3–1.5 cm.

Distribution and ecology

Vietnam. Recorded by Sy *et al.* (2013a) from two locations in Dak Nong and Dak Lak provinces, at 11°56′12″ N, 107°45′01″ E and at 12°16′25.3″ N, 108°07′19.1″ E. Open secondary forests at 500–550 m a.s.l. (Sy *et al.* 2013a).

Phenology

Flowering March–July.

Provisional conservation status

Following the *IUCN Red List Categories and Criteria* (IUCN 2012), the species is assessed as Vulnerable (VU D2). *Capparis daknongensis* is known only from two locations, where a few individuals were observed in areas prone to be affected by anthropic activities.

Taxonomic remarks

Based on Sy *et al.* (2013a), *Capparis daknongensis* is related to *C. khuamak* Gagnep., a species known from China, Laos, and Vietnam (Zhang & Tucker 2008). *Capparis daknongensis* differs mainly in having glabrous, pruinose twigs (vs tomentose, later glabrescent), acuminate leaves (vs obtuse, acute or notched), petals ca 13–16 mm long (vs ca 6–9(–12) mm), 13–18 stamens (vs ca 20–28) with filaments 3.7–4.5 cm long (vs 2–2.5 cm), a gynophore 3.5–4 cm long (vs (1.5–)2.3 – 3.5 cm), and an ovoid fruit (vs globose).

Capparis diffusa Ridl.

Capparis diffusa Ridl. (Ridley 1911: 68.).

Type material

MALAYSIA • Perlis, Bukit Lagi; Mar. 1910; *Ridley 15174*; holotype: SING [SING0056837]; isotype: K [K000643988].

Other material examined

VIETNAM – **An Giang Province** • Mont de Chaudoc; June 1876; *Harmand 592*; P [P04022334, P04746968, P04746969]. – **Dong Nai Province** • Tan Phu District, Cat Tien National Park; 11°25′9.34″ N, 107°25′7.82″ E; 28 Sep. 2005; *N.V. Du et al. HNK 863*; HN, K [K000577054] • Tan Phu District, Cat Tien National Park; 11°27′31″ N, 107°22′22″ E; 28 Sep. 2005; *N.V. Du et al. HNK 947*; HN, K [K000577053].

Description

Shrubs or climbers. Twigs puberulous, later glabrescent. Stipular thorns recurved, 1–3 mm long, in some cases lacking. Petiole 2–5 mm long. Leaf blade herbaceous, 1.7–3.5 times as long as wide, 4–9.5(–11.2) × 1.2–4(–5) cm; base rounded or acute, top acute or subacuminate, in some cases notched; surfaces glabrous; nerves 5–10 pairs. Flowers in terminal subumbels 3–5(–10)-flowered, or the umbels lateral on short twigs; pedicels 2–5 cm long, glabrous; sepals ca 4–5 × 2–4 mm, glabrous, inner pair ciliate; petals white, oblong, ca 4–6(–8) mm long, inside pubescent; stamens 12–15(–20); gynophore ca 1–1.8(–2) cm long, glabrous; ovary subglobose, ca 1 mm long, glabrous. Fruit globose, ca 7–8(–10) mm in diameter.

Distribution and ecology

Malaysia, Thailand, Vietnam, Indonesia (Sumatra). The occurrence of the species in Cambodia, reported by Jacobs (1965), was not confirmed by Fici (2023). In Vietnam recorded by Ban & Dorofeev (2003) in Thua Thien-Hue, Khanh Hoa and An Giang provinces. During the present research also material from Dong Nai Province was examined. Evergreen forests, forest edges and thickets, on limestone at low elevation (Jacobs 1965; Ban & Dorofeev 2003). In Dong Nai Province collected in closed evergreen forest on black soil, at 145 m a.s.l. (*N.V. Du et al. HNK 947*), and in semi-evergreen forest on alluvial soil, at 120 m a.s.l. (*N.V. Du et al. HNK 863*).

Phenology

Flowering from December to May (Jacobs 1965); based on Ban & Dorofeev (2003) fruiting in May–June in Vietnam, but fruiting material was collected in September in Dong Nai Province (*N.V. Du et al. HNK 947* & *863*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). Based on the available data, no risks were detected for the populations of the species in the study area.

Vernacular name

'Cáp tràn' (Ban & Dorofeev 2003).

Capparis dongvanensis Sy, B.H.Quang & D.V.Hai
Fig. 11

Capparis dongvanensis Sy, B.H.Quang & D.V.Hai (Sy *et al.* 2016: 272).

Type material

VIETNAM – **Ha Giang Province** • Dong Van District; 23 Mar. 2015; *T.T. Bach et al. Thuong 73*; holotype: HN; isotype: KRIB.

Other material examined

VIETNAM – **Ha Giang Province** • Dong Van District; 21 Mar. 2015; *Bach et al. Thuong 70*; HN • Dong Van District; 1 Jan. 2014; *D.V.Hai et al. HG 585*; HN.

Description

Shrubs up to 10 m tall. Twigs glabrous. Stipular thorns 1–2 mm long, recurved. Petiole 5–8 mm long. Leaf blade 2.8–3.7 times as long as wide, 9–16.5 × 3–4.5 cm; base acute, top acuminate with tip 7–10 mm long; surfaces glabrous; nerves 7–8 pairs. Flowers in axillary or terminal subumbels 4–7-flowered; pedicels 1.8–2 cm long; sepals 4.5–6 × 3–4.5 mm, glabrous; petals white-greenish, obovate, 7–9 × 3–3.5 mm, pubescent on both surfaces; stamens 36–42, with filaments 1.8–2 cm long; gynophore 1.8–2 cm long, glabrous; ovary cylindrical, ca 2 × 1 mm, glabrous. Fruit globose, 2–5 cm in diameter.

Distribution and ecology

Vietnam. The species is only known from the type locality (Sy *et al.* 2016), in the Ha Giang Province, Dong Van District. Rocky soil at ca 1348 m a.s.l..

Phenology

Flowering in February–March and in October–November, fruiting from June to January.

Fig. 11. Fruiting branch of *Capparis dongvanensis* Sy, B.H.Quang & D.V.Hai (Ha Giang Province, *Bach et al. Thuong 70*). Photo by Danh T. Sy.

Provisional conservation status

The species was assessed by Sy *et al.* (2016) as Endangered (EN) following the *IUCN Red List Categories and Criteria* (IUCN 2012), due to its limited population size, which underwent considerable reduction in the recent past. 100–250 mature individuals were observed in the three locations so far known, which are prone to habitat destruction linked with anthropic activities (Sy *et al.* 2016).

Capparis erycibe Hallier f.
Fig. 12

Capparis erycibe Hallier f. (Hallier 1898: 217).

Type material

INDONESIA • Java, Tjampea, Mt Tjibodas, Buitenzorg; 4 May 1895; *Hallier f. 779A*; holotype: BO n.v.; isotype: L [L0035324].

Other material examined

VIETNAM – **Khanh Hoa Province** • Presqu'ile de Nui-Hon heo; 3 May 1923; *Poilane 6195*; P [P04746274] • Massif de la Mère et l'enfant, near Nhatrang; 24 May 1923; *Poilane 6733*; P [P04746275, P04747152] • Nha-Trang and vicinity; 11–26 Mar. 191; *Robinson 1461*; P [P04746276]. – **Kon Tum Province** • W slope of Ngoc Linh mountain system, near Long Nam village; 3 Apr. 1995; *Averyanov*

Fig. 12. Flowering branch of *Capparis erycibe* Hallier f. (Thua Thien-Hue Province, *Thuong et al. 63*) Photo by Danh T. Sy.

et al. VH 1097; P [P04746272], LE [01077311], HN. – **Ninh Binh Province** • Nho Quan District, Cuc Phuong National Park, slope northeast of Bong; 105°35.80′ N, 20°21.22′ E; 19 Mar. 1999; *Soejarto et al. 10621*; P [P04746278], NY [NY04746938]. – **Thua Thien-Hue Province** • Mt Bach Ma; Jul. 1943; *Vidal 757 A*; P [P04746279] • Mt Bach Ma; 6 Apr. 1944; *Vidal 758 A*; P [P04746280] • Nam Dong District, Huong Hoa Commune; 27 Nov. 201; *Thuong et al. 63*; HN.

Description

Climbers, sometimes shrubs or small trees up to ca 8 m tall. Twigs puberulous or pubescent. Stipular thorns mostly lacking, if present recurved, up to 2(–3) mm long. Petiole 4–10 mm long. Leaf blade herbaceous or subcoriaceous, 1.8–2.8(–3.5) times as long as wide, widest above or at the middle, (7.3–)10–17(–20) × 4.5–8.5 cm, base rounded, subcordate, obtuse or acute, top acuminate, mucronate; surfaces glabrous, in some cases the whole lower surface hairy or hairy along the midrib; nerves 6–9 pairs. Flowers in subumbels constituting terminal, leafless panicles ca 10–20 cm long; pedicels 4–20 mm long; sepals 4–6 × 2–3 mm, the outer pair outside sparsely pubescent or glabrous, the inner pair glabrous; petals suborbicular or subspathulate, 4.5–6 × 2–4 mm, in some cases pubescent, mostly at base; stamens ca 20–40, with filaments 5–8 mm long; gynophore 2–5 mm long, glabrous; ovary ovoid, ca 2 × 1 mm, glabrous. Fruit globose, 0.6–1.5 cm in diameter.

Distribution and ecology

Malaysia, Thailand, Vietnam, Indonesia (Jacobs 1965). Recently recorded from Laos by Lim *et al.* (2021). In Vietnam reported by Ban & Dorofeev (2003) from Thua Thien-Hue, Khanh Hoa and Kon Tum provinces. During the present research also material from Ninh Binh Province has been examined. Forests on sandy, loamy and rocky soil (Jacobs 1965; Ho 1999). In the Cuc Phuong National Park (Ninh Binh Province) the species has been collected in tall primary forest on a slope with thick soil cover, at 440 m a.s.l. (*Soejarto et al. 10621*), in Kon Tum Province in evergreen close primary forest at 1300–1450 m a.s.l. (*Averyanov et al. VH 1097*) in Khanh Hoa Province in forest on sandy soil at 300 m a.s.l. (*Poilane 6195*) and on clayey-rocky soil at 600 m a.s.l. (*Poilane 6733*), and in Thua Thien-Hue Province in dense, humid forest at 1200 and 1300 m a.s.l. (*Vidal* 757 A, *Vidal* 758 A).

Phenology

Based on Ho (1999) flowering in December–July, fruiting in July–November. In central Vietnam collected in fruit in March (*Robinson 1461*), April (*Averyanov et al. VH 1097*) and May (*Poilane 6195*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). Based on the available data, no risks were detected for the populations of the species known from the study area.

Vernacular name

‘Cáp bìm bìm’ (Ban & Dorofeev 2003).

Capparis fengii B.S.Sun

Capparis fengii B.S.Sun (Sun 1964: 113).

Type material

China – **Yunnan** • Wen-Shan Hsien; 5 May 1962; *K.M. Feng 22452*; holotype: KUN; isotype: IBSC [IBSC0134488].

Other material examined

VIETNAM – **Cao Bang Province** • Nguyen Binh District, municipality Ca Thanh, vicinities of Ta Phinh village; 22°44′ N, 105°50′ E; 19 Apr. 1999; *Phan Ke Loc et al. CBL 1569*; HN, LE [LE01077263]. – **Ha Giang Province** • Dong Van District, municipality Ho Quang Phin, vicinities of Ta Xa village, 14–16 km to SSW of Dong Van town; 23°16′ N, 105°22′ E; 28 Apr. 1999; *Phan Ke Loc et al. CBL 1743*; HN, LE [LE01077265].

Description

Shrubs up to 10 m tall. Twigs glabrous. Stipular thorns recurved, 2–3 mm long. Petiole 5–12 mm long. Leaf blade herbaceous, ca 2.7–3.3 times as long as wide, 8–12 × 3–4 cm; base acute, top acuminate, with tip up to ca 1.2 cm long, mucronate; surfaces glabrous; nerves 7–13 pairs. Flowers in axillary or terminal corymbs, 2–5-flowered; pedicel 1–3 cm long; sepals 8–10 × 4–7 mm, glabrous; petals white, turning reddish, obovate or oblong, ca 1.5 cm long, outside pubescent in the basal part, inside pubescent; stamens ca 35, with filaments 2.5–3 cm long; gynophore (2.1–)3–5 cm long, glabrous; ovary subgloboid, 2–2.5 × 1.5–2 mm, shortly beaked, glabrous. Fruit globoid, ca 5.5–6 × 4.5–5 cm, verrucose.

Distribution and ecology

China, Vietnam. The species has been recently recorded (Sy 2016) from northern Vietnam, in Cao Bang Province. During the present research also material from Ha Giang Province has been examined. Thickets, forests, valleys, wet areas (Zhang & Tucker 2008). The species has been collected in primary evergreen broadleaved forest at 1200–1300 m a.s.l. in Cao Bang Province (*Phan Ke Loc et al. CBL 1569*), and in primary very wet mossy cloud mixed forest at 1550–1600 m a.s.l. in Ha Giang Province (*Phan Ke Loc et al. CBL 1743*).

Phenology

Flowering April–May, fruiting October (Zhang & Tucker 2008).

Conservation status

Data Deficient according to *IUCN Red List Categories and Criteria* (2012). The species has been collected in two locations of the study area; lacking information on its population status, it is not possible to make a direct or indirect assessment of the risks (IUCN 2012).

Vernacular name

‘Cáp mũi dài’ (Sy 2016).

Taxonomic remarks

Jacobs (1965) hypothesized that *Capparis fengii* could be conspecific with *C. versicolor*, but underlined that in the latter species the leaves are shorter. More recently *C. fengii* has been treated as a separate species by Zhang & Tucker (2008), who reported other differential characters as the glabrous twigs, the mucronate leaf blade and the stamens in lower number.

Capparis flavicans Kurz
Fig. 13

Capparis flavicans Kurz (Kurz 1870: 62).

Capparis flavicans Wall. ex Hook.f. & Thomson (Hooker & Thomson 1872: 179), nom. illeg.

Capparis cambodiana Pierre ex Gagnep. (Gagnepain 1908a: 210). – **Type**: CAMBODIA • In prov. Samrong-Tong Cambodiae; 1870; *Pierre 501*; lectotype: P [P04022340], designated by Fici (2023: 14); isolectotypes: P [P04022341], LE [LE00013155].

Type material

THAILAND • Campong Kankian by Radboerie [Ratchaburi]; *Teijsmann 5931*; holotype: CAL n.v.; isotypes: K [K000651014], U [U1164806].

Other material examined

VIETNAM – **Gia Lai Province** • Ayun Pa District, Ayun Pa Town; 5 Mar. 2011; *Thuong et al. PTV 682*; HN. – **Khanh Hoa Province** • Tom San près Nhatrang; 14 May 1921; *Hayata 452*; P [P05456871]. – **Ninh Thuan Province** • Hoa Trinh, entre Ca-Na et Hoa Trinh; 26 Mar. 1923; *Poilane 5859*; P [P05456881, P05456882] • Ouest de la gare de Song Mao; 24 Sep. 1940; *Poilane 30492*; P [P04460194] • Bac Ai District, Phuoc Tien Commune; 11°48′49″ N, 108°48′06″ E; 2 Aug. 2010; *Bach et al. VK 4000*; HN, KRIB • Bac Ai District; 16 Mar. 1980; *Nguyen Nghia Thin et al. P 4216*; HNU.

Description

Shrubs or small trees up to 10 m tall. Twigs densely pubescent with stellate hairs. Stipular thorns patent or slightly recurved, 1–3 mm long, sometimes lacking on the fertile twigs. Petiole 2–4(–7) mm long.

Fig. 13. Flowering branch of *Capparis flavicans* Kurz (Gia Lai Province, *Thuong et al. PTV 682*). Photo by Danh T. Sy.

Leaf blade herbaceous or subcoriaceous, (1.1–)1.3–1.8(–2.7) times as long as wide, 1.3–3(–4.5) × (0.7–)1–2 cm, widest at the middle or sometimes above; base obtuse or acute, top rounded or slightly emarginate, in some cases mucronulate; surfaces tomentose, later glabrescent; nerves 3–5 pairs. Flowers solitary, axillary; pedicels (0.7–)1–3 cm long; sepals (4–)5–8 × (3–)4–5 mm, tomentose outside and at margins, glabrous inside; petals yellow, obovate, ca 8–9 × 4–6 mm, tomentose outside, the upper pair often turning reddish or brownish; stamens 6–8(–12), filaments ca 1.2–2 cm long; gynophore 1.3–2.5 cm long, densely pubescent; ovary ovoid or pear-shaped, ca 3–3.5(–4) × 1.5(–2) mm, densely pubescent, sometimes beaked, stigma knob-shaped. Fruit globose or ellipsoid, ca 2.3–4 × 2–3.5 cm, pericarp tomentose, covered with small warts.

Distribution and ecology

India, Myanmar, Thailand, Vietnam, Laos, Cambodia (Jacobs 1965). In Vietnam recorded from Khanh Hoa, Gia Lai and Ninh Thuan provinces by Ban & Dorofeev (2003). Evergreen and mixed deciduous forests, dry dipterocarp forests, dry scrubs, forest margins, deforested land, on poor sandy or rocky soil at low elevations (Jacobs 1965; Chayamarit 1991; Ban & Dorofeev 2003). In Ninh Thuan Province collected in a deforested area on poor, sandy soil (*Poilane 5859*)

Phenology

Flowering December–April (Chayamarit 1991). Based on Ho (1999) in Vietnam flowering in February–March, fruiting in March–September, but in Khanh Hoa Province flowering material was collected in May (*Hayata 452*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). No threats are reported for the populations of the species in the study area.

Vernacular names

‘Cáp vàng’, ‘Pola sahat’ (Ban & Dorofeev 2003).

Uses

Fresh flowers are used as vegetables, while leaves are used to increase milk secretion (Ban & Dorofeev 2003).

Capparis floribunda Wight

Fig. 14

Capparis floribunda Wight (Wight 1840: 35, t. 14).

Capparis oligandra Griff. (Griffith 1854: 577). – **Type**: MYANMAR • Mergui; *Griffith 1103*; lectotype: K, designated by Jacobs (1965: 453).

Capparis oligostema Hayata (Hayata 1913: 22). – **Type**: TAIWAN • Koshun, Kuraru; 30 May 1912; *Hayata s.n.*; lectotype: TI n.v., designated by Jacobs (1965: 453); isolectotype: L [L0035325].

Type material

INDIA • Peninsula Ind. orientalis; *Wight 2439*; lectotype: K [K000247308], designated by Fici *et al.* (2022: 3); isolectotypes: K [K000247309], E [E00179031], NY [NY00387644].

Fig. 14. Illustration of *Capparis floribunda* Wight. **1**. Flowering branch. **2**. Flower. **3**. Section of ovary. **4**. Anther. **5**. Fruits. **6**. Section of fruit. **7**. Seed. **8**. Section of seed. **9**. Section of embryo. (From Wight 1840.)

Other material examined

VIETNAM – **Gia Lai Province** • An Khe; 9 Aug. 1930; *Poilane 17970*; P [P05456839]. – **Khanh Hoa Province** • Village Moi, Ile Tre près de Nhatrang; 19 Apr. 1922; *Poilane 3060*; P [P05456837, P04747035)] • Nha-Trang and vicinity; 11–26 Mar. 1911; *Robinson 1227*; P [P05456841], NY [04746939] • Nha-Trang and vicinity; 11–26 Mar. 1911; *Robinson 1138*; P [P05456836], NY [NY04746940]. – **Ninh Thuan Province** • Ninh Hai District, Vinh Hai Commune; 5 Jul. 2012; *Bach et al. PTV 1073*; HN • Ninh Hai District, Vinh Hai Commune; near 11°42′41″ N, 109°11′30″ E; 25 Jul. 2011; *Bach et al. VK 3913*; HN, KRIB.

