



The genus *Moenchia* (Caryophyllaceae) in Turkey

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Abstract

A new identification key, full descriptions, and distribution records based on various herbaria of Turkish *Moenchia* are given in this study. Detailed and comparative descriptions of the studied species have been prepared. Also, a new species, *Moenchia akmanii* M.Keskin sp. nov., is described as for science. The new species is morphologically similar to *M. graeca* that is but differs by long stems, different leaves, non-flowering shoots, 3-nerved sepals, mauve anthers, etc. The new identification key has been created to distinguish taxa distributed in Turkey.

Keywords: *Moenchia*, *Moenchia akmanii*, new species, Turkey

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Türkiye'deki *Moenchia* (Caryophyllaceae) cinsi

Özet

Bu çalışmada, Türkiye'de yetişen *Moenchia* cinsine ait yeni teşhis anahtarları, betimlemeler ve dağılımlar çeşitli herbarium numunelerine dayanılarak verilmiştir. İncelenen türlere ait detaylı ve karşılaştırmalı betimlemeler hazırlanmıştır. Ayrıca *Moenchia akmanii* M.Keskin sp. nov. adıyla bilim dünyasına yeni bir tür tanıtılmıştır. Bu yeni tür, morfolojik olarak *M. graeca* türüne benzemekle beraber ondan uzun gövdesi, farklı yaprakları, çiçeksiz sürgünleri, 3-damarlı sepalleri, mor anterleri vb. karakterleri ile ayrılmaktadır. Türkiye'de yayılış gösteren taksonları ayırt etmek için yeni teşhis anahtarları oluşturulmuştur.

Anahtar kelimeler: *Moenchia*, *Moenchia akmanii*, yeni tür, Türkiye

1. Introduction

Moenchia is a small genus with only 3 to 5 species living mainly in the Mediterranean area [1]. It is certainly related to the genus *Cerastium*. In particular, it is separated from the genus *Cerastium* with non-disintegrating petals.

Four species of *Moenchia* have been reported in A Checklist of the Flora of Turkey [2]. After examining much-related literature [1, 2, 3, 4, 5, 6, 7, 8] about this genus in detail, an unnamed specimen is decided to be a new species and proposed here as *Moenchia akmanii* M.Keskin.

2. Materials and methods

During the revision of the genus *Cerastium* for Illustrated Turkish Flora, the genus *Moenchia*, which is closely related to this genus, was also studied. During this working time, all the specimens of *Moenchia* genus present in various herbaria (E, AEF, HUB, ISTE, ISTF, ISTO, MARE, MUFE, ANK, NGBB, VANF, IZEF - These herbarium samples were examined by using only the high-resolution pictures obtained on the website.-) was examined morphologically. The findings obtained during the examinations were comparatively studied. As a result, detailed

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descriptions and distributions were prepared for all species and mapped. Furthermore, an unidentified specimen is described as a new species to science from Central Anatolia (Ankara province, Turkey).

3. Results

3.1. Description of the genus *Moenchia*

Moenchia Ehrhart, Beitr. Naturk. 2: 177 (1778). (nom. cons.), non Medik., non Roth.

Type species: *Moenchia erecta* (= *Moenchia quarternella* Ehrh. (as *Mönchia quarternella*)).

Syn.: *Alsinella* Moench., Meth. 222 (1794) (non Hill 1756). *Doerriena* Borkh., Rhein. Mag. 1: 528 (1793).

Annual herbs. Stems glabrous, thin, ascending to erect, simple or sometimes branched. Cauline leaves connate, sessile or sometimes little petiolate in basal leaves; blade 1-veined, linear to linear-oblongate, apex acute or subacute. Inflorescence terminal, 1-10 flowered, spreading cymes or flowers solitary; bracts paired, subfoliaceous with scarious margins. Pedicels erect or subpatent in fruit. Sepals 4 or 5, free, green, usually linear-lanceolate, herbaceous, scarious, apex acute; petals 4 or 5, white or blue-mauve, blade apex generally entire or rarely small-dentate; stamens 4, 8 or 10; styles 4 or 5; filaments longer than anthers; anthers generally ovate to spherical; stigmas 4 or 5; ovary ovate to subcylindrical and longer than or equal to style. Capsules cylindrical, opening by 8 or 10 revolute teeth, shorter than or equaling sepals. Seeds small, more, brown, tuberculate to submuricate.

3.2. The New Identification key for *Moenchia* in Turkey

1. Sepal and petal 4
 2. Stamen 4 5b. *M. erecta* var. *octandra*
 2. Stamen 8 5a. *M. erecta* var. *erecta*
1. Sepal and petal 5
 3. Petal blue-mauve..... 2. *M. coerulea*
 3. Petal white
 4. Petal longer than sepal 1. *M. mantica*
 4. Petal at most equal to sepal
 5. Stems 2-15 cm; sepal 1-nerved; anthers yellow..... 4. *M. graeca*
 5. Stems 15-25 cm; sepal 3-nerved; anthers mauve..... 3. *M. akmanii*

3.3. The Checklist of *Moenchia* in Turkey with a New Species

3.3.1. *Moenchia mantica* (L.) Bartl. Cat. Hort. Gött. 5 (1839). [Fig.1, 2]

Type: Described from Verona, Italy (Hb. Linn. 603/28, photo!).

Syn.: *Cerastium manticum* L., Sp. Pl. Ed.2, 629 (1762). *M. dolichothea* Somm. & Lev. in Act. Hort. Petrop. 13: 40 (1893).

Annual herbs. Stems ascending to erect, mostly dichotomous branched, 10-40 cm. Leaves 15-20 x 3-5 mm, glabrous, lanceolate to very narrowly elliptic-lanceolate, acute rarely obtuse. Inflorescence strict, usually many-flowered. Bracts ovate to lanceolate with broad scarious margins. Pedicels unequal, longest pedicel 45-70 mm. Sepals 5-parted, 6-9 mm, broad and lanceolate, elevated 1-veined, and c.10 thin vein. Petals white, 5-parted, slightly 2 x longer than the sepals. Stamens 10, anthers yellow. Capsule ovoid, at most equal to sepal. Seeds 0.8-1.1 mm.

Examined specimens

Ağrı: Patnos, Top dağı, Kızkapan köyü üstleri, step, 390 17' 350"N ve 420 38' 200"E, 1850m, 17 v 2006, H.Emlik 1616 (VANF 3642!).

Afyonkarahisar: Bayat, Otlugedik sırtı kuzeyi, 1360m, 22 v 1975, M.Vural (GAZI 197!). Bolvadin, Emirdağ, Gedik yaylası, 1600m, 8 vi 1987, Y.Akman (ANK 14354!). Kocatepe, kıraç sırtlar, 22 v 1966, A.BAYtop, B.Çubukçu (ISTE 9392!).

