

A new species of *Vinca* (Apocynaceae) from eastern Anatolia, Turkey

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Abstract: *Vinca soneri* Koyuncu sp. nova (Apocynaceae) is described and illustrated as a new species from eastern Anatolia in Turkey. Diagnostic morphological characters of this new species from the related species *V. herbacea* Waldst. & Kit. are discussed.

Key words: Apocynaceae, *Vinca*, Kemaliye, Erzincan, Turkish flora

Türkiye'nin Doğu Anadolu bölgesinden yeni bir *Vinca* (Apocynaceae) türü

Özet: *Vinca soneri* Koyuncu (Apocynaceae) Doğu Anadolu Bölgesinden (Türkiye) bilim dünyası için yeni bir tür olarak tanımlanmış ve yakın tür olan *V. herbacea* Waldst. & Kit.' den ayırt edici morfolojik özellikleri tartışılmıştır.

Anahtar sözcükler: Apocynaceae, *Vinca*, Kemaliye, Erzincan, Türkiye florası

Introduction

The genus *Vinca* L. (Apocynaceae) is native to Europe, north-west Africa, and south-west Asia and comprises 6 species: *Vinca difformis* Pouret, *V. erecta* Regel & Schmalh, *V. pubescens* d'Urv., *V. herbacea* Waldst. & Kit., *V. major* L., and *V. minor* L.; the last 3 occur in Turkey (Stearn, 1972, 1973, 1978). However, during a botanical excursion to Sarikonaklar village in Kemaliye District in 1992 Dr. Pharm. Osman SONER and I found a species yet unknown, forming a large population on stony

dry slopes. It is an erect subshrub with dark green leaves and blue-whitish flowers, which differs from the 3 species of *Vinca* recorded in Turkey (Stearn, 1978). We took coloured pictures of the plant and collected herbarium specimens. Voucher specimens are stored in Ankara University Faculty of Pharmacy Herbarium (AEF). As a result, I described this new species of *Vinca* and provided a key to distinguish it from the other *Vinca* species from Turkey. In Turkey it is always possible to describe a new species as well as new records (Hamzaoğlu et al., 2010; Koç et al., 2011; Özhatay et al., 2011).

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Species description

Vinca soneri Koyuncu sp. nova (Figures 1, 2, 4).

Type: Turkey, B7 Erzincan: Kemaliye, above Sırakonaklar village, dry stony slopes. 1600-1900 m, 16.05.1992 (in flower & in fruit), *M.Koyuncu* 9067 & *O.Soner* (holo types: AEF 16951, iso types: ANK, GAZI).

Diagnosis: Affinis *Vinca herbacea* sed caule erecto et 25-50 cm (non ascendenti ad 20 cm), surculus serpentibus carenti (non ad 60 cm), foliis elliptico-ovatis et 5-8 × 2.5-3.5 cm (non anguste ellipticis, elliptico-lanceolatis ad ovatis et 0.6-5 × 0.2-3 cm), petiolo 0-1 mm (non 1-4 mm), calyce 8-10 mm (non 3-10 mm) corollae tubo 2-2.5 cm (non 1-2 cm), pistilo 15-16 mm (non 7-8 mm), folliculo 5-7 cm (non 2.5-3.5 cm) differt (Table, Figures 2-5).

Description: Perennial subshrub with woody rootstock. Stem erect, simple, pilose, 25-50 cm high; trailing shoots absent. Leaves opposite, deciduous, subsessile or shortly petiolate, simple, entire, ovate-elliptic, 5-8 × 2.5-3.5 cm, base and apex acute, margin smooth and glabrous, beneath puberulent only on nerves, with veins spreading at 10-12 from midrib; petiole 0-1 mm long. Flowers large, solitary in leaf axils. Calyx 8-10 mm; lobes linear, glabrous. Corolla infundibular, blue or pale-blue; lobes white-blue, 1.2-1.5 cm long; tube 2-2.7 cm. Stamens included, inserted, c. ½ up corolla tube; filaments 2 mm,

bent forward then back; anthers with flat flap-like appendage at apex and with hairs on the back. Stylus slender and slightly shorter than anthers height; stigma capitate with hairs at apex. Follicles 5-7 cm; seeds 1-3, 10-12 mm long, tuberculate. Flowering time: 5- 6. *Dry stony slopes, 1200-2800 m.*