Description

Shrubs or climbers up to ca 4 m tall. Twigs glabrous, rarely puberulous. Stipular thorns mostly lacking, when present recurved, small. Petiole 0.5–1.5(–2) cm long. Leaf blade herbaceous, ca 2.5–3 times as long as wide, widest at the middle or below, (3–)5–10(–13) × (1.5–)2–4(–6) cm; base rounded or acute, top obtuse or rounded, often mucronate; surfaces glabrous; nerves 7–9 pairs. Flowers in subumbels constituting a panicle up to 15 cm long; pedicels 0.8–1.2 cm long; sepals 2–4 × 1.5–2.5 mm, glabrous; petals white, oblong or ovate, 3–5 × 1.5–2 mm, glabrous; stamens 7–9(–12), with filaments 8–10 mm long; gynophore 4–6 mm long, glabrous; ovary ovoid, 0.7–1.5(–2) × 1 mm, glabrous. Fruit globose, 1–2(–2.5) cm in diameter.

Distribution and ecology

India (including Andaman Islands), Sri Lanka, Myanmar, Thailand, Taiwan, Vietnam, Philippines, Indonesia (Jacobs 1965). In Vietnam recorded from Binh Dinh and Khanh Hoa provinces by Ban & Dorofeev (2003). During the present research also collections from Gia Lai and Ninh Thuan provinces were examined. Evergreen forests, often on rocky soil, up to 1600 m elevation (Jacobs 1965; Ho 1999; Ban & Dorofeev 2003). In Khanh Hoa Province collected on clayey-rocky soil at 200 m a.s.l. (*Poilane 3060*).

Phenology

Based on Ho (1999) flowering in February–March in Vietnam, but flowering material was collected in April in Khanh Hoa Province (*Poilane 3060*); fruiting material was collected in August in Gia Lai Province (*Poilane 17970*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). Based on the available data, no risks were detected for the populations of the species known from the study area.

Vernacular name

‘Cáp nhiều hoa’ (Ban & Dorofeev 2003).

Uses

The fruits are reported as edible in the label of *Poilane 17970.*

Capparis gialaiensis Sy
Fig. 15

Capparis gialaiensis Sy (Sy *et al.* 2015: 219).

Type material

VIETNAM – **Gia Lai Province** • K’Bang District, Son Lang Commune; 23 May 2013; *T.T. Bach et al. VK 5402*; holotype: HN; isotype: KRIB.

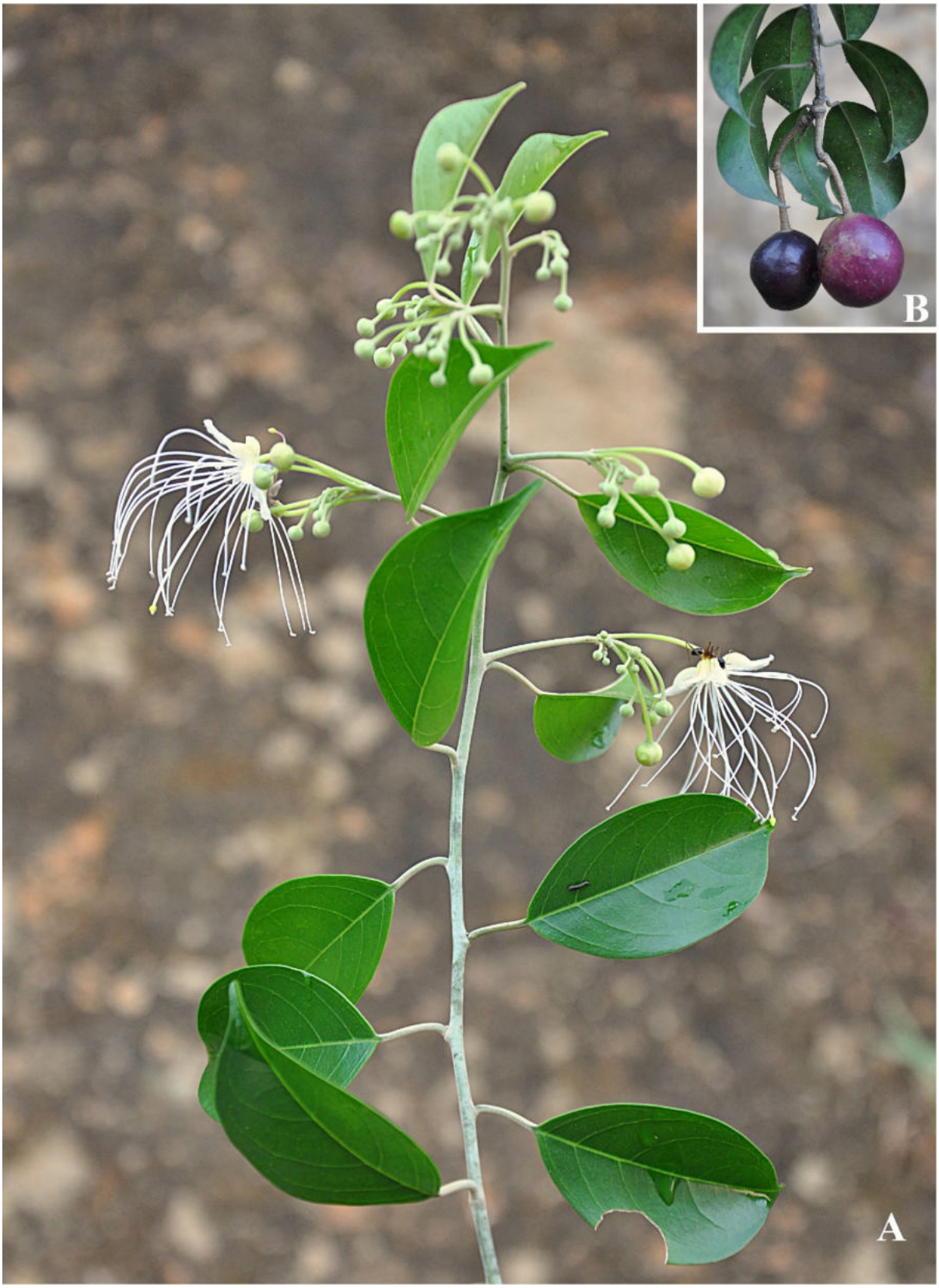

Fig. 15. *Capparis gialaiensis* Sy. **A**. Flowering branch. **B**. Fruits (Gia Lai Province, *T.T. Bach et al. Thuong 60*). Photos by Danh T. Sy.

Other material examined

VIETNAM – **Gia Lai Province** • K'Bang district, Son Lang commune; 23 May 2013; *T.T. Bach et al. Thuong 60*; HN • K'Bang district, Son Lang commune; 19 Nov. 2013; *T.T. Bach et al. Quang* 68; HN.

Description

Shrubs up to 10 m high. Twigs pubescent. Stipular thorns recurved, 0.5–1 mm long. Petiole 1.2–1.5 cm long, hairy. Leaf blade subcoriaceous, ca 1.5–2 times as long as wide times as long as wide, 5–5.5 × 3–3.5 cm, widest at or below the middle; base rounded or acute, top acuminate, tip ca 0.5 cm long; upper surface hairy on the nerves, lower surface glabrous, nerves 3–5 pairs. Flowers in terminal or axillary corymbs; pedicels 1.5–1.6 cm long, hairy; sepals 6–6.5 × 3–3.5 mm, pubescent outside, glabrous inside; petals white, oblong, 12–13 ×4–5 mm, hairy on the surfaces and margins; stamens 21–22, with filaments 3.7–4 cm long; gynophore 3–3.5 cm long, glabrous; ovary ellipsoid, ca 2 × 1 mm, glabrous. Fruit globose, 3.5–3.8 cm in diameter.

Distribution and ecology

Vietnam. Known from two locations of the Gia Lai Province, at 14°20′44.8″ N, 108°34′46.7″ E and 14°21′02.1″ N, 108°33′00.9″ E. Basaltic soil in open, secondary forest, at 810–910 m elevation (Sy *et al.* 2015).

Phenology

Flowering in May–July, fruiting in May–November.

Provisional conservation status

Capparis gialaiensis is so far known from two close locations, where few individuals were observed. Sy *et al.* (2015) underlined that the population could be easily affected by human activities. Following the *IUCN Red List Categories and Criteria* (IUCN 2012), the species is assessed as Vulnerable (VU D2).

Capparis grandis L.f.
Fig. 16

Capparis grandis L.f. (Linné 1782: 263).

Capparis maxima Roth (Roth 1821: 237). – **Type**: INDIA • India orientalis; *B. Heine 6995*; lectotype: K [K001126530], designated by Jacobs (1965: 456).

Capparis obovata Buch.-Ham. ex DC. (Candolle 1824: 248). – **Type**: INDIA • Mysore; *F. Buchanan-Hamilton s.n.*; lectotype: BM [BM000629304], designated by Jacobs (1965: 456).

Type material

INDIA • s.loc.; *König s.n.*; lectotype: C [C10009043], designated by Maurya *et al.* (2021: 126).

Other material examined

VIETNAM – **An Giang Province** • Austro-Cochinchina, in montibus Day ad Chaudoc; Dec. 1867; *Pierre 4064*; P [P05456847, P05456900, P05456904], K [K005755301], L [L1855554]. – **Ninh Thuan Province** • Annam, Ba-Rau; 16 Dec. 1923; *Poilane 9149*; P [P05456855] • Annam, Ka Rom; 24 Mar. 1924; *Poilane 9866*; P [P05456857, P05456865] • Annam, Cana; 25 Oct. 1925; *Poilane 12497*; P [P05456853], VNM • Ninh Son District, Lam Son Commune, 11°50′06″ N, 108°40′28″ E; 28 Jul. 2010; *Bach et al.* VK *3944*; HN, KRIB • Ninh Son District, Tra Giang Commune; 4 Aug. 2012; *Bach et al. PTV 1070*; HN.

Fig. 16. Fruiting branch of *Capparis grandis* L.f. (Ninh Thuan Province, *Bach et al. PTV 1070*). Photo by Danh T. Sy.

Description

Trees up to 12 m tall. Twigs densely fulvous or greyish-pubescent. Stipular thorns 3–9 mm long, recurved, often lacking. Petiole (6–)7–11(–14) mm long. Leaf blade herbaceous or subcoriaceous, 1–2(–2.6) times as long as wide, (3–)4–9(–10.5) × (2–)3–5(–6.5) cm, widest mostly at the middle, in some cases above or below; base acute or cuneate, top acute, obtuse or rounded, sometimes mucronate; nerves 5–11(–12) pairs; upper surface mostly glabrescent, lower pubescent. Flowers conferted terminally or in axillary subumbels, rarely the flowers solitary; pedicels (0.7–)1.1–2(–3) cm long, pubescent; sepals ca 6–8(–9) × (3–)4–7 mm, sparsely pubescent or glabrous, ciliate at margins; petals white, obovate, 8–13 × 3–4 mm, glabrous or puberulous; stamens ca (20–)30–50(–70), with filaments ca 1.3–1.7 cm long; gynophore 1–3 cm long, hairy at the base; ovary ovoid, 1.5–2 × 1–1.5 mm, glabrous. Fruit globose, (1–)2.5–3.5 cm in diameter.

Distribution and ecology

India, Sri Lanka, Myanmar, Thailand, Vietnam (Jacobs 1965). In the study area recorded by Ban & Dorofeev (2003) in Lam Dong, Ninh Thuan and An Giang provinces. In forests and grasslands, often on rocky soil below 1000 m a.s.l. (Jacobs 1965). In Vietnam reported by Ho (1999) up to 800 m a.s.l. Collected in forest on rocky soil in Ninh Thuan Province at 300 m a.s.l. (*Poilane 9866*) and 600 m a.s.l. (*Poilane 9149*).

Phenology

Jacobs (1965) stated that the species seems to be fertile throughout the year. Based on Ban & Dorofeev (2003) in Vietnam flowering in May–June, fruiting in August–October, but fruiting material was collected in Ninh Thuan Province in March (*Poilane 9866*) and December (*Poilane 9149*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). Based on the available data, no risks were detected for the populations of the species known from the study area.

Vernacular name

'Cáp to' (Ban & Dorofeev 2003).

Uses

The bark is used to produce incense. Infusions of the bark and leaves are used to treat oedemas and skin rashes (Ban & Dorofeev 2003). Infusion of leaves is also reported to treat diarrhoea (*Poilane* 12497).

Capparis kbangensis Sy & D.V.Hai
Fig. 17

Capparis kbangensis Sy & D.V.Hai (Sy *et al.* 2020: 84).

Type material

VIETNAM – **Gia Lai Province** • K'Bang District; 7 Apr. 2018; *Sy Danh Thuong, Do Van Hai, Thuong 0704201801*; holotype: HN; isotype: IBSC.

Other material examined

VIETNAM – **Gia Lai Province** • K'Bang District; 11 Mar. 2011; *T.T. Bach et al. PTV 698*; HN • K'Bang District; 28 Apr. 2017; *D. V. Hai, Hai* 28042017; HN.

Description

Shrubs up to 5 m high. Twigs pubescent, later glabrous. Stipular thorns recurved, ca 3 mm long. Petiole 6–8 mm long, pubescent. Leaf blade subcoriaceous, ca 1.7–2.2 times as long as wide, 4.5–6 × 2.8–3.2 cm, widest mostly above, in some cases at the middle; base rounded or cuneate, top emarginate; surfaces glabrous; nerves 6–7 pairs. Flowers in terminal corymbs or lateral racemes, in some cases the lower flowers axillary, solitary; pedicels 1.5–1.7 cm long, glabrous; sepals 9–10 × 4–5 mm, outer pair hairy at the margins, inner pair hairy inside and at the margins; petals white, obovate, 16–18 × 7–10 cm, pubescent, especially at the base; stamens 57–60, with filaments 3–3.5 cm long; gynophore 3.8–4.2 cm long, glabrous; ovary elliptical, 2 × 1 m, beaked, glabrous. Fruit globose, 1.8–1.9 cm in diam.

Distribution and ecology

Vietnam. *Capparis kbangensis* is so far known from two close locations in Gia Lai Province, at 14°11′44.0″ N, 108°35′40.9″ E and 14°12′16.0″ N, 108°36′18.5″ E. The species has been collected in forest margins and along roadsides, on basaltic soil, at 626–630 m a.s.l. (Sy *et al.* 2020).

Phenology

Flowering March–April, fruiting April–August.

Fig. 17. Flowering branch of *Capparis kbangensis* Sy & D.V.Hai (Gia Lai Province, *D. V. Hai, Hai 28042017*). Photo by Danh T. Sy.

Provisional conservation status

Sy *et al.* (2020) reported that only 12 individuals of *Capparis kbangensis* were observed in habitats affected by anthropic activities, underlining that further surveys are needed to find additional populations. The same authors (Sy *et al.* 2020) assessed the species as Critically Endangered (CR) or Data deficient (DD), according to the *IUCN Red List Categories and Criteria* (IUCN 2012).

Capparis khuamak Gagnep.

Capparis khuamak Gagnep. (Gagnepain 1938: 598).

Capparis trichopoda B.S.Sun (Sun 1964: 116). – **Type**: China – **Yunnan** • Ping-Bing [Pingbian] Hsien; 17 May 1954; *P.Y. Mao 4316*; holotype: KUN [KUN0494238].

Type material

LAOS – **Houaphanh Province** • Sam-Neua [Xam Neua]; 8 Oct. 1920; *Poilane 2005*; holotype: P [P04022035]; isotype: L [L0035330].

Other material examined

VIETNAM – **Kon Tum Province** • Village de Tou-Morang; 10 Mar. 1941; *Poilane 32237*; L [L1855479], P [P04747256], VNM • Nord de la province du Kon Tum près du village Moi de Tu-Inh; 6 Mar. 1941; *Poilane 32085*; L [L1855478], P [P04747230], VNM • NW slope of Ngoc Linh mountain system on elevation to Ngoc Gua peak; 9 Apr. 1995; *Averyanov et al. VH 1231*; HN, P [P05454046].

Description

Shrubs or climbers up to 15 m long. Twigs pubescent, later glabrescent. Stipular thorns recurved, up to 3 mm long, or lacking. Petiole (5–)8–18 mm long, tomentose. Leaf blade subcoriaceous, (1.9–)2.2–3 times as long as wide, widest at the middle or above, (4.7–)5.5–10(–11) × (1.7–)2–3.5(–4.5) cm; base acute or rounded, top acute, obtuse or notched, often mucronulate; surfaces glabrous; nerves 5–9 pairs. Flowers conferted in the terminal part of the branches or at the top of lateral twigs; pedicels 1.7–4 cm long, tomentose; sepals 6.5–8 × 3.5–4.5 mm, puberulous outside; petals white, obovate or oblong, ca 6–9(–12) × 3–3.5(–4) mm, pubescent inside at the base; stamens ca 20–28, with filaments 2–2.5 cm long; gynophore 2.3–3.5 cm long, glabrous; ovary ellipsoid or ovoid, ca 1.7 × 1.3 mm, glabrous. Fruit globose, (2.5–)3–4(–6) cm in diameter.

Distribution and ecology

China, Laos, Vietnam (Zhang & Tucker 2008). The species was not reported in Vietnam by Ho (1999), while it was later recorded from Kon Tum Province by Ban & Dorofeev (2003). Forests and wet areas on loamy and clayey soils (Fici 2023). In Kon Tum Province collected at 1000 m a.s.l. (*Poilane 32237*) and in evergreen primary forest at 1800–1900 m a.s.l. (*Averyanov et al. VH 1231*).

Phenology

In Vietnam flowering material was collected in March (*Poilane 32237* & *32085*) and April (*Averyanov et al. VH 1231*).

Provisional conservation status

In the study area the species has been collected in a few locations of the Kon Tum Province. Due to the scanty information available, it is assessed as Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Vernacular name

'Khua mật' (Ban & Dorofeev 2003).

Uses

The fruits are reported as soft and edible (Jacobs 1965).

Capparis koioides M.Jacobs

Capparis koioides M.Jacobs (Jacobs 1965: 459).

Type material

VIETNAM – **Khanh Hoa Province** • Massif du Hon Ba; 25 Aug. 1918; *Chevalier 38761*; lectotype: P [P05453686], designated by Fici *et al.* (2022: 4); isolectotype: P [P05453685].

Other material examined

VIETNAM – **Khanh Hoa Province** • Khanh Vinh District, Son Thai Commune; 12°14′56″ N, 108°48′28″ E; 30 Jul. 2010; *Bach et al. VK 3980*; HN, KRIB • Dien Khanh District, Hon Ba Nature Reserve; 12 Apr. 2012; *Bach et al. Thuong 34*; HN.

Description

Climbers. Twigs early glabrescent. Stipular thorns recurved, up to ca 4 mm long. Petiole 6–8 mm long. Leaf blade subcoriaceous, ca 8.5–12.5 × 3–4.2 cm, base acute or obtuse, top acuminate, with tip ca 1 cm long; surfaces glabrous; nerves 8–9 pairs. Flowers solitary, axillary in the terminal part of twigs, or in subumbels on short lateral twigs; pedicels 2.5–3.2 cm long, glabrescent; sepals ovate, ca 16 × 7 mm, glabrous; petals white, 20–27 × 15–17 mm, pubescent at the base; stamens ca 85–100, with filaments ca 3 cm long; gynophore 4–5 cm long, glabrous; ovary ellipsoid or ovoid, ca 4 × 2 mm, glabrous. Fruit unknown.

