

Two new species to Turkey from Turkish Thrace: *Mibora minima* (L.) Desv. (*Gramineae*) & *Trifolium ornithopodioides* (L.) Sm. (*Leguminosae*)

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Abstract: *Mibora minima* (L.) Desv. (*Gramineae*) and *Trifolium ornithopodioides* (L.) Sm. (*Leguminosae*) are added new to the Turkish flora from localities in Turkish Thrace. Their diagnostic characters are briefly described and their ecology and conservation discussed.

Key Words: *Mibora minima*, *Gramineae*, *Trifolium ornithopodioides*, *Leguminosae*, new records, Flora, Turkey

Trakya'dan, Türkiye florası için yeni iki tür: *Mibora minima* (L.) Desv. (*Gramineae*) & *Trifolium ornithopodioides* (L.) Sm. (*Leguminosae*)

Özet: *Mibora minima* (L.) Desv. (*Gramineae*) ve *Trifolium ornithopodioides* (L.) Sm. (*Leguminosae*) Trakya'dan toplanan örnekler ile Türkiye florasına ilave edilmişlerdir. Türlerin tanıtıcı özellikleri, yetiştirme ortamları ve koruma durumları belirtilmiştir.

Anahtar Sözcükler: *Mibora minima*, *Gramineae*, *Trifolium ornithopodioides*, *Leguminosae*, yeni kayıtlar, Türkiye Florası

Introduction

During various excursions to Turkish Thrace (Turkey-in-Europea), the authors have discovered populations of *Mibora minima* (L.) Desv. and *Trifolium ornithopodioides* (L.) Sm. during field work to identify sites of botanical importance for nature conservation. A review of the literature on Turkish flora - notably (1-5) - suggests that these two species have not previously been recorded from Turkey. Accordingly we publish these records as additions to the flora of Turkey. Short descriptions of the Turkish specimens are given together with drawings.

Mibora minima (L.) Desv. Obs. Pl. Angers 48(1818).

Ic: Illustrierte Flora von Mittel. Europa Bant I: p. 209, Tafel 26 (1906); Flore de l'Afrique Du Nord, vol II: 112 (1953); Grasses., C.E. Hubbard, p. 336 (1984).

Tufted annual. stems erect, few-numerous, unbranched, (10-) 15-20(-25) mm high, closely sheathed at the base. Leaves mostly basal, 13-15 mm long, glabrous, sheaths round, overlapping with a wide scarious margin; ligules 0.5.0-8 mm scarious, truncate; lamina very narrow with inrolled margins. Inflorescence 7-9

mm, racemes slender, erect with dark purple or greenish purple main axis. Spikelets 4-8, sessile in 2 rows along one side of the rachis, 2-2.5 mm. Glumes oblong. 2.5-3 mm, obtuse, irregularly dentate at the apex, deep maroon-red. Lemma suborbicular, 1.7-2 mm, 5-veined, long and densely spreading hairy, minutely toothed at the apex. Palea as long as lemma, ovate to obovate, acute-obtuse with narrowly winged keels, hairy. Anthers 1-1.5 mm long, apiculate at the apex with dark maroonish-red apicule. Ovary glabrous, trigonous, styles terminal, 3-4 mm. Fl. 2-3. Open acid sandy grassland.

Examined specimen:

Turkey-in-Europea. A1(E) Edirne: Pehlivan köy, elevated commonland a few kilometres from Pehlivan köy towards Kircasali, 25 ii 1994, A.J. Byfield et al. (AJB 295), det. A.J. Byfield, conf. T.A. Cope, ISTE 66249! Very frequent locally, growing in very short and open turf within sandy grassland at the tops of hills (apparently acid sands and clays form a 'cap' on otherwise calcareous areas of hills), associated with *Crassula tillaea* Lester-Garland, *Rumex acetosella* L., *Scilla autumnalis* L. and *Tuberaria guttata* (L.) Fourr.

