

Paris quadrifolia L. (Liliaceae): A New Record for the Flora of Turkey

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Abstract: *Paris quadrifolia* L. (Liliaceae) was collected from Northeast Anatolia (A9 Ardahan). It is reported for the first time from Turkey. Line drawings, diagnostic characters and a distribution map of *Paris* L. species of Turkey are presented.

Key Words: *Liliaceae*, *Paris*, new record, Turkey, Flora

Paris quadrifolia L. (Liliaceae): Türkiye Florası İçin Yeni Bir Kayıt

Özet: *Paris quadrifolia* L. (Liliaceae) Kuzeydoğu Anadolu'dan (A9 Ardahan) toplanmıştır. Bu tür Türkiye florasına ilk kez kaydedilmiştir. Türkiye'de doğal olarak yetişen *Paris* L. türlerinin çizimleri, ayırt edici karakterleri ve yayılış haritası verilmiştir.

Anahtar Sözcükler: *Liliaceae*, *Paris*, Yeni kayıt, Türkiye, Flora

Introduction

The genus *Paris* L. (Liliaceae) consists of more than 20 species of herbaceous, rhizomatous perennials and is closely related to the *Trillium* L. (Burnie et al., 1999). *P. quadrifolia* L. (Figure 1a) was collected during an expedition in mixed coppice dominated by *Betula litwinowii* Doluch. from A9 Ardahan (Turkey). The locality, Posof District - Gönülağan village, is adjacent to the Georgian border. *P. incompleta* Bieb. (Figure 1b) has been known in the Turkish flora (Mill, 1984). However, *P. quadrifolia* occurs in a very restricted area in Turkey and is common in the Caucasus-Europe to eastern Asia (Heß et al., 1967; Knorring, 1968; Ketskhoveri, 1969; Heywood, 1980). Also, 2 of these species are commonly distributed in Georgia (Ketskhoveri, 1969).

Paris quadrifolia L., Sp. Pl. 1: 367 (1753) (Figure 1a).

Described from Europe, type in London.

The following description of the species was mainly based on the specimens collected from Gönülağan village, Posof-Ardahan.

Herbaceous perennial with creeping rhizome. Stem 15-35 cm tall. Leaves in terminal whorls of 4, obovate, shortly petiolate, narrowly acuminate with 3-5 prominent veins. Perianth biseriolate of 4 outer and 4 inner segments. Sepals and petals 2-3.5 cm. Fruit is black berry, globose, many seeded, 11 mm diam., glaucescent. Fl. 5-6. Wet places in mixed coppice dominated by *Betula litwinowii*, 1930-2015 m.

Turkey, North-east Anatolia, A9 Ardahan: Posof-Gönülağan village, UTM 0308140 E, 4603186 N, 1930 m and UTM 0308050 E, 4602923 N, 2015 m, 17.08.2007, S. Terzioğlu, KATO: 10538, Coşkunçelebi 659 (KTUB), (Figure 2).

The specimens were deposited both at KATO (Herbarium of Karadeniz Technical University Faculty of

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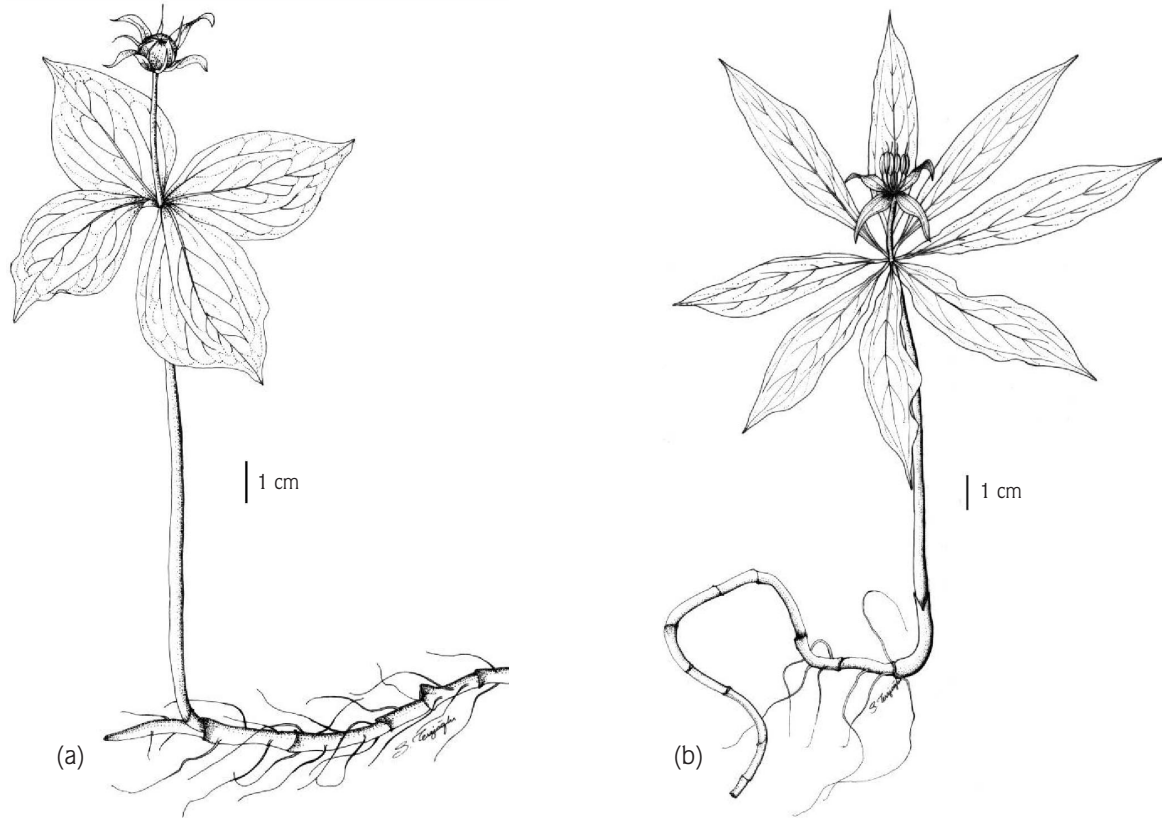