Distribution and ecology

Thailand, Vietnam (Jacobs 1965). In the study area recorded by Ban & Dorofeev (2003) from Khanh Hoa Province. Forests up to ca 1000 m a.s.l. (Jacobs 1965).

Phenology

Flowering June–August (Ban & Dorofeev 2003).

Provisional conservation status

In the study area the species has been collected in a few locations of the Khanh Hoa Province. Due to the scanty information available, it is assessed as Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Vernacular name

'Cáp coi' (Ban & Dorofeev 2003).

Taxonomic remarks

When describing *Capparis koioides*, Jacobs (1965) underlined its relationships with *C. versicolor* Griff., which differs in the smaller leaves, thinner pedicels, smaller sepals, thinner and shorter gynophore and lower number of stamens. Later Chayamarit (1991), in her treatment of the genus *Capparis* in *Flora*

of Thailand, included *C. koioides* among the synonyms of *C. versicolor*, while Ho (1999) and Ban & Dorofeev (2003) considered these as separate species.

Capparis longestipitata Heine
Fig. 18

Capparis longestipitata Heine (Heine 1953: 210).

Type material

MALAYSIA • North Borneo, Mt. Kinabalu, Tenompok; 7 Jun. 1932; *J. & M.S. Clemens 29812*; holotype: M n.v.; isotypes: A [A00042279], BM [BM000541238], L [L0035337], NY [NY00387658].

Other material examined

VIETNAM – **Khanh Hoa Province** • Massif du Hon Ba; 20–22 Sep. 1918; *Chevalier 38671*; P [P05453683, P05453684].

Description

Shrubs. Twigs puberulous, later glabrescent. Stipular thorns recurved, 2–4 mm long, or lacking. Petiole 0.8–1.2 cm long, puberulous. Leaf blades herbaceous, ca 2.2–2.6 times as long as wide, 5–7.1 × 2.4–3.5 cm, base rounded, top acuminate, with tip up to 1.5 cm long; nerves (4–)5–7 pairs; surfaces glabrous, in some cases the midrib puberulous below. Flowers in subumbels at the axil of the upper leaves or terminal, constituting a panicle with leaves in the lower part; pedicels 8–18 mm long; sepals 3–5.5 × 3–4.5 mm, the outer pair densely puberulous outside; petals white, 4–6 × (2–)3–3.9 mm, glabrous or pubescent; stamens 18–30, with filaments (0.7–)1.5–2.1 cm long; gynophore 2–3 cm long, glabrous; ovary subovoid or ellipsoid, ca 1.5–2 × 0.9–1.2 mm, beaked, glabrous. Fruit not known at mature stage.

Distribution and ecology

Vietnam, Malaysia (Borneo). In Vietnam recorded from Khanh Hoa Province by Ban & Dorofeev (2003). Forests, at 1000–1500 m a.s.l. (Jacobs 1965); in Vietnam collected at 1000 m a.s.l. (*Chevalier 38671*).

Phenology

The single collection of the species from Vietnam (*Chevalier 38671*) is represented by two duplicates collected in September, one including a flowering branch, the other a fruiting branch.

Provisional conservation status

In the study area the species has been collected in a single location. Due to the scanty information available, it is assessed as Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Vernacular name

‘Cáp cọng dài’ (Ho 1999).

Taxonomic remarks

Jacobs (1965) recorded this species from both sides of the South China Sea, in south-eastern Annam and northern Borneo. Based on the same author (Jacobs 1965), *Capparis longestipitata* is related to both *C. cantoniensis* Lour. and *C. lanceolaris* DC., differing from the former species in the longer gynophore and the midrib sunken only in the basal part, and from the second one in the smaller flowers.

Fig. 18. Illustration of *Capparis longestipitata* Heine. Flowering branch. (From Jacobs 1965.)

Capparis micracantha DC.

Capparis micracantha DC. (Candolle 1824: 247).

Description

Trees, shrubs or climbers up to ca 10 m tall. Twigs firstly pubescent or puberulous, later glabrous, with cataphylls at the base. Stipular thorns 1–7 mm long, straight or slightly recurved. Petiole 0.6–2(–2.2) cm long. Leaf blade coriaceous or subcoriaceous, 8–24(–32.5) × 3.7–10(–12.5) cm, widest at the middle, sometimes below the middle or rarely above; base rounded, obtuse, acute or subcordate, top rounded, obtuse, acute, slightly emarginate or acuminate, often with rigid mucro; surfaces glabrous; nerves 5–8(–10) pairs. Flowers serial, up to 7 in supra-axillary rows; pedicels 7–13(–21) mm long; sepals acute, 4–13 × 1.5–5.5 mm; petals white, 10–25(–33) × 3–7(–9) mm; stamens 12–100, with filaments (1.5–)1.8–3(–3.3) cm long; gynophore 1.5–3(–3.5) cm long; ovary ovoid, globose or ellipsoid, 2–3 × 1–2 mm. Fruit globose, subglobose or oblong, 2.2–10(–17) × 2–4.5 cm.

Distribution

India (Andaman Islands), China, Taiwan, Myanmar, Thailand, Malaysia, Laos, Cambodia, Vietnam, Singapore, Indonesia, Philippines.

Taxonomic remarks

Capparis micracantha is a polymorphic species known from several areas of southern Asia, Indonesia and the Philippines. Jacobs (1965) split it into two subspecies, i.e., subsp. *micracantha*, characterized by mostly obtuse sepals, 12–35(–75) stamens and globose or subglobose fruit, and subsp. *korthalsiana* (Miq.) M.Jacobs, distinguished by acute to acuminate sepals, a higher number of stamens (60–100) and oblong fruit. Both subspecies are known from Vietnam, with subsp. *micracantha* here represented by two varieties, i.e., var. *micracantha* and var. *henryi* (Matsum.) M.Jacobs.

Key to the subspecies of *Capparis micracantha*

1. Stamens 12–35(–75); fruit globose or subglobose .....subsp. ***micracantha*** DC.
– Stamens 60–100; fruit oblong .....subsp. ***korthalsiana*** (Miq.) M.Jacobs

Capparis micracantha subsp. ***micracantha*** DC.

Description

Trees or shrubs up to ca 10 m tall, rarely climbers. Twigs firstly pubescent or puberulous, later glabrous. Stipular thorns 2–7 mm long, straight or slightly recurved. Petiole 0.6–1(–1.5) cm long. Leaf blade coriaceous or subcoriaceous 1.6–2.9(–4.1) times as long as wide, 8–24(–32.5) × 3.7–10(–12.5) cm; base rounded, obtuse, acute or subcordate, top rounded, obtuse or acute, sometimes subemarginate, often with rigid mucro 1–3 mm long; surfaces glabrous; nerves 5–7(–10) pairs. Flowers up to 7 in supra-axillary rows; pedicels 7–10(–20) mm long; sepals ovate to oblong, mostly obtuse, (4–)5.5–10(–13) × 1.5–4(–5.5) mm, glabrous or pubescent outside and at margins; petals white, oblong, lanceolate, linear or narrowly spathulate, 10–25(–33) × 3–7(–9) mm, glabrous or puberulous outside and at margins, the upper pair with yellow honey-guide, in some cases turning red or violet; stamens 12–35(–75), with filaments (1.5–)2–3(–3.3) cm long; gynophore (1.5–)1.8–3(–3.5) cm long, glabrous; ovary ovoid or ellipsoid, 2.5–3 × 1.5–2 mm, glabrous. Fruit globose or subglobose, (2.2–)3–6.5(–7) × (2–)3–4.5 cm.

Distribution

India (Andaman Islands), Myanmar, China, Taiwan, Vietnam, Laos, Cambodia, Thailand, Malaysia, Indonesia, Philippines.

Key to the varieties of *Capparis micracantha* subsp. *micracantha* in Vietnam

1. Stamens more than (16–)20 ..... var. ***micracantha*** DC.
– Stamens 12–16 ..... var. ***henryi*** (Matsum.) M.Jacobs

Capparis micracantha subsp. ***micracantha*** var. ***micracantha*** DC.
Fig. 19

Capparis billardierei DC. (Candolle 1824: 247). – **Type**: INDONESIA • In ins. Moluccanis ad fretum Bouton; *Labillardière s.n. hb. Desfontaines*; lectotype: P, designated by Jacobs (1965: 467); isolectotype: M [M0241014] n.v.

Capparis callosa Blume (Blume 1825: 53). – **Type**: INDONESIA • Java, Linga Jattie [Linggadjati]; *Blume 1560*; lectotype: L [L2066780], designated by Fici (2023: 22); isolectotype: L [L2066344]).

Capparis roydsiifolia Kurz (Kurz 1870: 62). – **Type**: THAILAND • Siam; *Teijsmann HB*; lectotype: BO n.v., designated by Jacobs (1965: 467).

Capparis forsteniana Miq. (Miquel 1870: 32). – **Type**: INDONESIA • NE. Celebes [Sulawesi], Belang; Oct. 1840; *Forsten 324*; lectotype: L [L0035342], designated by Jacobs (1965: 467).

Capparis hainanensis Oliv. (Oliver 1887: t. 1588). – **Type**: CHINA • Hainan; *B.C. Henry 7*; lectotype: K [K000380495], designated by Jacobs (1965: 467).

Capparis myrioneura Hallier f. (Hallier 1906: 60). – **Type**: INDONESIA • Celebes [Sulawesi], Menado; *Teijsmann 5773*; lectotype: BO n.v., designated by Jacobs (1965: 467).

Capparis bariensis Pierre ex Gagnep. (Gagnepain 1908a: 209). – **Type**: VIETNAM • In montibus Dinh ad Baria austro-Cochinchinae; Mar. 1867; *Pierre 38*; lectotype: P [P04022045], designated by Fici 2023: 22; isolectotypes: P [P04022044], A [A00042265], K [K000643977, K000643978], L [L0035339, L0035340, L0035341], LE [LE00013153], NY [NY00387641, NY00387642].

Capparis donnaiensis Pierre ex Gagnep. (Gagnepain 1908a: 211). – **Type**: VIETNAM • Ad Ton Man in prov. Bien Hoa, austro Cochinchinae; Mar. 1877; *Pierre 4012*; lectotype P: [P04022050], designated by Fici (2023: 22); isolectotypes: P [P04022048, P04022049, P04022051], K [K000643976].

Capparis venosa Merr. (Merrill 1915: 305). – **Type**: PHILIPPINES • Mindanao, District of Cotabato, near Lebak; Apr. 1912; *Whitford FB 14216*; lectotype: PNH? n.v., designated by Jacobs (1965: 467).

Capparis liangii Merr. & Chun (Merril & Chun 1934: 29). – **Type**: CHINA • Hainan, Poting, Lingshin; 24 Apr. 1932; *Ko 52177*; lectotype: NY [NY00387648], designated by Fici (2023: 22); isolectotypes: A [A00042258], K [K000380494], P [P04022052].

Capparis petelotii Merr. (Merrill 1942: 166). – **Type**: VIETNAM • Tonkin, Mont Bani; 2 Jul. 1940; *Pételot 2618*; lectotype: A [A00042272], designated by Jacobs (1965: 468).

Type material

INDONESIA • Java; *Lahaye s.n.*; lectotype: G-DC [G00203273], designated by Jacobs (1965: 467) as the holotype.

Other material examined

VIETNAM – **An Giang Province** • Chau Doc Town, Nui Sam Mountain; 30 Jul. 2012; *Bach et al. Thuong 33*; HN • Chau Doc Town, Nui Sam Mountain; *Bach et al. PTV 608*; HN. – **Bac Kan Province** • Ba Be District, Nam Mau Municipality, Ba Be National Park, Fairy Lake; ca 22°26.825′ N, 105°37.028′ E; 12 Jul. 2004; *Atha et al. 4734*; HN, NY [NY04747002]. – **Ba Ria-Vung Tau Province** • In montibus Dinh ad Baria austro-Cochinchinae; Mar. 1867; *Pierre 38*; P [P04022044, P04022045, P04022046, P04022047], A [A00042265], K [K000643977, K000643978], L [L0035339, L0035340, L0035341], LE [LE00013153], NY [NY00387641, NY00387642] • Vungtau-Contao, Con Dao; 8°40′ N, 106°35′ E; 2 Apr. 1987; *Averyanov & Kudryavtzeva 704*; LE [LE01077302, LE01077330] • Con Dao District; 2 Apr. 1975; *Ban 704*; HN. – **Binh Thuan Province** • Ham Thuan Nam District, Ta Kou Nature Reserve; 21°41′19.2″ N, 106°21′15.1″ E; 17 Jan. 2010; *Bach et al. VK 3412*; HN, KRIB • Ham Thuan Nam District, My Thanh Commune; 11°06′09″ N, 107°54′31″ E; 11 Apr. 2010; *Bach et al. VK 3714*; HN, KRIB. – **Dak Lak Province** • Krong Pak District; 1 Jun. 1979; *Phuong 1060*; HN • Ea Sup District, Krong Na Commune; 31 Mar. 1987; *Hiep 313*; HN • Ea Sup District; Apr. 1987; *Hiep 360*; HN • Buon Don District, Krong Na municipality, Yok Don National Park, Yok Don Ridge; around point 12°51′12″ N, 107°41′18″ E; 18 Mar. 2008; *Hiep et al. HLF 7145*; LE [LE01077284] • Buon Don District, Krong Na municipality, Yok Don National Park, Yok Don Ridge; around point 12°51′36″ N, 107°42′22″ E; 20 Mar. 2008; *Hiep et al. HLF 7252*; LE [LE01077286] • Buon Don District, Krong Na municipality, Yok Don National Park; around point 12°51′27″ N, 107°41′52″ E; 23 Mar. 2008; *Hiep et al. HLF 7323*; LE [LE01077285] • Buon Don District, Krong Na Commune; 12°54′58″ N, 107°44′56″ E; 23 Mar. 2010; *Bach et al. VK 3522*; HN, KRIB • Buon Don District, Yok Don National Park; 10 Apr. 2010; *Bach et al. Thuong 52*; HN. – **Dak Nong Province** • Krong No District, Quang Phu Commune; 13 May 1979; *Tan 15*; HN. – **Dong Nai Province** • Ad Ton Man; Mar. 1877; *Pierre 4012*; P [P04022050, P04022048, P04022049, P04022051], K [K000643976] • Ad Tri Huyen; Mar. 1873, *Pierre 1325*; P [P05462589, P05462591], K [K000643975]. – **Gia Lai Province** • K'Bang District, So Pai Commune; 9 Mar. 2011; *Bach et al. PTV 696*; HN • Ayun Pa Town; 13 Aug. 2011; *Bach et al. Thuong 03*; HN. – **Ho Chi Minh City** • A 10 km du Cap, route de Saigon; 21 Oct. 1920; *Evrard 125*; P [P05462582],VNM. – **Hoa Binh Province** • Mont Bavi [Ba Vi]; 2 Jun. 1918; *Chevalier 37778*; P [P05462539, P05462542]. – **Khanh Hoa Province** • Nha-Trang and vicinity; 11–26 Mar. 1911; *Robinson 1237*; P [P05462566], K [K005755225], NY [NY04747012] • Ba Ngoi; 29 Jun. 1919; *Poilane 130*; P [P05462541] • Kilo 26 route de Nhatrang à Ninh Hoa; 11 Oct. 1923; *Poilane 8156*; P [P05462620], VNM • Ile Tre [Hon Tre] près Nhatrang; 31 Mar. 1922; *Poilane 2890*; P [P05462634], VNM • Cam Ranh City District, Cam Lam Commune; 2 Jul. 2012; *Bach et al. Thuong 29*; HN • Cam Ranh City District, My Thanh Commune; 25 Jul. 2010; *Bach et al. PTV 431*; HN. – **Kien Giang Province** • Ha Tien Town; 21 Jun. 2005; *Phuong 10214*; HN • Kien Luong District, Hon Chong Commune; 13 Jan. 2011; *Bach et al. PTV 625*; HN. – **Lang Son Province** • Huu Lung District; 23 Mar. 1960; *Nguyen Dang Ngoi & Vo Van Chi 0528*; HNU • Chi Lang District; 17 May 1974; *Nguyen Dang Khoi 1759*; HN • Huu Lung District, Huu Lien Nature Reserve; 21°41′19.2″ N, 106°21′15.1″ E; 1 Dec. 2007; *Khoi et al. VK 1745*; HN, KRIB. – **Ninh Binh Province** • Nho Quan District, Cuc Phuong National Park (Ao Luon); 11 Aug.1970; *Khien Q140*; HN. – **Ninh Thuan Province** • Ca-Na, pro: Phanrang; 31 Mar. 1923; *Poilane 5895*; P [P05462559, P05462560], K [K005755224] • Vinh Hai District, Ninh Hai Commune; 11°41′40″ N, 109°10′34″ E; 21 Mar. 2004; *Huong et al. HLF 3248*; HN. – **Phu Yen Province** • Son Hoa District, Suoi Da Commune; 4 Apr. 2010; *Bach et al. Thuong 01*; HN. – **Quang Binh Province** • Minh Hoa District, 72 km NWW of Dong Hoi, Thong Hoa municipality, vicinities of Yen Son village, limestone massif Ke Bang; 17°40′ N, 105°57′ E; 18 May 1997; *Averyanov*

et al. VH 4800; LE [LE01077269, LE01077270]. – **Thanh Hoa Province** • Thach Thanh District, Thach Lan Commune; 11 Jun. 1971; *Vu Van Dung Q140*; HN.

Description

Small trees, shrubs or climbers, up to ca 10 m tall. Stipular thorns 2–4(–7) mm long. Petiole 0.6–1(–1.5) cm long. Leaf blade 8–24(–32.5) × 4–10(–12.5) cm; top rounded, obtuse or acute, sometimes submarginate; nerves 5–7(–10) pairs. Flowers 2–7 in supra-axillary rows; pedicels 7–10(–20) mm long; sepals (4–)5.5–10(–13) × (2–)2.5–4(–5.5) mm; petals 10–25(–33) × 3–7(–9) mm; stamens (16–)20–35(–75), with filaments (1.5–)1.8–3(–3.3) cm long; gynophore (1.5–)2–3(–3.5) cm long; ovary ovoid or ellipsoid, 2.5–3 × 1.5–2 mm. Fruit globose or subglobose, (2.2–)3–6.5(–7) × (2–)3–4.5 cm.

Distribution and ecology

India (Andaman Islands), China, Myanmar, Malaysia, Thailand, Laos, Cambodia, Vietnam, Indonesia, Philippines (Jacobs 1965). In Vietnam reported by Ban & Dorofeev (2003) in Bac Kan, Ha Tay, Quang Tri, Thua Thien-Hue, Khanh Hoa, Gia Lai, Ninh Thuan, Dong Nai, Ba Ria-Vung Tau, Ho Chi Minh and An Giang provinces. During the present research also material from Lang Son, Hoa Binh, Quang Binh, Thanh Hoa, Kien Giang, Dak Lak, Ninh Binh, Binh Thuan, Dak Nong and Phu Yen provinces has been examined. Forests, open thickets, savannahs, hedges, often on limestone at low elevations, but recorded up to 2000 m a.s.l. (Jacobs 1965; Chayamarit 1991; Zhang & Tucker 2008; Fici 2023). In Quang Binh Province collected in open evergreen primary broadleaved forest along river in alluvial valley, at 200 m a.s.l. (*Averyanov et al. VH 4800*), in Dak Lak Province in primary dry evergreen forest on thin grey soil derived from sandstone, at 300–350 m a.s.l. (*Hiep et al. HLF 7145*) and in open dry semi-deciduous *Dipterocarpus* forest on thin ferralitic grey soil at about 200 m a.s.l. (*Hiep et al. HLF 7323*).