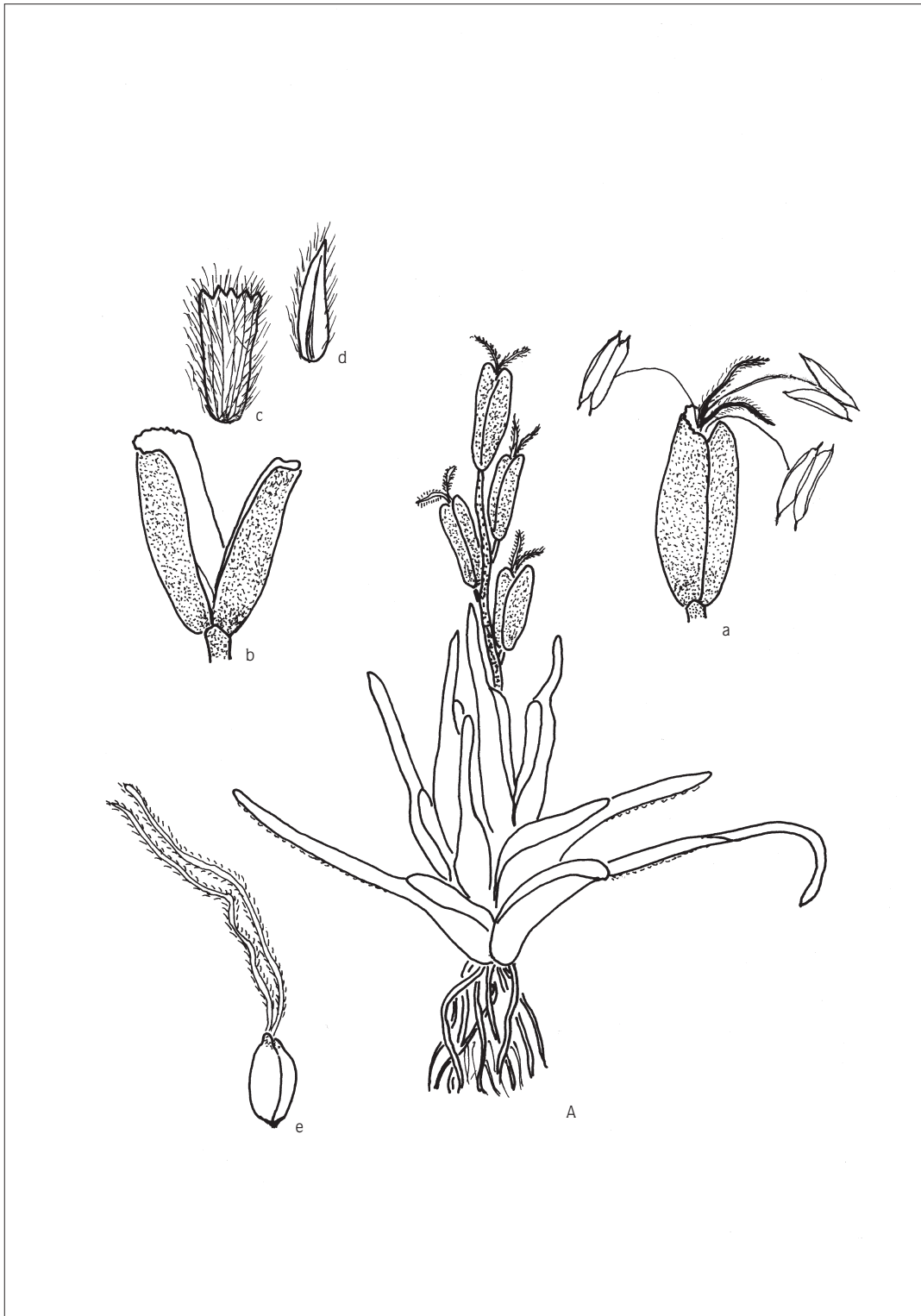


Figure 1. *M. minima* ISTE 66249, A general habit (x 4), a, spikelet (x 8), b, glumes (x 8), c, lemma (x 4), d, palea (x 4), e, pistil (x 15).

