

A contribution to the moss flora of the Taurus Mountains, southern Turkey

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Abstract – Over 300 moss collections made by A. Everest from diverse localities in the bryologically under-explored Taurus Mountains of southern Turkey have been identified. An inventory of the 69 taxa represented in these collections is presented.

Southern Turkey / Taurus Mountains (İçel, Adana, Osmaniye) / moss flora

INTRODUCTION

Much research on the moss flora of Turkey has involved the inventory of taxa occurring within a small, localised area. Such studies have added important detail to the national and southwestern Asian floras. For example, Tonguç & Yayıntaş (2000, 2001) have recently explored and analysed the mosses of Muğla and Antalya in southern Anatolia. As a further example of this kind of study, the present paper expands upon an initial investigation by Everest & Ellis (1999) of a mountainous area to the east of Antalya, along the Mediterranean coast. The following inventory is based on collections made by A. Everest between the autumn of 2001 and the spring of 2002. Although recording no new taxa for the Turkish moss flora, these collections were made mostly in hitherto bryologically unexplored localities. They are housed in the herbarium of Mersin University, with duplicates in NHM.

The area under investigation (Fig. 1) is part of Mediterranean, southern Anatolia (C4, C5, C6 in the grid system of Henderson & Prentice, 1969). It incorporates the provinces of İçel, Adana and Osmaniye, extending eastward from Anamur (36°06'N 32°49'E) to Düziçi (37°04'N 36°15'E), and southward from the high plateaux of the Taurus Mountains (up to 1800 m alt.) down to the Mediterranean coast.

The Bolkar Mountains form the most important part of the Taurus range. The outer Taurus belt shows a distinct stratigraphic and tectonic development, but more typical of the range are Miocene marine sediments of clay, marl and limestone, deeply cut by river valleys (Atalay, 1994; Demirtaşlı *et al.*, 1995).

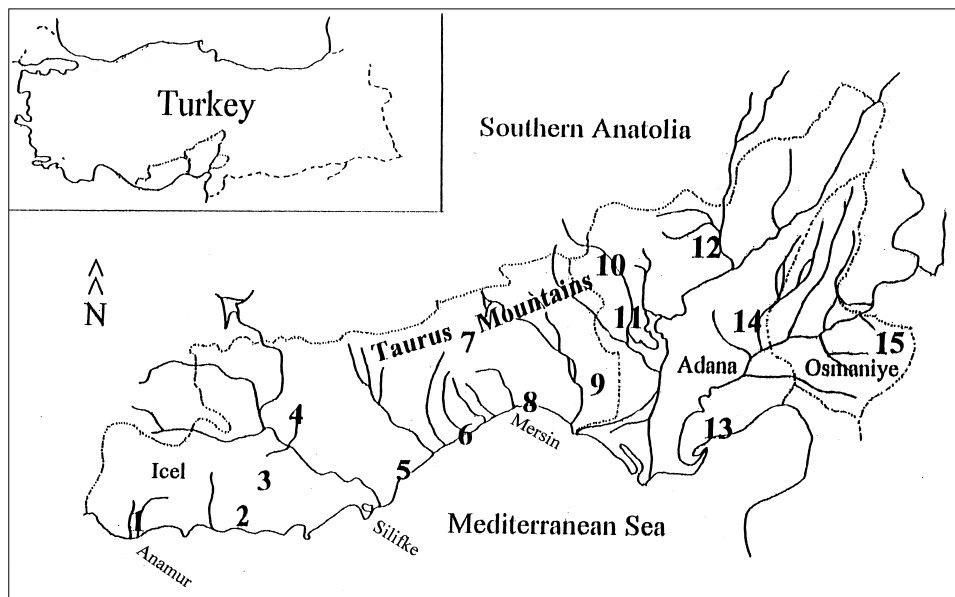


Fig. 1. Map showing main research localities in study area in southern Anatolia. Major rivers and province boundaries are indicated. Key to localities: 1 - Anamur, 2 - Aydıncık, 3 - Gülnar, 4 - Mut, 5 - Tarsus, 6 - Erdemli, 7 - Aslanköy - Başpınar - Çampınarı, 8 - Mersin, 9 - Silifke, 10 - Pozanti, 11 - Karaisalı, 12 - Imamoğlu (Aldağ), 13 - Yumurtalık, 14 - Kozan, 15 - Düziçi.

