

**GENUS *Didymocarpus* Wall. AND A NEW RECORD OF SPECIES  
*Didymocarpus purpureobracteatus* Smith FOR THE FLORA OF VIETNAM  
FROM XUAN LIEN NATURAL RESERVE**

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**ABSTRACT:** Species *Didymocarpus purpureobracteatus* Smith is a new record for the flora of Vietnam. It was regarded as one endemic species to China, but up to now we have found it in Xuan Lien natural reserve (Thanh Hoa province). Voucher specimens were deposited in the Herbarium of the Institute of Ecology and Biological Resources, Hanoi, Vietnam (HN). This species is closed to *D. poilanei* but differs by bract elliptic or ovate, ca. 3-8 mm long; sepal tube ca. 8-9 mm long, sepal lobed ca. 2-3 mm long. So far, in Vietnam there were 5 species of the genus *Didymocarpus* Wall. recorded *D. bonii*, *D. pulcher*, *D. kerrii*, *D. poilanei* and *D. purpureobracteatus*.

**Keywords:** Gesneriaceae, *Didymocarpus*, new record, Xuan Lien natural reserve, Vietnam.

**INTRODUCTION**

According to Wang et al. 1998 [10], the genus *Didymocarpus* Wall. (Gesneriaceae) comprises about 180 species, mainly distributed South-East Asia, there were 4 *Didymocarpus* species recorded in Vietnam [8]. During the study of specimens and documents of Gesneriaceae of Vietnam, we found *Didymocarpus*: *Didymocarpus purpureobracteatus* Smith collected in Xuan Lien reserver, Thanh Hoa province, Vietnam. Therefore, this is a new record for the flora of Vietnam and to date the genus *Didymocarpus* has 5 species. In this paper, we provide the key to these species of the genus *Didymocarpus*, some new information of these species and characteristic morphology for finding *D. purpureobracteatus* in Vietnam.

**MATERIALS AND METHODS**

All specimens of *Didymocarpus* were collected in Vietnam, including specimens in herbarium of Institute of Ecology and Biological Resources (IEBR), Institute of Biological Tropical (VNM), National Institute of Medicinal Material (HNPM), Vietnam National University, Hanoi (HNU), Kunming Institute of Botany, China (KUN), Kwangxi Institute of Botany, China (KIB), South Botany China Institute, China (SBCI), National Natural Museum of History Paris, France (P) and fresh plants in the field.

The comparative morphology methods is used for the study. This is traditional method, which is usually used in classification of plant. All drawings made by Mrs Ly Kim Chi (10-19) and Mr Nguyen Quang Hung (1-9) (IEBR).

**RESULTS AND DISCUSSION**

**Taxonomy key to the species of genus *Didymocarpus* Wall. in Vietnam**

- 1A. Sepal actinomorphic, 5-sect from base; filament with glandular hair.....1. *D. bonii*
- 1B. Sepal zygomorphic, 5-lobed into 2 lips, 1 lip 3-lobed, 1 lip 2-lobed, filament smooth.
- 2A. Ovary smooth.
- 3A. Corolla outer hair; leaf blade ovate or elliptic, ca. 4-10 × 2-6 cm.....2. *D. pulcher*
- 3B. Corolla outer smooth; leaf blade near round or broadly elliptic, ca. 1-4,5 × 1-4 cm....3. *D. kerrii*

2B. Ovary hair.

4A. Base of leaf often axisymmetric; bract lanceolata, ca. 2-3 mm long; sepal tube ca. 3 mm long, sepal lobed ca. 1-1,5 mm long.....4. *D. poilanei*

4B. Base of leaf often oblique; bract elliptic or ovate, ca. 3-8 mm long; sepal tube ca. 8-9 mm long, sepal lobed ca. 2-3 mm long.....5. *D. purpureobracteatus*

**Some new information of species *Didymocarpus* and characteristic morphology of *D. purpureobracteatus* - a new record for the flora of Vietnam.**

**1. *Didymocarpus bonii* Pellegr. - Song quả bon (Fig. 1-4)**

Pellegr. 1926. Bull. Soc. Bot. France, 73: 416; id. 1930. Fl. Gen. Indoch. 4: 520; Phamh. 1993. Illustr. Fl. Vietn. 3: 11; V. X. Phuong, 2005. Checkl. Pl. Sp. Vietn. 3: 242.