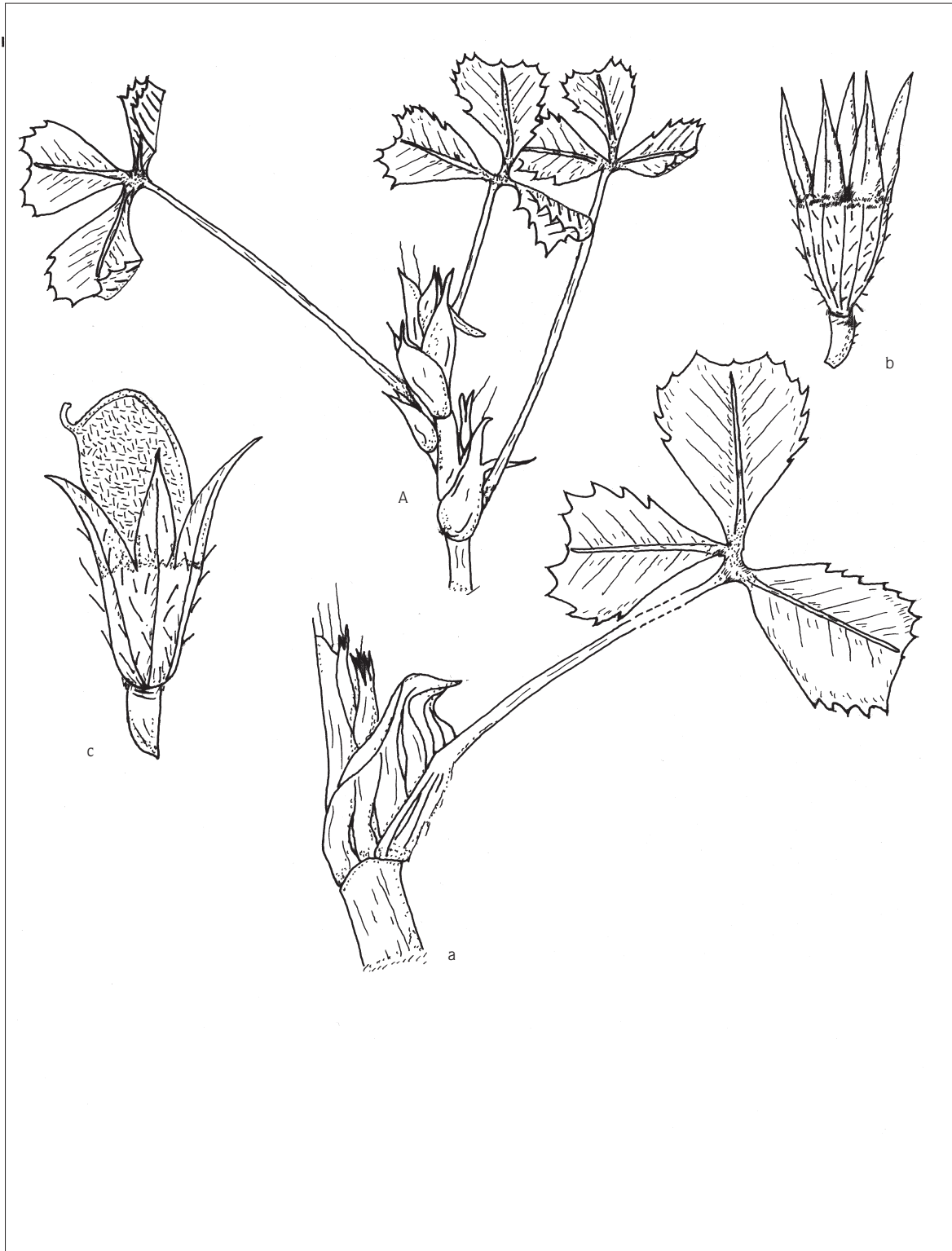


Figure 2. *T. ornithopodioides* ISTE 66433. A part of the stem (x 2), a, leaf with stipules (x 5), b, calyx (x 5), c, fruit with calyx (x 5).

The discovery of *M. minima* in Turkey comes as no surprise. The record also represents the addition of a new genus to the flora. Tutin et al. (6) records the plant as occurring principally in the European seaboard countries - both Atlantic and Mediterranean - from Britain in the north-west to Greece and Bulgaria (unconfirmed) in the south-east. That it should have escaped detection until the present time is doubtless a reflection of its very small size (the Turkish material is between 15 and 20 mm in height) and its very early flowering season, when little else is in flower.

It is nevertheless, a distinctive member of the *Gramineae*. Amongst the Turkish and European grasses, it may be easily recognised by the following combination of characters: plant annual, dwarf; inflorescence a raceme of one-flowered spikelets, borne singly in each node of the fine raceme axis. The colour of the plant is also distinctive: the leaves are pale grey green, contrasting markedly with the deep maroon-red colour of the spikelets. The plant is well illustrated in Hegi (7), Hubbard (8) and Maire (9).

Recommended IUCN Threat Category listing: Vulnerable (VU).

Trifolium ornithopodioides (L.) Sm. Fl. Brit. 2: 782 (1800).

Syn: *Melilotus ornithopodioides* L. in Sp. Pl. 768 (1753).

Trigonella ornithopodioides Desr. in Lam., Encycl. Meth. Bot. 4: 67 (1797).

lc: Illustrierte Flora von Mittel. Europa, Bant IV, 3, p. 1279, Fig. 1382 (1923); Ross-Craig, Drawings of British Plants, Part VII, Pl. 22 (1967); Zohary, M. & Heller, D., The genus *Trifolium*, Pl. 1, p. 69 (1984).