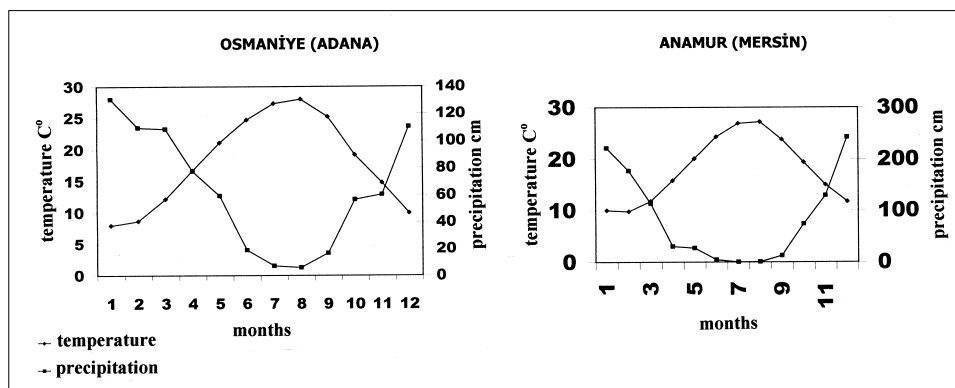


Fig. 2. Climate diagrams for two localities in the research area (Meteorological Bulletin 1974).

Generally enjoying a Mediterranean climate (Met. Gen. Bull., 1974) with hot, dry summers and mild, wet winters, the study area has an average annual rainfall 750-1,350 mm. In summer, most of the precipitation occurs as mist, and in winter as snow. As can be seen from the climate diagrams (Fig. 2), there is some local variation within the general pattern.

The vegetation in the study area includes Mediterranean, Irano-Turanien, and relic Euro-Siberian elements, as well as locally endemic plants. In the mountains, below 1,000 m alt., mixed forest occurs, characteristically including *Cedrus libani* A. Rich, *Abies cilicica* (Ant. & Kotschy) Carr., *Pinus pinea* Ten., *Juniperinus excelsa* Bieb., *J. drupacea* Lab., *Pinus brutia* Ten., *Quercus cerris* L., *Q. petraea* (Mattuschka) Liebl., *Q. infectoria* Olivier. At lower altitudes, pine forest gives way to Maquis, dominated by *Styrax officinalis* L., *Myrtus communis* L., *Pistacia lentiscus* L., *Erica arborea* L., *Quercus coccifera* L. and *Juniperinus oxycedrus* L. Common trees along the river valleys, occurring mostly below 500 m alt., are *Alnus glutinosa* (L.) Gaertner and *Plantanus orientalis* L., which often support communities of corticolous bryophytes.

LOCALITIES IN THE RESEARCH AREA

Abbreviation: h.p. = high plateau

Number in brackets preceding locality = map reference in Fig. 1.

ADANA

- (11) KARAISALIK: Kizildağ h.p. (1,800 m alt.), Kaltak h.p. (1,100 m alt.)
- (14) KOZAN: Horzum h.p. (1,000 m alt.), Suluhan h.p. (1,000 m alt.)
- (12) IMAMOĞLU: Aladağ h.p. (1,050 m alt.)
- (10) POZANTI: Tekir h.p. (1,200 m alt.), Gülek h.p. (1,700 m alt.), Iskender (1,400 m alt.)
- (5) TARSUS: Karabucak (5-10 m alt.)
- (13) YUMURTALIK (5 m alt.)