Fig. 19. Flowering branch of *Capparis micracantha* var. *micracantha* DC. (Gia Lai Province, *Bach et al. Thuong 03*). Photo by Danh T. Sy.

Phenology

Flowering throughout the year (Fici 2023). In Khanh Hoa Province fruiting material collected in June (*Poilane 130*), in Bac Kan Province in July (*Atha et al. 4734*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). This variety is widespread in the study area, where it occurs under various ecological conditions.

Vernacular names

'Cáp gai nhỏ', 'Bùng chè', 'Mắm gai' (Ban & Dorofeev 2003).

Uses

Based on Ban & Dorofeev (2003), the ripe fruits can be eaten. The roots have diuretic and anti-inflammatory properties and are also used to treat menstrual disorders. In addition, powdered wood is smoked to treat bronchitis and inflammation of the nasal mucosa. The plant is further used to treat asthma and heart attacks, while roasted seeds are used to treat coughs.

Capparis micracantha subsp. ***micracantha*** var. ***henryi*** (Matsum.) M.Jacobs

Capparis micracantha subsp. *micracantha* var. *henryi* (Matsum.) M.Jacobs (Jacobs 1965: 470). – *Capparis henryi* Matsum. (Matsumura 1899: 33).

Type material

TAIWAN • Takow; *A. Henry 570*; holotype: TI n.v.; isotypes: A [A00042255, A00042256], K [K000380497], NY [NY00387639], US [US00100552, US00100553].

Other material examined

VIETNAM – **Ba Ria-Vung Tau Province** • Xuyen Moc District, Binh Chau Phuoc Buu Nature Reserve; 16 Febr. 2008; *Bach et al. VK. 1890*; HN, KRIB. – **Dak Lak Province** • Lak District, Lien Son Town; 27 Mar. 2012; *Bach et al. CTTN 131*; HN • Lak District, Lien Son Town; 9 Jul. 2012; *Bach et al. Thuong 27*; HN.

Description

Shrubs up to ca 2 m tall. Stipular thorns 6–7 mm long. Petiole ca 0.7 cm long. Leaf blade 8–12.5 × 3.7–5.5 cm; top rounded; nerves ca 6 pairs. Flowers 2–5 in supra-axillary rows; pedicels 7–10 mm long; sepals ca 6 mm long; petals ca 11–12 × 3–3.5 mm; stamens 12–16, with filaments 2–2.5 cm long; gynophore 1.8–2 cm long; ovary ca 2.5 mm long. Fruit unknown.

Distribution and ecology

Taiwan and Vietnam. In Vietnam recorded from the area of the Dong Nai River (Ho 1999; Ban & Dorofeev 2003), which flows through various provinces of southern Vietnam. During the present research material from the Dak Lak and Ba Ria-Vung Tau provinces has been examined. Forest edges, bushlands and along rivers (Ban & Dorofeev 2003).

Phenology

Flowering January–February (Ban & Dorofeev 2003).

Provisional conservation status

In the study area this variety has been collected in a few locations. Due to the scanty information available, it is assessed as Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Vernacular name

'Cáp henry' (Ho 1999).

Taxonomic remarks

Jacobs (1965) stated that "except for the low number of stamens, all characters of this variety are found among the great complex of forms that has to be designated as the typical variety". The same author (Jacobs 1965) recorded var. *henryi* only from Taiwan, while it was later reported from Vietnam by Ho (1999) and Ban & Dorofeev (2003).

Capparis micracantha subsp. ***korthalsiana*** **(Miq.) M.Jacobs**

Capparis micracantha subsp. *korthalsiana* (Miq.) M.Jacobs (Jacobs 1960: 86). – *Capparis korthalsiana* Miq. (Miquel 1870: 31).

Capparis finlaysoniana Wall. ex Hook.f. & Thomson (Hooker & Thomson 1872: 179). **Type** – SINGAPORE • Oct. 1822; *Wallich hb. 6992B*; lectotype: K [K001126516], designated by Jacobs (1965: 471).

Type material

INDONESIA • Borneo, Pulu Lampei; *Korthals s.n.*; lectotype: L [L0035343], designated by Jacobs (1965: 471).

Other material examined

VIETNAM – **Dong Nai Province** • Vinh Cuu District, Ma Da Commune; 4 Apr. 2013; *Bach et al. Thuong 57*; HN.

Description

Shrubs or climbers up to ca 9 m tall. Twigs early glabrous. Stipular thorns ca 1–2 mm long, patent or slightly recurved. Petiole 7–10 mm long. Leaf blade coriaceous, (9–)12–18(–21) × (4–)5.3–8(–9) cm; base acute, top acuminate or subacuminate, not mucronate; surfaces glabrous; nerves ca 6–8 pairs. Flowers 2(–4) in supra-axillary rows, or solitary; pedicels 13–21 mm long; sepals acute or acuminate, ca 9–12 mm long, the inner pair puberulous; petals oblong-spathulate, 17–24 mm long, pubescent; stamens 60–100, with filaments 1.8–2.2 cm long; gynophore ca 2–2.3 cm long; ovary ellipsoid-oblong, ca 2 × 1 mm, glabrous. Fruit oblong, ca 6–10(–17) × 2.5–3.7 cm.

Distribution and ecology

Malaysia, Singapore, Vietnam, Indonesia. In Vietnam recorded from Dong Nai Province by Ban & Dorofeev (2003). Primary forests (Ban & Dorofeev 2003).

Phenology

Fruiting in July (Ho 1999).

Provisional conservation status

A single collection of this variety has been examined from the study area. Due to the scanty information available, it is assessed as Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Vernacular name

'Cáp gai nhỏ' (Ban & Dorofeev 2003).

Uses

Ban & Dorofeev (2003) reported the fruit to be edible.

Taxonomic remarks

Jacobs (1960) reduced *Capparis korthalsiana* to a subspecies of *C. micracantha*, distinguished from subsp. *micracantha* by the higher number of stamens and the shape of the fruit. However the same author (Jacobs 1965) underlined that "much about the rank and delimitation of this paramorph must remain tentative", and that subsp. *korthalsiana* seems to prefer wetter forest conditions than subsp. *micracantha*.

Capparis montis-aquae Fici & Sy
Fig. 20

Capparis montis-aquae Fici & Sy (Fici & Sy 2025: 80).

Type material

VIETNAM – **Da Nang** • Ngu Hanh Son District, Thuy Son; 9 Mar. 2024; *Fici et al. 2445*; holotype: PAL.

Description

Shrubs ca 3–4 m tall. Twigs glabrous, with cataphylls at the base. Stipular thorns straight, vertical or horizontal, ca 1–2 mm long, in some cases lacking. Petiole 0.5–0.9(–1.2) cm long, glabrous. Leaf blade elliptic or narrowly obovate, coriaceous, (7–)8–14(–17) × (2.4–)3–5(–6) cm, base acute or rounded, apex rounded, acute or retuse, sometimes with short cartilaginous mucro; surfaces glabrous; nerves 6–9 pairs. Flowers in lateral racemes, in some cases terminal, up to 4-flowered; pedicels (0.5–)1.2–2.3(–2.5) cm long, glabrous; sepals acute, 8–11 × (3–)4–7(–8) mm, glabrous; petals white, obovate, 20–28 × 8–14(–18) mm, glabrous, the upper pair with yellow honey-guide at the base; stamens ca 56–78, with filaments (1.7–)2.2–2.9(–3.4) cm long and anthers 1.5–2 mm long; gynophore 2.2–2.6 cm long, glabrous; ovary ellipsoid or narrowly ovoid, 3.5–4 × 1.5–2 mm, glabrous, ribbed. Fruit unknown.

Distribution and ecology

Vietnam. The species is only known from the hill of Thuy Son, in proximity of Da Nang City, central Vietnam. On exposed limestone, at 70–90 m a.s.l. (Fici & Sy 2025).

Phenology

Flowering in March (based on the available material).

Provisional conservation status

The species has been assessed as Vulnerable (VU D2), following the *IUCN Red List Categories and Criteria* (IUCN 2012), since it is known only from the type locality, where a few individuals were observed, and its population is prone to the effects of human activities or stochastic events (Fici & Sy 2025).

Taxonomic remarks

Capparis montis-aquae is related to *C. brachybotrya* Hallier f., a species known from several areas of Indonesia, which differs in the slightly recurved thorns, acuminate leaf apex, up to 20-flowered racemes, puberulous pedicels, longer sepals, shorter petals, puberulous outside, higher number of stamens, and smaller ovary (Jacobs 1960, 1965).

Fig. 20. Flower of *Capparis montis-aquae* Fici & Sy (Da Nang, *Fici et al. 2445*). Photo by Silvio Fici.

Capparis oxycarpa Fici, Aver. & Sy

Capparis oxycarpa Fici, Aver. & Sy (Fici *et al.* 2022b: 11).

Type material

VIETNAM – **Khanh Hoa Province** • Nha Trang, Hon Tre Island; 6 Nov. 1989; *Averyanov & Kudryavtzeva 83*; holotype: LE [LE01077298]; isotype: LE [LE01077300].

Other material examined

VIETNAM – **Khanh Hoa Province** • Nha Trang, Hon Tre Island; 6 Nov. 1989; *Averyanov & Kudryavtzeva 178*; LE [LE01077299] • Hon Tre Island; 29 Sep. 1990; *Kudryavtzeva & Ogureeva 134*; LE [LE01077297].

Description

Climbers 1.5–2 m tall. Twigs glabrous. Stipular thorns recurved, 1–5 mm long. Petiole 2–5 mm long. Leaf blade elliptic or ovate, rarely obovate, 1.3–3.2 times as long as wide, widest at the middle or below, 2.3–5.7 × 1.4–3 cm; base rounded or subcordate, apex rounded or subemarginate, rarely obtuse; surfaces glabrous; nerves 4–7 pairs. Flowers in subumbels 2–3-flowered, at the top of short lateral twigs or terminal, or in some cases the flowers solitary; pedicels 0.6–2.2 cm long; sepals 3.5–5.5 × 2–3.1 mm, the outer pair obtuse, glabrous, ciliate at the margins, the inner pair rounded at apex, glabrous, membranaceous and villose at the margins; petals narrowly obovate to spatulate, 5.2–6.2 × 1.9–2.1 mm, villose inside, villose at the base outside; stamens ca 24–26, with filaments 1–1.6 cm long; gynophore 0.9–1.4 cm long, glabrous; ovary ovoid or ellipsoid, 0.9–1.2 × 0.8–0.9 mm, glabrous, shortly beaked. Fruit ovoid, 5.5–12 × 4–10 mm, sharply apiculate.

Distribution and ecology

Vietnam. The species is only known from two close locations on Hon Tre Island (Khanh Hoa Province), central Vietnam. Scrubs and secondary lowland forests, up to 100 m a.s.l.

Phenology

Flowering in September, fruiting in November (Fici *et al.* 2022b).

Provisional conservation status

The species has been assessed as Vulnerable (VU D1), being known from two locations on Hon Tre Island, in a restricted area of occupancy (Fici *et al.* 2022b).

Capparis pranensis (Gagnep.) M.Jacobs

Fig. 21

Capparis pranensis (Gagnep.) M.Jacobs (Jacobs 1965: 477). – *Capparis thorelii* var. *pranensis* Gagnep. (Gagnepain 1908a: 214).

Type material

THAILAND • Ad Muong Pran in peninsula Malayana; Aug. 1868; *Pierre 4018*; lectotype: P [P04022393], designated by Fici (2023: 24); isolectotypes: P [P04022391, P04022392], K [K000651018], LE [LE00013167], MPU [MPU600749).

Other material examined

VIETNAM – **Da Nang** • Tourane [Da Nang], Lazaret; 12 Nov. 1911; *Lecomte & Finet 920* ; P [P05454892]. – **Khanh Hoa Province** • Massif de Co-Inh près de Nhatrang; 16 Sep. 1922; *Poilane 4548*; P [P05454893], VNM • Ba Ha (près Ninh Hoa); 26 Apr. 1923; *Poilane 6088*; P [P05454969], VNM • Ninh Hoa Town, Ninh Xuan Commune; 2 Jul. 2012; *Bach et al. Thuong 28*; HN. – **Ninh Thuan Province** • Entre Ba Lap et Barau; 7 Feb. 1914; *Chevalier 30559*; P [P05454971] • Environs de Tourcham; 1–2 Oct. 1918; *Fleury 39062*; P [P04747254], L [1856318] • Environs de Tourcham; 1–2 Oct. 1918; *Fleury 39090*; P [P05454897] • Cana pro. Phanrang; 16 Jul. 1930; *Poilane 17891*; P [P04460196] • Hoa-Trinh pro. Phanrang; 26 Mar. 1923; *Poilane 5862*; P [P05454895], VNM • Ba Ran prov. Phanrang; 2 Mar. 1924; *Poilane 9858*; P [P05454967] • Entre Cana et Phan Rang; 20 Jan. 1961; *Schmid s.n.*; P [P05454970] • Ninh Hai District, Nui Chua National Park, Lake Dahang; 16 Jan. 2010; *Soejarto et al. DDS 14718*; P [P04746750] • Ninh Hai District, Vinh Hai Commune; 11°41′38″ N, 109°0′34″ E; 24 Jul. 2010; *Bach et al. VK 3910*; HN, KRIB • Bac Ai District, Phuoc Tien Commune; 11°49′49″ N, 108°48′15″ E; 2 Aug. 2010; *Bach et al. VK 4003*; HN, KRIB • Bac Binh District, Luong Son Commune; 7 Jul. 2002; *Phuong 4930*; HN, KRIB.

Description

Shrubs or climbers up to ca 10 m tall. Twigs glabrous. Stipular thorns recurved, 2–5 mm long. Petiole 4–7 mm long. Leaf blade coriaceous, (1.2–)1.5–2.2 times as long as wide, widest at the middle or below, (2–)3–6(–7) × (1.8–)2–3.5(–4) cm; base obtuse or rounded, top obtuse, rounded or emarginate, sometimes mucronulate; surfaces glabrous; nerves ca (3–)4–6(–8) pairs. Flowers in subumbels at the top of lateral twigs, often constituting a panicle; pedicels (7–)8–14(–16) mm long; sepals (4.5–)5–6 × 4–5.5 mm,

Fig. 21. Fruiting branch of *Capparis pranensis* (Gagnep.) M.Jacobs (Ninh Thuan Province, *Bach et al. VK 3910*). Photo by Danh T. Sy.

glabrous, inner pair sometimes ciliate; petals oblong, 7–9 × 3–4 mm, pubescent; stamens ca 29–35, with filaments ca 7–9 mm long; gynophore (6–)7–11 mm long, glabrous; ovary ovoid, ca 1.5 × 1 mm long, glabrous, beaked. Fruit globose, (1.1–)1.3–2.5(–3) cm in diameter.

Distribution and ecology

Thailand, Cambodia, Vietnam. In the latter country reported by Ban & Dorofeev (2003) from Da Nang, Quang Nam, Khanh Hoa, Dak Lak and Ninh Thuan provinces. Scrubs and open vegetation at low altitudes (Jacobs 1965; Chayamarit 1991). In Ninh Thuan Province the species was collected in scrubs along a railway (*Chevalier 30559*), in dry, thorny open secondary forest at 80 m a.s.l. (*Soejarto et al. DDS 14718*) and in deforested areas, on sandy soil (*Poilane* 5862); in Khanh Hoa Province on wet, clayey soil (*Poilane 4548*).

Phenology

Flowering December-March (Fici 2023). Ho (1999) reported flowering period in Vietnam in February and fruiting period in September; however, in Ninh Thuan Province the species was collected in flower in January (*Soejarto et al. DDS 14718* and *Schmid s.n.*) and March (*Poilane 5862* & *9858*), in fruit in October (*Fleury 39062* & *39090*), while in Khanh Hoa Province it was collected in fruit in April (*Poilane 6088*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The species is widespread in the study area, and no threats are reported for its populations.

Vernacular name

'Cáp thái lan' (Ban and Dorofeev 2003).

Note

The fruit is reported as toxic on the label of herbarium material from central Vietnam (*Fleury 39062*).

Capparis pubiflora DC.
Fig. 22

Capparis pubiflora DC. (Candolle 1824: 246).

Capparis nigricans Span. (Spanoghe 1841: 165). – **Type**: INDONESIA • Timor; *Spanoghe s.n.*; lectotype: L [L0035347], designated by Jacobs (1965: 479).

Capparis braianensis Gagnep. (Gagnepain 1938: 597). – **Type**: VIETNAM – **Lam Dong Province** • Braian près de Djiring; 22 Feb. 1935; *Poilane 24484*; lectotype: P [P05454901], designated by Jacobs (1965: 479).

Type material

INDONESIA • Timor; *Anonymous s.n.*; holotype: P; isotype: G-DC [G00207275].

Other material examined

VIETNAM – **Dak Lak Province** • B. Kroa (Darlac); 2 Mar. 1950; *Schmid 927*; P [P05454906]. – **Ha Noi** • Mt Ba Vi; 18 May 1940; *Petelot 2646*; VNM.

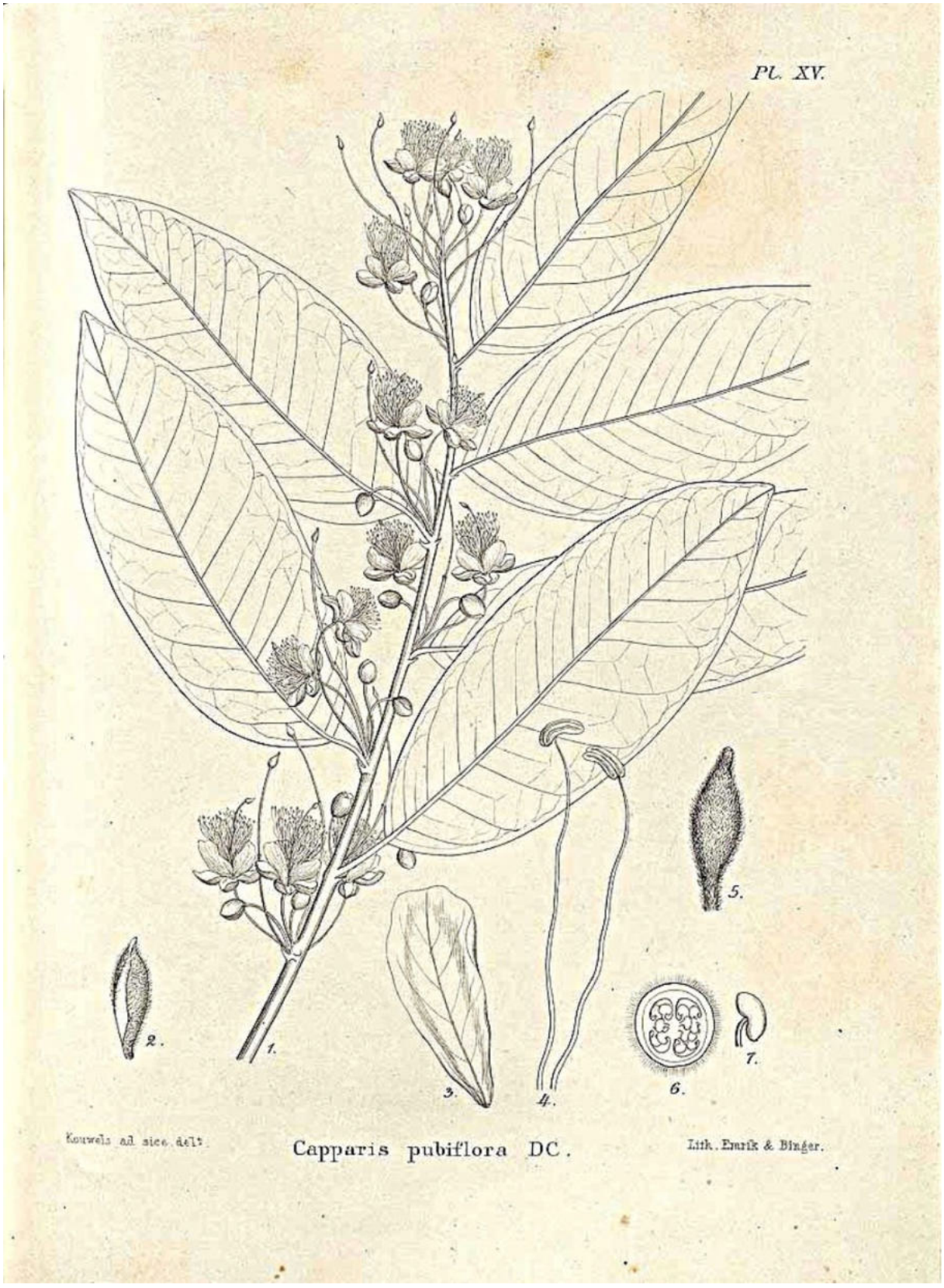

Fig. 22. Illustration of *Capparis pubiflora* DC. **1**. Flowering branch. **2**. Sepal. **3**. Petal. **4**. Stamens. **5**. Ovary. **6**. Section of ovary. **7**. Anther. (From Miquel 1870.)