Low (2-) 4-6(-23) cm procumbent, glabrous annual. Leaves long-petioled, 15-45 mm, slender; stipules 7-10 mm, lanceolate with papery margins, acuminate; leaflets 4-9(-14) mm, obovate or obcordate, cuneate, truncate, mucronate and serrate. Inflorescences 1-3 flowered, axillary, sessile. Peduncles up to 2 mm long. Corolla 6-8 mm, whitish pale pink. Calyx up to 7 mm, tube cylindrical, sparsely pilose or glabrous, 10 dark greenish nerved, teeth narrowly triangular, subequal. Legume 6-8 mm, hairy and exerted. Fl. 4-5. *Short grassland on seasonally damp alluvial clays near the coast.*

Examined specimens:

Turkey-in-Europea. A1(E) Edirne: Keşan, SW of Mecidiye, at the eastern end of the beach extending east

of Lake Tuzla, 5 m, 19 iv 1994, A.J. Byfield & N. Özhatay (AJB 326), det. A.J. Byfield, ISTE 66433! Very abundant locally, on winter-damp, compacted brackish mud at rear of narrow sand dune strip, associated with *Trifolium resupinatum*. A1(E) Edirne: N.E. of Enez, low land between Lake Gala and Lake Pamuklu, at the southern edge of the Meriç floodplain, c. 10 m, 1 vi 1994, A.J. Byfield (AJB 632), det. A.J. Byfield, ISTE 66741! Locally abundant, in short grazed, seasonally-flooded brackish *Hordeum/Tamarix* grassland, associated with *Alopecurus creticus* Trin. *Myosurus minimus* L. etc.

Like *M. minima*, *T. ornithopodioides* is a relatively widespread European species, yet until 1994 had not been recorded from Turkey. Coombe (10) records *T. ornithopodioides* from Western Europe, northwards to Italy; S.E. part of Central Europe, but not from either country bordering European Turkey (i.e. Greece and Bulgaria). The new population therefore apparently lies at the easternmost limit of this species' natural range.

The plant occupies a rather isolated position within the genus *Trifolium*, and belongs to *Subgenus Falcatula* (Brot.) D.E. Coombe. The few flowered inflorescences (less than 5 flowered), bracteate flowers, and legume greatly exceeding the calyx serve to distinguish this species from any other *Trifolium* species in Turkey. It is illustrated in (11-12).

Recommended IUCN Threat Category listing: Endangered (EN)

Distribution

The occurrence of both species in Turkey is of considerable interest for they extend in a south-easterly direction from the known distribution of these essentially European species. Both should be looked for elsewhere in Turkish Thrace and Western Anatolia, in short winter-wet grassland at low altitudes and typically close to the coast. Their discovery in Anatolia would be especially welcome, as the authors could trace no Asian records for either species.

Ecology & Conservation

Both species occur in habitats of considerable importance for nature conservation. The *M. minima* colony occurs on sand within a calcareous grassland site: whilst the overall site has not been fully surveyed, these calcareous loam grasslands of lowland Thrace are of importance for Balkan grassland species such as *Fritillaria sibirnyi* Velen., *Paeonia tenuifolia* L. and *Salvia nutans* L.,

* *Mibora minima* grows in one 10 km square, as defined by the UTM (Universal Transverse Mercator) grid coverage of Turkey.

The *T. ornithopodioides* colonies are also of importance: the narrow dune location at Mecidiye supports nationally and locally rare species such as *Aurinia uechtritzi* (Bornm.) Cullen et Dudley, *Centaurea* aff. *polyclada* DC., *C. spinosa* L., *Corrigiola litoralis* L., *Crambe maritima* L., *Mollugo cerviana* (L.) Ser., *Silene frivaldskyana* Hampe and *Verbascum pinnatifidum* Vahl (13); whilst the Enez location lies within the last remaining area of wetland within the Turkish part of the Meriç floodplain, noted for nationally and locally rare species such as *Hydrocharis morsus-ranae* L., *Filago minima* (Sm.) Pers., *Myosurus minimus* L., *Najas marina* L., *Nymphoides peltata* (S.G. Gmelin) O. Kuntze, *Salvinia natans* (L.) All., *Sium latifolium* L. and *Trapa natans* L. The whole delta is also of international importance for its avifauna. Regretably, all sites are threatened: by conversion to arable land (*M. minima* at Pehlivan köyü), secondary housing construction (*T. ornithopodioides* at Mecidiye), and drainage (*T. ornithopodioides* at Enez). Their continued survival in

Turkey is therefore in some doubt, although it seems likely that other colonies of each species exist.

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