İÇEL

- (1) ANAMUR: Çaltibükü - Dibek Valley (900 m), Çaltibükü - Küçükkikiz hill (1,400 m), Çaltibükü - near Bakir River (800 m), Çaltibükü - around fish farm (800 m), Gökçesu River (500 m).
- (7) ASLANKÖY: Başpınar h.p. (1,400 m)
- (2) AYDINCIK (10 m alt.)
- (7) ÇAMPINARI-BAŞPINAR: Ünlük hill (1,700 m), Başpınar Road (*Cedrus* forest, 1 800 m)
- (6) ERDEMLİ: Güzeloluk h.p. (1,200m alt.), Avkadi h.p. (900-1,200 m alt.), Müğlü h.p. (1,150 m alt.), Elvanlı (500 m alt.), Çeşmeli köy (500 m alt.)
- (3) GÜLNAR: Bardat h.p. (1,450 m alt.)
- (8) MERSİN: Eskihamam (50-100 m alt.), Sultaşa (50m alt.), Çiftlikköy village (100 m alt.), Çavak village (500 m alt.), Fındıkpinari h.p. (1,200 m alt.)
- (4) MUT: Sertavul h.p. (1,350-1,550 m alt.), Göğden h.p. (1,500 m alt.), Kozlar (1,500 m alt.)
- (9) SILIFKE: Balandiz h.p. (Cilbayır) (800-1,100 m alt.), Gökbelen h.p. (780 m alt.), Uzencaburç (1,400 m alt.)

OSMANIYE

- (15) DÜZİÇİ: Hasanbeyli h.p., Karayığit village (1,800 m alt.)

TAXA

Reference to the bryophyte herbarium NHM and recent taxonomic treatments facilitated identification of the collections. In particular, examinations of specimens in the family Grimmiaceae were made with reference to Blom (1996), Greven (1995) and Muñoz & Pando (2000), collections of *Syntrichia* were determined using Agnew & Vondráček (1975), Kramer (1980) and Gallego *et al.* (2002), and Hofmann (1998) was used to identify species of *Homalothecium*. The taxa listed below are mostly included in the catalogue of Southwest Asian bryophytes by Frey & Kürschner (1991) but the nomenclature has been updated following Blockeel & Long (1998) and Zander (1993).

Abbreviations: **Ad.** = Adana, **İç.** = İçel, **Os.** = Osmaniye. Collection numbers are prefixed **AE** indicating collection by A. Everest. Owing to mixed collections some numbers occur under more than one species.

***Amblystegium serpens* (Hedw.) Bruch, Schimp. & W. Gümbel**

İç.: Çampinari-Başpinar, Başpinar Road **AE805**, **AE810**. In crevices in wet rocks.

***Amblystegium tenax* (Hedw.) C.E.O. Jensen**

İç.: Mut, Kozlar **AE723**. On soil subject to inundation.

***Barbula convoluta* Hedw.**

İç.: Anamur, Dibek valley **AE865**; Çampinari-Başpinar, Başpinar Road **AE806**; Erdemli, Müğlü **AE654**. In crevices in limestone.

***Barbula ehrenbergii* (Lorentz) M. Fleisch.**

İç.: Anamur, Gökçesu **AE849**, **AE852**, **AE853**. On rock.

***Barbula unguiculata* Hedw.**

Ad.: Imamoğlu, Aladağ **AE561**. **İç.:** Erdemli, Avkadi **AE570**. In crevices in limestone.

***Brachythecium rutabulum* (Hedw.) Bruch, Schimp. & W. Gümbel**

İç.: Mut, Kozlar **AE728**. In rocky soil.

***Bryoerythrophyllum recurvirostrum* (Hedw.) P.C. Chen**

İç.: Erdemli, Müğlü **AE655**. On calcareous stones.

***Bryum alpinum* With.**

İç.: Çampinari-Başpinar, Ünlük hill **AE800**, **AE802**. In rock crevices.

***Bryum argenteum* Hedw.**

Ad.: Pozanti, Tekir **AE771**, **AE786**. **İç.:** Mersin, Çavak **AE618**; Mut, Kozlar **AE729**. In crevices of rocks and rocky walls.

***Bryum argenteum* var. *lanatum* (P. Beauv.) Hampe**

İç.: Aslanköy **AE816**, **AE820**; Mut, Sertavul **AE591**. In crevices of limestone.

***Bryum bicolor* J. Dicks.**

İç.: Mersin, Çiftlikköy **AE685**. On soil.

***Bryum caespiticium* Hedw.**

Ad.: Pozanti, Iskender **AE764**, **AE767**. **İç.:** Çampinari-Başpinar, Başpinar Road **AE803**; Erdemli, Avkadi **AE573**., **AE577**, **AE581**, **AE580**; Mersin, Çavak **AE613**, **AE614**, **AE622**; Mersin, Çiftlikköy **AE681**, **AE682**; Mersin, Eskihamam **AE689**, **AE683**; Mut, Kozlar **AE720**, **AE733**. Mostly on soil in crevices of rocks and walls.