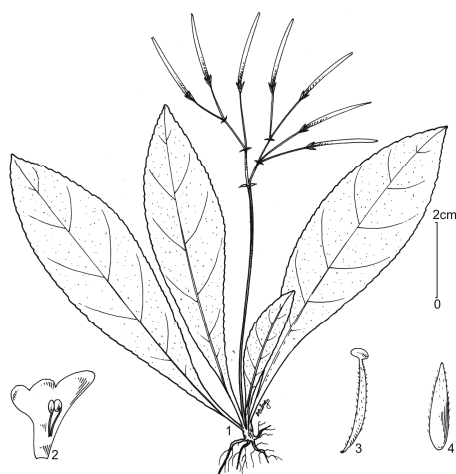


Fig 1-4. *Didymocarpus bonii* Pellegr.  
1. plant; 2. corolla opened; 3. stamen; 4. bract  
(Specimen Bon 5730, P)

**Diagnostic morphology:** Sepal actinomorphic, 5-sect from base; filament with glandular hair.

**Loc.class.:** Indochine, Tonkin: Matson.  
**Typus:** Bon 5730 (P).

**Ecology:** Flower and fruit in June-October. In limestone mountains, cliff, small cave in the rocky mountain.

**Distribution:** Only in the North of Vietnam: Ninh Binh (Cho Ghenh), Thanh Hoa (Mat Son).

**Specimens examined:** Ninh Binh, Petelot 959 (P). Thanh Hoa, Bon 5730 (P).

**2. *Didymocarpus pulcher* C. B. Clarke - Song quả pulcher (Fig. 5-7)**

C. B. Clarke, 1883. Monogr. Phan. 5: 79; id. 1884. Fl. Brit. Ind. 4: 348; Pellegr. 1930. Fl. Gen. Indoch. 4: 523; W. T. Wang, 1990. Fl. Reip. Pop. Sin. 69: 434; Phamh, 1993. Illsstr. Fl. Vietn. 3: 12; W. T. Wang, 1998. Fl. China, 18: 354; V. X. Phuong, 2005. Checkl. Pl. Sp. Vietn. 3: 242.

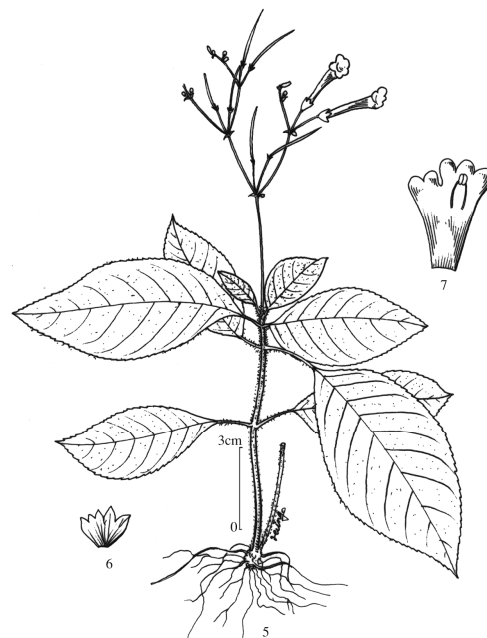


Fig 5-7. *Didymocarpus pulcher* C. B. Clarke  
5. plant; 6. sepal opened; 7. corolla opened  
(Specimen LX-VN 111, HN)

**Diagnostic morphology:** Leaf blade ovate or elliptic, ca. 4-10 × 2-6 cm; sepal zygomorphic, 5-lobed into 2 lips, 3/2; corolla outer hair; filament smooth; ovary smooth.

**Loc.class.:** Himalaya centralis, Sikkim.  
**Typus:** Griffith3841 (K).

**Ecology:** Flower and fruit in June-August. In every green forest, soil mountains and

limestone mountains, at 600-1,000 m alt..