Description

Shrubs 2–6 m tall. Twigs densely pubescent, later glabrescent, with cataphylls at the base. Stipular thorns straight or slightly recurved, 3–6 mm long. Petiole 5–8(–12) mm long. Leaf blade herbaceous or subcoriaceous (1.7–)2.7–3(–4.4) times as long as wide, widest above the middle or below, (5–)8–16(–27.5) × 2.5–6(–9) cm; base acute or rounded, top acuminate, with tip up to 2 cm long; nerves (6–)7–10(–13) pairs; surfaces glabrous. Flowers 1–5(–10) in axillary racemes; pedicels 0.7–3(–5) cm long; sepals acute to rounded, 4–7 × (2–)2.5–4 mm, outside puberulous; petals white, obovate, 6–10 × 3–4 mm, outside pubescent at the top and margins, with red or pink honey-guide; stamens 20–30(–50), with filaments ca 1.5–2(–2.5) cm long; gynophore 1.5–2.5 cm, densely pubescent; ovary ellipsoid, ca 2.5–3 × 1.2–1.5 mm, densely pubescent. Fruit globose or ellipsoid, 12–21 × (8–)10–19 mm, umbonate.

Distribution and ecology

China, Taiwan, Thailand, Malaysia, Vietnam, Indonesia, Philippines (Zhang & Tucker 2008). In Vietnam recorded in Ha Tay and Lam Dong provinces by Ban & Dorofeev (2003). During the present research also material from Ha Noi and Dak Lak provinces has been examined. Forests, thickets, forest margins, roadsides, up to 1200 m a.s.l. In Lam Dong Province collected in forest on clayey-rocky soil at 1200 m a.s.l. (*Poilane 24484*), in Dak Lak Province in dense forest at 500 m a.s.l. (*Schmid 927*).

Phenology

Based on Ban & Dorofeev (2003) flowering in April–May in Vietnam, but in Lam Dong Province collected in flower in February (*Poilane 24484*), in Dak Lak Province in March (*Schmid 927*).

Provisional conservation status

In the study area the species has been collected in a few locations. Due to the scanty information available, it is assessed as Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Vernacular name

‘Cáp hoa lông’ (Ho 1999).

Capparis pubifolia B.S.Sun
Fig. 23

Capparis pubifolia B.S.Sun (Sun 1979: 64).

Type material

CHINA – **Yunnan** • 20 Oct. 1958; *Chang 13028*; holotype: KUN [KUN0137208].

Other material examined

VIETNAM – **Bac Kan Province** • Bach Thong District, Sy Binh commune; 26 Aug. 2004; *Trai et al. 7804A*, *7804B*, *7804C*, *7804D*, *7804E*, *7804F*; NIMM. – **Lang Son Province** • Cao Loc District, Cong Son commune; 3 Jul. 1969; *Thuan BX 452*, *BX 453*; VFM • Loc Binh District, Bang Khanh commune; 21°48′41.4″ N, 106°52′39.9″ E; 20 Jul. 2015; *Bach et al. VK 6501*; HN.

Description

Shrubs or climbers up to 5 m tall. Twigs densely fulvous or greyish pubescent. Stipular thorns 0.5–1 mm long, recurved, or lacking. Petiole 0.8–1.1 cm long, pubescent. Leaf blade ca 1.8–2.3 times as wide as large, 4.5–8(–9) × 2.5–3.5(–4) cm, base rounded or cuneate, top acuminate, with tip 0.5–0.7 cm long; upper surface glabrescent, lower surface densely pubescent; nerves (8–)9–12 pairs. Flowers in corymbs,

Fig. 23. Flowering branch of *Capparis pubifolia* B.S.Sun (Lang Son Province, *Bach et al. VK 6501*). Photo by Danh T. Sy.

axillary or terminal, forming a panicle; pedicels 1.5–2 cm long, pubescent; sepals 5–8 × 5–7 mm, the outer pair tomentose outside, glabrous inside, the inner pair puberulous at the base; petals white, obovate, ca 7–15 mm long, pubescent on both surfaces, especially at the base; stamens 43–50, with filaments 2.5–3 cm long; gynophore 4–4.2 cm long, glabrous; ovary ovoid, ca 2 × 1 mm, glabrous. Fruit subglobose, 2–3.6 × 1.7–2.6 cm.

Distribution and ecology

China, Vietnam. In Vietnam recorded from Bac Kan and Lang Son Province by Sy *et al.* (2017b). Thickets, rocky slopes, up to 1300 m a.s.l. (Zhang & Tucker 2008; Sy *et al.* 2017b).

Phenology

Flowering in July, fruiting in July–September (Sy *et al.* 2017b).

Provisional conservation status

In the study area the species has been collected in a few locations. Due to the scanty information available, it is assessed as Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012).

Capparis pyrifolia Lam.
Fig. 24

Capparis pyrifolia Lam. (Lamarck 1785: 606).

Capparis acuminata Willd. (Willdenow 1799: 1131), non Lindl. (Lindley 1830: t. 1320). – **Type**: INDIA • s.loc.; *s.coll.*; lectotype: B-W [B-W 10037-01 0], designated by Fici (2016: 172).

Capparis foetida Blume (Blume 1825: 52). – **Type**: INDONESIA • Java, Batavia; *Blume 1194*; L [L0035348], designated by Fici (2016: 172); isolectotype: NY [NY00387656].

Capparis dasypetala Turcz. (Turczaninow 1854: 322). – **Type**: INDONESIA • Java; *Zollinger 2265*; lectotype: G [G00237966], designated by Fici (2023: 26); isolectotype: KW [KW001000838].

Capparis oxyphylla Miq. (Miquel 1855: 397). – **Type**: INDONESIA • Java; *Junghuhn s.n.*; L [L0845884], designated by Fici (2023: 26).

Capparis kerrii Craib (Craib 1922: 232). – **Type**: THAILAND • Ban Pong Yeng; 29 Mar. 1915; *Kerr 3568*; K [K000651022], designated by Fici (2016: 172); isolectotype: BM [BM000629522].

Type material

"INDE" • s.loc.; *Poivre s.n.*; lectotype: P [P00680459], designated by Jacobs (1965: 480).

Other material examined

VIETNAM – **Binh Phuoc Province** • Phuoc Long District, Bu Gia Map Commune; 25 Feb. 2011; *Thuong et al. PTV 662*; HN • Phuoc Long District, Bu Gia Map Commune; 5 Apr. 2005; *Loc et al. HLF 4732*; HN. – **Binh Thuan Province** • Tanh Linh District, Duc Thuan Commune; 10°01′16″ N, 107°43′21″ E; 10 Apr. 2010; *Bach et al. VK 3705*; HN, KRIB. – **Dak Lak Province** • Krong No District, Quang Phu Commune; 14 May 1979; *Ha Tue* 150; HN • s.loc.; 28 Mar. 1974; *Vo Van Chi 92*; HNU • Lak District, Lien Son Town; 9 Jul. 2012; *Bach et al. CTTN 132*; HN. – **Dong Nai Province** • Route col. n° 20 K. 46, Dinh Quan; 13 Oct. 1931; *Poilane 19656*; P [P05453846], VNM • Bien-Hoa; *Vinot s.n.*; P [P05453844] • Tan Phu District, Cat Tien National Park; 11°27′31″ N, 107°22′22″ E; 28 Sep. 2005; *N.V. Du et al. HNK*

931; HN, K [K000577077] • Bien Hoa City; 19 Apr. 1931; *Evrard s.n.*; VNM • Xuan Loc District, Gia Ray Town (Chua Chan Mountain); 300 m a.s.l.; 24 Aug. 1931; *Poilane 19399*; VNM. – **Gia Lai Province** • K'Bang District, So Pai Commune; 10 Mar. 2011, *Thuong et al. PTV 704*; HN. – **Kon Tum Province** • s.loc.; 14 Mar. 1974; *Vo Van Chi 44*; HNU. – **Lam Dong Province** • Dalat and vicinity; Mar.–Apr. 1932; *Squires 829*; P [P05453853], NY [NY04747046]. – **Tay Ninh Province** • Ad Cai Cong, austro Cochinchinae; Apr. 1866; *Pierre 3206*; P [P05453850, P05453866, P05453873, P06804838].

Description

Shrubs or small trees to 3–4(–6) m tall, sometimes climbers. Twigs pubescent, later glabrescent. Stipular thorns straight or slightly recurved, up to 3–4 mm long, or lacking. Petiole 4–6(–7) mm long, hairy or glabrescent. Leaf blade chartaceous to subcoriaceous (1.2–)1.7–2.5(–3) times as long as wide, widest below or at the middle, rarely above, (4–)5–9.5(–15) × (2–)2.5–4.5(–6.5) cm; base rounded, blunt or acute, top acuminate, the tip ca 0.7–1.5 cm long; upper surface glabrous, lower glabrescent or hairy; nerves 4–7 pairs. Flowers serial, 2–6 in supra-axillary rows, rarely solitary; pedicels (0.7–)0.9–2(–2.5) cm long, hairy; sepals 4–5 × (2–)2.5–4 mm, pubescent or glabrous; petals white, elliptic or oblong, (5–)5.5–8 × (1.5–)2–4 mm, hairy-floccose on both sides, upper pair with yellow or reddish honey-guide; stamens ca 20–25(–27), with filaments 1.4–2.3 cm long; gynophore (1–)1.2–2.3(–2.5) cm long, glabrous; ovary ovoid or ellipsoid, 1–1.2 × 0.5–0.7 mm, glabrous, beaked. Fruit globose, (5–)8–12 mm in diameter.

Fig. 24. Flowering branch of *Capparis pyrifolia* Lam. (Gia Lai Province, *Thuong et al. PTV 704*). Photo by Danh T. Sy.

Distribution and ecology

Thailand, Laos, Cambodia, Vietnam and Indonesia (Jacobs 1965). In Vietnam the species was reported by Ban & Dorofeev (2003) in Thua Thien-Hue, Kon Tum, Dak Lak, Lam Dong, Tay Ninh and Dong Nai provinces. During the present research also material from Gia Lai, Binh Phuoc and Binh Thuan provinces has been examined. Evergreen and semideciduous forests, bamboo forests, secondary forests, scrubs, hedges, wastelands, up to 1500 m a.s.l. (Jacobs 1960, 1965, Chayamarit 1991, Ban & Dorofeev 2003). In Dong Nai Province collected in evergreen forest on black soil, at 145 m a.s.l. (*N.V. Du et al.* HNK *931*) and on volcanic, basaltic soil (*Poilane 19656*), in Lam Dong Province on sandy river bank (*Squires 829*).

Phenology

Flowering from December to April (Jacobs 1965). Based on Ban & Dorofeev (2003) fruiting from March to September in Vietnam; the species has been collected in fruit in October in Dong Nai Province (*Poilane 19656*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The species is widespread in the study area, and no threats are reported for its populations.

Vernacular names

'Cáp lá xá lị', 'Cáp có mũi', 'Tacha' (Ban & Dorofeev 2003).

Taxonomic remarks

Jacobs (1965) noted that in some cases the supra-axillary rows of flowers of *Capparis pyrifolia* are very short and such specimens may be confused with *C. pubiflora*, which however differs in the hairy gynophore and the larger fruit.

Capparis radula Gagnep.

Capparis radula Gagnep. (Gagnepain 1908a: 213).

Type material

LAOS • Bassac [Champasak]; Jan. 1877; *Harmand 1094*; lectotype: P [P04022374], designated by Fici (2023: 26); isolectotype: P [P04022375].

Other material examined

VIETNAM • Cochinchina meridionalis, s.loc.; 1876; *Harmand 4020*; P [P05454923].

Description

Shrubs or climbers up to 3–4 m tall. Twigs glabrous, minutely warty, with cataphylls at the base. Stipular thorns recurved, up to ca 4 mm long. Petiole 4–6(–7) mm long. Leaf blade coriaceous, (1.2–)1.5–2.1 times as long as wide, (3.5–)4.5–8.7(–9.5) × (1.5–)2.2–4.8(–6.5) cm, widest at the middle or below; base rounded or cordate, top rounded, retuse or acute; surfaces glabrous; nerves 4–6 pairs. Flowers up to 3 in supra-axillary rows, sometimes solitary; pedicels (0.7–)0.8–1.3(–2) cm long; sepals acute, 6–11(–12) × 3–5 mm, puberulous; petals white, obovate or oblong, (9–)10–14 × 3.5–6 mm, the upper pair pubescent inside at the base; stamens ca 30–40, with filaments 1.5–2 cm long; gynophore (1–)1.6–2.3 cm long, glabrous; ovary ovoid, (2.5–)3–4 × 1.5–2 mm long, glabrous, ribbed, with cushion-shaped stigma. Fruit ellipsoid or ovoid, 4–6 × 3–4.2 cm.

Distribution and ecology

Thailand, Laos, Cambodia, Vietnam. In Vietnam recorded from Thua Thien-Hue, Khanh Hoa provinces and 'Cochinchine' by Ban & Dorofeev (2003). Scrubs, open forests, dense thickets, forest margins and savannahs, at low altitude (Jacobs 1965; Chayamarit 1991).

Phenology

Flowering January–April (Jacobs 1965), fruiting May–September (Ban & Dorofeev 2003).

Provisional conservation status

Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012), since only one collection without locality (*Harmand 4020*) has been examined from the study area.

Vernacular name

'Cáp bàn nạo' (Ban & Dorofeev 2003).

Taxonomic remarks

Jacobs (1965) underlined that *Capparis radula* is distinguished from all allied species by its minutely warty twigs, and included this species in the Brevispina-Group due to the large size of its flowers.

Capparis rigida M.Jacobs

Capparis rigida M.Jacobs (Jacobs 1965: 485).

Type material

VIETNAM – **Ninh Thuan Province** • Ca-Na, Phanrang; 10 Dec. 1923; *Poilane 9081*; holotype: P [P04022373].

Other material examined

VIETNAM – **Ninh Thuan Province** • Ca-Na, Phanrang; 8 Nov. 1923; *Poilane 8493*; HN, L [L1856009], P [P05454922],

Description

Shrubs or climbers up to 8 m tall. Twigs glabrous, with few cataphylls at the base. Stipular thorns mostly lacking or when present ca 1 mm long, ascending. Petiole 7–14 mm. Leaf blade coriaceous, 1.8–2.5(–2.9) times as long as wide, widest at the middle or lower, ca (4.3–)5.2–7(–7.5) × (2–)2.2–3.2(–3.7) cm; base acute, top subacuminate; surfaces glabrous; nerves 6–7 pairs. Flowers serial, ca 2 in supra-axillary rows, otherwise unknown. Fruit subglobose, ca 2.8 × 2.4–2.5 cm, with pedicel ca 2 cm long and gynophore 2.6 cm long.

Distribution and ecology

Vietnam, Ninh Thuan Province (Jacobs 1965; Ban & Dorofeev 2003). Deforested areas on rocky soil, at 300 m a.s.l. (*Poilane* 8493).

Phenology

Fruiting in December (Jacobs 1965).

Provisional conservation status

Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012), since only two historical collections (*Poilane 9081 & 8493*) are known for the species.

Vernacular name

'Cáp cứng' (Ban & Dorofeev 2003).

Taxonomic remarks

Capparis rigida is a poorly known species, described by Jacobs (1965) on fruiting material collected in central Vietnam. Within the Seriales-Group, it is characterized by the presence of cataphylls at the base of the twigs, and differentiated from *C. micracantha* by the thorns mostly lacking, the shorter leaves and the fruit on a slender stipe (Jacobs 1965).

Capparis sepiaria L.

Capparis sepiaria L. (Linnaeus 1759: 1071).

Capparis incanescens DC. (Candolle 1824: 247). – *Capparis sepiaria* var. *incanescens* (DC.) Hook.f. & Thomson (Hooker & Thomson 1872: 177). – **Type**: INDIA – **Karnataka** • "Mysore [Mysuru]; v.s. in h. Banks"; lectotype: BM, designated by Jacobs (1965: 489):

Capparis umbellata R.Br. ex DC. (Candolle 1824: 247). – **Type**: Australia • Nov. Holl.; 1819; *R. Brown s.n.*; lectotype: G-DC [G00207273], designated by Jacobs (1965: 490).

Capparis emarginata C.Presl (Presl 1835: 85). – **Type**: PHILIPPINES • Luzon; *Haenke s.n.*; lectotype: PR [PR 375394], designated by Jacobs (1965: 490).

Capparis retusella Thwaites (Thwaites 1858: 16). – **Type**: Sri Lanka • Ceylon; *Thwaites CP 2550*; lectotype: K [K000247337], designated by Fici (2023: 28); isolectotypes: BM [BM010769742], BR [BR0000006985493], G [G002379554], G [G00237955], MEL [MEL2059747], US [US00100581].

Capparis glauca Wall. ex Hook.f. & Thomson (Hooker & Thomson 1872: 180). – **Type**: MYANMAR • Pagodas at Pegam [Pegamew]; *Wallich 7005*; lectotype: K [K001126549], designated by Jacobs (1965: 490).

Capparis flexicaulis Hance (Hance 1878: 225). – **Type**: CHINA – **Hainan** • Hoi-Han; 1877; *Bullock 20274*; lectotype: E [E00327219], designated by Fici (2023: 28); isolectotype: BM [BM000946249].

Capparis trichopetala Valeton (Valeton 1907: 14). – **Type**: INDONESIA • Merauke; Nov. 1905; *Koch 618*; lectotype: L [L0035356], designated by Jacobs (1965: 490).

Capparis affinis Merr. (Merrill 1915: 303). – **Type**: PHILIPPINES • Palawan; Aug. 1913; *Escritor 21583*; lectotype: NY [NY00387650], designated by Fici (2023: 28); isolectotypes: BM [BM000629553], K [K000643992], L [L0035355], US [US00100532].

Type material

INDIA • "Ind. hab. ad sepes"; *Anonymous s.n.*; lectotype: LINN [LINN-HL 664.4], designated by Jacobs (1965: 489).

