

Two new *Ornithogalum* L. (*O. yildirimlii* Kılıç and *O. kilicii* Yıld.) from Elazığ and Bingöl provinces, Turkey

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Abstract

Flowering tepaloids *Ornithogalum yildirimlii* Kılıç and *O. kilicii* Yıld. (*Liliaceae/Hyacinthaceae*) are described and illustrated as new species from Elazığ and Bingöl, east Turkey. The distributions of the new species are mapped. *Ornithogalum yildirimlii* and *O. kilicii* are closely related to *O. arabicum* L. and *O. nutans* L., respectively.

Key Words: *Ornithogalum yildirimlii*, *O. kilicii*, *Liliaceae*, Elazığ, Bingöl, Turkey

Türkiye'nin Elazığ ve Bingöl illerinden iki yeni tükrükotu (*O. yildirimlii* Kılıç ve *O. kilicii* Yıld.) türü

Özet

Çiçekli tekçeneklilerden *Ornithogalum yildirimlii* Kılıç ve *O. kilicii* Yıld. (Zambakgiller) bilim dünyası için yeni olarak Elazığ ve Bingöl (Doğu Türkiye) betimlenmiş ve fotoğraflanmıştır. Yeni ve yakın türlerin yayılışları harita üzerinde gösterilmiştir. *Ornithogalum yildirimlii* ve *O. kilicii*, sırasıyla *O. arabicum* L. ve *O. nutans* L. türüne yakındır.

Bulduru Sözcükleri: Tükrükotu, zambakgiller, *Ornithogalum yildirimlii*, *O. kilicii*, zambakgiller, Elazığ, Bingöl, Türkiye

Introduction

The genus *Ornithogalum* L. in the tribe *Ornithogaleae* (Caurel) J.C.Manning & Goldblatt of the subfamily *Ornithogaloideae* Speta (*Hyacinthaceae* Batsch) comprises about 160 species (1) or even 200 according to Martinez-Azorin et al. (2). There are 14 genera in the subfamily *Ornithogaloideae*. Among them, *Ornithogalum* is the genus with the most species. This genus has a wide distribution, including Europe, Asia (reaching Afghanistan to the East), Africa (except the Tropic of Cancer band), and Madagascar (3, 4).

In recent years, a lot of taxa have been added and currently known species of *Ornithogalum* genus in Turkey are 62 native species, 1 subspecies, 1 non native species and 35 species (56.4 %) of these are endemic to Turkey, including these new species (5). Thus, Turkey is one of the main centres of diversity for this genus.

During an expedition in May of 2017, the authors collected some interesting *Ornithogalum* specimens from the Elazığ and Bingöl, Turkey, B7 and B8 squares, respectively. Further studies showed that they were not referable to any known species of the genus, and therefore these species are described as new.

Taxonomic Treatment

Ornithogalum yildirimlii Kılıç, sp. nov., figures 1-8

Bulbs 4-5 x 3-4 cm, ovoid, whitish, perennial without offset. Scapes 41-68 cm x 2-5 mm, erect, terete, striate, whitish to light yellow, glabrous. Leaves basal and stemmed, shorter than scape, 5-6, 15-30 cm x 3-8 mm except decurrent part, linear, inrolled, erect, striate, margins entire, glabrous. Inflorescence 6-7 x 5 cm, corymbose, c. 20-flowered, glabrous. Bracts 10-15 x 2-3 mm, linear, white glabrous, amplexicaule to pedicels. Pedicels c. 7-9 mm at anthesis, 25-50 mm at fruiting time, erect-ascending. Tepals 6, 9-10 x 4-5 mm, elliptic, white membranous, not green middle fasciate outside, white inside and outside, glabrous, obtuse at apex. Stamens 6, 5-6 x 1 mm, ovate, white membranous; filaments 5 x 1 mm, simple, white winged and entire at base and membranous; anthers c. 1.5 x 1 mm, yellow, dorsifixed and versatile. Ovary greenish-black. Style c. 2 mm, filamentous. Capsules loculidial, c. 10-14 x 6-7 mm, oblong to oblong-ovoid, glabrous, wrinkled, reticulate, greenish, 3-septate; seeds c. 3-4 x 2-3 mm, three dimensional triangular, black, wrinkled, glabrous.

