

## *Muscari babachii* sp. nov. (Hyacinthaceae) from south Anatolia

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A new species, *Muscari babachii* Eker & Koyuncu sp. nov. (Hyacinthaceae) from south Anatolia is described. Diagnostic characters, description, detailed illustration, geographical distribution, IUCN extinction risk, observations and taxonomic comments on the new species are given. It is also compared with the closely related *M. tenuiflorum* Tausch.

Anatolia is one of the most important floristic and faunistic regions in the world because of demographic, topographic and climatic features. Despite the frequently performed studies in this region, new species are still being described.

The genus *Muscari* Mill. was revised by Davis and Stuart (1984) for the 'Flora of Turkey and the East Aegean Islands' in which 20 species were recognized. After this study, eight further new species have been described from Turkey (Karlén 1987, Davis et al. 1988, Tan 1988, Cowley et al. 1994, Güner and Duman 1999, Özhatay 2000, Yıldırım and Selvi 2002, Uysal et al. 2007). Thus, the total number of *Muscari* species has increased to 28 in the last twenty years. However, 17 out of 28 taxa are endemic to Turkey and the endemism value of the genus is consequently very high.

During fieldwork in Hatay in June 2005, an interesting *Muscari* species was collected by Eker from Karlı Tepe and deposited at AIBU and AEF. Identification of the collected specimens were attempted using the diagnostic key in the 'Flora of Turkey and the East Aegean Islands'. However, the specimens were distinctly different from all *Muscari* species, and they were consequently compared with similar specimens at the Turkish herbariums; AEF, ANK, ISTE, ISTF, GAZI, HARRAN and AIBU. Our studies showed that the specimens were closely related to *M. tenuiflorum* Tausch, but important morphological differences were apparent between them. After checking the flora of neighbouring countries such as Syria, Palestine, Iraq and Iran (Post and Dinsmore 1933, Stuart 1985, Rechinger 1990), it was concluded that our specimens represent a new species endemic to Turkey.

### *Muscari babachii* Eker & Koyuncu sp. nov. (Fig. 1)

(*M.* subgen. *Leopoldia* (Parl.) Rouy)

*M. tenuifloro* Tausch affinis, sed floribus sterilibus 3–7 mm longis, glazei-azureis vel subrose albidis, (non clare violaceis et 3.5–16 mm longis), fertilibus 4–13 mm longis, parte distali eburnea-virida, parte proximali porphyrea (non 5–9 mm et laete violacea); pedicellis florum sterilium 3–6 mm (non 2–16 mm), florum fertilium 1–6 mm (non 1–20 mm) longis; capsulis 6–11 mm diametro (non 12–16 mm) differt.

**Type:** Turkey, C6 Hatay: Amanoslar, Arsuz, Karlı Tepe, 1788 m a.s.l., 13 Jun 2005, 36° 18.218'N, 36°00.272'E, İ. Eker 1196 (Holotype: AIBU, Isotype: AEF).

Bulb ovoid, 2–4 cm in diameter. Outer tunics papery, brown; middle tunics membranous, creamy with pinkish-brown or black spots; inner tunics transparent, membranous. Leaves 3–5, generally 4, linear-lanceolate, 18–50 cm × 3–13 mm, canaliculate, apex obtuse or subobtuse. Scape 35–70 cm, longer than leaves. Raceme lax, cylindrical, 8–30 × 1–4 cm, 40–100-flowered. Pedicels of fertile flowers horizontally spreading, 1–6 mm, shorter than perianth, elongating very little in fruit (to 9 mm). Fertile flowers in bud ivory, at anthesis narrowly oblong-obconical, 4–13 × 2–4 mm, distal part ivory-green, proximal part reddish-brown, shoulders sharply angled, ivory; lobes black, recurved, 0.5 mm. Outer filaments 1.5 mm; inner filaments 1 mm; anther purplish-black, 1–2 mm. Pollen yellow. Ovary ovate, 3–5 mm, style 3–6 mm, stigma punctate. Pedicels of sterile flowers ice-blue, ascending to horizontal, 3–6 mm. Sterile flowers narrowly tubular, 3–7 mm, ice-blue to pinkish white with brownish-black apical lobes. Capsule broadly ovate to orbicular, obtuse or emarginate, 6–11 × 6–10 mm, valves not strongly compressed. Seeds 4–6 per capsule, 2–3 mm wide, ovoid, rotund or irregular, rugose, black. Flowering and fruiting in May–Jul.