Ankara: Beypazarı, Alemdar köyü üstü, 1400m, 1 vii 1971 (ANK 788!). Beypazarı, Cuma deresi, köprübaşı, 2 vii 1972, Y.Akman (ANK 8516!). Beypazarı, Deliyar-Cuma deresi, *Pinus nigra* ormanı, 1400m, 22 vii 1972, Y.Akman (ANK 8519!). Beypazarı, Elmabeli, *Pinus nigra* orman açıklığı, 700m, 27 v 1971 Y.Akman (ANK 788-A!). Beypazarı, Karaşaraltı, 1000m, 28 v 1971, Y.Akman (ANK 788-B!). Beypazarı, köprü yanı, 28 v 1972, Y.Akman (ANK 8520!). Beypazarı, Nallıkaş, nemli çayırlar, 1500m, 26 vi 1973, Y.Akman (ANK 8517!). Elmadağ, 1600m, 25 vi 1932, W.Kotte (ANK 122!). Kızılcahamam, Karaçam ormanı, 26 vi 1960, A.Huber-Morath (ANK!). Kızılcahamam, Soğuksu Milli parkı, yanık sırtı, 1300-1350m, 12 v 1990, Ö.F. (GAZI 1328!).

- Aydın:** Çine çayı vadisi, 21 iv 1969, K.Fitz (EGE 3973!). Çine çayı kenarı, 21 iv 1969, H.Güner (EGE 15184!). Dalaman-Cumalı 6.6km, çalılık yamaçta, 24 iv 1992, A.Byfield B 49 (ISTE 64875!).
- Balıkesir:** Ayvalık güneyi, Yassı tepe, 150m, 28 v 1997, K.Alpınar (ISTE 73953!). Ayvalık, Hakkıbey yarımadası, Cennet koyuna bakan yamaçlar, 15 iv 1998, K.Alpınar (ISTE 74992!). Edremit, Bursalıhanı, *Pinus brutia* ormanı, 10 v 1966, H.Peşmen (EGE 15192!). Edremit, Kumluca, Eybek kule yolu, bir çoğu bir arada, bol miktarda, güney, 940m, 23 iv 1999, M.Tokcan (ISTO 28525!). Erdek, Marmara adası, maki ve çayır, 2 v 1965, E.Demiriz ((ISTF 5203!). Kozak, Kıranlı köyü, Madran çayı, 15 v 1966, H.Peşmen 565 (EGE 5885!). Marmara adası, Marmara yakınları, kireç ocakları üstündeki tepeler, 8 v 1971, A.Baytop, G.Ertem, F.Öktem (ISTE 19636!). Marmara adası, Nahiye merkezi, Çınarlıköy arasındaki yamaçlar, 100m, 6 v 1978, E.Tuzlacı (ISTE 39174!). Marmara adası, *Pteridium* altında, 550m, 17 vi 1968, A.Baytop, T.Avcıgil (E ! ve ISTE 13740!).
- Bilecik:** Bozöyük-İnegöl, c.37 km from İnegöl and c.1km from river Aksu to Bözöyük, N of the main road. Fairy steep slope, facing S, with open deciduous forest affected by grazing. 830m, 21 v 1990, Raino Lampinen 7660 (EGE 33879!).
- Bitlis:** Tatlıkaynak köyü, step, 1550m, 18 v 2002, A.Altıok 2286 (VANF 3709!). Bitlis'in 5km kuzeyi, sulu çayırlar, 1350m, 18 v 1966, Davis 43139 (E !). Tatvan ile Küçükusu arası, 1750m, 19 v 1966, Davis 43293 (E !).
- Bolu:** Abant girişi, 840m, 25 v 1980, Y.Akman, E.Yurdakulol (ANK 10557). Abant, 1350m, 26 vi 1975, A.Baytop (ISTE 32276). Abant, 5 vii 1975, A.ve T.Baytop (ISTE 32405a!). Abant, Alpogut'u geçince *Carpinus betulus* ormanı, 1000m, 10 vi 1978, Y.Akman (ANK 9449!). Bandırma, Şahinburgaz, maki zonu, 300m, 19 v 1976, Y.Akman (ANK!). Bolu'ya inişte, Kuzey yamaçları, meşe ormanı, 800m, 10 vi 1980, Y.Akman, E.Yurdakulol (ANK 10558!). Gerede, Aktaş ormanları, Aşağı ovacık, *Pinus sylvestris* katı, 1400m, 3 vii 1975, O.Ketenoglu (ANK 428!). Gerede-Aktaş ormanları, sarıçam katı, 1400m, 3 vii 1975, O.Ketenoglu (ANK 428!). Bolu işletmesi, 14/00, Kökez bölgesi, Sultan serisi, bölme no: 38, bakı N, 930m, 16 vii 1978, H.Aksoy 371, (ISTO 25661!). Bolu işletmesi, 14/00, Kökez bölgesi, Sultan serisi, bölme no: 44, bakı SSE, 970m, 9 vi 1978, H.Aksoy 58, (ISTO 25573!). Köroğlu, Karaçamaltı, anakaya volkanik, 1400m, 26 vi 1975, Y.Akman (6310!). Sarı Mestan, 27 vi 1997 Y.Akman (ANK!). Dolubaba-Yiğitali, 14 v 1955, B.Tutel ve M.Heilbron (ISTF 14129!).
- Bursa:** Işıklar köyü, 5 v 1950, T.Baytop, A.Berk (ISTE 297!). Uludağ, Soğukpınar, 500-1000m, 15 v 1962, Dudley 34751 (E!). Uludağ, 27 iv 1883, P.Sintenis (E !). Uludağ, 17 v 1899, J.Bornmüller 4210 (E !). Uludağ, orman zonu, 1450m, ix 1964, F.F.E.De Wilde (E !). Uludağ, Softaboğan'nın batısı, Abietum, 1700m, 10 viii 1951, H.Demiriz (E !).
- Çanakkale:** Gökçeada, Bademli köyü üstü, Yıldız tepesi kuzeyi, 0m, 16 iv 1977, Ö.Seçmen, E.Leblebici (EGE 20346!). Gökçeada, Değirmendere Ketveren tepesi, kuzey doğusu, 30m, 19 v 1975, Ö.Seçmen, E.Leblebici (EGE 23039!). Gökçeada, Pınarbaşı-Kaleköy arası, vadi içinden, 100m, 18 iv 1977, Ö.Seçmen, E.Leblebici (EGE 20345!). Gökçeada, Yıldız köyü Kuzulimanı arası, 15m, 14 iv 1975, Ö.Seçmen, E.Leblebici (EGE 23038!). Gökçeada, Yıldız köyü Kuzulimanı arası, 20m, 14 iv 1975, Ö.Seçmen, E.Leblebici (EGE 23040!). Kurudağ, 28 iv 1968, A. ve T. Baytop (ISTE 12560!). Yenice, Kalkım Ayı gediği yolu, Karaçam altında bol miktarda, 840m, 16 v 1999, M.Tokcan (ISTO 28526!).
- Çankırı:** Atkaracalar, Dumanlıdağı, Avlağa-Sivren yaylası arası, step, 1500-1600m, 9 vii 1992, Ahmet Duran (GAZI 1572!). Işık dağı, Karaçam altı, 1400m, 12 vi 1975, Y.Akman (ANK 6317!). Saka dağı, yayla, 1050m, 27 vi 1980, M.Demirörs (ANK 172!).
- Denizli:** Babadağ, Babadağ ilçeden Başalan yaylasına çıkarken 2km, yamaçlar, 1300m, 9 v 1986, S.Oluk, Ö.Seçmen, Y.Gemici (EGE 34863!). Babadağ, Gökbel yaylası, Acılık tepesi, eğimli arazi, 1750m, 17 v 1986, S.Oluk (EGE 34869!). Buldan, 29 vi 1965, C.Regel (EGE 15183!). Çivril, Sığırkuyruğu yaylası, 1300-1400m, 4 v 1983, Y.Gemici (EGE 25459!). Honaz dağı, Başalan mevkii, yol kenarı, 700m, 17 v 1973, E.Tuzlacı (ISTE 24762!). Honaz dağı, Döngelli tepeden Honaz'a inen oduncu yolu, 950m, 18 v 1973, E.Tuzlacı (ISTE 24851!). Honazdağı, Baymanlı mevkii, 700m, 18 v 1973 (ISTE 24867!).
- Edirne:** Babaeski-Havsa arası, Havsa yakınları, Simit reverzuarına iniş yolu, 8 v 1973, A.Baytop, E.Tuzlacı (ISTE 24402!). Keşan-Enez yolu, Kılıçköy'den 1,5km önce, merada otlu çukurlar ve tepecikler üzerinde, 18 iv 1992, A.Byfield B 26 (ISTE 64852!). Keşan-İpsala yolu, İpsala yakınları, yol kenarı, 22 iv 1970, A.Baytop, F.Öktem (ISTE 17658!).
- Eskişehir:** Sündiken dağı, Kalabak deresi, 1400-1600m, 12 vi 1971, T.Ekim (E ! ve ANK 335!). Türkmen dağı, Kazan çukuru, 1400m, 16 vi 1976, T.Ekim (ANK 2128!).
- Giresun:** Merkez, Ülper köyü, yumuşak toprak üzerinden, 1200m, 23 v 1983, Ö.Yeşilada (HUB 2837!).
- İğdir:** Tuzluca, Hadımlı-Sarıabdal arası tepeler, 1279m, 30 v 2007, E.Altundağ (ISTE 84538!).
- İstanbul:** Alemdağ, 18 iv 1952, T.Baytop, A.Berk (ISTE 3005!). Anadolu hisarı, 19 v 1942, M.Başarman (ANK!). Ataşehir: Nezahat Gökyiğit Botanik Bahçesi, doğal alan bitkileri koleksiyonu, tarihsiz, M.Vural (NGBB 006115!). Aydos yolu, Aydos dağı, Hayrettin çeşmesi, maki, 12 v 1958, B.Tutel (ISTF 16982!). Aydos, 1 iv 1951, A.Berk (ISTE 3690!). Aydos, 10 v 1950, T.Baytop, A.Berk (ISTE 3716!). Aydos, 22 iv 1951, A.Baytop (ISTE 3710!). Aydos, 3 iv 1952, T.Baytop, A.Berk (ISTE 3682!). Aydos, 3 iv 1952, T.Baytop, A.Berk (ISTE 3705!). Aydos, Yakacık, 24 iv 1966, N.Tanker (ISTE 8687!). Beykoz, Dereseği, Karakulak suyu çevresi, ormanaltı, 11 v 1967, H.Demiriz, B.Tutel, A.Aydın (ISTF 22079!). Büyükdere, 30 iv 1956, E.Leblebici (EGE 15193!). Çatalca, Arnautköy girişi, set üstü, 03 v 1989, E.Üzen (ISTF 35820!). Çatalca, Hadımköy, Çanakça, Çanakça-Kestanelik, yol kenarı, 70m, 12 iv 2002, İ.Genç (ISTE 82065!). Çatalca, Hadımköy, Tugay, sevgi korusu, 60m, 28 iv 2002, İ.Genç (ISTE 82094!). Çatalca, mezarlık yakınları,

