

Cayratia maritima B. R. Jackes (Vitaceae), a new addition to the flora of Taiwan

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Abstract. In addition to *Cayratia japonica* (Thunb.) Gagnep., the only species previously recorded from Taiwan, we report a second species, *C. maritima* B. R. Jackes, which was collected from the islet of Lutao. *Cayratia maritima* is easily distinguished from *Cayratia japonica* in having three leaflets in mature leaves. The populations from Lutao represent the northern distributional limit of *Cayratia maritima*, which was previously known from tropical Asia, Australia, and the Pacific Islands.

Keywords: *Cayratia japonica*; *Cayratia maritima*; New record; Taiwan; Vitaceae.

Introduction

Cayratia, a genus of *Vitaceae* consisting of 63 species (Jackes, 1987), is distributed mostly in tropical and subtropical Africa, Asia, Australia, and the Pacific Islands. This genus is characterized by axillary inflorescences with bisexual, tetramerous flowers. Only one species, *Cayratia japonica*, was previously recorded from Taiwan (Lu, 1977, 1993; Ying, 1995). Here we report a second species, *C. maritima* B. R. Jackes, which was recently found on the islet Lutao when a botanical inventory was made. *Cayratia maritima* may be distinguished by the presence of three leaflets, compared with the five to seven leaflets in *Cayratia japonica*.

Taxonomy of *Cayratia* in Taiwan

Cayratia A. L. Jussieu in Dict. Hist. Nat. Sci. 10: 103. 1818, nom. cons.; Dict. Class. Hist. Nat. 4: 46. 1823; Gagnepain, Notul. Syst. (Paris) 1(11): 346. 1911. — TYPE: *Cayratia pedata* (Lour.) Jussieu ex Gagnepain, Notul. Syst. (Paris) 1(11): 346. 1911.

Columella Loureiro, Fl. Cochinch. 85. 1790.

Climbing shrubs; tendrils leaf-opposed, usually branched. Leaves alternate, compound, 3-7-foliolate pinnate or pedate. Stipules 2. Inflorescence axillary, corymbose or umbellate. Flower bisexual, tetramerous. Calyx cup-shaped, indistinct. Petals valvate, spreading. Stamens inserted on the receptacle at the base of the disc, oppo-

site the petals. Disc adnate to and entirely surrounding the ovary, 4-lobed. Ovary 2-locular; style conical, stigma minute. Fruit a 2-4-seeded berry.

About 63 species (Jackes, 1987) in tropical and subtropical areas of Africa, Asia, Australia, and the Pacific Islands. Two species in Taiwan.

Key to the Species

- 1. Leaflets 3 *C. maritima*
- 1. Leaflets 5-7 *C. japonica*

1. *Cayratia japonica* (Thunb. ex Murray) Gagnepain, Notul. Syst. (Paris) 1(11): 349. 1911; Liu, Ill. Nat. Intr. Lign. Pl. Taiwan 2: 849. f. 693. 1962; Li, Woody Fl. Taiwan 523. 1963; Lu, Fl. Taiwan 3: 668. 1977; Lu, Fl. Taiwan, ed. 2, 3: 699. 1993; Ying, Col. Ill. Fl. Taiwan 5: 584. 1995.

烏斂莓 Figure 1

Vitis japonica Thunb., ex Murray, Syst. Veg. (ed. 14) 244. 1784.

Cissus japonica (Thunb. ex Murray) Wild., Sp. Pl. 1(2): 659. 1797.

Causania japonica (Thunb. ex Murray) Raf., Sylva Tellar. 87. 1838.

Columella japonica (Thunb. ex Murray) Merr., Philipp. J. Sci. Bot. 8: 145. 1918.

Cissus tenuifolia F. Heyne in Wall. List N. 6022. 1831. nom. nud.

Vitis tenuifolia (F. Heyne) Laws in Hook, f. Fl. Brit. Ind. 1: 660. 1875. nom. illeg.

Cissus tenuifolia F. Heyne ex Planch., Monogr. Phan. 5: 563. 1887.