**Distribution:** Lao Cai (Sa Pa), Quang Ninh (Ha Long bay), Vinh Phuc (Tam Dao national park), Ha Noi (Ba Vi national park), Thanh Hoa (Ba Thuoc, Pu Luong natural reserve), Thua Thien-Hue (Bach Ma national park), Quang Nam (Song Thanh natural reserve). And India, Nepal, China.

**Specimens examined:** Lao Cai, Petelot 8699 (HM); TV 359 (HN); HNK 469 (HN). - Vinh Phuc, LX-VN 74 (HN); 111 (HN); 327 (HN); N. T. Hiep 14980 (HN); H. V. Ve 15022 (HN); T. D. Nghia T013 & 263 (HNU). - Hanoi, Balansa 4295 (P). - Thanh Hoa, HAL 4197 (HN). - Thua Thien-Hue, TVC 527 (HN). - Quang Nam, TVC 487 (HN).

**3. *Didymocarpus kerrii* Craib - Song quả kerri (Fig. 8-9)**

Craib, 1911. Kew Bull. 1911: 431; id. 1912. Contrib. Fl. Siam. 149; Pellegr. 1930. Fl. Gen. Indoch. 4: 525; V. X. Phuong & D. T. Xuyen, 2012. Journ. Bot. 34(1): 72-74.

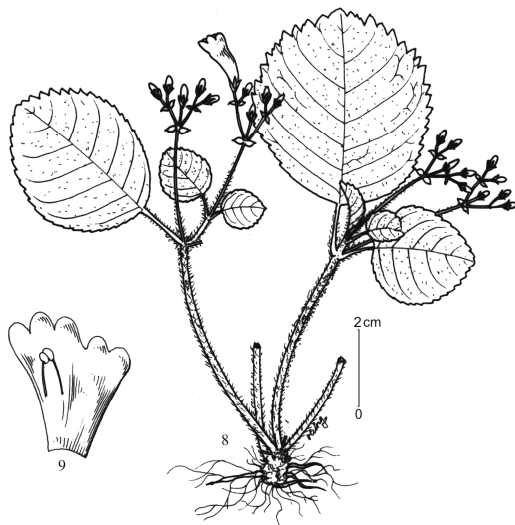


Fig 8-9. *Didymocarpus kerrii* Craib  
8. plant; 9. corolla opened  
(Specimen N. K. Dao 14156, HN)

**Diagnostic morphology:** Leaf blade near round or broadly elliptic, ca. 1-4.5 × 1-4 cm; Sepal zygomorphic, 5-lobed into 2 lips, 3/2; corolla outer smooth; filament smooth; ovary smooth.

**Loc.class.:** Siam, Chiangmai (Doi Sootep).  
**Typus:** Kerri 786 (K).

**Ecology:** Flower and fruit in March-June. In every green forest, soil mountains and limestone mountains, at under 1600 m about the sea.

**Distribution:** Hanoi (Ba Vi), Thailand.

**Specimen examined:** Hanoi, Werff & N. K. Dao 14156 (HN).

**4. *Didymocarpus poilanei* Pellegr. - Song quả poilane (Fig. 10-14)**

Pellegr. 1930. Fl. Gen. Indoch. 4:523; Phamh. 1993. Illust. Fl.Vietn.3:11; V. X. Phuong, 2005. Checkl. Pl. Sp. Vietn. 3: 242.

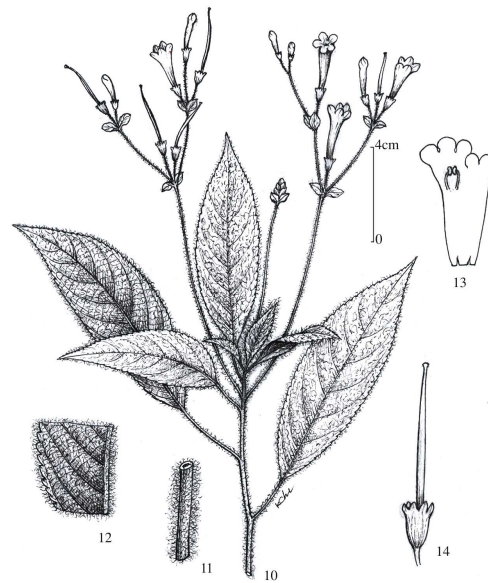


Fig 10-14. *Didymocarpus poilanei* Pellegr.  
10. plant; 11. pieces of stem; 12. pieces of leaf;  
13. corolla opened; 14. sepal and style  
(Specimen VH 4297, HN)