1 v 1964, A. ve T.Baytop (ISTE 7605!). Çatalca, Subaşı köyü çevresi, buğday tarlası kenarı, 24 v 1972, N.Özhatay, E.Tuzlacı (ISTE 21880!). Çatalca, Subaşı yolu, 21 v 1974, A.Baytop, E.Tuzlacı (ISTE 28164!). Çatalca, Subaşı, Piknik alanı, yol kenarı, 80m, 19 v 2002, İ.Genç (ISTE 82137!). Çekmeköy, Çataltepe Kalebayırı yolu sulak nemli sazlıklar, 254m, 23 iv 2016, M.Keskin, E.Özhatay, N.Özhatay !. Ispartakule, Kapadık çiftliği, 14 v 1949, M.Başarman (ISTF 8552!). Kanarya, Soğuksu, 31 v 1964, A. ve T.Baytop (ISTE 7672!). Karaburun-Terkos arası, 2km, 13 v 1962, Betül Tutel (ISTF 18480!). Kayışdağ, 16 iv 1952, T.Baytop, A.Berk (ISTE 3704!). Kemerburgaz, Ağaçlı, 0,5km, S., çayır, 4 v 1968, H.Demiriz (ISTF 23065!). Kilyos, sol taraftaki sahil tepeleri, 22 v 1992, Ş.Şiraneci, E.Akalın (ISTE 63924!). Küçükbakkalköy-Kayışdağı yolu üzerinde, 12 v 1963, Betül Tutel (ISTF 18847!). Küçüksu, 22 iv 1966, A.Ali, E.Günhan, S.Türkseven (ISTE 8635!). Maltepe, Başbüyük Mahallesi, 7 ii 2001, M.Keskin 2462 (ISTE 79290!). Maltepe, Cevizli, Dragos tepesi, N yamaçlar, çayır, 28 iv 1968, A.Çırpıcı, O.Sunter (ISTF 23035!). Maltepe, Cevizli, İzmit yolu, çayır, 11 iv 1971, A.Çırpıcı (ISTF 25140!). Olimpiyat köyü alanı, vadinin olimpiyat sahası tarafı, harfiyat yapılan alanlarının altları, taşlık alanlar, 6 v 2001, E.Akalın, U.Uruşak (ISTE 79932!). Maltepe: Cevizli-Dragos tepenin NE yamaçları, 14 v 1971, E.Özhatay 282 (ISTO 18653!). Pendik, Akfırat-Göçbeyli, Aydımlık sokak girişi, giriş yolunun solundaki Taşlı makilikler, 105m, 13 v 2017, M.Keskin 2161, N.Özhatay, E.Özhatay !. Sancaktepe, Turkuaz su fabrikası yakınları, Fabrikalar alanı, çayır, 15 iv 2017, M.Keskin 6813!. Sarıyer, Haciosman bayırı, yamalı çayır, 15 v 1973, Tutel, Çırpıcı, Kuş (ISTF 27116!). Sarıyer: Belgrad ormanı, Balaban dere, 28 iv 1959, F.Yaltırık (E ! ve ISTO 1317!). Sarıyer, Belgrad ormanı, 1951, İ.Akbaş (ISTO 148!). Silahtarğa ilerisindeki tepeler, 13 v 1967, N. ve M.Tanker (ISTE 11205!). Silivri, Danamandıra, Tabiat Parkı yolu-Sinekli yolu ayrımı, gençleştirilmiş meşe ormanı, M.Keskin 6220, N.Özhatay, M.Özhatay !. Silivri, Gelevri, Gülçin çiftliği, bodur orman, *Quercus*, *Phillyrea*, *Carpinus*, kurak çayır, 16 iv 1961, H.Demiriz (ISTF 17892!). Silivri, Lüleburgaz deniz evleri civarı, G.Ertem, 30 iv 1973 (ISTE 24252!). Terkos fidanlığı yakını, 3 v 1971, A.Baytop, G.Ertem, N.Özhatay, (ISTE 19478!). Terkos yolu, Çınarlıhan civarı, uzunca ova, makide, 150m, 12 v 1951, H.Demiriz (E ! ve ISTF 11078!). Terkos yolu, Habibler köyünde 2km önce, maki, 13 v 1962, B.Tutel (ISTF 18460!). Terkos, Fidanlık yolu kenarı, 3 v 1971, Ertem, E.Özhatay 264 (ISTO 18638!). Rumeli hisarı, 20 v 1918, B.V.D.Post (E !).