Specimens examined: *Vinca soneri* B6 Sivas: Between Ulaş and Zara, around Değirmenboğazı village, dry stony slopes, 1490 m, 20.07.2008 (in fruit), *M.Koyuncu* 15942 (AEF 25289); Zara to Divriği, around Bolucan, dry slopes, 1500 m, 24.07.2008 (in fruit), *M.Koyuncu* 15961 *et al.* (AEF 25262); Divriği to Zara, around Cürek village, slopes, 1100 m, 18.07.2009 (in fruit), *M.Koyuncu* 16241 & *N.Arslan* (AEF 25632); B7 Erzincan: Kemaliye, Yılanlı Dağ, around Umutlu village, stony slopes, 2400-2800 m, 27.9.1984 (in fruit), *M.Coşkun* (AEF 15165); Above Aşağı Umutlu village, 1400-1650 m, 28.9.1984 (in fruit), *M.Tanker* & *M.Coşkun s.n.* (AEF 15166); Kemaliye, above Sırakonaklar village, 1500-1700 m, 15.05.1994 (in flower), *M.Koyuncu* & *O.Soner s.n.* (AEF 16143); B7 Malatya: Between Eğin and İliç, mica schist area, 1420 m, 21.06.2005 (in fruit) *M.Koyuncu* 15083 & *N.Arslan* (AEF 24690); Kemaliye, between Sırakonaklar village and Halife Holy Tomb slopes, 1500 m, 21.05.2002 (in flower), *M.Abu Asaker s.n.* (AEF 22948).

Habitat: *Vinca soneri* grows on a serpentine steppe and slopes along with *Helichrysum noeantum* Boiss.,

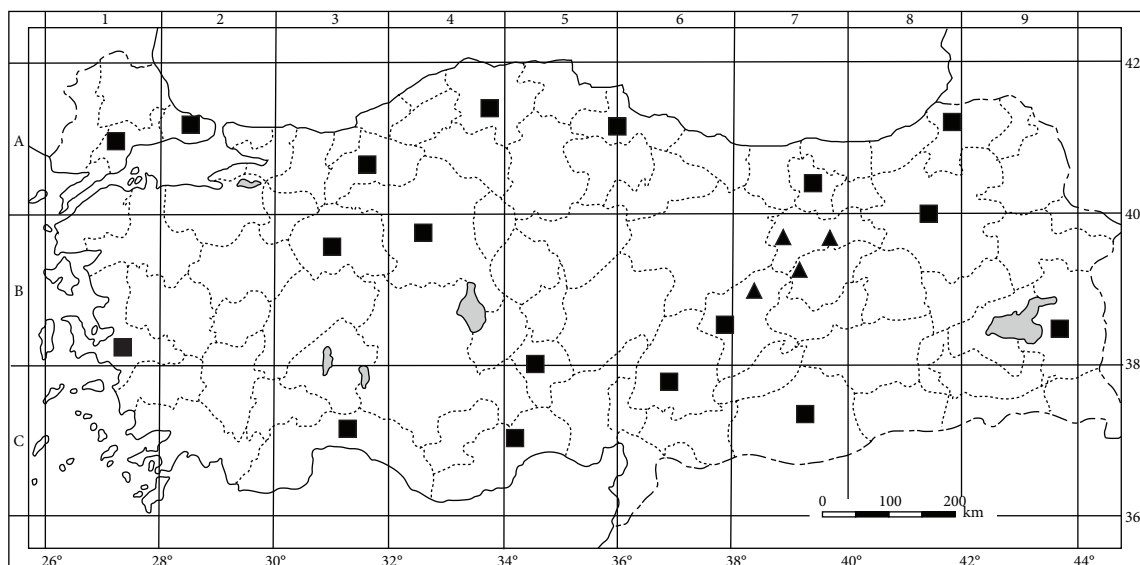


Figure 1. Distribution of *Vinca soneri* (▲) and *Vinca herbacea* (■).