**Diagnostic morphology:** Base of leaf often axisymmetric; bract lanceolata, ca. 2-3 mm long; sepal zygomorphic, 5-lobed into 2 lips, 3/2, sepal tube ca. 3 mm long, sepal lobed ca. 1-1,5 mm long; filament smooth; ovary hair.

**Loc.class.:** Annam, Nha Trang. **Typus:** Poilane 3417 (P).

**Ecology:** Flower and fruit in May-September. In every green forest, soil mountains and limestone mountains, at 800-1200 m about the sea.

**Distribution:** Only in central of Vietnam: Thua Thien-Hue (A Luoi), Khanh Hoa (Nha Trang).

**Specimens examined:** Thua Thien-Hue, T. M. Quang 47 (HN). - Khanh Hoa, Poilane 3417 (P); VH 4297 (HN).

**5. *Didymocarpus purpureobracteatus* Smith - Song quả lá bắc tím**

Smith, 1912. Notes Roy. Bot. Gard. Edinb.5: 153, Pl.107; W. T. Wang, 1990. Fl. Reip. Pop. Sin. 69: 441; id. 1998. Fl. China, 18: 356.

- *Didymocarpus veitchianus* Smith, 1912. l. c. 5: 154.; *Didymocarpus purpureobracteatus* var. *veitchianus* (Smith) H. W. Li, 1983. Bull. Bot. Res. 3(2): 32.

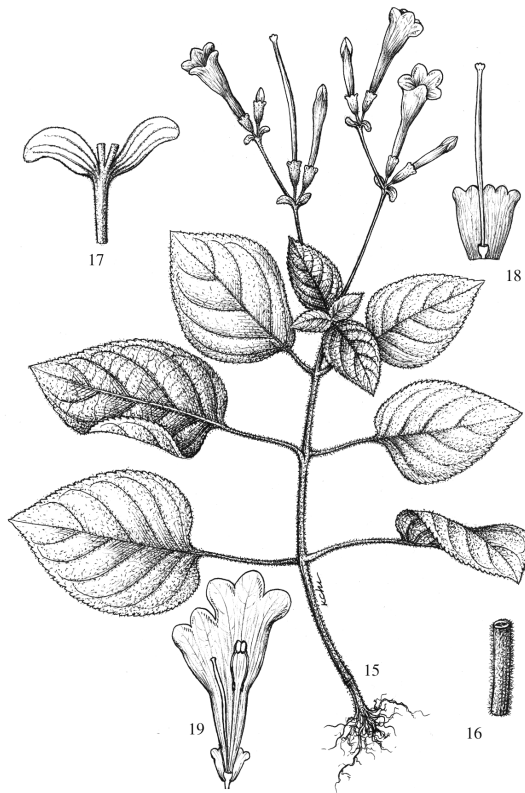


Fig 15-19. *Didymocarpus purpureobracteatus* Smith.

15. plant; 16. pieces of stem; 17. bract; 18. sepal opened and style; 19. flower opened (Specimen XL 553, HN)

**Morphology:** Stems 10-60 cm, young part sparsely puberulent. Leaves opposite; leaf blade ovate to obovate, 3-17(-25) × 1.5-10(-15) cm, apex acute to acuminate, base often oblique, round to cordate; margin minute serrate; 2 surface sparsely appressed puberulent to glabrous, sparsely glandular; lateral veins 5-9 on each side of midrib; petiole 1-10 cm. Cymes often 5-10 flowered in axil; peduncle 4-10 cm, puberulent to glabrous; bracts purple, ovate to elliptic-ovate, 3-8 mm long, glabrous, margin entire. Pedicel 1-5 mm. Calyx slightly zygomorphic, 1-1.2 cm long; limb indistinctly 2-lipped; tube 8-9 mm; adaxial lip 3-lobed, 2-3 × 3 mm, lobes semiorbicular; abaxial lip 2-lobed, 2-3 × 4-5 mm, lobes semiorbicular, glabrous. Corolla purple to pinkish purple, ca. 3-4 cm, glabrous; tube funnellform, ca. 2.5-3.0 long, 2 lips; adaxial lip 3-4 mm long; abaxial lip 8-10 mm long. Stamen 2, Filaments ca. 1 cm, glabrous; anthers ca. 3 mm, puberulent; staminodes 2, 1-2 mm. Pistil 2.1-2.5 cm, sparsely puberulent; ovary ca. 2-2.3 cm. Capsule 3-5 cm. Seed unappendage.