İzmir: Bergama, Kozak, Kıranlı odun deposu, 750m, 24 iv 1986, Ö.Seçmen (EGE 17938!). Kemalpaşa-Sincancılar, Ovacık, 300m, 12 v 1969, G.Oğuz (EGE 15187!). Ödemiş, Bozdağ, 29 v 1962, C.Regel (EGE 15185!). Ödemiş, Keldağı, kayalık yerler, 1350m, 31 v 1980, E.Tuzlacı, T.Çelebioğlu (ISTE 44382!). Yamanlar dağı, 24 v 1995, K.Alpınar, G.t Hart (ISTE 67943!).

Kastamonu: Ilgaz dağları, Kanlı göl, Çeşme üstü, 1300m, 13 vi 1982, Y.Akman, E.Yurdakulol, M.Demirörs (ANK 12118!). Ballıdağ, Sarıçam ormanı, 1350m, 11 vi 1979, O.Ketenoglu 881 (ISTO 25187!). Daday arası, Sarıoluk, meşelik, 1000, 19 vi 1978, O.Ketenoglu (ANK 880!). Daday arası, taş ocakları, 950m, 23 vi 1980, O.Ketenoglu (ANK 883!). Daday, Kiraz serisi, Abies ormanı, 1100m, 19 vi 1978, O.Ketenoglu (ISTO 29468!). Devrekani, Oyrak II geçidi, *Pinus sylvestris* topluluğu, anakaya ofiolitik, 1210m, 08 vi 1991, E.Yurdakulol (ANK 3517!). Tosya, Ahlatdağı bölgesi, Büyükdere serisi, Dikmen tepe mevki, *Pinus nigra* ormanı 1500m, 11 vi 1975, M.Kılınç (ANK 1085!). Tosya, Ortalıca yaylası, -Acıkavak yaylası arası, Karaçam ormanı, 1350m, 30 vi 1976, M.Kılınç (ANK 5069!).

Kırklareli: Demirköy, Demirköy dökümhanesi, 176m, 30 v 2009, N. ve E. Özhatay (ISTE 27690!). Demirköy, Sarpdere yolu, 511m, 14 vi 2009, E.Akalın & S.Demirci (ISTE 92080!). Dereköy-Hudut arası 4km, yol kenarı, otlu alanlar, 525m, 23 v 2009, N.Güler, H.Ersoy (ISTE 96220!). Pınarhisar'dan 9 km, çalılıklar arası, 21 v 1974, A.Baytop, E.Tuzlacı (ISTE 28226!). Üsküp yolu, ana kavşaktan c.4km, sırtlarda, 21 v 1974, A.Baytop, E.Tuzlacı (ISTE 28241!). Eski Saray yolu, tarlalardan aşağıya inerken, 40m, 21 iv 2005, D.Oral 1521 (ISTO 33579!).

Kocaeli: Gebze-İzmit yolu, 2. km, yol kenarı, 14 v 1970, E.Özhatay 128 (ISTO 18498!).

Kütahya: Azant'tan Pehlivan taşına, Eğrigöz 3km geçince, 1360m, 8 vi 1978, G.Görk (EGE 37882!). Domaniç-İnegöl arası, Duraköy ileri, 940m, 11 v 1982, K.Alpınar (ISTE 48659!). Emet, Eynal'dan Emet'e doğru 9km sonra, açık habitat, kumlu fiğ habitatı, 1200m, 17 v 1978, Ö.Seçmen, G.Görk (EGE 37883!). Emet, Yeniceköy'den arpa tarlasına giden yolda, geniş çayırılıkta, çeşmelerin yanında, 1100m, 08 v 1980, G.Görk (EGE 18347!). Gediz, Murat dağı, Çukurören, çayır, 1100m, 16 v 1980, A.Çırpıcı (ISTF 34088!). Gediz, Murat dağı, Hamam yukarı, göl yeri, orman arası açıklık, 1750m, 9 vi 1977, A.Çırpıcı (ISTF 30468!). Gediz, Murat dağı, İkizce, çayır, 1450m, 21 vi 1978, A.Çırpıcı (ISTF 32033!). Gediz, Muratdağı, Hamam Çukurören köyü arası, Yayla çayırılık *Pinus nigra* orman açıklığı, 1500m, 3 vii 1972, S.Oflaz, G.Oğuz, Ö.Seçmen, E.Leblicci (EGE 15375!). Gediz-Uşak, 55km Uşak'ın 10 km kuzeyi, *Cistus laurifolius* topluluğu, 1140m, 14 vi 1954, H.Demiriz (E ! ve ISTF 13322!). Hamam-Sobalar, çayır, 1450m, 17 v 1978, A.Çırpıcı (ISTF 31454!). İnönü-Kütahya arası, kurak tepeler, 1000m, 21 v 1966, A.Baytop, B.Çubukçu (ISTE 9347!). Simav, Kiçir-Akdağ, *Pinus nigra* ormanı, 1700m, 19 vi 1965, M.J.E.Coode ve B.M.G.Jones (E !, ISTF 20901!, ISTO 6712!). Simav'dan yaklaşık 10km, orman yolundan Simav dağına giderken, 1500-1700m, 18 vi 1965, M.J.E.Coode ve B.M.G.Jones (ISTF 20881! ve ISTO 6741!). Simav-Demirel arası, Demirci'den 11 km, *Pinus nigra* orman altı, 1350m, 9 vi 1972, S.Oflaz, G.Oğuz, Ö.Seçmen, E.Leblicci (EGE 15186!). Murat dağı, Gediz üstleri, Kesik Söğüt, 1200m, 5 vii 1962, Davis 36723 ve Coode (E !). Simav, dağ yolu, 1500-1700m, 18 vi 1965, M.J.E.Coode ve B.M.G.Jones (E !).