***Bryum capillare* Hedw.**

Ad.: Karaisalik, Kizildağ AE664; Kozan, Horzum AE651; Pozanti, Iskender AE759, AE761; Yumirtalik AE670, AE673. **İç.:** Anamur, Çaltibükü (Bakir River) AE837; Anamur, Çaltibükü (fish farm) AE869; Anamur, Dibek valley AE858, AE861; Anamur, Küçükkikiz hill AE827; Erdemli, Avkadi AE571; Mersin, Çavak AE619. On trees, walls, rocks and soil.

***Bryum subelegans* Kindb.**

İç.: Erdemli, Avkadi AE572. On bark.

***Bryum turbinatum* (Hedw.) Turner**

İç.: Mut, Kozlar AE721. On damp calcareous soil.

***Cinclidotus riparius* (Brid.) Arn.**

İç.: Anamur, Çaltibükü (Bakir River) AE838; Anamur: Çaltibükü (fish farm) AE866. On bark.

***Cratoneuron filicinum* (Hedw.) Spruce**

İç.: Çampinari-Başpinar, Başpinar Road AE804, AE 810. In crevices of wet rocks.

***Dialytrichia mucronata* (Schimp.) Limpr.**

İç.: Anamur, Çaltibükü (Bakir River) AE834. On bark.

***Didymodon insulanus* (De Not.) M.O. Hill**

İç.: Mersin, Çiftlikköy AE686. On soil.

***Didymodon luridus* Hornsch. ex Spreng.**

İç.: Çampinari- Başpinar, Başpinar Road AE807, AE808, AE811; Erdemli, Elvanlı AE567; Erdemli, Müğlü AE662; Mut, Göğden AE703. Mostly on limestone.

***Didymodon tophaceus* (Brid.) Lisa**

İç.: Mut, Kozlar AE728, AE732, AE733; Mut, Sertavul AE564. On wet, calcareous rocky soil.

***Didymodon vinealis* (Brid.) R.H. Zander;**

İç.: Anamur, Dibek valley AE863; Mut, Göğden AE701; Silifke, Balandiz (Cilbayir) AE693, AE695, AE696; Silifke, Gökbelen AE711, AE713; Silifke, Uzuncaburç AE789, AE796, AE799. On calcareous rocks.

***Encalypta vulgaris* Hedw.**

Ad.: Pozanti, Gülek AE739, AE744; Pozanti, Tekir AE773, AE776; **İç.:** Aslanköy AE814, AE817; Erdemli, Avkadi AE582, AE583. On calcareous rocks.

***Eucladium verticillatum* (Brid.) Bruch, Schimp. & W. Gümbel**

Ad.: Pozanti, Gülek AE753; **İç.:** Anamur, Gökçesu AE850. On calcareous rock.

***Eurhynchium praelongum* (Hedw.) Bruch, Schimp. & W. Gümbel**

İç.: Çampinari- Başpinar, Başpinar Road AE807. In rock crevices.

***Eurhynchium pumilum* (Wilson) Schimp.**

İç.: Silifke, Uzuncaburç AE653. On soil amongst historic ruins.

***Eurhynchium speciosum* (Brid.) Jur.**

İç.: Anamur, Çaltibükü (Bakir River) AE842 . On bark at base of tree.

***Eurhynchium striatum* (Hedw.) Schimp.**

İç.: Anamur, Çaltibükü (fish farm) AE877. On bark.

***Fissidens dubius* P. Beauv.**

İç.: Erdemli, Müğlü AE657. On soil in crevices of rock.

***Funaria hygrometrica* Hedw.**

Ad.: Pozanti, Iskender AE760, AE767; Tarsus, Karabucak AE735, AE736, AE737;

İç.: Mersin, Çiftlikköy AE685. On soil.