Other material examined

VIETNAM – **An Giang Province** • Ad montem ..... in prov. Chaudoc; Feb. 1868; *Pierre 4015*; P [P05454844]. – **Bac Giang Province** • Xuan Thon; 13 May 1892; *Bon 5340*; P [P05454826, P05454827, P05454828, P04747236]. – **Binh Thuan Province** • Phanri; 29 Oct. 1924; *Evrard 1620*; P [P05454884] • Tuy Phong District, Lien Huong Commune; 3 Aug. 2012; *Bach et al. PTV 1068*; HN. – **Ca Mau Province** • Ngoc Hien District, Tan An Commune (Hon Khoai Island); 4 May 2011; *Dang Trung Tan et al. 0269.1*; HN. – **Da Nang** • Tourane and vicinity; May–Jul. 1927; *J. & M.S. Clemens 3099*; NY [NY4747077], P [P05454860]. – **Hai Phong** • Cat Hai District, Cat Ba Town (Dao Khi Island); 29 Jun. 2010; *Thuong et al. Thuong 50*; HN • Cat Hai District, Cat Ba Town (Dao Khi Island); 22 May 2013; *Cuong SN*; HN. – **Ninh Thuan Province** • Cabane forestière à l'ouest de Cana; 5 Nov. 1925; *Evrard 2488*; P [P05454885], VNM • Environs de Tourcham; 1–2 Oct. 1918; *Fleury 39057*; P [P04747169] • Ninh Hai District, Khanh Hai Commune; 11°35′29″ N, 109°01′41″ E; 26 Jul. 2010; *Bach et al. VK 3933*; HN, KRIB • Ninh Hai District, Vinh Hai Commune; 26 Jul. 2010; *Thuong et al. Thuong 51*; HN • Ninh Son District, Tan Son Commune; 4 Aug. 2012; *Bach et al. PTV 1069*; HN. – **Quang Ninh Province** • Fankenin, près de Quang-Yen; Aug. 1855; *Balansa 1377*; P [P00283266].

Description

Shrubs up to 3–4 m tall, sometimes climbers. Twigs pubescent, later glabrescent. Stipular thorns recurved, up to 5(–8) mm long, sharp. Petiole 2–5(–7) mm long, pubescent. Leaf blade herbaceous or subcoriaceous, (1.4–)1.7–2.7(–4) times as long as wide, (1.5–)2–8.2(–10) × (0.8–)1.3–3.6(–4) cm, widest at the middle or below; base rounded, subcordate, acute or obtuse, top rounded or acute, often emarginate; upper surface glabrescent, lower surface mostly pubescent; nerves (3–)4–7(–9) pairs. Flowers in subumbels at the top of lateral twigs, sometimes terminal; pedicels (0.7–)1–2.5(–3) cm long; sepals (2–)3–5(–6) × 2– 4(–5) mm, glabrous; petals white, oblong, 4–7(–7.5) × 1.5–3 mm, pubescent; stamens (20–)25–45, with filaments 5–10 mm long; gynophore (4–)7–13(–15) mm long, mostly puberulous at the base; ovary ovoid or ellipsoid, 1.5–2 × 0.8–1 mm, glabrous, shortly beaked. Fruit globose or subglobose, 4–10(–12) × (3–)4–10(–12) mm.

Distribution and ecology

Mauritania, Senegal, Mali, Côte d'Ivoire, Burkina Faso, Niger, Nigeria, Benin, Cameroon, Chad, Central African Republic, Sudan, Ethiopia, Eritrea, Somalia, Kenya, Tanzania, Uganda, Rwanda, Burundi, Democratic Republic of Congo, Malawi, Zambia, Angola, Botswana, Zimbabwe, Mozambique, South Africa, Madagascar, India (including Andaman Islands), Sri Lanka, Nepal, Myanmar, China, Vietnam, Laos, Cambodia, Thailand, Malaysia, Indonesia, Philippines, New Guinea, Australia (Fici 2023). In Vietnam the species has been reported by Ban & Dorofeev (2003) in Quang Ninh, Hai Phong, Ninh Binh, Thua Thien-Hue, Da Nang, Ninh Thuan, Binh Thuan, Dong Nai and Ba Ria-Vung Tau provinces. During the present research also material from the Bac Giang, An Giang and Ca Mau provinces has been examined. Open forests, riverine forests, scrubs, grasslands, hedges, often along the sea coast (Jacobs 1960, 1965; Chayamarit 1991; Ban & Dorofeev 2003; Fici 2023; Zhang & Tucker 2008). In Vietnam collected in roadside thicket in Da Nang (*J. & M.S. Clemens 3099*), and in forest on rocky soil, at 800 m a.s.l., in Ninh Thuan Province (*Evrard 2488*).

Phenology

Flowering December–June (Chayamarit 1991; Zhang & Tucker 2008). Ho (1999) reported fruiting period in Vietnam in September–December. However, flowering material was collected in October in Binh Thuan Province (*Evrard 1620*) and fruiting material in August in Quang Ninh Province (*Balansa 1377*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The species is widespread in the study area and its populations, occurring in different habitats, are stable.

Vernacular name

'Cáp hàng rào' (Ban & Dorofeev 2003).

Uses

The stem is used to treat skin diseases, reduce fever, and as a medicine to regulate menstruation (Ban & Dorofeev 2003).

Capparis siamensis Kurz
Fig. 25

Capparis siamensis Kurz (Kurz 1877: 63).

Capparis macropoda Pierre ex Gagnep. (Gagnepain 1908b: 196). – **Type**: CAMBODIA • In montibus Camchay [Kamchay] ad Kamput [Kampot]; May 1874; *Pierre 4007*; lectotype: P [P04022376], designated by Fici (2023: 31); isolectotype P [P04022377].

Capparis adunca Craib (Craib 1922: 231). – **Type**: THAILAND • Muang Pichit; 25 Mar. 1922; *Kerr 5672*; lectotype: K [K000651015], designated by Fici (2023: 31); isolectotype: BM [BM000629532].

Capparis winitii Craib (Craib 1922: 234). – **Type**: THAILAND • Muang Hawt; 14 Mar. 1913; *Kerr 2938*; lectotype: K [K000651016], designated by Fici (2023: 31); isolectotype: BM [BM010754844].

Type material

THAILAND • Radboore [Ratchaburi]; *Teijsmann 5927*; holotype: CAL n.v.; isotypes: GH [GH00042274], K [K000651017], U [U0000961].

Description

Shrubs or small trees 1.5–8 m tall, rarely climbers. Twigs firstly pubescent, later glabrescent or glabrous, with cataphylls at the base. Stipular thorns recurved or patent, up to 3 mm long, sometimes lacking. Petiole (4–)5–10(–13) mm long. Leaf blade herbaceous, (1.5–)2–2.7(–3) times as long as wide, (5–)6–10(–11.7) × 3–5(–6) cm; base cordate, subcordate or rounded, top acute, obtuse or subacuminate, often mucronulate; surfaces puberulous or glabrescent; nerves 3–6(–7) pairs. Flowers solitary, axillary; pedicels (0.7–)1–1.3 cm long; sepals 6–10(–12) × 3–5(–6) mm, ciliate at margins, pubescent outside; petals whitish or yellow, obovate or spathulate, (1.3–)2–2.5(–2.7) × (0.5–)0.7–1 cm, outside pubescent at the top, the upper pair with a red or yellow basal spot; stamens ca 28–46, with filaments ca 1.9–2.2 cm long; gynophore 1.7–2.7 cm long, pubescent; ovary ovoid, (3–)4–5 × 1.5–2(–2.5) mm, pubescent, beaked. Fruit ellipsoid or ovoid, 3–5.5 × 2.5–3.6 cm.

Distribution and ecology

Thailand, Cambodia (Jacobs 1965; Chayamarit 1991). The occurrence of *Capparis siamensis* in southern Vietnam, Kien Giang Province, was reported by Ban & Dorofeev (2003), but no material of the species from the country has been examined during the present research. Deciduous forests, bamboo forests, scrubs, forest margins and open vegetation (Fici 2023).

Provisional conservation status

Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012), lacking information on the population status in the study area.

Phenology

Flowering in December–April (Chayamarit 1991).

Vernacular name

'Cáp xiêm' (Ban & Dorofeev 2003).

Fig. 25. Flower of *Capparis siamensis* Kurz. Photo by Silvio Fici.

Capparis sikkimensis Kurz

Capparis sikkimensis Kurz (Kurz 1874b: 181).

Description

Trees, shrubs, or climbers up to 6 m tall. Twigs pubescent, often reddish-brown, later glabrous or glabrescent. Stipular thorns often lacking, when present recurved, up to ca 5 mm long. Petiole 1– 2.5 cm long. Leaf blade coriaceous or subcoriaceous, 1.6–2.6 times as long as wide, widest at the middle, 7.5–18(–20) × 3.2–7.5(–10) cm; base acute, cuneate or rounded, top rounded, acute or obtuse, often shortly acuminate or with a callous tip; upper surface glabrous, lower surface glabrous or pubescent when young, later glabrescent or glabrous; nerves 6–8 pairs. Flowers in axillary or terminal subumbels, in some cases constituting a panicle, or sometimes the flowers solitary, axillary; pedicels 1.7–5.5 cm, pubescent; sepals ca (8–)10–20 × 5–10 mm, puberulous outside; petals white, obovate, ca 12–30 × 5–8 mm, pubescent inside; stamens ca 28–120; gynophore 2–4 cm long, glabrous; ovary 2–4 × 1.5–2 mm, glabrous. Fruit globose, ellipsoid or ovoid, ca 2.5–6.5 × 2.5–5.5 cm.

Distribution

India, China, Taiwan, Japan, Myanmar, Vietnam (Jacobs 1965).

Taxonomic remarks

The present treatment is based on Jacobs (1965), who recognized within *Capparis sikkimensis* four subspecies distributed from India eastwards to Vietnam and Japan. Later Zhang & Tucker (2008), adopting a narrower species concept, treated these taxa as separate species, mostly differentiated by the indumentum, sepals length and number of stamens.

With regard to Vietnam all the subspecies of *C. sikkimensis* are recognized, i.e., subsp. *sikkimensis* Kurz, subsp. *formosana* (Hemsl.) M.Jacobs, subsp. *masakai* (H.Lév.) M.Jacobs, and subsp. *yunnanensis* (Craib & W.W.Sm.) M.Jacobs. Of these, subsp. *sikkimensis* is firstly recorded here from Vietnam. The following key includes the subspecies recognized in the study area.

Key to the subspecies of ***Capparis sikkimensis***

1. Leaf blade with both surfaces glabrous when young; ovary ca 5 mm long .... subsp. ***formosana*** (Hemsl.) M.Jacobs
– Leaf blade with lower surface pubescent when young, later glabrescent or glabrous; ovary up to 4 mm long 2

2. Sepals ca 1.3–2.1 cm long ..... subsp. ***yunnanensis*** (Craib & W.W.Sm.) M.Jacobs
– Sepals 0.7–1.1 cm long 3

3. Sepals 0.9–1.1 cm long; stamens 45–55(–65); fruit ribbed .....subsp. ***masakai*** (H.Lév.) M.Jacobs
– Sepals 0.7–0.8 cm long; stamens 28–36; fruit not ribbed..... subsp. ***sikkimensis*** Kurz

Capparis sikkimensis subsp. ***sikkimensis*** Kurz

Type material

INDIA – **Sikkim** • Kurseong; *Kurz s.n.*; lectotype: CAL [CAL0000005006], designated by Jacobs (1965: 496).

Other material examined

VIETNAM – **Hoa Binh Province** • Mai Chau District, Hang Kia Commune; 11 Apr. 1982; *Nguyen Nghia Thin 993*; HNU • Mai Chau District, Hang Kia Commune; 20°44′21′ N, 104°53′57″ E; 10 Apr. 2001; *Hiep et al. HAL 860*; HN.

Description

Twigs pubescent, later glabrescent. Stipular thorns up to 5 mm long. Petiole 1–2 cm long. Leaf blade subcoriaceous, often ovate, up to 12 cm long; base cuneate or rounded, top rounded, obtuse or acuminate; upper surface glabrous, lower surface pubescent, later glabrescent. Flowers in subumbels ca 3–20-flowered; sepals 0.7–0.8 mm long; petals ca 2(–3) cm long; stamens 28–36; gynophore 2–4 cm long, glabrous; ovary ovoid, 2–4 mm long, glabrous. Fruit globose, ca 2.5–4 cm in diameter.

Distribution and ecology

India, Bhutan, Myanmar, China (Zhang & Tucker 2008). Subsp. *sikkimensis* is here firstly recorded from northern Vietnam, where it has been collected in the Hoa Binh Province. Open forests up to 1800 m a.s.l. (Zhang & Tucker 2008).

Phenology

Flowering May–June, fruiting September–November (Zhang & Tucker 2008).

Provisional conservation status

Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012), lacking information on the population status of the subspecies in the study area.

Capparis sikkimensis subsp. ***formosana*** (Hemsl.) M.Jacobs
Fig. 26

Capparis sikkimensis subsp. *formosana* (Hemsl.) M.Jacobs (Jacobs 1965: 497). – *Capparis formosana* Hemsl. (Hemsley 1895: 145).

Type material

TAIWAN • Bankinsing Mts and Ape's Hill; 1894; *A. Henry 501*[A]; lectotype: K [K00038502], designated by Jacobs (1965: 497).

Other material examined

VIETNAM – **Ha Giang Province** • Meo Vac District, Ta Lung Commune; 22 Mar. 2015; *Thuong et al. Thuong 72*; HN. – **Ninh Binh Province** • Nho Quan District, Cuc Phuong National Park; 22 Mar. 1971; *Quynh et al. D186*; HN • Cuc Phuong National Park; 5 Apr. 2000; *M.V. Sinh MVX 87*; NY [NY04746942], L [L3755030].

Description

Twigs pubescent, later glabrous or glabrescent. Stipular thorns up to ca 5 mm long. Petiole 1.5–2.5 cm long. Leaf blade coriaceous, oblong, ovate or obovate-oblong, up to 18 cm long; base acute or rounded, top obtuse, rounded or acute; surfaces glabrous. Flowers in subumbels 3–8(–20)-flowered; sepals 0.7–2 cm long; petals 1.2–2.7 cm long; stamens 30–120; gynophore 3–3.5 cm long, glabrous; ovary ellipsoid ca 5 mm long, glabrous. Fruit globose, ellipsoid, or ovoid, 4–5.5 cm in diameter.

Fig. 26. Flowering branch of *Capparis sikkimensis* subsp. *formosana* (Hemsl.) M.Jacobs. (Ha Giang Province, *Thuong et al. Thuong 72*). Photo by Danh T. Sy.

Distribution and ecology

China, Taiwan, Japan, Vietnam. This taxon has been firstly reported from Vietnam, in Ninh Binh Province, by Zhang & Tucker (2008). During the present research also material from Ha Giang Province has been examined. Dense montane forests up to ca 1000(–2400?) m a.s.l. (Zhang & Tucker 2008).

Phenology

Flowering April–May, fruiting August–February (Zhang & Tucker 2008). In Ninh Binh Province flowering material has been collected in April (*M.V. Sinh MVX 87*).

Provisional conservation status

Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012), lacking information on the population status of the subspecies in the study area.

Capparis sikkimensis subsp. ***masakai*** (H.Lév.) M.Jacobs
Fig. 27

Capparis sikkimensis subsp. *masakai* (H.Lév.) M.Jacobs (Jacobs 1965: 496). – *Capparis masakai* H.Lév. (Léveillé 1914–1915: 59).

Fig. 27. Fruiting branch of *Capparis sikkimensis* subsp. *masakai* (H.Lév.) M.Jacobs. (Dien Bien Province, *Thuong et al. Thuong 64*). Photo by Danh T. Sy.

Type material

CHINA • Kouy Tcheou [Kweichow], Lo Kouen chemin de Pin Fa; 15 May 1912; *Esquirol 3230*; lectotype: E [E00327218], designated by Jacobs (1965: 496); isotype: A [A00251638].

Other material examined

VIETNAM – **Dien Bien Province** • Dien Bien District, Muong Phang Commune; 10 Mar. 2015; *Thuong et al. Thuong 64*; HN. – **Ha Giang Province** • Bac Quang District, Tan Lap Commune; 12 Apr. 1985; *Bien 14562*; HN • Quan Ba District, Bat Dai Son Commune; 5 Apr. 2000; *Harder et al. DKH 5145*; HN. – **Ninh Binh Province** • Cuc Phuong National park, slope northeast of Bong; 105°35.80′ N, 20°21.22′ E; 19 Mar. 1999; *Soejarto et al. 10623*; HN, NY [NY04746981].

Description

Twigs pubescent, reddish. Stipular thorns up to ca 5 mm long, often lacking on the fertile twigs. Petiole 1.2–2.1 cm long. Leaf blade coriaceous, elliptic or obovate, up to ca 20 cm long; base rounded or cuneate, top acute or obtuse, sometimes acuminate; upper surface glabrous, lower surface pubescent when young, later glabrescent or glabrous. Flowers in subumbels 3–8-flowered; sepals ca 0.9–1.1 cm long; petals 1.2–1.5 cm long; stamens (45–)55–65; gynophore 2–3 cm long, glabrous; ovary ovoid, 2–3 mm long, glabrous. Fruit globose or ellipsoid, ribbed, 4–5 cm in diameter, often sculptured and acuminate.

Distribution and ecology

China, Vietnam. In the latter country recorded by Sy *et al.* (2013b) in the Ha Giang Province. During the present research also material from Dien Bien and Ninh Binh provinces has been examined. Forests, slopes, valleys, in limestone areas, below 1600 m a.s.l. (Zhang & Tucker 2008). In Ninh Binh Province collected in primary forest on a slope with thick soil and exposed limestone rocks, at 440 m a.s.l. (*Soejarto et al. 10623*).

Phenology

Based on Zhang & Tucker (2008) flowering in May–June, fruiting in November–December. In Ninh Binh Province collected in flower in March (*Soejarto et al. 10623*), in Ha Giang Province in April (*Bien 14562*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). Based on the available data, no risks were detected for the populations of the subspecies in the study area.

Capparis sikkimensis subsp. ***yunnanensis*** (Craib & W.W.Sm.) M.Jacobs

Capparis sikkimensis subsp. *yunnanensis* (Craib & W.W.Sm.) M.Jacobs (Jacobs 1965: 496). – *Capparis yunnanensis* Craib & W.W.Sm. (Craib & Smith 1916: 91).

Capparis bhamoensis Raizada (Raizada 1941: 127). – **Type**: MYANMAR • Bhamo; Apr. 1923; *Smales X6*; lectotype: DD n.v., designated by Jacobs (1965: 496).

Type material

CHINA – **Yunnan** • Szemao; *A. Henry 12986*; holotype: E [E00217925]; isotypes: A [A00042262], K [K000380499, K000380500], US [US00100597].

Other material examined

VIETNAM – **Lao Cai Province** • Environs de Chapu [Sa Pa]; Apr. 1936; *Petelot 5951*; NY [NY04746980], P [P05454770], VNM.

Description

Twigs densely pubescent, later glabrescent. Stipular thorns up to 5 mm long, often lacking. Petiole ca 1 cm long. Leaf blade elliptic, elliptic-lanceolate or obovate, up to ca 10–15 cm long; base cuneate or rounded, top rounded, obtuse or acute; upper surface glabrous, lower surface pubescent when young, later glabrescent. Flowers in subumbels 3–7-flowered; sepals 1.3–2.1 cm long; petals ca 2 cm long; stamens (60–)85–120; gynophore 3–4 cm long, glabrous; ovary ca 3 mm long, glabrous. Fruit ellipsoid or globose, 3–5 cm in diameter.