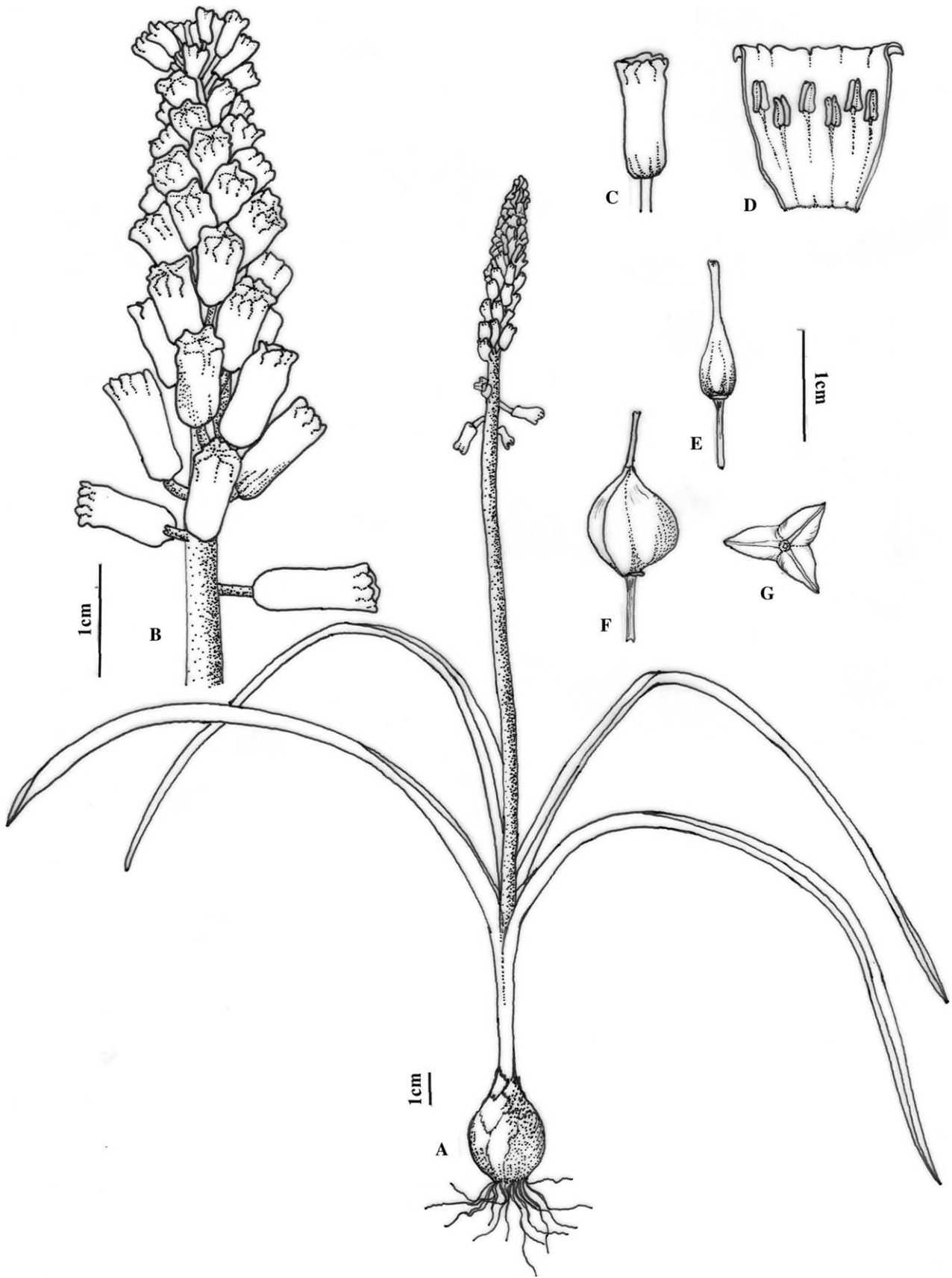


Figure 1. *Muscari babachii* Eker & Koyuncu sp. nov. (A) habit (holotype), (B) inflorescence, (C) flower from exterior, (D) corolla opened out, (E) gynoecium, (F) fruit from exterior, (G) fruit viewed from the apex.

