

***DUCHESNEA BRUNNEUS*, A NEW SPECIES OF ROSACEAE
FROM HUBEI, CHINA**

C. LEI, C.C. ZHANG, Y. WANG¹ AND J.Z. DONG*

Key Laboratory of Biologic Resources Protection and Utilization of Hubei Province, School of Biological Science and Technology, Hubei University for Nationalities, Enshi 445000, China

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Abstract

Duchesnea brunneus J. Z. Dong (Solanaceae) is described and illustrated here as a new species from Hubei, China. The newly described species is compared with its closely related species.

Introduction

Duchesnea belonging to the family Rosaceae is distributed throughout the world (Weber, 2003). In China *Duchesnea* is represented by 2 species and 1 variety, namely, *D. indica*, *D. chrysantha*, and *D. indica* var. *microphylla* (Li *et al.*, 2003). Most of them occur at the foot of shadowy hillside, slopes, ravines, river banks, meadows, field margins, and wet places. In 2010 and 2011, during our investigation on *Duchesnea* species, we found a new plant specimen with yellow petals, globose or coniform receptacle and aggregate fruits and primarily identified it to be in *Duchesnea*. Then we conducted an extensive field investigation in Hubei, Sichuan, Guizhou and Chongqing of China. A new species was found and it was described as *Duchesnea brunneus* J.Z. Dong based on its main features as follows: leaf blade 3-5-foliolate, mostly 5-foliolate; inflorescence terminal, cyme, petals yellow, rachis 2-3 branched; epicalyx long lanceolate, integer-edged; receptacle globose or coniform, ripening green to light green; aggregate fruits, ripening green to brown; achenes ripened brown and rugose; reniform, green and glabrous when fresh.

***Duchesnea brunneus* J. Z. Dong, sp. nov.**

Type: China. Hubei: cultivated at Wuhan Botanical Garden, CAS [collected in Wangchengpo mountain, Enshi, Hubei, China], 15 March 2011, Z. J. Dong (holotype, HIB; isotype, HIB). (**Fig. 1**)

Diagnosis: *Herba perennis. Folium 3-5-foliatum; Cymula terminalis; epicalyx integer; torus globosus, chlorus. Coenocarpium brunneus. Marura achenium brunneus, rugosus, imaturata achenium reniformis, chlorus.*

*Corresponding author: Email: djz21cn@yahoo.com.cn

¹Wuhan Botanical Garden, Chinese Academy of Sciences, Wuhan 430074, China.

Perennial herbs. Rhizome short, small, white, 2-3 mm in diameter, 1.5-2.0 cm long. Stolons 4-6(-12), 10-30 (60) cm long, 1.1-3.0 mm in diameter, 5-6 nodes, procumbent, the upper surface of the stolon red, the lower surface of the stolon green; nodes bearing adventitious roots, each node bearing mostly 3 leaves and a bud, a bud bearing mostly 3 leaves. Leaves 3-5-foliolate (mostly 5-foliolate), leaflets long oval, margin obtusely serrate, both surfaces green; petiole 2.0-2.5 cm long; stipules 2, broadly lanceolate, pink or green, adnate to base of petiole. Inflorescence terminal cyme, rachis 2-3 branched. Flowers small, 0.5-1.2 cm in diameter; pedicels 1.0-1.5 cm long; sepals 5, green, bigger than epicalyx, broadly lanceolate, integer-edged, enlarged in fruits, 1.4-1.6 × 2.4-2.8 mm in flowers, 1.5-2.2×3.4-3.6 mm in fruits; epicalyx lanceolate, green, integer-edged, enlarged in fruits, 0.5-0.8×1.7-2.2 mm in flowers, 1.0-1.2 × 3.2-3.7 in fruits; petals 5, yellow, obovate, 2.9-3.1×4.1-4.3 mm. Anthers yellow, fan-like, 1.2-1.7 × 1.5-2.1 mm. Carpels numerous, free, inserted on convex receptacle; receptacle globose or coniform, 1.7-2.1 mm in diameter, ripening green to light green; styles subterminal, deciduous; aggregate fruits ripening green to brown, 3.5-3.7mm in diameter. Achenes ovoid, rugose, 0.6-0.9 mm in diameter, reniform, green and glabrous when fresh, brown at maturity.

Phenology: Flowering period: April to May; fruiting period: May to November.

Habitat and distribution: Known from Wangchengpo mountain of Enshi, China, 109°28'30" E, 30°16'55" N, 1540 m, it grows under pine trees, together with shrubs, and from Wuhan Botanical Garden, c. 30°32'46" N, 114°25'05" E, 31 m, it grows at lake side. It also grows at road side, top of mountain, under trees, field side in many areas such as Sichuan, Guizhou, Hubei, Henan, Yunnan, Guangdong and so on, together with *D. indica*.

Table 1. Diagnostic characters of *D. brunneus*, *D. indica* and *D. indica* var. *microphylla*.

Characters	<i>D. brunneus</i>	<i>D. chrysantha</i>	<i>D. indica</i>	<i>D. indica</i> var <i>microphylla</i>
Leaf	3-5-foliolate, mostly 5-foliolate	3-foliolate	3-foliolate	3-foliolate, petiole densely villous
Inflorescence	Terminal, cymose	Axillary, single	Axillary, single	Axillary, single
Epicalyx	Lanceolate, integer-edged	Obovate, 3-5 serrated	Obovate, 3-5 serrated	Obovate, 3-5 serrated
Receptacle	Enlarged, ripening green	Enlarged, ripening red or pink	Enlarged, ripening red or pink	Enlarged, ripening red or pink
Stolon	4-6(-12), 0.1-0.5 m long, 2-3 mm in diam	1-3, 0.2 -0.65 m long, 0.6 -1.6 mm in diam.	1-3, 0.2 -0.65 m long, 0.6 -1.6 mm in diam.	1-3, 0.2 -0.65 m long, 0.6 -1.6 mm in diam.
Fruits	Ripening green to brown	Ripening red	Ripening red	Ripening red

Etymology: The specific epithet refers to the colour of the ripened aggregate fruits, which is different from the fruit colour of other species in *Duchesnea*.