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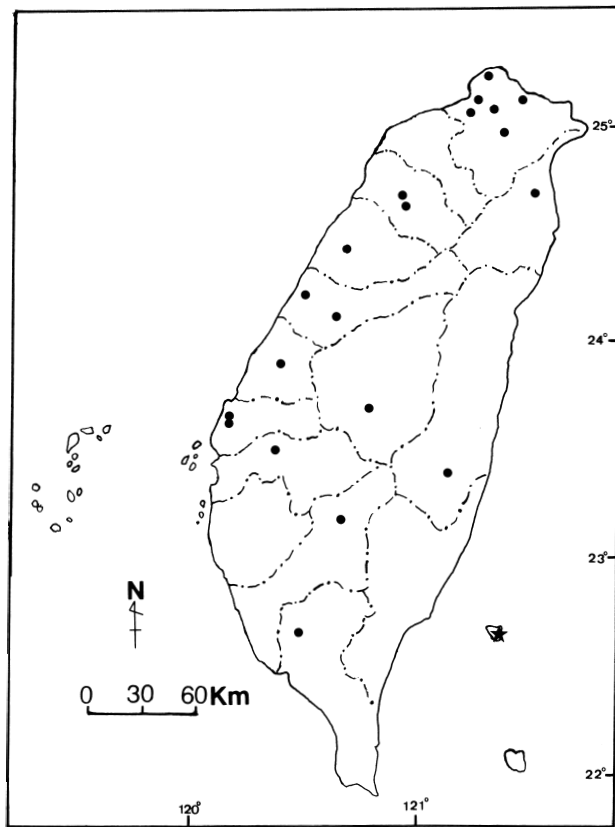


Figure 1. Distribution of *Cayratia japonica* (●), *Cayratia maritima* (★).

Vitis leucocarpa Hay., Icon. Pl. Formosana 3: 63. 1913.

Cissus japonica var. *dentata* Makino, Bot. Mag. Tokyo 23: 249. 1909.

Cayratia japonica var. *dentata* (Makino) Honda, Nom. Pl. Jap. 504. 1939.

Cayratia japonica var. *taiwaniana* Masamune, J. Geobot. 13: 3. 1964. nom. illeg.

Scrambling vine; tendrils leaf-opposed, 2-3-fid. Leaf pedate with 5 leaflets. Central leaflet ovate to broadly-lanceolate, apex acute, about 4-8 cm long and 2-4 cm broad; lateral leaflets oblique; margins serrate; petioles 4-7 cm long. Inflorescence axillary, corymbose or umbellate. Petals ovate. Stamens 4, opposite the petals, anthers ellipsoid. Style conical, short, stigma minute. Fruit rounded, with 2-4-seeds, endosperm in transverse section T-shaped

Specimen examined. TAIWAN. TAIPEI: Keelung, Masamune 88 (TAI); Tatungshan, Kuo 9025 (TAI); Paisawan, Huang 4992 (TAI); Chingmei, Huang 4533 (TAI); Tanshui, Cheng 658 (TAI); Kuanyinshan, Wu 1035 (TAI); HSINCHU: Hengshan, along Yulo Hsi (River), 140 m alt., Peng 13298 (HAST); Chutung, along Yulo-Hsi (River), 140 m alt., Leu 522 (HAST); MIAOLI: between Tunglo and Wumeikeng, a hilly burial ground, along

County Rd. #128, 5.5 km west of intersection of Freeway #1 and Co. Rd. #128., 125 m alt., Peng 11562 (HAST); TAICHUNG: Tso-lung-pu Hsu 4671 (TAI); Chingshui, Nanshan Temple, Yang 912 (TAI); CHANGHUA: Chichow farm, Hsu 4746 (TAI); Yuanlin, 29 Mar 1991 Hsiao s.n. (PPI); NANTOU: en route from Tungpu Hot Spring to Bunong Aboriginal Dwelling, 1,200-1,100 m alt., Peng 8227 (HAST); YUNLIN: Houan, Yang 483 (TAI); Mailiao, Chang 18477 (PPI); CHIAYI: Chuchi, along a creek nearby Hsianguang Temple, 250-400 m alt., Lin 456 (HAST); KAOHSIUNG: Taoyuan, en route from Tengchih to Liukuei, 1,500-2,000 m alt., Chen 586 (HAST); PINGTUNG: Pingtung city, Chung 734 (PPI); ILAN: Lotung, Yamamoto 3732 (TAI); HUALIEN: Yuli, Yamamoto 3110 (TAI).