Type. Turkey. B7 ELAZIĞ: Keban, baraj aşağısı, Fırat alabalık tesisleri ilerisi, tekedilmiş yol boyunca, bozkır, 780-900 m, 19.05.2017, Ş. Yıldırımli 43060 & Ö. Kılıç (holo. Yıldırımli Otluk'u, HUB).

Endemic. Anatolia-Turanian element.

Close to *Ornithogalum arabicum* L. but bulbs without offsets (with numerous offsets); leaves 3-8 mm broad (not 10-30 broad); perianth segments 9-10 mm (not 15-32 mm).

Eponymy. The new species is named in honour of Prof. Dr. Şinasi Yıldırımli, Hacettepe University, Ankara.



Figure 1. *Ornithogalum yildirimlii*, habitus, Ş. Yıldırımli 43060 & Ö. Kılıç (holotype)



Figure 2. *Ornithogalum yildirimlii*, habitus, Ş. Yıldırımli 43060 & Ö. Kılıç (holotype)



Figure 3. *Ornithogalum yildirimlii*, bulbs and basal leaves, Ş. Yıldırımli 43060 & Ö. Kılıç (holotype)



Figure 4. *Ornithogalum yildirimlii*, inflorescence, Ş. Yıldırımli 43060 & Ö. Kılıç (holotype)



Figure 5. *Ornithogalum yildirimlii*, inflorescence, Ş. Yıldırım 43060 & Ö. Kılıç (holotype)



Figure 6. *Ornithogalum yildirimlii*, inflorescence, Ş. Yıldırım 43060 & Ö. Kılıç (holotype)



Figure 7. *Ornithogalum yildirimlii*, inflorescence and tepals, Ş. Yıldırımılı 43060 & Ö. Kılıç (holotype)

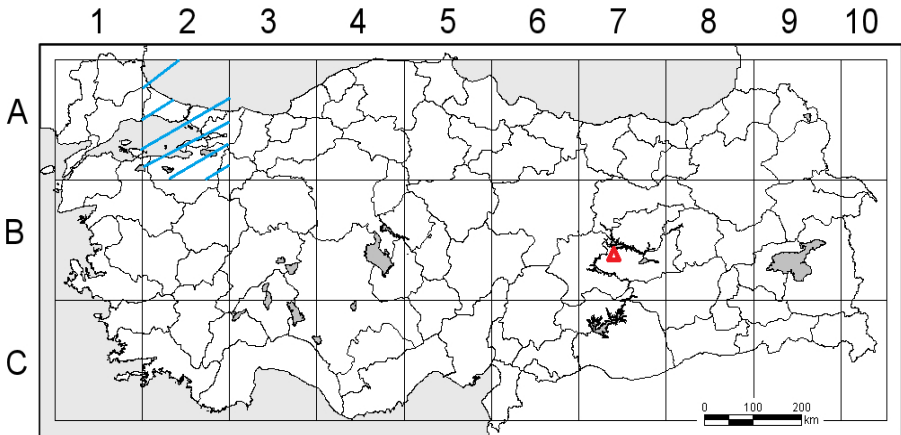


Figure 8. The distribution of *Ornithogalum yildirimlii* and close to *O. arabicum* in Turkey