***Grimmia pulvinata* (Hedw.) A.J.E. Smith**

Ad.: Pozanti, Tekir AE781, AE785; **İç.:** Anamur, Çaltibükü (Bakir River) AE841; Anamur, Dibek valley AE861, AE865; Anamur, Gökçesu AE851; Anamur, Küçükkikiz hill AE821; Aydıncık AE699; Erdemli, Müğlü AE658, AE659; Gülnar, Bardat AE632, AE633, AE634, AE635, AE639, AE652, AE644, AE649, AE650; Mersin, Findikpinari AE679, AE680; Mut, Göğden AE703; Mut, Sertavul AE592, AE602, AE606, AE612; Silifke, Balandiz (Cilbayır) AE690, AE691, AE694; Silifke, Uzuncaburç AE794; **Os.:** Düziçi, Hasanbeyli h.p., Karayığit village AE624, AE625. Mostly on calcareous rocks, exposed or in shade.

***Grimmia trichophylla* Grev.** (including *G. t.* var. *subsquarrosa* (Wilson) A.J.E. Smith)

İç.: Anamur, Çaltibükü (fish farm) AE870; Anamur, Küçükkikiz hill AE822; Erdemli, Müğlü AE660; Mersin, Findikpinari AE680; Mut, Sertavul AE610, AE611; Silifke, Gökbelen AE711, AE712; **Os.:** Düziçi, Hasanbeyli h.p., Karayığit village AE626. Mostly on calcareous rocks.

Note: Greven (1995) placed *Grimmia subsquarrosa* Wils. (= *Grimmia trichophylla* var. *subsquarrosa* (Wils.) A.J.E. Smith) in synonymy with *Grimmia lisae* De Not. However, Blockeel & Long (1998) and Muñoz & Pando (2000) include Smith's variety under *Grimmia trichophylla* Grev.

De Notaris (1837) described *Grimmia lisae* De Not. from material collected by Lisa in the hills of Torino, Italy ('*collibus Taurinensibus*'). Greven (1995) erroneously translated the locality of this collection as the Taurus Mountains in southern Anatolia. Fortunately, he also cited two other collections under *G. lisae* that are genuinely from southern Anatolia, (i.e. Osmaniye, *Davis & Hedge* [26896c]; Urfa, *Davis & Hedge* [28176c]). However, if the duplicates of these collections in BM are identified using Muñoz & Pando (2000) the specimen from Osmaniye keys out as *G. lisae*, whilst the one from Urfa keys out as *G. trichophylla*. The collections newly recorded above also key out as *Grimmia trichophylla*, and mostly possess the features of the form originally referred to as *Grimmia subsquarrosa* Wils.

***Gymnostomum calcareum* Nees & Hornsch.**

İç.: Anamur, Gökçesu AE487. On calcareous rock.

***Homalothecium aureum* (Spruce) H. Rob.**

İç.: Anamur, Küçükkikiz hill AE822; Silifke, Gökbelen AE710, AE713. On limestone rock.

***Homalothecium philippeanum* (Spruce) Schimp.**

Ad.: Karaisalı, Kaltak AE668, AE669; Karaisalı, Kızıldağ AE666; **İç.:** Anamur, Küçükkikiz hill AE830; Erdemli, Avkadi AE571, AE576, AE585; Mersin, Findikpinari AE675; Mut, Sertavul AE601, AE605; **Os.:** Düziçi, Hasanbeyli h.p., Karayığit village AE623. Mostly on rocks or rocky soil amongst leaf litter.

Note: All collections of *Homalothecium philippeanum* cited above lack the characteristic habit of this species. However, their leaves do possess its key fea-

tures, especially a long costa that occupies the leaf apex. Hofmann (1998) implies that these latter features may be more significant in identification than habit.

***Homalothecium sericeum* (Hedw.) Bruch, Schimp. & W. Gümbel**

Ad.: Karaisalik, Kizildağ AE665; Imamoğlu, Aladağ AE561, AE563; Pozanti, Gülek AE738, AE739, AE749, AE754 ; Pozanti, Tekir AE769, AE772, AE775, AE777; **İç.:** Erdemli, Avkadi AE570, AE584; Erdemli, Müğlü AE661, AE662; Erdemli, Çeşmeli köy AE718; Mersin, Findikpinari AE674, AE704; Silifke, Uzuncaburç AE793, AE798; **Os.:** Düziçi, Hasanbeyli h.p., Karayığit village AE626. On calcareous rock, sometimes on bark.

***Hypnum cupressiforme* Hedw.**

Ad.: Imamoğlu, Aladağ AE 555, AE562; **İç.:** Mersin, Findikpinari AE674, AE705. On tree boles and rocks.