Distribution and notes. Widespread in Asia extending from Annam, north to Japan and east to New Caledonia. The species is commonly found growing in primary forests of low to medium elevations in Taiwan.

Based on narrower leaflets of specimens collected from northern Taiwan, Masamune (1964) described a new taxon, *C. japonica* var. *taiwaniana*. However, that name is illegitimate, as he did not designate any type materials. Our observations indicate that the leaf morphology of *C. japonica* is quite variable and that shape and size may vary even within the same individual. Since *C. japonica* var. *taiwaniana* lies within the range of leaf morphology, we do not recognize this variety.

2. *Cayratia maritima* B. R. Jackes, Austrobaileya 2: 366. 1987. — TYPE: Australia: Lakefield, 26 Jun 1982, B. R. Jackes s. n. (holotype: BRI). 海岸烏斂莓 Figure 2

Scrambling vine, stems angular, simple hairs at nodes when young. Tendrils 2-3-fid, glabrous. Leaf trifoliolate. Central leaflet ovate to rhomboid, apex acuminate; lateral leaflets oblique, sometimes lobed, ca. 2-5 cm long and 1.5-2.5 cm wide. Margins crenulate-serrate. Upper surface glabrous at maturity except for the vertically compressed midrib which bears uniseriate hooked hairs. Lower surface usually glabrous, occasionally hooked hairs are present on veins near the junction of the petiole and lamina. Petiole 2-4 cm long. Stipules 2, triangular. Inflorescence axillary, 3-5 primary branches cymose. Calyx papillose. Petals papillose, valvate, spreading.

Specimens examined. TAIWAN. TAITUNG: Lutao, Seaslug Plain (Haisenping), seaside hot spring, Lin 3071 (TNM); Lutao, seaside, 30 Jun 1998 Huang s.n. (HAST); Chang 3972, 15974 (PPI); Huang 6972 (TAI).

Distribution and notes. Indonesia, New Guinea and neighbouring Pacific Islands. In Taiwan, only found on islet of Lutao, along coastlines.

This species is easily distinguished from *C. japonica* in having three leaflets, and readily distinguished from the related *C. trifolia* (L.) Domin by the 2-3-fid (vs. 4-5-fid) tendrils, and the mature leaves that are glabrous except for hooked hairs on the adaxial midrib. Previously this species was known only from the Southern Hemisphere.