Figure 1. General views of *Paris quadrifolia* (a) and *Paris incompleta* (b).

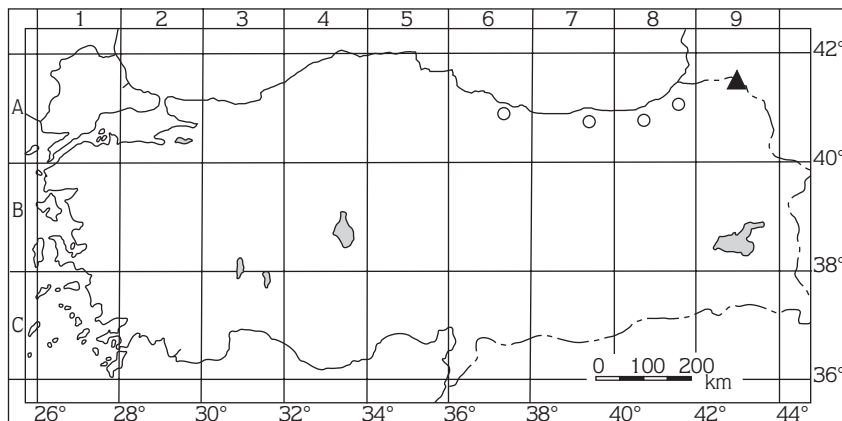


Figure 2. Distribution map of *Paris quadrifolia* (▲) and *Paris incompleta* (○) in Turkey.

Forestry) and KTUB (Herbarium of Karadeniz Technical University Faculty of Art and Science, Department of Biology).

Discussion

P. quadrifolia, the distribution of which has not been recorded previously in Turkey, is distributed in Caucasia

(Knorring, 1968; Ketskhoveri, 1969) and Europe (Heywood, 1980). Two close vicinities of the species in Turkey are in the Turkish Caucasus and this distribution is not surprising. By adding this species, the number of *Paris* species in Turkish flora reached 2 and the separation of them is given below:

1. Perianth uniseriate, leaves 6-9 (-12)

. *P. incompleta*

1. Perianth biseriate, leaves 4 *P. quadrifolia*

A part of the given key of *Liliaceae* in Flora of Turkey (Mill, 1984) was reworded and given below.

10. Leaves in a single whorl of 4-9 (-12), venation \pm reticulate; flowers terminal, with only 4 outer or 4 outer and 4 inner clearly different perianth segments and 8-10 stamens

. 32. *Paris*

10. Leaves alternate, paired or in several whorls, parallel-veined; flowers with 3 outer and 3 inner \pm similar perianth segments

The following woody taxa grow in association with the *P. quadrifolia* at its sites in Turkey (Gönülaçan

Village): *Betula litwinowii* Doluch., *Populus tremula* L., *Corylus avellana* L. var. *avellana*, *Sorbus aucuparia* L., *Acer platanoides* L., *A. trautwetteri* Medwed., *A. campestre* L., *Fagus orientalis* Lipsky, *Pinus sylvestris* L. var. *hamata* Steven, *Picea orientalis* (L.) Link, *Ribes biebersteinii* Berl. ex DC., *R. orientale* Desf., *R. uva-crispa* L., *Lonicera caucasica* Pallas subsp. *caucasica*, *L. xylosteum* L., *Rubus idaeus* L., *Padus avium* Mill. subsp. *petraea* (Tausch) Pawlowski ex Holub., *Prunus avium* L., *Viburnum orientale* Pall., *V. lantana* L., *Euonymus latifolius* (L.) Mill. subsp. *latifolius*, *Quercus macranthera* Fisch & Mey. subsp. *sypirensis* (C.Koch) Menitsky, *Ulmus glabra* Huds., *Rosa montana* Chaix subsp. *woronowii* (Lonacz.) Ö.Nilsson, *R. canina* L., *R. pimpinellifolia* L., *Rhododendron caucasicum* Pall., *R. luteum* Sweet, *Salix caprea* L., *Vaccinium myrtillus* L., *Juniperus communis* L. subsp. *saxatilis* Pall.

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