**Loc. class.:** China, Yunnan.

**Typus:** A. Henry 9189 (K).

**Ecology:** Flower and fruit in July-September. In evergreen forest, soil mountains and limestone mountains, 800- 1200 m alt..

**Distribution:** Thanh Hoa (Xuan Lien natural reserve). China (SE Yunnan).

**Specimen examined:** THANH HOÁ, XL 553: N 19° 53'33.1''; E 105° 10'54.1'', at 1427 m near the sea (HN).

**Notes:** This species is closed to *D. poilanei* but differs by bract elliptic or ovate, ca. 3-8 mm long; sepal tube ca. 8-9 mm long, sepal lobed ca. 2-3 mm long.

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**CHI SONG QUẢ (*Didymocarpus*) VÀ BỔ SUNG LOÀI  
*Didymocarpus purpureobracteatus* Smith CHO HỆ THỰC VẬT VIỆT NAM  
TỪ KHU BẢO TỒN THIÊN NHIÊN XUÂN LIÊN, TỈNH THANH HÓA**

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## TÓM TẮT

Ghi nhận mới loài *Didymocarpus purpureobracteatus* Smith - Song quả lá bắc tím cho hệ thực vật Việt Nam. Đây là loài cây thảo, trước kia được coi là đặc hữu của Trung Quốc, đến nay chúng tôi đã tìm thấy có ở Khu BTTN Xuân Liên, tỉnh Thanh Hoá. Mẫu vật hiện đang được lưu giữ tại Phòng tiêu bản thực vật của Viện Sinh thái và Tài nguyên sinh vật (HN). Như vậy, cho đến nay, chi *Didymocarpus* Wall. ở Việt Nam hiện được ghi nhận có 5 loài là *D. bonii*, *D. pulcher*, *D. kerrii*, *D. poilanei* và *D. purpureobracteatus*. Bài báo đã đưa ra khóa định loại cho 5 loài thuộc chi này ở Việt Nam.

Loài Song quả lá bắc tím - *Didymocarpus purpureobracteatus* Smith có các đặc điểm dễ nhận dạng như: thân dạng cỏ, cao 10-60 cm, có lông rải rác ở phần non. Lá hình trứng hay trứng ngược, gốc thường bất xứng, mép có răng, cuống lá dài 1-10 cm. Cụm hoa hình xim mọc ở nách lá, thường mang 5-10 hoa, cuống cụm hoa dài 4-10 cm; lá bắc màu tím, hình trứng tới bầu dục-trứng, dài 3-8 mm, nhẵn, mép nguyên; cuống hoa dài 1-5 mm; đài đối xứng hai bên, dài 1-1,2 cm; chia 2 môi; ống đài dài 8-9 mm; thùy đài thường có chóp gần tròn, dài 2-3 mm; tràng màu đỏ tía tới hồng nhạt, dài 3-4 cm. Nhị hữu thụ 2, chỉ nhị dài đến 10 mm; nhị bất thụ 2 ngắn dưới 1 mm. Quả nang dài 3-5 cm. hạt không có phần phụ. Loài này rất gần với loài *D. poilanei* nhưng khác bởi đặc điểm rất dễ nhận là lá bắc to, hình bầu dục hay hình trứng, dài 3-8 mm; ống đài dài 8-9 mm, thùy đài dài 2-3 mm.

*Từ khóa:* Gesneriaceae, *Didymocarpus*, *D. purpureobracteatus*, song quả, Xuân Liên.

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