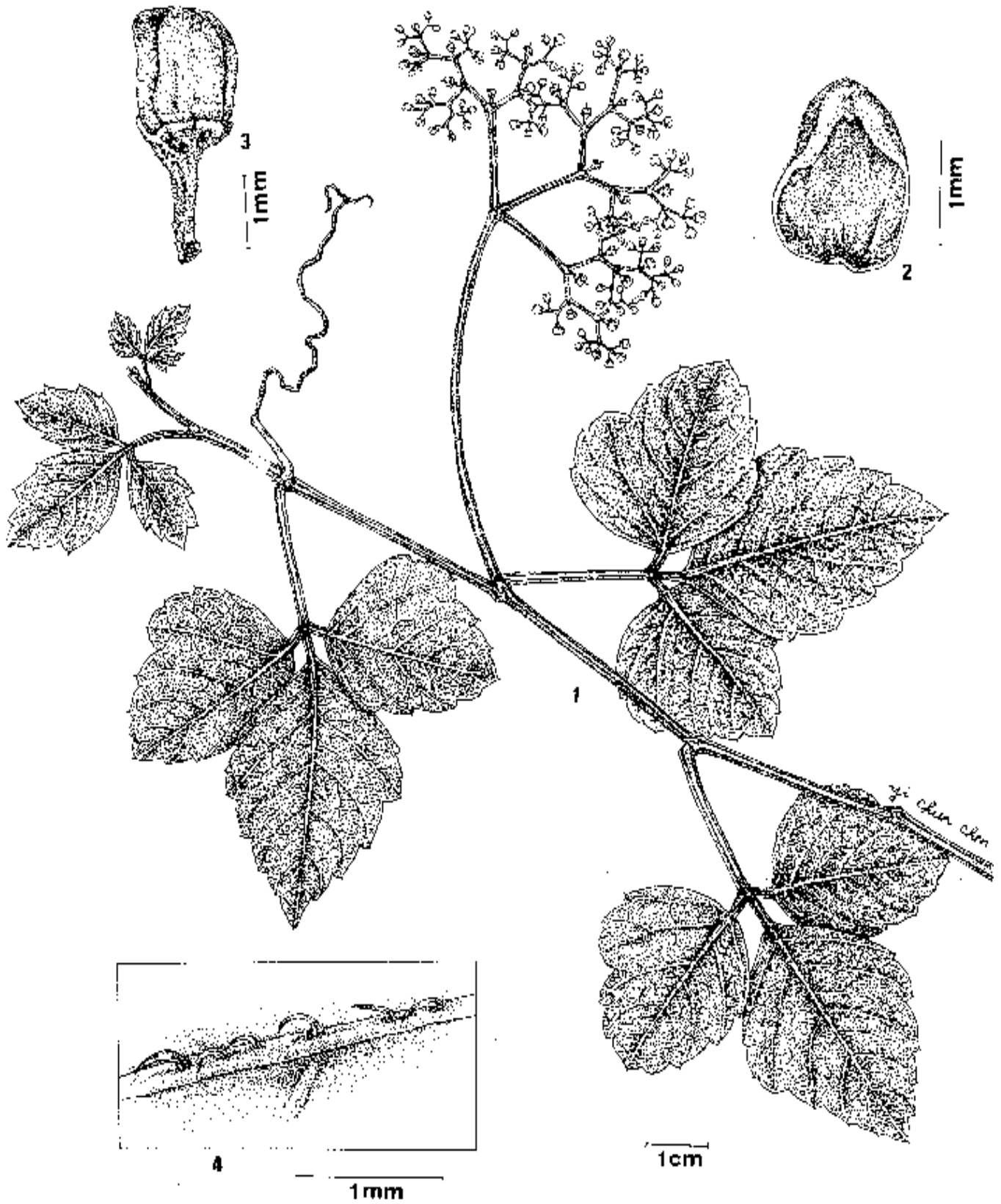


Figure 2. *Cayratia maritima* B. R. Jackes. 1, Habit; 2, Sepal; 3, Flower bud; 4, Hooked hairs on the midrib. (All from *Lin 3071*).

Obviously *C. maritima* has a tropical origin. Populations of Lutao, a tropical islet, represent the northern limit in distribution. The discovery of this species in Taiwan extends its distributional range.

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台灣產葡萄科新記錄植物 — 海岸烏斂莓

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依據台灣植物誌的記載，台灣產之烏斂莓屬僅有一種—烏斂莓 (*Cayratia japonica*)。本文報導最近在台灣東部綠島發現之本屬新記錄種—海岸烏斂莓 (*C. maritima*)，本植物以其成熟葉為三出葉，而與原有烏足狀五片小葉之烏斂莓明顯可分。依據文獻此種植物分布於澳州、印尼、新幾內亞和其鄰近太平洋島嶼，為一南半球分布的植物，綠島為北半球首度對此植物的採集，亦為此物種目前已知分布的北界。本文對本屬植物進行形態觀察，並提供檢索表及繪圖。

關鍵詞：烏斂莓；海岸烏斂莓；新記錄；台灣；葡萄科。