Manisa: Akhisar, Kertil mevki, *Pinus brutia* ormanı, 23 iv 1973, Öner, Seçmen, Ahmet (EGE 11391!). Akhisar-Gölmarmara, step, 29 iv 1966, H.Peşmen (EGE 4862!). Manisa dağı, 1500m, 13 vi 1966, A.Baytop, B.Çubukçu,

T.Avcıgil (ISTE 9981!). Manisa dağı, 3 v 1961, Turhan Baytop (ISTE 6428!). Manisa dağı, 4 iv 1966, N.Zeybek, C.Regel (EGE 15189!). Manisa dağı, Karlık kuzeyi, 1140m, 25 v 1984, H.Duman (GAZI 1075!). Manisa dağı, yamacı, 700m, 4 iv 1966, C.Regel, H.Peşmen, G.Oğuz (EGE 15191!). Soma, Adilköy, kuzeydoğusu, Bahçecik çeşmesi üstü, 750m, 18 v 1967, H.Peşmen, M.Aydar (EGE 15190!). Soma, Madenci çeşmesi yol kenarı, 600m, 12 v 1977, Ö.Seçmen (EGE 23753!). Çine arası, kayalık habitat, 28 iii 1979, Ö.Seçmen, Leblebici, Bekat (EGE 17273!).

Muğla: Karaçam ormanı altı, 1200-1350m, 18 vi 1976, Y.Akman ve Quezel (ANK 7290!); Yatağan-Gökbel, *Quercus coccifera* makisi, 300m, 20 iv 1965, Dr. Davis 41456 (ISTO 5863!).

Samsun: Kurupelit kampüsü, Fen-Edebiyat Fakültesi çevresi, 4 v 1995, M.Keskin 153 (ISTE 77071!). Samsun'un 8km doğusu, çayırılık, 19 v 1963, Carl Tobey 120 (E ! ve ISTO 1926!). Samsun'un 5km doğusu, Karadağ, 50m, 15 vi 1963, Carl Tobey 341 (E ! ve ISTO 2014!). Kızılırmak, Asar'dan sonra, 450m, 12 v 1967, Tobey 1782 (E !). Hacı İsmail köy, açık alanlar, 300m, 6 v 1967, Tobey 1733 (E !). Derbent, Ökçetepe'nin kuzey yamacı, Asarağaç tepe, 30-40m, 22 v 1952, H.Demiriz (E !).

Sinop: İnce burun, volkanik arazi, 30m, 23 iv 1966, Tobey 1621 (E !).

Sivas: Zara, 20 km güneyi, jipsli arazi, 1500m, 6 vii 1986, B.Yıldız (ISTE 94275!).

Tekirdağ: Keşan, Malkara arası, 19 v 1970, A.Baytop, F.Öktem (ISTE 17974a). Kırkgöz köyü, Londra asfaltı, kavaklık altı, 30 iv 1973, G.Ertem (ISTE 24253!). Malkara-Keşan yolu, Pişman koruluğu, 20km içeride, 12 v 1991, E.Akalın (ISTE 62892!). Seymen-Çorlu arası, Çorlu'ya 2km kala, 22 iv 1970, A.Baytop, F.Öktem (ISTE 17635!). Seymen-Çorlu arası, Çorlu'ya 7km kala, 22 iv 1970, A.Baytop, F.Öktem (ISTE 17619!).

Trabzon: Vakfikebir, Fol köyü, çayırılık, 1500m, 11 vii 1986, Y.Gemici (EGE 30162!).

Van: Özalp, Dorutay köyü batı kesimi, step, 2658m, 25 vi 1996, F.Özgökçe 2654 (VANF 3625!). Özalp, Damlacık köyü doğusu, Boncuk deresi vadisi, step, 2150m, 9 vii 1997, F.Özgökçe 5730 (VANF 3638!). Muradiye, Alkasnak köyü, Ziyaret tepesi batısı, nemli, çayırılık alan, 1900m, 12 vi 2001, O.Karabacak 1698 (VANF 3708!). Gürpınar, Hamurkesen köyünün arkaları, step, 2000m, 22 v 2002, M.Ünal 6760b (VANF 3779!). Gürpınar, Hamurkesen köyünün arkaları, step, 2000m, 22 v 2002, M.Ünal 6814 (VANF 3780!).

Yalova: Orhangazi yolu, 3 v 1950, A.Berk, T.Baytop (ISTE 2474!).



Figure 1. A Herbarium sheet

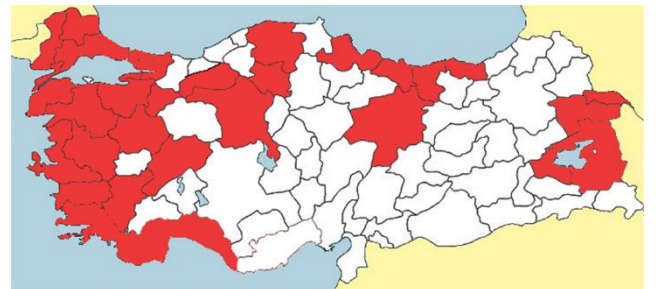


Figure 2. Distribution map

It is probably the most widely distributed and is available in many parts of Turkey. It is the most basic member of slightly moist meadows with white flowers, especially in early spring. *M. mantica* is a very characteristic species due to its double-length petals of calyx, its upright posture, and its early nature compared to other species.

3.3.2. *Moenchia coerulea* Boiss., *Fl. Orient. 1: 712 (1867)*. [Fig. 3, 4]

Syn.: *Cerastium coeruleum* Boiss., *Diagn. Ser. 1(1): 53 (1853)*. *M. mantica* L. var. *violascens* Azn., *Bull. Soc. Bot. Fr. 44: 166 (1897)*. *M. mantica* L. forma *coerulea* (Boiss.) Janchen, *Zwei für Österreich neue Pflanzen, 5: 59 (1907)*. *M. mantica* L. var. *jolanthae* Kováts, *Ungarische Botanische Blätter – 29: 49 (1930)*.