***Leptodon smithii* (Hedw.) F. Weber & D. Mohr**

Ad.: Kozan, Suluhan AE646. On rock..

***Leucodon sciurioides* (Hedw.) Schwägr.**

Ad.: Kozan, Suluhan AE647; Imamoğlu, Aladağ AE562; Pozanti, Gülek AE748; Pozanti, Tekir AE779; **İç.:** Anamur, Çaltibükü (fish farm) AE871, AE874, AE875; Erdemli, Çeşmeli köy AE715; Erdemli, Müğlü AE656; Gülnar, Bardat AE641; Mersin, Findikpinari AE676, AE707. On tree boles and rocks.

***Metaneckera menziesii* (Hook.) Steere**

İç.: Mersin, Findikpinari AE706, AE708. On soil overlying calcareous rock.

***Orthotrichum affine* Brid.**

İç.: Erdemli, Çeşmeli köy AE716. On bark.

***Orthotrichum anomalum* Hedw.**

Ad.: Imamoğlu, Aladağ AE560. On limestone rocks.

***Orthotrichum cupulatum* Brid.**

Ad.: Pozanti, Gülek AE745, AE751, AE756; Pozanti, Tekir AE770, AE781, AE783; **İç.:** Anamur, Küçükkikiz hill AE831; Erdemli, Avkadi AE570, AE575, AE576, AE6582; Gülnar, Bardat AE630, AE639; Mut, Sertavul AE590, AE594, AE600, AE606., AE611; Silifke, Uzuncaburç AE791; **Os.:** Düziçi, Hasanbeyli h.p., Karayığit village AE624. On limestone rocks.

***Orthotrichum diaphanum* Brid.**

İç.: Aslanköy AE818; Mut, Sertavul AE589. On bark and in rock crevices.

***Orthotrichum lyellii* Hook. & Tayl.**

İç.: Erdemli, Çeşmeli köy AE717. On tree bole.

***Orthotrichum rupestre* Schleich. ex Schwägr.**

İç.: Silifke, Balandiz (Cilbayir) AE692. On rock.

***Palustriella commutata* (Hedw.) Ochyra**

İç.: Mut, Kozlar AE724, AE725. On damp soil.

***Pleurochaete squarrosa* (Brid.) Lindb.**

Ad.: Kozan, Suluhan AE638. On soil debris overlying limestone. (Represented in the specimen only by a couple of shoots interweaving the thallus of a foliose lichen.)

***Pterogonium gracile* (Hedw.) A.J.E. Smith**

İç.: Anamur, Küçükkikiz hill AE823, AE826 On rock.

***Pterygoneuron ovatum* (Hedw.) Dixon**

Ad.: Pozanti, Iskender AE762; Pozanti, Tekir AE780; **İç.:** Erdemli, Avkadi AE582, AE586; Mut, Sertavul AE591. On calcareous rock.

***Rhynchostegiella curviseta* (Brid.) Limpr.**

İç.: Anamur, Çaltibükü (Bakir River) AE833, AE839, AE844, AE845. On rock.

***Rhynchostegium riparioides* (Hedw.) Cardot**

İç.: Anamur, Çaltibükü (fish farm) AE867. On bark.

***Schistidium atrofusum* (Schimp.) Limpr.**

İç.: Gülnar, Bardat AE630, AE648. On rock, tree-shaded ground.

***Schistidium singarense* (Schiffn.) Laz.**

Ad.: Pozanti, Gülek AE740; Pozanti, Iskender AE763; Pozanti, Tekir AE787; **İç.:** Çampinari-Başınar, Başpınar Road AE812; Erdemli, Avkadi AE579, AE581, AE583; Erdemli, Müğlü AE662; Gülnar, Bardat AE652; Mut, Kozlar AE727; Mut, Sertavul AE602; Silifke, Uzuncaburç AE792. Mostly on calcareous rocks.

***Scorpiurium circinatum* (Brid.) M. Fleisch. & Loeske**

Ad.: Kozan, Suluhan AE628, AE638; **İç.:** Anamur, Çaltibükü (Bakir River) AE835, AE839, AE844, AE846; Anamur, Çaltibükü (fish farm) AE872, AE873, AE876; On rock.