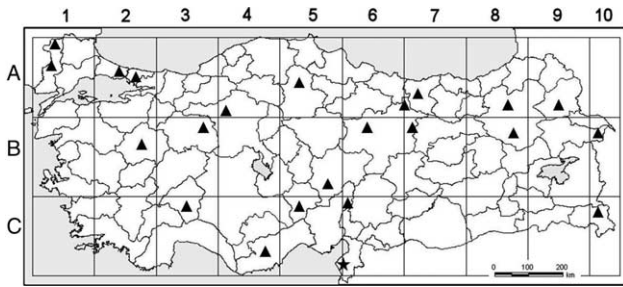


Figure 2. Geographic distribution of *Muscari babachii* (★) and *Muscari tenuiflorum* (▲) in Turkey.

## Ecology and distribution

*Muscari babachii* is only known from south Anatolia and it represents an east Mediterranean (mountain) element. It grows in machie, under oaks and in rocky places.

## Conservation status

*Muscari tenuiflorum* is widely distributed in Anatolia and European Turkey, especially in inner Anatolia (Davis et al. 1988, Özhatay and Dalgıç 1989) while *M. babachii* is found only in a discontinuous mountain in the southernmost region of Anatolia (Fig. 2). *Muscari babachii* was found at only one locality and it has a very limited distribution. It is not so common in its natural habitat and it was estimated that there are ca 1000 specimens present within an area of less than 100 km<sup>2</sup>. Thus, the species may be classified as ‘Critically Endangered’ (CR) (criterion B1a) (IUCN 2001).

## Taxonomic remarks

*Muscari babachii* sp. nov. clearly differs from *M. tenuiflorum* by having shorter (3–7 mm) and ice blue to pinkish–white sterile flowers and larger fertile flowers (4–13 mm) with ivory–green distal part and reddish–brown proximal part. In addition, the capsule of the new species is shorter (6–11 mm) as compared to that of *M. tenuiflorum* (Table 1).

## Etymology

The name of the new species is given in honour of the Turkish taxonomist Prof. Dr M. Tekin Babaç, who prepared a database of the plants in Turkey.

## Key to closely related *Muscari* species in Turkey (*Muscari* Mill. subgen. *Leopoldia* (Parl.) Rouy)

1. Pedicels of fertile flowers usually less than 2 × perianth; capsule obovate–orbicular, emarginate; tunics greyish or brown..... 2
1. Pedicels of fertile flowers manifestly longer than

Table 1. A comparison of selected characters used to distinguish *M. babachii* and *M. tenuiflorum*.

Characters	<i>Muscari babachii</i>	<i>Muscari tenuiflorum</i>
Bulb width (cm)	2–4	2–3 (–4)
Leaf number	3–5, generally 4	3–7
Leaf size (cm)	18–50 × 0.3–1.3	15–30 (–40) × 0.4–2 (–3)
Raceme (cm)	8–30 × 1–4, lax	6–30 × 1.5–3, lax
Pedicel of fertile flower (mm)	1–6	1–16 (–20)
Fertile flower size (mm)	4–13 × 2–4	5–9
Fertile flower colour	distal part of fertile flowers ivory–green, proximal part reddish–brown	ivory to pale beige
Pedicel of sterile flower (mm)	3–6	(2–)3.5–16
Sterile flower size (mm)	3–7	3.5–16
Sterile flower colour	Ice–blue to pinkish white with brownish–black lobes at apex	bright violet
Capsule (mm)	6–11 × 6–10	12–16
Flowering time	May–June	April–July
Habitat	under oaks and rocky places	<i>Pinus nigra</i> and <i>P. brutia</i> forest, <i>Juniper scrub</i> , <i>Artemisia</i> steppe, pastures, rocky slopes, on limestone, serpentine, gypsum and volcanic soils

- 2 × perianth; elongating further after fertilisation; capsule ovate, acute; bulb tunics greyish–brown .....  
 ..... *M. longipes*
2. Sterile flowers bright violet, 3.5–16.0 mm; fertile flowers ivory to pale beige, 5–9 mm; capsule 12–16 mm .....  
 ..... *M. tenuiflorum*
2. Sterile flowers ice blue to pinkish–white with brownish–black lobes at apex, 3–7 mm; distal part of fertile flowers ivory–green, proximal part reddish–brown, 4–13 mm; capsule 6–11 mm .....  
 ..... *M. babachii*

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