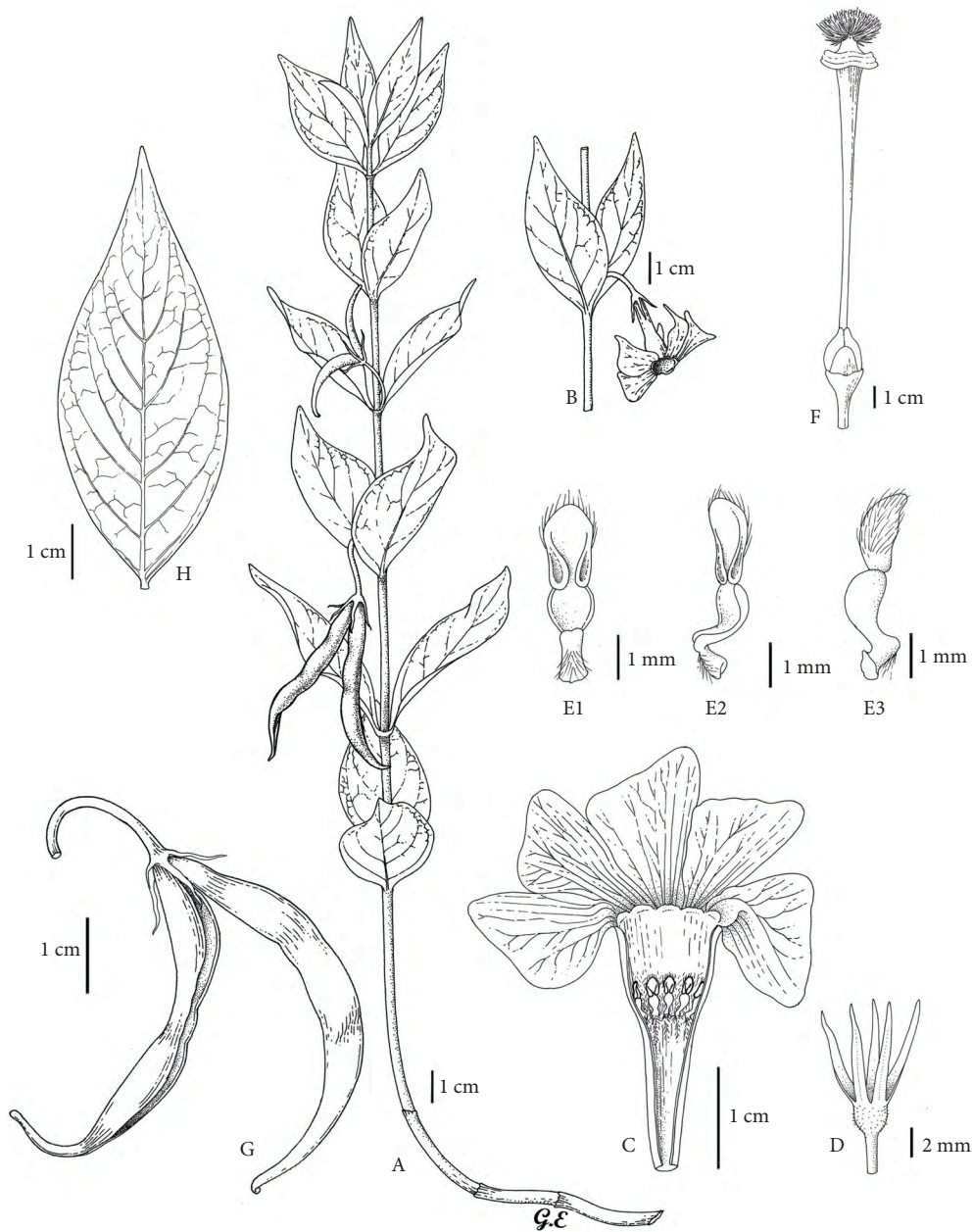


Figure 2. *Vinca soneri* (from holotype Koyuncu 9067). A, B- habit, C- opened corolla, D- calyx, E1, E2, E3- stamens, F- pistil, G- fruit, H- leaf venation.

Salvia caespitosa Montbret & Aucher ex Benth, *Hedysarum nitidum* Willd., *Campanula stricta* L., *Morina persica* L., *Pelargonium endlicherianum* Fenzl, *Teucrium polium* L., *Scorzonera tomentosa* L., *Stachys lavandulifolia* Vahl, *Muscari armeniacum* Leichtlin ex Baker, *Sternbegia clusiana* (Ker-Gawler) Ker ex Sprengel, *Beta trygina* Waldst. & Kit., and *Astragalus lagurus* Willd. (Figures 1, 2, 4).