The differentiating characters of newly described *D. brunneus* with its closely related species are summarized in Table 1.

Paratypes: Found in Hubei University for Nationalities, Enshi, Hubei, China, 30°17'48" N, 109°29'53" E, 456 m, about 100 individuals, and Wangchengpo mountain, Enshi, China, 30°20'31" N, 109°26'45" E, 1456 m, more than 1000 individuals. This species is also found distributed in many areas of China such as Sichuan, Guizhou, Hunan, Guangdong and so on.

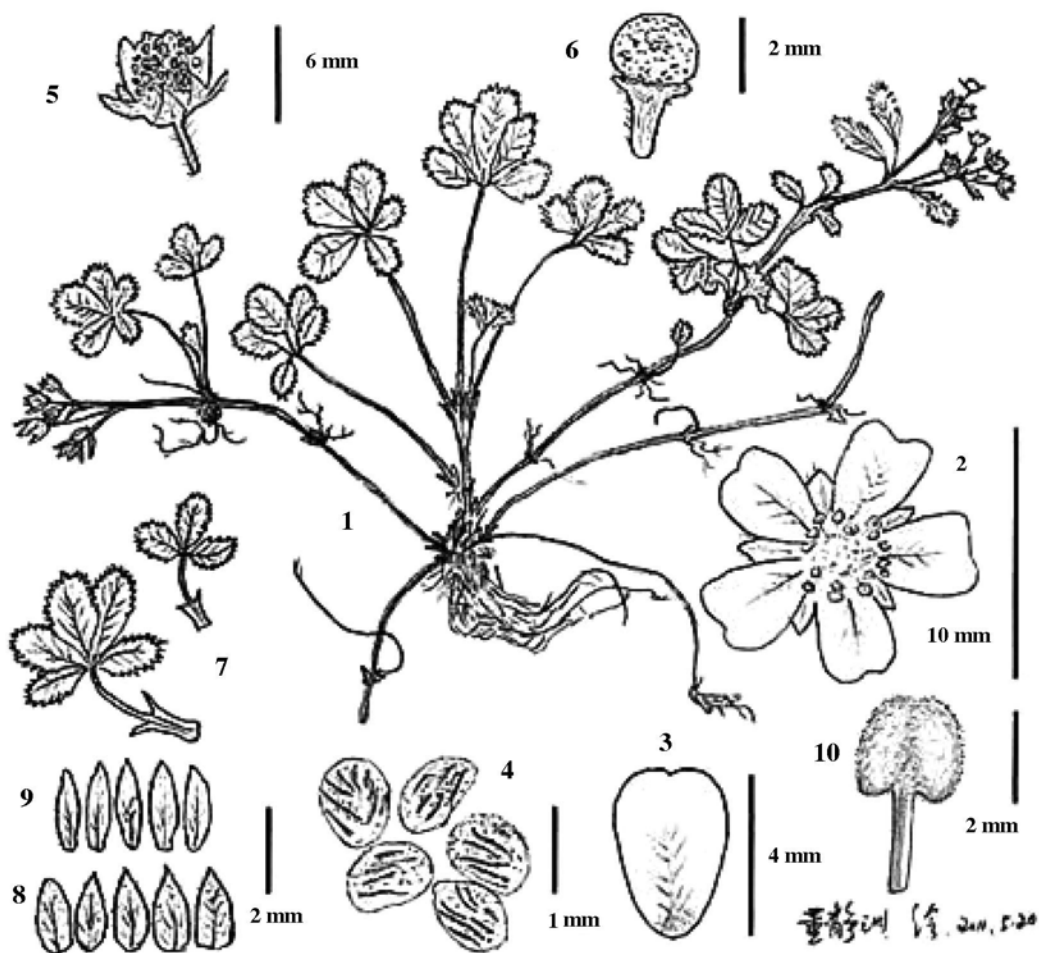


Fig. 1. *Duchesnea brunneus*. 1. Terminal inflorescence. 2. Flower. 3. Petal. 4. Achenes. 5. Aggregate fruits. 6. Receptacle. 7. Stipule. 8. Calyx. 9. Epicalyx. 10. Anther.

Discussion

Infrageneric taxonomy of *Duchesnea* is still unclear and needs further clarification (Naruhashi *et al.*, 1991). In Flora of China (Li *et al.*, 2003), *Duchesnea* includes *D. indica*, *D. indica* var. *microphylla* and *D. chrysantha*. However, in USDA classification, *Duchesnea* includes only *D. indica*, which is in agreement with Kalkman (1968). In fact, according to our investigation, *D. indica*, *D. indica* var. *microphylla* and *D. chrysantha* have the same main features and should be united into *D. indica* (Table 1). The main features of *D. brunneus* J.Z. Dong having terminal inflorescence, petals yellow, receptacle globose and ripening green to light green, aggregate fruits ripe brown provide adequate support for *D. brunneus* to be a new species different from *D. indica*, and *D. chrysantha*. So *D. brunneus* is identified as a new species.

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