▲ : *Ornithogalum yildirimlii* ▨ : *Ornithogalum arabicum*

***Ornithogalum kilicii* Yıld., sp. nov., figures 9-13**

Bulbs 15-20 x 13-18 mm, globose to ovoid, whitish, perennial. Scapes 26-40 cm x 3 mm, erect, terete, striate, glabrous. Leaves basal 4-8, 8-22 cm

x 2-5 mm, linear, erect, striate, margins entire, glabrous. Inflorescence 12-18 x 3.5-4 cm, cylindric, racemose, c. 35-flowered, glabrous. Bracts 6-14 x 1-1.5 mm, linear, white glabrous. Pedicels 3-7 mm at anthesis, 15-28 mm at fruiting time, erect-ascending. Tepals 6, 6-10 x 1-2 mm in sicco, 11-12 x 3-4 mm at fresh, linear-oblong, ovate-linear, white membranaceous, very narrowly green middle fasciate outside, white inside, glabrous, obtuse at apex. Stamens 6, 5-6 x 1 mm, ovate, white membranaceous; filaments 5 x 1 mm, simple, white winged and inconspicuously toothed at base and membranaceous; anthers 1.5-2 x 0.5-1 mm, light green, dorsifixed and versatile. Style 2-2.5 mm, filamentous. Capsules loculidial, 3-6 x 2-5 mm, globose, oblong-ovoid, glabrous, reticulate, greenish, 3-septate.

B8 BİNGÖL: Solhan, Harzemşah köyü, Aksakal göl mezrası, Yüzenada çevresi, yamaçlar, çayırılık, 1300-1350 m, 25.05.2017, Ş. Yıldırım 43429 & Ö. Kılıç (holo. Yıldırım Otluk'u, HUB).

Endemic. Anatolia-Turanian element.

Close to *Ornithogalum nutans* L. but bulbs without offsets (with numerous offsets); leaves shorter than scap (not almost as long as to longer than scape); raceme c. 35-flowered (not (3-)9-17(-20) flowered); tepals 6-12 mm long (not 20-31 mm); fruiting pedicels longer than fruit (not fruiting pedicels shorter than fruit).

Eponymy. The new species is named in honour of Doç. Dr. Ömer Kılıç, Bingöl University, Bingöl.



Figure 9. *Ornithogalum kilicii*, habitus, Ş. Yıldırım 43429 & Ö. Kılıç (holotype)



Figure 10. *Ornithogalum kilicii*, habitus, Ş. Yıldırımli 43429 & Ö. Kılıç (holotype)



Figure 11. *Ornithogalum kilicii*, inflorescence, Ş. Yıldırımli 43429 & Ö. Kılıç (holotype)



Figure 12. *Ornithogalum kilicii*, inflorescence, Ş. Yıldırım 43429 & Ö. Kılıç (holotype)

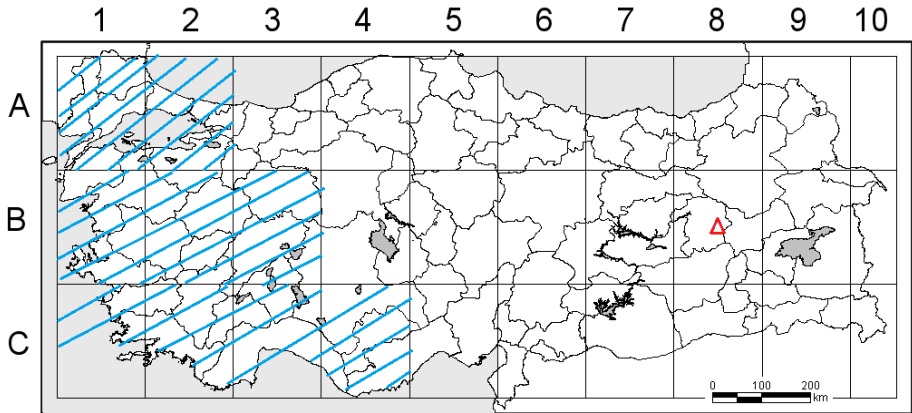


Figure 13. The distribution of *Ornithogalum kilicii* and close to *O. nutans* in Turkey

▲: *Ornithogalum kilicii*,

▨: *Ornithogalum nutans*

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