Holotype: Montes Smyrne, Mai 1842, Boissier (E !).

Annual herbs. Stems usually strict, simple or branched from base, dichotomous branched at upper, 10-20 cm. Leaves 7-15 x 2-4 mm, glabrous, linear-lanceolate, acute. Inflorescence strict, 2-7 flowered. Bracts broad ovate-lanceolate with broad scarious margin. Pedicels unequal, longest pedicel 40-75 mm. Sepals 5-parted, 6-9 mm, oblong-lanceolate, mauve at upper, usually veins obscure, main vein sub elevated. Petals blue-mauve, 5-parted, longer than the sepals, usually not 2 x calyx white. Stamens 10, anthers yellow. Capsule subovoid, exceeding to sepals.

Examined specimens

Afyonkarahisar: Bayat, Bağlık mevkii üzeri, 1120m, 23 v 1975, Mecit Vural (ANK 198!).

Antalya: Akseki-Bademli arası, Toy alanı, step, 1400m, 25 v 1983, M.Koyuncu 6040-S.Erik (HUB 02879!).

Aydın: Eskiçine, Madrandağı, Topçam köyü güneyi, yamaçtan, 800m, 29 iv 1977, A.Yayıntaş, A.Yürül, A.Tamar; F.Seliayan (EGE 15180!).

Denizli: Çivril, Sorgun'dan-Kocayayla'ya çıkarken, 1250m, 5 v 1983, Y.Gemici (EGE 25460!). Sarayköy, Babadağ-Hisarköy'den Tekçam'a doğru 7km, 1050m, 22 v 1972, G.Oğuz, Ö.Seçmen, E.Leblebici, T.Kesercioğlu (EGE 15181!).

Edirne: Merkez, Edirne'nin 8km batısı, 100m, 19 iv 1966, Davis 41971 (E !).

Elazığ: Kup dağı, Sumalı yayla yeri, *Quercus* topluluğu, 1600m, 10 v 1982, H.Susen (ANK 1089!).

Isparta: Şarkikaraağaç, Kızıldağ milli parkı, Kolonkaya kuzey yamaç, 1200m, 11 v 1995, B.Mutlu 1351 (HUB 37178). Sütçüler, Kuzca köyü, Kuzcalan, *Astragalus* stebi, kırmızı toprak, 1350m, 5 vi 1975, H.Peşmen-A.Güner 2062 (HUB 02875!).

İstanbul: Arnavutköy, Durusu, İSKİ girişi, 70m, 19 v 2017, M.Keskin 7092, N.Özhatay, E.Özhatay!. Arnavutköy, Durusu kumul girişi, 8m, 19 v 2017, M.Keskin 7116, N.Özhatay, E.Özhatay !. Terkos gölü, Karaburun'dan Tahlisiye'ye doğru, kumluk yol kenarı, *Quercus* makiliği, 50-60m, 8 v 1962, Dudley 34535 (E !).

İzmir: Bornova, Kurudere, Karaçoban mevkii, 6 v 1971, M.Aydar, C.Ödemiş (EGE 15188!). Bornova: Kurudere köyü, Mengene mevkii, 6 v1971, Aydar Ödemiş, (EGE 11656!). Kemalpaşa, Nifdağı, zirve yolu, yangın kulesine doğru, 1300m, 16 v 1975, Ö.Seçmen, E.Leblebici (EGE 24322!). Kemalpaşa, Nif dağı, 600m, 27 iv 1987, N.Zeybek (IZEF 2703!). Kemalpaşa, Nif dağı, Manastır kalesi, 450m, 9 v 1992, N.Zeybek (IZEF 1652!). Ödemiş: N Birgi, 500m, 17 v 1993, E.Sauer (IZEF 1254!). Yamanların şarkı ve karaçamdaki kurak otlaklarda, 900-1200m, v.1932, O.Schwarz (EGE 23174!). Bozdağ: pinetum, 1400m, 5 vii 1968, Huber-Morath (ISTO 15095!). İkikardeş, 15 v 1906, J.Bornmüller 9157 (E !). İzmir dağları, vi 1842, E.Boissier (E !).

Muğla: Eskiçine'ye gelmeden, Çine çayı, 5 iv 1995, N.Keyikçi, A.Er, G.Görk (EGE 18984!). Muğla, *Pinus brutia*, 19 iv 1965, C.Regel (EGE 15182!). Yatağan-Çine arası, Gökbel mevkii, granit kayalıkları, 300m, 2 v 1982, T.Ekim ve M.Koyuncu 5152 (AEF!). Yatağan-Çine, *Quercus coccifera* çalılıkları arası, 100m, 1 iv 1956, Davis 25553 et O.Polunin (E ! ve ANK!). Yatağan ile Gökbel arası, *Quercus coccifera* makiliği açıklıkları, 300m, 20 iv 1965, Davis 41456 (E !).

Samsun: Ladik istasyonu, Karadağ, 1050m, 8 v 1965, C.Tobey 948 (E !).



Figure 3. A Herbarium sheet



Figure 4. Distribution map

The most characteristic feature of the *M. coerulea* is the presence of blue to the purple corolla. This species is strictly related to *M. mantica*. But it is distinguished by the following characters:

- 1) Corolla blue to purple
- 2) Small, linear-lanceolate leaves
- 3) Corolla longer than calyx but never 2-fold
- 4) Capsule equal to sepals or slightly longer than sepal

3.3.3. *Moenchia akmanii* M.Keskin sp. nov. [Fig. 5, 6]

Type material: Türkiye, Ankara: Beypazarı, Eğriova, yavaş akan dereciklerde, 1550m, 26 vi 1973, Y.Akman (ANK 8518!).

Diagnose: *Moenchia akmanii* M.Keskin is close to *M. graeca* Boiss. & Heldr. but differs from it by its long stems (short in *M. graeca*); cauline leaves 4-6 pairs, 20-35 x 1.0-2.0 mm (2-4 pairs, 4-14 x 1.5-2.5 mm in *M. graeca*); axillary shoots present (absent in *M. graeca*); flowers 4-9 (1-5 in *M. graeca*); 5-6 x 1.8-2 mm, caudate at anthesis and 3-nerved (7 x 3 mm, acute at anthesis and 1-elevated nerved in *M. graeca*); anthers mauve (yellow in *M. graeca*).