Key for identification of the species of *Vinca* in Turkey

1. Plant dying down completely in winter; herbaceous or subshrub; veins of leaves diverging from midrib at 10°-35° or 40°-60°
2. Stem to 20 cm; trailing shoots present; leaves 0.6-5 × 0.2-3 cm; veins of leaves diverging from midrib at 10°-35°V. herbacea

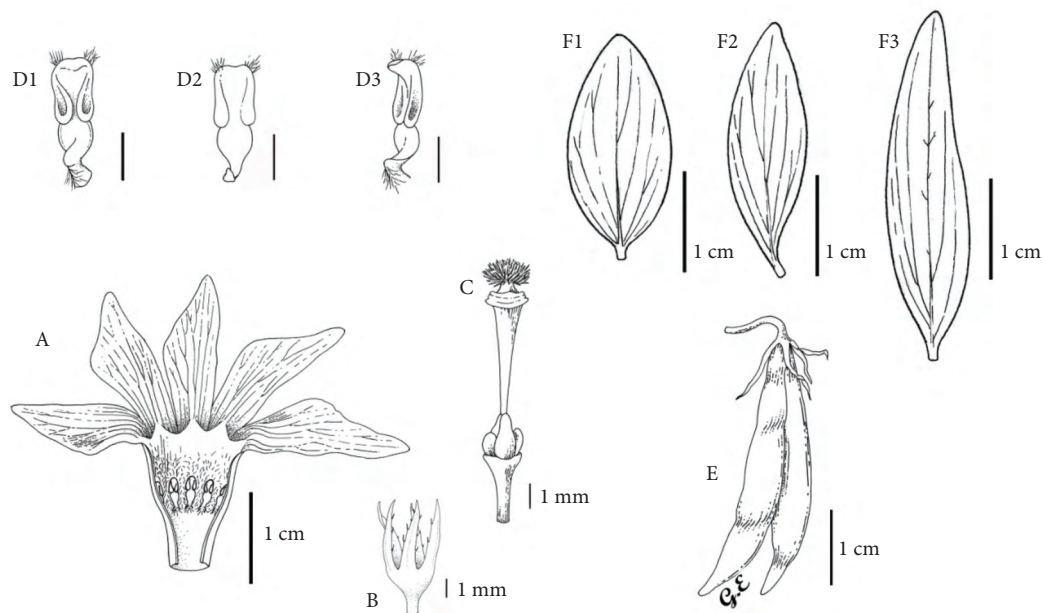


Figure 3. Diagnostic characters of *Vinca herbacea* (Koyuncu 1895, 10549, 3340, 8946, 5253, 5018, 7823 & from Flora of Turkey). A- opened corolla, B- calyx, C- pistil, D1, D2, D3- stamens, E- fruit, F1, F2, F3- leaf venation.