Distribution and ecology

Myanmar, China, Vietnam (Jacobs 1965). In Vietnam recorded from Lao Cai Province by Ban & Dorofeev (2003). Mixed forests, valleys up to 2300 m a.s.l. (Zhang & Tucker 2008). In Lao Cai Province collected along a stream at ca 1200 m a.s.l. (*Petelot 5951*).

Phenology

Flowering March–April, fruiting October–December (Zhang & Tucker 2008).

Provisional conservation status

Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012), lacking information on the population status of the subspecies in the study area.

Vernacular name

'Cáp vân nam' (Ban & Dorofeev 2003).

Capparis subsessilis B.S.Sun

Capparis subsessilis B.S.Sun (Sun 1964: 110).

Type material

CHINA – **Kwangxi** • Lung-Tsin Hsien; 22 Oct. 1956, *T. D. Li 3112*; holotype: IBK [IBK00406871]; isotype: GAC [GAC0002093].

Other material examined

VIETNAM – **Cao Bang Province** • Tra Linh District, municipality Quoc Toan, vicinities of Lung Tao village, about 12 km from Cao Bang town to the NNE; 22°45′ N, 106°19′ E; 14 Dec. 1998; *Hiep et al. CBL 1243*; HN, LE [LE01077261, LE01077262] • Tra Linh District, Quoc Toan Commune (Ho Thang Hen Lake); 18 Dec. 1998; *Cuong et al. VN 469*; HN • Tra Linh District, Quoc Toan Commune; 24 Jul. 2002; *Hiep et al. W 17466*; HN.

Description

Shrubs or small trees up to ca 5 m tall. Twigs glabrous. Stipular thorns lacking. Petiole 1–2 mm long. Leaf blade elliptic or ovate-elliptic, chartaceous or subchartaceous, 2.1–3 times as long as wide, 8.6–11.2(–12.5) × (3.1–)3.5–4.7(–5.4) cm; base cordate, top acuminate, with tip up to 1.6 cm long; surfaces glabrous; nerves 9–11 pairs. Flowers serial 1–2 in supra-axillary rows, otherwise unknown. Fruit

subglobose, ca 7–10 mm in diameter, with pedicel (1.2–)1.7–2.5 cm long and gynophore (2–)2.5–3.8 cm long.

Distribution

China, Vietnam. The species has been firstly reported from Vietnam, in the Cao Bang Province, by Zhang & Tucker (2008). Forests, up to 1000 m (Zhang & Tucker 2008). In Vietnam *Capparis subsessilis* has been collected in primary semideciduous open broadleaved forest, on limestone at 600–800 m a.s.l. (*Hiep et al. CBL 1243*).

Phenology

Flowering in July–August, fruiting in October–December (based on the available material).

Provisional conservation status

Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012), lacking information on the population status of the species in the study area.

Taxonomic remarks

Jacobs (1965) stated that *Capparis subsessilis* is related to *C. urophylla* F.Chun. The latter species, included in the Seriales-Group and known from China and Laos, differs in the smaller leaves and shorter gynophore.

Capparis thorelii Gagnep.

Capparis thorelii Gagnep. (Gagnepain 1908a: 214).

Type material

CAMBODIA • Oudan [Oudong]; 1866–1868; *Thorel 2037*; lectotype: P [P04022397], designated by Fici (2023: 33); isolectotypes: P [P04022396, P04022398], K [K000651019], L [L0035361], MPU [MPU600750].

Other material examined

VIETNAM – **Binh Thuan Province** • Bac Binh District, Phan Son Commune; 4 Apr. 2010; *Thuong et al. Thuong 04*; HN • Bac Binh District, Phan Son Commune; 4 Apr. 2010; *Bach et al. VK 3640*; HN, KRIB. – **Ninh Thuan Province** • Phan Rang, ouest de la gare de Song Mao; 25 Sep. 1940; *Poilane 30532*; L [L1855682], P [P04747263], VNM.

Description

Shrubs or small trees up to 5 m tall, sometimes climbers. Twigs pubescent, later glabrous or glabrescent, often zig-zag. Stipular thorns recurved, strong, up to 6 mm long. Petiole (3–)4–7 mm long. Leaf blade chartaceous or subcoriaceous, 1.2–2.1(–2.5) times as long as wide, (1.2–)1.7–2.9(–4) × (0.9–)1.3–2(–2.5) cm, widest at or above the middle; base rounded or obtuse, top rounded, sometimes subemarginate; surfaces glabrescent; nerves 4–6 pairs. Flowers in lateral subumbels often arranged in a panicle; pedicels (0.6–)0.8–1.4(–1.7) cm long; sepals (3.5–)4–5(–5.5) × 2–3 mm, glabrous, sometimes ciliate; petals white, obovate, 4.5–6(–7) × 2–3 mm, pubescent inside at the base; stamens ca 35, filaments ca (6–)7–10 mm long; gynophore (0.7–)1–1.5 cm long, glabrous; ovary ovoid, 1.1– 1.5 × 0.6–1 mm, glabrous, with beak to ca 0.4 mm long. Fruit globose or subglobose, on thickened stipe, ca 1.1–2 × 1.1–1.8(–2) cm.

Distribution and ecology

Thailand, Cambodia, Vietnam (Jacobs 1965). In Vietnam the species has been reported from Ninh Thuan Province by Ban & Dorofeev (2003), while during the present research also material from the Binh Thuan Province has been examined. Dry scrub and bamboo forest at low elevation (Fici 2023). In Vietnam the species has been collected in open forest on sandy soil in Ninh Thuan Province (*Poilane 30532*).

Phenology

Flowering December–March (Chayamarit 1991). Fruiting material was collected in September in Ninh Thuan Province (*Poilane 30532*).

Provisional conservation status

Data Deficient (DD) according to *IUCN Red List Categories and Criteria* (IUCN 2012), lacking information on the population status of the species in the study area.

Vernacular name

'Cáp thorel' (Ban & Dorofeev 2003).

Taxonomic remarks

Species related to *Capparis sepiaria*, but differing in the glabrescence of the lower surface of the leaves, in the shorter ovary with pronounced beak and in the larger fruit with thickened stipe (Fici 2023).

Capparis tonkinensis Gagnep.

Capparis tonkinensis Gagnep. (Gagnepain 1908a: 215).

Type material

VIETNAM • Tonkin, in montibus Lang He; 18 Oct. 1888; *Bon 4016*; holotype: P [P04022385]; isotype: L [L0035362].

Other material examined

VIETNAM – **Ha Nam Province** • Monts entre Lan Mat et Lat Son; 28 Apr. 1884; *Bon s.n.*; P [P05454502] • In montium Thinh Chau; 19 Sep. 1884; *Bon 2731*; P [P05454465, P04747240] • Kim Bang District, Ba Sao Commune; 28 Sep. 1976; *Phan Ke Loc P3505*; HNU. – **Hai Phong Province** • Cat Hai District, Cat Ba National Park; 3 Mar. 2010; *Bach et al. PTV 334*; HN. – **Khanh Hoa Province** • Nha-Trang and vicinity; 11–26 Mar. 1911; *Robinson 1483*; P [P05454495], NY [NY04747115] • Presqu'île de Nui Han Heo, pr. Nhatrang; 12 Jun. 1923; *Poilane 6860*; P [P05454503]. – **Nghe An Province** • In montibus Lan Mat [Lang Mat]; 25 Nov. 1883; *Bon 2325*; P [P05454509, P04747237] • Massif de Len Ca près de Song Con, pr. de Vinh; 27 Jul. 1929; *Poilane 16466*; P [P05454498]. – **Ninh Binh Province** • Cho Ganh; Sep. 1923; *Petelot 1448*; P [P05454507, P05454508], VNM. – **Quang Ninh Province** • Pres Quang-Yen; Aug. 1885; *Balansa 1479*; P [P05454499] • Hon Veu Island; 20 Aug. 2002; *Phuong et al. 5188*; HN • Cong Do Island; 26 Mar. 2022; *Tien 143*; HN • Bu Xam Island; 19 Aug. 2002; *Phuong et al. 5080*; HN • Ha Long City, Thien Cung Cave; 7 Dec. 2012; *Thuong 32*; HN. – **Yen Bai Province** • Yen Bay; Apr. 1931; *d'lleizette 472*; P [P05454500].

Description

Climbers 1–5 m tall. Twigs pubescent, later glabrescent, purplish or brownish. Stipular thorns recurved, 1–3 mm long, sometimes lacking. Petiole (1.5–)2–5(–8) mm long. Leaf blade coriaceous, lanceolate, ca 2–3.5 times as long as wide, widest at the middle or below, (3.3–)3.5–8.7 × (1.4–)1.7–4 cm; base

rounded or subcordate, top acute or acuminate, mucronulate; surfaces glabrous; nerves 5–7 pairs. Flowers in subumbels or racemes, often constituting a small panicle; pedicels 2–5(–8) mm long; sepals concave, 2.5–4 × 2–3 mm, glabrous or puberulous outside, the inner pair ciliate; petals white, obovate, 2.5–5 × 2–2.5 mm, woolly at margins; stamens 19–24, with filaments ca 1.5–3(–3.5) mm long; gynophore ca 1–3 mm long, glabrous; ovary conical, 1.2–1.5(–2) × 0.7(–1) mm, glabrous, beaked. Fruit subellipsoid or globose, 9–14 × 6–10 mm, in some cases apiculate.

Distribution and ecology

Vietnam. Reported by Ban & Dorofeev (2003) from Yen Bai, Quang Ninh, Ninh Binh, Nghe An, Khanh Hoa and Ninh Thuan provinces. During the present research also material from Hai Phong and Ha Nam provinces has been examined. Secondary forests, on rocky soil, sand, loam or limestone, up to 800 m a.s.l. (Jacobs 1965; Ban & Dorofeev 2003). In Ninh Binh Province the species has been collected in limestone hills (*Petelot 1448*), in Khanh Hoa Province in forest, on clayey-rocky soil (*Poilane 6860*), in Ninh Thuan Province in forest at 700 m a.s.l. (*Poilane 10128*).

Phenology

Based on Jacobs (1965) the species seems to be fertile throughout the year. Ban & Dorofeev (2003) reported flowering period in September–October, fruiting period in February–March. In Khanh Hoa Province flowering material was collected in June (*Poilane 6860*), in Ha Nam Province in September (*Bon 2731*); fruiting material was collected in March in Khanh Hoa Province (*Robinson 1483*) and Ninh Thuan Province (*Poilane 10128*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). No risks were detected for the populations of the species in the study area.

Vernacular name

‘Cáp bắc bộ’ (Ban & Dorofeev 2003).

Uses

The young shoots are used as vegetables (Ban & Dorofeev 2003).

Taxonomic remarks

Jacobs (1965) stated that this species is related to *Capparis cantoniensis*, which differs in having greenish or greyish twigs, an acute or obtuse leaf base and subumbels arranged in a large, terminal panicle. According to the same author (Jacobs 1965), *C. tonkinensis* also shows affinities with *C. parviflora* Hook.f. & Thomson, which is a shrub with twigs lacking the purplish tinge, and is also distinguished by longer leaves, pedicels and gynophore, and a more truncate ovary.

Capparis trinervia Hook.f. & Thomson var. ***trinervia***

Capparis trinervia Hook.f. & Thomson var. *trinervia* (Hooker & Thomson 1872: 175).

Capparis kunstleri King (King 1889: 396). – **Type**: MALAYSIA • Gunong Booboo; Dec. 1885; *King’s Collector* 8337; lectotype: K [K000643958], designated by Fici (2023: 33); isolectotypes: CAL [0000004992, CAL0000004993, CAL 0000004994, CAL0000005007].

Type material

MYANMAR • Tenasserim; *Helfer 185*; lectotype: K [K000247349], designated by Jacobs (1965: 500).

Other material examined

VIETNAM – **Binh Thuan Province** • Bac Binh District, Da Mi Commune; 12 Mar. 2013; *Thuong 59*; HN. – **Cao Bang Province** • Nguyen Binh District; Jun. 1976; *Do et al. DB 203*; HN. – **Ha Noi** • Ba Vi District (Thu Phap); 22 Apr. 1976; *Ly Bien Ve 118*; HN • Tu-Phap; May 1887; *Balansa 4076*; P [P05454479, P05454491], K [K005755389]. – **Kon Tum Province** • Dakto; 20 Nov. 1946; *Poilane 35551*; P [P05454490] • Sa Thay District, Chu Mom Ray National Park; 25 May 2005; *Phuong et al. Phuong 8535*; NIMM. – **Lam Dong Province** • Blao pro. du Haut Donai; 22 Jan. 1933; *Poilane 21760*; P [P05454086], K [K005755387]. – **Nghe An Province** • Quy Hop District, Chau Cuong Commune; 11 May 2009; *Cuong et al. VN 2060*; HN • Que Phong District, Que Son Commune; 4 Jun. 2005; *Trai et al. 8517*; NIMM. – **Phu Tho Province** • Entre la reserve forest. de Chan-mong et la gare de Phu-Tho; 24 Apr. 1914; *Fleury 32276*; P [P05454084, P05454085, P05454087] • Thanh Son District, Xuan Son Commune; 2 Jul. 2003; *Phuong et al. Phuong 6487*; HN • Ha Hoa District (Ao Chau); 13 Sep. 2000; *Phuong et al. Phuong 3361*; HN. – **Quang Tri Province** • Da Krong District; 2004; *Phuong et al. Phuong 8953*; HN. – **Thai Nguyen Province** • Vo Nhai District, Than Sa Commune; 29 Aug. 2006; *Loc et al. HAL 9184*; HN. – **Thanh Hoa Province** • Nhu Xuan District, Yen Le Commune; 19°40′58″ N, 105°27′54″ E; 8 Jun. 2009; *Bach et al. VK 2892*; HN, KRIB • Thuong Xuan District, Xuan Lien Commune; 23 Aug. 2013; *Hai et al. XL 391*; HN. – **Vinh Phuc Province** • Me Linh District, Ngoc Thanh Commune; 24 Oct. 2010; *Phuong et al. Phuong 4534*; HN • Me Linh District, Ngoc Thanh Commune; 5 Dec. 2012; *Thuong 30*; HN • Me Linh District, Ngoc Thanh Commune; 29 Jun. 2013; *Thuong 61*; HN • Tam Dao District, Tam Dao National Park; 28 May 1977; *Ban et al. Ban 112*; HN.

Description

Shrubs up to 4–5 m tall, or climbers. Twigs pubescent, later glabrescent, angular. Stipular thorns patent or slightly recurved, 1–3(–5) mm long. Petiole (0.4–)1–1.7(–1.8) cm long, pubescent. Leaf blade subcoriaceous, (1.9–)2.2–3.2(–3.4) times as long as wide, (5.5–)6.2–14(–19) × (2.4–)2.8–5.5(–6.5) cm, widest at or above the middle, with margin often revolute; base cuneate or acute, top acute, subacuminate or acuminate; margin often revolute-undulate; surfaces glabrescent; nerves (2–)3–4(–10) pairs. Flowers (3–)6–10(–15) conferted at the top of twigs or on lateral subumbels, in some cases flowers solitary at the axils of the upper leaves; pedicels (1.3–)2–4.2(–5) cm long, pubescent; sepals (8–)10–14 × (6–)8–11 mm, outside pubescent; petals white or reddish, obovate, 12–16(–17) × 8–9(–10) mm, pubescent in the basal part; stamens ca (30–)60–70, with filaments ca 2–2.7 cm long; gynophore 2.7–4.5(–5) cm long, glabrous or puberulous at the base; ovary ellipsoid, (2–)2.5–3 × 1–2 mm, shortly beaked, glabrous or puberulous. Fruit globose, ca (2.8–)3.5–5 cm in diameter.

Distribution and ecology

Myanmar, Malaysia, Laos, Vietnam, Indonesia. The occurrence in Thailand, reported by Jacobs (1965), was not confirmed by Chayamarit (1991). In Vietnam the species has been recorded from Phu Tho, Ha Tay, Ninh Binh, Kon Tum and Lam Dong provinces by Ban & Dorofeev (2003). During the present research also material from Cao Bang, Nghe An, Vinh Phuc, Thanh Hoa, Ha Noi, Thai Nguyen, Quang Tri and Binh Thuan provinces has been examined. Dense forests, secondary forests, scrubs and open vegetation (Ban & Dorofeev 2003; Fici 2023). In Lam Dong Province the species has been collected in dense forest on rich, red soil at 800 m a.s.l. (*Poilane 21760*), in Kon Tum Province on basaltic, red soil at 600 m a.s.l. (*Poilane 35551*).

Phenology

Flowering January–May (Ho 1999; Fici 2023). In Lam Dong Province fruiting material was collected in January (*Poilane 21760*), in Kon Tum Province in November (*Poilane 35551*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The species is widespread in the study area, where no risks were detected for its populations.

Vernacular name

'Mác hoe pha' (Ban & Dorofeev 2003).

Taxonomic remarks

As underlined by Jacobs (1965), *Capparis trinervia* is characterized by great polymorphism. In the study area, the number of nerve pairs in the leaf blade is reported to be 3–4 (Ho 1999), but their pattern and number is very variable across the whole distribution range (Fici 2023). Recently, a new variety of this species, *C. trinervia* var. *chungiana* Julius, has been described from Peninsular Malaysia (Julius 2022). This variety is mostly distinguished by its broadly ovate to ovate-elliptic leaf blade, reddish-brown drying leaves (rarely pale green with venation pale yellow), obscure intercostal nerves and stamens in number of 30–40 (Julius 2022).

Capparis versicolor Griff.

Capparis versicolor Griff. (Griffith 1854: 577).

Capparis nhatrangensis Gagnep. (Gagnepain 1938: 598). – **Type**: VIETNAM – **Khanh Hoa Province** • Au nord de Nhatrang (7 kil) sur la route de Ninh Hoa; 27 Sep. 1929; *Poilane 4746*; lectotype: P [P04022399], designated by Jacobs (1965: 501).

Type material

MYANMAR • Mergui; Jan. 1835; *Griffith 936*; lectotype: K [K000247351], designated by Fici *et al.* (2022b: 7); isolectotype: K [K000247350], CAL [CAL0000004997].

Other material examined

VIETNAM – **Bac Giang Province** • Luc Nam District, Mai Suu Commune; 29 May 1970; *Duong Kinh BX1105*; VFM. – **Da Nang** • Tourane [Da Nang] and vicinity; May 1927; *J. & M.S. Clemens 3132*; P [P05454010], K [K005755346], NY [NY04747169]. – **Dak Nong Province** • Gia Nghia City, Dao Nghia Commune; 18 May 1979; *Phuong et al. Phuong 949*; HN. – **Hoa Binh Province** • Yen Thuy District, Yen Lak Village; 20°23.85′ N, 105°33.67′ E; 21 Aug. 2000; *Cuong et al. 1022*; HN, NY [NY04747119] • Luong Son District, Lam Son Commune; 13 May 1983; *Bui Duc Binh 589*; HNU • Luong Son District, Lam Son Commune; 29 Jun. 1976; *Bui Duc Binh D0142*; HNU. – **Khanh Hoa Province** • Au nord de Nhatrang (7 kilo) sur la route de Ninh Hoa; 27 Sep. 1927; *Poilane 4746*; P [P04022399]. – **Lao Cai Province** • Lao Cai City, Nam Cuong Commune; 18 Dec. 1964; *Doan Dieu Tra Viet Trung LX-VN 3030*; HN. – **Nghe An Province** • Kil. 70 de la route de Phu Qui à Kebon; *Poilane 16538*; P [P05454006] • Reserve forestière de Co-Ba; 13 May 1914; *Fleury 32497*; P [P05454008, P05454009] • Tuong Duong District, Tam Thai Commune; 24 Jul. 1998; *Franck VN 406*; HN • Quy Hop District, Chau Cuong Commune; 9 May 2009; *Cuong et al. VN 2047*; HN. – **Ninh Binh Province** • Nho Quan District, Cuc Phuong National Park; 20°22.80′ N, 105°31.71′ E; 9 Mar. 2002; *Soejarto et al. DDS 12093*; L [L1851588]. – **Quang Binh Province** • Quang Trach District, Quang Dong Commune; 12 Aug. 2008; *Bach et al. VK*

2323; HN, KRIB. – **Thai Nguyen Province** • Dong Hy District, Tan Long Commune; 25 Mar. 2006; *Phan Ke Loc et al. HAL 9153*; HN. – **Thanh Hoa Province** • Thuong Xuan District, Xuan Lien Commune; 4 Nov. 2011; *Hai et al. XL 48*; HN • Thuong Xuan District; 14 Jun. 1982; *Trai 2683*; NIMM. – **Vinh Phuc Province** • Lang Luc; *Eberhardt 4925*; P [P05454011] • Vinh Yen City (Lang Luc); *Blanche 4925*; VNM • Me Linh District, Ngoc Thanh Commune; 29 Jun. 2013; *Thuong 62*; HN.