Description: Annual herbs. Stems green, thin and flexible, 20-36 cm. Basal leaves linear, more or less withered at anthesis. Internodes very long. Cauline leaves 4-6 pairs, 20-35 x 1.0-2.0 mm, linear-elliptic, acute, not glaucous, 1-main vein. More axillary shoots present. Bracts 3-5 mm, elliptic with broad scarios margins, midvein brownish, and first bracts fimbriate at the base. Inflorescences 4-9 flowered, axillary; each flower supported by two bracts. Flowering pedicels 10-15 mm; fruiting pedicels 30-40 mm, 5-7 times as long as calyx, distinctly thickened above. Sepal 5; 5-6 x 1,8-2 mm at anthesis, narrowly lanceolate, with narrow scarios margins, caudate; 3-nerved, not indurate, and decurrent

to the base of calyx. Petal 5, white, as long as sepals or rarely exceeding, spatulate. Stamens 10; anthers mauve. The capsule as long as sepals (submature). Seeds c. 0,5 mm.

Flowering time: June (probably to July).

Habitat: Slow flowing streams, meadows

Etymology: This new species named after Professor Yıldırım Akman who is a leading Ecologist, author, and collector of this sample.

Examined specimens:

Ankara: Beypazarı, Eğriova, Orman açıklığı, 36 T 0417361,4481291, 1598m, 12 vi 2014, Haşim Altınözlü, M.Erol Demirbilek (NGBB 004337!).

Notes: *M. akmanii* is probably only an endemic species of Eğriova/Beypazarı.

The proposed new species is strictly related to *M. graeca*. Differences are summarized in table 1. Nevertheless, the first impression as a general structure seems to be the *M. mantica* type, but it is easily separated from the corolla as sepal or short, linear leaves, etc.



Figure 5. A Herbarium sheet (Holotype)



Figure 6. Distribution map

Table 1: Differences between *M. graeca* and *M. akmanii*

	<i>graeca</i>	<i>mantica</i>	<i>akmanii</i>
Stem height	4-15 cm, tinged purple	10-40 cm	20-36 cm, green, somewhat flexuous
Basal leaves	Oblanceolate, more or less withered at anthesis.	Linear to oblanceolate, more or less withered at anthesis.	linear , more or less withered at anthesis
Cauline leaves	2-4 pairs, 4-14 x 1.5-2.5 mm, linear-elliptic, subacute, somewhat glaucous.	3-5 pairs, 15-20 x 3-5 mm, glabrous, lanceolate to very narrowly elliptic-lanceolate	4-6 pairs, 20-35 x 1.0-2.0 mm , linear-elliptic, acute, not glaucous
Axillary shoots	Absent	Absent	Present
Bracts	Elliptic with broad scarious margins, midvein green	Ovate to lanceolate with broad scarious margins	First bracts fimbriate at the base, elliptic with broad scarious margins, midvein brownish
Inflorescences	Apical	Apical	Axillary
Flowers	1-5	3-8	4-9
Fruiting pedicels	2-8 times as long as calyx, distinctly thickened above.	3-7 times as long as calyx, distinctly thickened above.	5-7 times as long as calyx , distinctly thickened above.
Sepals	7 x 3 mm at anthesis, elliptic to broadly lanceolate, acute with broad scarious margins; 1-nerved, midvein thickened and indurate in fruit others not elevated, especially towards base.	6-9 mm at anthesis, broad and lanceolate, elevated 1-veined, and c.10 thin vein.	5-6 x 1.8-2 mm at anthesis , narrowly lanceolate, with narrow scarious margins, caudate; 3-nerved, not indurate
Petals	2/3 as long as sepals, elliptic-oblong, obtuse	slightly 2 x longer than the sepals, oblong to subspathulate or broadly spathulate to oblong or cuneate at base	as long as sepals or rarely exceeding, spatulate
Anthers	Yellow	Yellow	Mauve
Capsule	2/3 as long as sepals, ellipsoid	Ovoid, at most equal to sepal	as long as sepals (sub mature)
Seeds	0.5-0.6 mm.	0.8-1.1 mm	c. 0.5 mm

3.3.4. *Moenchia graeca* Boiss. & Heldr., *Diagn. Ser.* 2(1): 91 (1853). [Fig.7, 8]

Type: Many syntypes from Greece.

Small annual herbs. Stems 2-15 cm, usually unbranched. Basal leaves oblanceolate and more or less withered at anthesis; cauline leaves 2-4 pairs, 4-14 x 1.5-2.5 mm, linear-elliptic, subacute. Inflorescence 1-5 flowered. Bracts elliptic with broad scarious margins. Pedicels 2-8 times as long as calyx, distinctly thickened above. Sepals 7 x 3 mm at anthesis, elliptic to broadly lanceolate, acute with broad scarious margins; midvein thickened and indurate in fruit. Petals shorter than sepals, elliptic-oblong, obtuse. Capsule shorter than sepals. Seeds 0.5-0.6 mm.

Examined specimens

Denizli: Baymanlı mevkii, 700m, 18 v 1973, E.Tuzlacı (ISTE 24867!).

İzmir: Karaburun, Akdağ, 550m, 11 iv 1982, Sauer, E. et al. (IZEF 947!).

Manisa: Kula, lav akıntıları, 700m, 21 vi 1965, M.J.E.Coode ve B.MG.Jones (E !).



Figure 7. A Herbarium sheet



Figure 8. Distribution map

M. graeca is a little known species in Turkey. It is probably present in all Aegean and Mediterranean coasts. It is easily overlooked because of its small structure, short corolla, and early flowering phase.

3.3.5. *Moenchia erecta* (L.) P.Gaertn., B.Meyer & Scherb., *Fl. Wett.* 1: 219 (1799).

Small annual herbs. Stems 2.5-15 cm, glabrous, usually glaucous. Leaves somewhat petiolated at the base, 5-18 mm, linear to oblanceolate; cauline leaves sessile, 3-12 mm, linear to lanceolate, ascending, subrigid, acute. Inflorescences loose, a few-flowered. Bracts ovate-lanceolate with broad scarious margin. Pedicel unequal, longest pedicel 25-65 mm. Sepal 4; 4.5-7 mm, 3-veined, lateral faint, linear-lanceolate with broad scarious margin. Petals 4; linear-lanceolate, white, shorter than sepals. Stamens 4 or 8. Stillus 4 (-5). Capsule equalling or slightly longer than sepals, more or less cylindrical. Seeds reddish-brown, finely tuberculate, 0.5-0.7 mm diam.

a. var. *erecta* [Fig.9,10]

Type: Lectotype, Herb. Linn. No. 177.3 (LINN).