Figure 4. Habit of *Vinca soneri* (from holotype Koyuncu 9067).



Figure 5. Habit of *Vinca herbacea* (Koyuncu 7823).

Table. Diagnostic characters of *Vinca soneri* with the related *V. herbacea*.

Characters	<i>Vinca soneri</i>	<i>Vinca herbacea</i>
Stem	25-50 cm	to 20 cm
Trailing shoots	absent	to 60 cm
Leaves	5-8 × 2.5-3.5 cm elliptic-ovate	0.6-5 × 0.2-3 cm narrowly elliptic, elliptic lanceolate
Petiole	0-1 mm	1-4 mm
Calyx	8-10 mm	3-10 mm
Tube of corolla	2-2.7 cm	1-2 cm
Stamens	anthers with hairs on the back	anthers hairy at apex
Pistil	15-16 mm	7-8 mm
Follicles	5-7 cm	2.5-3.5 cm
Flowering time	May-June	March-May

2. Stem 25-50 cm; trailing shoots absent; leaves 5-8 × 2.5-3.5 cm veins of leaves diverging from midrib at 40°-60° **V. soneri**
1. Plant evergreen; shrub; veins of leaves diverging from midrib at 40°-60°
 3. Leaves and calyx ciliate; leaf-blades subcordate or rounded at base; calyx lobes 6-8 mm **V. major**
 3. Leaves and calyx glabrous; leaf-blades usually cuneate at base; calyx lobes 3-4 mm **V. minor**

Etimology: The species is named after the late Mustafa SONER (father of Osman SONER), from Sırakonaklar village, whose help during the collection of this plant was very much appreciated.

Conservation status: Kemaliye is a small pretty town on the southern skirts of the Munzur Mountains within the province of Erzincan in Turkey. Because of the large plateaus, animal breeding is the main

source of livelihood in this area. Beekeeping and fruit agriculture are the second most important economic activities in the region. Mulberries, prunes, grapes, sour cherries, and apricots are the main fruits that are cultivated in the region where the flora is composed of steppe vegetation and partial forests.

Due to human activities, grazing, and erosion, the species is strongly threatened with extinction in the wild if protection measures are not taken. Therefore, we recommended the classification of *V. soneri* as “Critically Endangered (CR)” according to the IUCN criteria (IUCN, 2001).

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References

- Hamzaoğlu E, Aksoy A & Budak Ü (2010). A new species of *Silene* (Caryophyllaceae) from Turkey. *Turkish Journal of Botany* 34: 47-50.
- IUCN (2001). *IUCN Red List Categories and Criteria*, version 3.1. Gland and Cambridge: IUCN Species Survival Commission.
- Koç M, Aksoy A & Hamzaoğlu E (2011). A new species of *Minuartia* (Caryophyllaceae) from northwestern Anatolia, Turkey. *Turkish Journal of Botany* 35: 337-341.
- Özhatay N, Kültür Ş & Aslan S (2011). Check-list of additional taxa to the supplement flora of Turkey V. *Turkish Journal of Botany* 35: 1-36.
- Stearn WT (1972). *Vinca* L. In: Tutin TG, Heywood VH, Burges NA, Moore DM, Valentine DH, Walters SM & Webb DA (eds.), *Flora Europea*. vol. 3, p. 69. Cambridge University Press.
- Stearn WT (1973). A synopsis of the genus *Vinca* including its taxonomic and nomenclatural history. In: Taylor WI & Farnsworth N (eds.) *The Vinca alkaloids; botany, chemistry, pharmacology*: pp. 19-94.
- Stearn WT (1978). *Vinca* L. In: Davis PH (ed.) *Flora of Turkey and the East Aegean Islands*, vol. 6, pp. 161-163. Edinburgh: Edinburgh University Press.