Description

Climbers or shrubs up to 12 m tall. Twigs puberulous, later glabrescent, in some cases glabrous. Stipular thorns patent or recurved, 1–2(–5) mm long, or lacking. Petiole 4–7(–9) mm long. Leaf blade subcoriaceous, (1.6–)2–3(–3.2) times as long as wide, widest below or above the middle, (2.5–)3–10(–11) × (1–)1.3–2.8(–3.7) cm; base acute or obtuse, top acute or acuminate; surfaces glabrous; nerves (4–)6–8(–9) pairs. Flowers in axillary or terminal subumbels, 2–4-flowered, or sometimes the flowers solitary, axillary, at the top of twigs; pedicels (1.7–)2–3.9 cm long; sepals 8–11 × (4–)4.5–7(–9) mm, glabrous or ciliate at the top; petals white, pink, red or yellow, suborbicular or obovate, (8–)10–18(–20) × (5–)6–10(–14) mm, glabrous or pubescent inside in the basal part; stamens (31–)50–70, with filaments ca 3–5 cm long; gynophore 2–3.9(–5) cm long, glabrous; ovary ovoid, ca 1.5–2 × 1–1.5 mm, glabrous. Fruit globose, 1.3–4.5(–5) cm in diameter.

Distribution and ecology

China, Myanmar, Malaysia, Vietnam (Jacobs 1965) and Thailand (Chayamarit 1991). In Vietnam recorded by Ban & Dorofeev (2003) from Ha Giang, Vinh Phuc, Ha Tay, Hoa Binh, Nghe An and Khanh Hoa provinces. During the present research also material from Thai Nguyen, Bac Giang, Thanh Hoa, Ninh Binh, Quang Binh, Da Nang and Dak Nong provinces has been examined. Forests and scrubs, up to 1800 m a.s.l. (Jacobs 1965), secondary forests on limestone (Ban & Dorofeev 2003). The species has been collected in thicket on a hill in Da Nang Province (*J. & M.S. Clemens 3132*), and in an open area of secondary forest in Hoa Binh Province (*Cuong et al. 1022*).

Phenology

Flowering April–July (Zhang & Tucker 2008). Flowering and fruiting material was collected in September in Khanh Hoa Province (*Poilane 4746*), fruiting material in August in Hoa Binh Province (*Cuong et al. 1022*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The species is widespread in Vietnam, and no risks were detected for its populations in the study area.

Vernacular name

'Hồng trâu' (Ban & Dorofeev 2003).

Taxonomic remarks

Jacobs (1965) included *Capparis nhatrangensis*, a species described by Gagnepain (1938) from Khanh Hoa Province, among the synonyms of *C. versicolor*, recording for the type of the former taxon the following characters: stipular thorns conical and slightly recurved 2 mm long, leaf blades ca 2.7–3 × 1.2 cm, nerves 4–5 pairs, flowers axillary, solitary, sepals very concave, thin, 6–8 mm in diameter, glabrous but ciliate at the top, stamens 31, gynophore 2.5 cm long, ovary 2 mm long and immature fruit subglobose, 3 × 2.6 cm.

Capparis viburnifolia Gagnep.
Fig. 28

Capparis viburnifolia Gagnep. (Gagnepain 1938: 598).

Type material

VIETNAM – **Lai Chau Province** • Seoleng piste de Phong Tho à Song tong Ngai; 7 Apr. 1936; *Poilane 25565*; holotype: P [P04022395].

Other material examined

VIETNAM – **Dien Bien Province** • Dien Bien District, Sam Mun Commune; 11 Mar. 2015; *Thuong et al. Thuong 65*; HN. – **Hoa Binh Province** • Entre Suyut et Chobo; 25 Jan. 1938; *Poilane* 27197; L [L1851598], P [P04747251], VNM. – **Quang Tri Province** • Col d'Ailao; 10 Febr. 1930; *Poilane 17289*; P [05454108], VNM.

Description

Climbers up to ca 6 m long. Twigs densely brown pubescent, sometimes later glabrescent, angular. Stipular thorns recurved, up to 6 mm long. Petiole 6–15 mm long, pubescent. Leaf blade 1.6–2.2(–2.8) times as long as wide, (5.5–)6–9(–9.5) × (2–)2.5–5.2 cm; base subcordate or obtuse, top acuminate with tip up to 1 cm long; upper surface pubescent, later glabrescent, lower surface densely pubescent; nerves 4–7 pairs. Flowers conferted at the top of twigs; pedicels 2–3 cm long, pubescent; sepals (8–)11–15 × 6–10 mm, densely pubescent outside; petals white to violet, ca 12–20 × 15 mm, pubescent mostly outside; stamens ca 75, with filaments ca 2.5 cm long; gynophore 2–3.5 cm long, pubescent at the base; ovary ovoid, ca 3 × 2 mm, glabrous. Fruit unknown.

Distribution and ecology

China, Thailand, Vietnam (Zhang & Tucker 2008). In the latter country recorded by Ban & Dorofeev (2003) from Lai Chau and Khanh Hoa provinces. During the present research also material from Dien Bien, Hoa Binh and Quang Tri provinces has been examined. Moist forests, clearings, up to 1300 m a.s.l. (Chayamarit 1991; Zhang & Tucker 2008). In Quang Tri Province collected at 800 m a.s.l. (*Poilane 17289*).

Phenology

Flowering February–March (Zhang & Tucker 2008). In Vietnam flowering material was collected in January in Hoa Binh Province (*Poilane 27197*), in April in Lai Chau Province (*Poilane 25565*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). Based on the available information, no risks were detected for the populations of the species in the study area.

Vernacular name

'Cáp lá vót' (Ban & Dorofeev 2003).

Capparis zeylanica L.

Capparis zeylanica L. (Linnaeus 1762: 720).

Capparis horrida L.f. (Linné 1782: 264). – **Type**: Sri Lanka • Ceylon, s.loc.; *König s.n.*; lectotype: C [C10009054], designated by Jacobs (1965: 506).

Capparis dealbata DC. (Candolle 1824: 246). – **Type**: INDONESIA • Timor; *Anonymous s.n.*; lectotype: G-DC [G00207277], designated by Jacobs (1965: 506).

Capparis quadriflora DC. (Candolle 1824: 247). – **Type**: COUNTRY UNKNOWN • Inde orient., s.loc.; *Anonymous s.n.*; lectotype: G-DC [G00207298], designated by Jacobs (1965: 506).

Fig. 28. Flowering branch of *Capparis viburnifolia* Gagnep. (Dien Bien Province, *Thuong et al. Thuong 65*). Photo by Danh T. Sy.

Capparis terniflora DC. (Candolle 1824: 247). – **Type**: INDIA • Coromandel; *Anonymous s.n.*; lectotype: P n.v., designated by Jacobs (1965: 506).

Capparis aurantioides C.Presl (Presl 1835: 86). – **Type**: PHILIPPINES • Luzon; *Haenke s.n.*; lectotype: PRC [PRC450494], designated by Jacobs (1965: 506).

Capparis rufescens Turcz. (Turczaninow 1854: 321). – **Type**: INDONESIA • Sumbawa; *Zollinger 3381*; lectotype: G [G00237963], designated by Fici (2016: 174); isolectotype: KW [KW001000832].

Capparis erythrodasys Miq. (Miquel 1855: 397). – **Type**: INDONESIA • Java, Gunong Gambing; *Junghuhn s.n.*; lectotype: U [U0000955], designated by Fici (2016: 174); isolectotype: L [L0035365].

Capparis hastigera Hance (Hance 1868: 296). – **Type**: CHINA • Kwangtung, Pak-Sha; 19 Nov. 1866; *Hance 13732*; lectotype: BM, designated by Jacobs (1965: 506).

Capparis swinhoii Hance (Hance 1868: 296). – **Type**: CHINA • Hainan; Mar. 1868; *Swinhoe 14409*; lectotype: BM, designated by Jacobs (1965: 506).

Capparis crassifolia Kurz (Kurz 1873: 227). – **Type**: MYANMAR • Pegu; 20 Mar.; *Kurz 1825*; lectotype: K [K000247354], designated by Fici (2016: 174); isolectotypes: CAL [CAL0000005020, CAL0000005021, CAL 0000005022].

Capparis polymorpha Kurz (Kurz 1873: 227). – **Type**: MYANMAR • Pegu; Apr. 1854; *Kurz 1828*; lectotype: CAL n.v., designated by Jacobs (1965: 506); isolectotype: K [K000247353].

Capparis xanthophylla Coll. & Hemsl. (Collett & Hemsley 1890: 20). – **Type**: MYANMAR • Jemethen; Feb. 1888; *Collett 93*; lectotype: K [K000247352], designated by Jacobs (1965: 506):

Capparis latifolia Craib (Craib 1922: 232). – **Type**: THAILAND • Muang Lom Sak; 3 Apr. 1922; *Kerr 5738*; lectotype: K [K000643981], designated by Fici (2016: 174); isolectotypes: BM [BM000629524], P [P05454068, P05454074], TCD [TCD0010331].

Capparis subhorrida Craib (Craib 1922: 234). – **Type**: THAILAND • Nakawn Tai; 13 Apr. 1922; *Kerr 5826*; lectotype: K [K000643980], designated by Fici (2016: 174); isolectotype: BM [BM000629526].

Type material

SRI LANKA • Ceylon, s.loc.; *Hermann s.n.*; lectotype: BM, designated by Jacobs (1965: 505).

Other material examined

VIETNAM – **Binh Phuoc Province** • Phuoc Long District, Bu Gia Map Commune; 25 Feb. 2011; *Bach et al. PTV 661*; HN. – **Binh Thuan Province** • Phanri; 29 Oct. 1924; *Evrard s.n.*; P [P05454072]. – **Dong Nai Province** • Ad Tan Man in prov. Bien Hoa austro-Cochinchinae; Mar. 1877; *Pierre 3379*; P [P04746252, P04746253, P05453672, P05453675, P05453678, P05454075, P05454758, P06804843]. – **Gia Lai Province** • K'Bang District, So Pai Commune; 13 Mar. 2011; *Thuong et al. Thuong 05*; HN. – **Hai Phong** • Haiphong [Hai Phong], sur les digues; 10 Apr. 1886; *Balansa 4075*; P [P05454050]. – **Khanh Hoa Province** • Nha-Trang [Nha Trang] and vicinity; 11–26 Mar. 1911; *Robinson 1229*; NY [NY04747145], P [P05453759] • Route de Ninh Hoa près de Nhatrang [Nha Trang]; 1 Mar. 1922; *Poilane 2678*; P [P04463616, P04451347, P04451350] • Ile Tre près de Nhatrang [Nha Trang]; 11 Apr. 1922; *Poilane 2964*; P [P05454073, P05454078] • Nha Trang City, Hon Mat Island; 14 Apr. 2014; *Thuong 35*; HN. – **Kon Tum Province** • Kon Ray District, Tan Lap Commune; 17 Mar. 2011; *Bach et al. VK 4552*; HN, KRIB • Kon Ray District, Tan Lap Commune; 17 Mar. 2011; *Bach et al. PTV 730* HN. – **Lam Dong**

Province • Dalat and vicinity; Mar–Apr. 1932; *Squires 810*; NY [NY04747152], P [P05453751] • Duc Trong District (Gougah Falls); 25 Mar. 1961; *Tai 696*; VNM. – **Ninh Thuan Province** • Phanrang; 26 Jun. 1919; *Poilane 101*; P [P05453750], VNM • Ba Ban; *Poilane 9798*; P [P05453747], VNM • Environs de Tourcham; 2 Oct. 1918; *Fleury 39083*; P [P05454062] • Vinh Hai District, Ninh Hai Commune; 24 Jul. 2010; *Bach et al. PTV 428*; HN • Vinh Hai District, Ninh Hai Commune; 24 Jul. 2010; *Bach et al. VK 3914*; HN, KRIB • Bac Ai District, Phuoc Tien Commune; 2 Aug. 2010; *Bach et al. VK 3999*; HN, KRIB • Vinh Hai District, Ninh Hai Commune; 4 Aug. 2010; *Thuong et al. Thuong 11*; HN • Vinh Hai District, Ninh Hai Commune; 20 Mar. 2004; *Phuong et al. HLF 3205*; HN • Vinh Hai District, Ninh Hai Commune; 21 Mar. 2004; *Loc et al. HLF 4026*; HN • Vinh Hai District, Ninh Hai Commune; 5 Aug. 2012; *Bach et al. PTV 1071*; HN. – **Quang Ngai Province** • Binh Son District, Binh Hai Commune; 7 Aug. 2001; *Trai et al. 5727*; NIMM. – **Quang Ninh Province** • Quang Yen, Mar. 1909; *d'Alleizette 225*; P [P05453739, P05453753].

Description

Shrubs or climbers to 5(–10) m long. Twigs pubescent, often with reddish hairs, later glabrescent. Stipular thorns recurved, up to 6 mm long. Petiole (0.4–)0.7–1.4(–2) cm long. Leaf blades subcoriaceous, (1.1–)1.4–3(–8.6) times as long as wide, (2.6–)4–10(–18) × (0.3–)0.8–5.5(–9) cm, widest at the middle or below; base rounded, obtuse or acute, top rounded or acute, with a rigid, dark mucro; upper surface glabrescent, lower pubescent or glabrescent; nerves (3–)4–7(–8) pairs. Flowers serial, 2–6 in supra-axillary rows; pedicels 0.4–2(–3) cm long, pubescent; sepals (5–)6–11(–15) × (3–)4–7(–9) mm, pubescent outside and at margins; petals whitish, oblong, (7–)7.5–12(–19) × (3–)3.5–5(–8) mm, outside pubescent or glabrescent; stamens 30–45(–70), with filaments 2–3.5(–5) cm long; gynophore (2–)3.3–5(–6.5) cm long, pubescent at the base; ovary ellipsoid or ovoid, 1.5–2.5 × 1–1.5 mm, shortly beaked, glabrous. Fruit globose or ellipsoid, (1.1–)2 5 × (0.9–)1.7–4 cm.

Distribution and ecology

India (including Andaman Islands), Sri Lanka, Nepal, China, Myanmar, Thailand, Laos, Cambodia, Vietnam, Philippines, Indonesia (Jacobs 1965; Tucker *et al.* 2012; Fici 2023). In Vietnam recorded by Ban & Dorofeev (2003) from Quang Ninh, Hai Phong, Quang Tri, Thua Thien-Hue, Khanh Hoa, Lam Dong and Ninh Thuan provinces. During the present research also collections from Binh Thuan, Kon Tum, Gia Lai, Binh Phuoc, Dong Nai and Quang Ngai provinces have been examined. Forests, scrubs, riverine formations, forest margins, grasslands, hedges, limestone hills up to 700(–1000) m a.s.l. (Jacobs 1965; Chayamarit 1991; Ban & Dorofeev 2003).

Phenology

Flowering January–April (Fici 2023). In Ninh Thuan Province fruiting material has been collected in June (*Poilane 101*), in Khanh Hoa Province in April (*Poilane 2964*).

Provisional conservation status

Least Concern (LC) according to *IUCN Red List Categories and Criteria* (IUCN 2012). The species is widespread in the study area, occurring in several habitats, and no threats were reported for its populations.

Vernacular names

'Cáp gai đen', 'Cáp tích lan' (Ban & Dorofeev 2003); 'Gai den' (*Poilane 101*), 'Day mot ho' (*Poilane 2678*).

Uses

The root bark is used to treat diarrhea and as a medicine for the digestive tract. The leaves are applied to treat boils and hemorrhoids (Ban & Dorofeev 2003), and are also used to treat headaches (*Poilane 2678*).

Taxonomic remarks

Across its wide distribution range, *Capparis zeylanica* shows a remarkable variation in leaf morphology and flower size (Fici 2016). Jacobs (1965) pointed out that in some specimens from Vietnam, as well as from Myanmar and China, the leaf blade is very narrow (sometimes 3 mm wide) and parallel-sided, and that in such specimens the flowers tend to be comparatively small.

Discussion

The taxonomy of the genus *Capparis* in Vietnam required detailed study because some taxa are incompletely known and several deviating forms occur. Furthermore, different authors have reported widely differing numbers of species. Gagnepain (1908b) reported 13 species from the area, while later, Ho (1999) and Ban & Dorofeev (2003) reported 34 and 30 species, respectively. Over the past decade, several new species have been described from Vietnam, and additional intrageneric taxa have been reported from the country for the first time.

Recently, Fici *et al.* (2022b), in their checklist of *Capparis* in Vietnam underlined that the species richness of the country is comparable (within the Asiatic continent) only to China and India, while other Southeast Asian countries such as Thailand, Laos, and Cambodia have fewer species (Chayamarit 1991; Srisanga & Chayamarit 2004; Newman *et al.* 2007; Zhang & Tucker 2008; Cho *et al.* 2016; Maurya *et al.* 2020; Fici 2023). Jacobs (1965) stated that the endemicity is generally low within the genus *Capparis*, but regarded the eastern part of the Indochinese Peninsula, with special reference to central Vietnam, as a main center of speciation of the genus.

In the present study, 38 species of *Capparis* were recognized in Vietnam, 11 of which are endemic. Beyond these endemics, eight species occurring in Vietnam are widely distributed in southern Asia, from India eastwards to Indochina, and in some cases extending to China, Indonesia, and the Philippines (*C. acutifolia*, *C. assamica*, *C. cantoniensis*, *C. floribunda*, *C. grandis*, *C. micracantha*, *C. sikkimensis*, *C. zeylanica*). A single species, *C. sepiaria*, is also recorded from Africa and Australia. Seven species are shared between Vietnam and other areas of the Indochinese Peninsula (*C. erycibe*, *C. flavicans*, *C. koioides*, *C. pranensis*, *C. radula*, *C. siamensis*, *C. thorelii*). Two species are reported from the peninsula and China (*C. versicolor*, *C. viburnifolia*) and three species from the peninsula and Indonesia (*C. diffusa*, *C. pyrifolia*, *C. trinervia*). One species (*C. pubiflora*) occurs in various Indochinese countries, as well as in China, Indonesia and the Philippines. Furthermore, three species are known exclusively from Vietnam and China (*C. fengii*, *C. pubifolia*, *C. subsessilis*), one species from Vietnam, Laos and China (*C. khuamak*) and one species from Vietnam and Indonesia (*C. longestipitata*).

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