Syn.: *Sagina erecta* L., *Sp. Pl.*: 128 (1753). *Cerastium tenue* Viviani, *Fl. Cors.* 7 (1824). *M. quaternella* Ehrh., *Beitr. Naturk.*, 2: 180 (1788) nom. illeg. *M. glauca* Pers., *Syn. Pl.*, 1: 153 (1805) nom. illeg. *Cerastium quaternellum* Fenzl, *Verbreit. Alsin.*: 56 (1833) nom. illeg. *Cerastium glaucum* Gren., *Mém. Soc. Émul. Doubs*, 1: 47 (1841). *Cerastium erectum* (L.) Cosson & Germain, *Fl. Env. Paris*, éd. 1: 30 (1845).

Longest pedicel 25-55 mm. Sepal 4; 6-7 mm, glabrous, veined. Petal 1/2 to 2/3 as long as sepals, usually subdentate. Stamens 4. Capsule equalling or slightly exceeding sepals.

Examined specimens

Edirne: Keşan-Enez yolu, Kılıçköy'den 1.5km önce, -merada otluk çukurlar ve tepelikler üzerinde- 18 iv 1992, A.Byfield B 22, (ISTE 64848!).

İstanbul: Kısırkaya köyü ile plaj arasında, yamaçlarda, iv 1992, A.Byfield B114 (ISTE 64884!). Pendik, Kurtköy, çataldağı, çayırliklar ve kıraç kayaliklar, 30 iv 1995, A.J.Byfield B 2145 (ISTE 69498!). Yeşilköy havalimanı, 15 km W (E5), yol kenarı çayır, genç *Pinus* plantasyonunda, 9 iv 1972, I.Kukkonen (ISTF 25907!).

İzmir: Yamanlar dağı, Karagöl'den Maninsa geçidine doğru ormanlık dağ yolu, 9 vii 1966, R.Alava 5104 ve G.Bocquet (E !).

Muğla: Çine'den Yatağan'a giderken 15.km, nehir üstlerinden kayalık yamaçlarda, kış aylarında oluşan su sızıntıları arasında, otlakta, 24 iv 1992, A.Byfield B44 (ISTE 64870!). Marmaris körfezinde, Yıldız adası, 150m, iii 1993, A.Byfield B 134 (ISTE 65739!).

Tekirdağ: İncik-Yenice, Yenice'den 7.2km önce, 18 iv 1992, A.Byfield B 10 (ISTE 64836!).

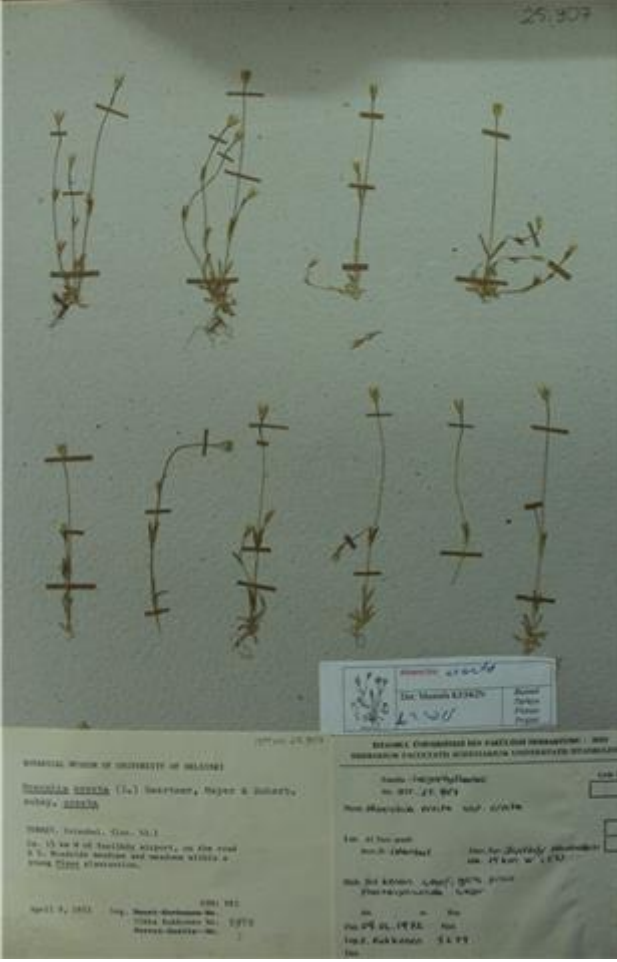


Figure 9. A Herbarium sheet



Figure 10. Distribution map

b. var. *octandra* (Ziz ex Mert. & W.D.J.Koch) M.Keskin stat. nov. [Fig.11, 12]

Type: Described from Germany.

Syn.: *M. octandra* Rchb., Fl. Germ. Exc.: 703 (1832). *M. octandra* (Ziz ex Mert & W.D.J.Koch)J.Gay, Perrym. Pl. Phan. Frejus 55 (1833). *M. quaternella* Ehrh. β. *octandra* Moris, Fl. Sard., 1: 269 (1837). *M. quaternella* Ehrh. subsp. *octandra* (Rchb.) Nyman, Consp. Fl. Eur. 111 (1878). *Sagina octandra* Ziz ex Mert. & W.D.J.Koch, Deutschl. Fl., ed. 3, 1: 864 (1823). *M. erecta* subsp. *octandra* (Ziz.)Coutinho, Fl. Portugal: 211 (1913).

Longest pedicel 50-65 mm. Sepal 4; 4-5 mm, glabrous, veined, usually subdentate. Petal 4, about as long as sepals or a little shorter. Stamens 8. Capsule scarcely equalling the sepals.

Examined specimens

İstanbul: Adalar: Büyükada, adanın arka tarafı, çayırlik, 17 iv 2017, M.Keskin 6914a!. Adalar: Burgazada, 18 v 1893, Aznavour (E !). Sancaktepe, Turkuaz su fabrikası yakınları, Fabrikalar alanı, çayır, 15 iv 2017, M.Keskin 6814!. Zincirli to Şişli, 6 iv 1898, Aznavour (E !).

İzmir: Emiralem, Manisa ile Menemen arası, 6 iv 1974, K.Lewejoann (Tu-74-203) ve F.Holtz (E !).



Figure 11. A Herbarium sheet



Figure 12. Distribution map

M. erecta is generally similar to the *M. graeca*. It is easily separated from the thickened pedicels, stamens with small numbers, and 4-part flowers. This species probably has a wider distribution in Turkey.

4. Conclusions and discussion

Although *Moenchia* is similar to *Cerastium* in general structure, it is separated from it by whole petal and calyx vein with prominent back.

In this study, it is reported to six *Moenchia* taxa in Turkey. *Moenchia* is not a widely known genus in Ankara province. Although there are many flora articles, this genus has never been reported [9, 10, 11, 12, 13, 14, 15]. One of them is the new species as *M. akmanii* M.Keskin. Although it looks like *M. mantica* in terms of appearance, its basic taxonomic characters are close to the *M. graeca*.

A new identification key to the species of *Moenchia* has been organized in Turkey. All herbarium records and distribution maps of the studied species have been prepared.

Acknowledgments

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