***Scorpiurium deflexifolium* (Solms) M. Fleisch. & Loeske**

İç.: Anamur, Çaltibükü (Bakir River) AE840, AE843; Anamur, Çaltibükü (fish farm) AE868. On bark and rock.

***Syntrichia caninervis* (Mitt.) Broth.**

İç.: Gülnar, Bardat AE645; Mut, Kozlar AE730. On rock, tree-shaded ground.

***Syntrichia handelii* (Schiffn.) Bach. Pyl.**

Ad.: Pozanti, Gülek AE741, AE747; **İç.:** Anamur, Çaltibükü (fish farm) AE882; Anamur, Küçükkikiz hill AE828, AE831; Erdemli, Avkadi AE58 ; Erdemli, Güzeloluk AE588; Gülnar, Bardat AE629, AE640, AE636, AE645, AE631, AE637, AE649; Mersin, Findikpinari AE675 p.p.; Mut, Kozlar AE726, AE 734; Mut, Sertavul AE590, AE594, AE598, AE610; Silifke, Gökbelen AE710. On rocks and soil, exposed or shaded.

***Syntrichia inermis* (Brid.) Bruch in Huebener**

Ad.: Pozanti, Gülek AE746; Pozanti, Iskender AE757, AE760, AE765, AE768; **İç.:** Anamur, Küçükkikiz hill AE827; Aslanköy AE819; Erdemli, Avkadi AE570, AE581; Mut, Göğden AE700; Mut, Kozlar AE729; Mut, Sertavul AE606. On calcareous rocks and rocky walls.

***Syntrichia intermedia* Brid.,**

Ad.: Kozan, Suluhan AE638; **İç.:** Çampinari-Başpınar, Ünlük hill AE801; Erdemli, Elvanlı AE558, AE559; Mut, Göğden AE702; **Os.:** Düziçi, Hasanbeyli h.p., Karayigit village AE627. On rocks and soil.

***Syntrichia princeps* (De Not.) Mitt.**

Ad.: Karaisalı, Kaltak AE667; Pozanti, Gülek AE738, AE743, AE746, AE750, AE751; Pozanti, Tekir AE778, AE784; **İç.:** Aslanköy AE815; Erdemli, Avkadi AE573, AE574, AE576, AE582, AE584; Erdemli, Müğlü AE663; Mersin, Findikpinari AE677, AE678; Mut, Sertavul AE604, AE607; Silifke, Balandiz (Cilbayır) AE690; **Os.:** Düziçi, Hasanbeyli h.p., Karayigit village AE626. Mostly on calcareous rocks, sometimes bark.

***Syntrichia ruralis* (Hedw.) F.Weber & D. Mohr**

İç.: Erdemli, Avkadi AE575; Gülnar, Bardat AE635, AE642; Mut, Sertavul AE592, AE593, AE595, AE608; **Os.:** Düziçi, Hasanbeyli AE714. On rocks and rocky soil amongst leaf litter.

***Syntrichia ruralis* var. *hirsuta* (Venturi) Podp. (= *S. papillosissima* (Copp.) Loeske)**

İç.: Anamur, Küçükkikiz hill AE830; Erdemli, Avkadi AE578 ; Gülnar, Bardat AE636, AE643; Mut, Sertavul AE596, AE599, AE610, AE603, AE609; Silifke, Balandiz (Cilbayır) AE695; Silifke, Gökbelen AE709. On calcareous rock, or in rocky soil amongst leaf litter, exposed or shaded.

***Timmiella barbuloidea* (Brid.) Mönk.**

İç.: Anamur, Dibek valley AE859, AE860, AE862, AE863. On rock.

***Tortella flavovirens* (Bruch) Broth.**

Ad.: Yumurtalık AE671. On soil.

***Tortella tortuosa* (Hedw.) Limpr.**

Ad.: Pozanti, Tekir AE774; **İç.:** Anamur, Küçükkikiz hill AE832; Erdemli, Avkadi AE570, AE573, AE585. On calcareous rock.

***Tortula muralis* Hedw.**

Ad.: Pozanti, Iskender AE758; Pozanti, Tekir AE775; Yumurtalık AE672; **İç.:** Anamur, Çaltibükü (Bakir River) AE836; Anamur, Çaltibükü (fish farm) AE869; Anamur, Dibek valley AE861; Aydıncık AE698; Mersin, Çavak AE614, AE615, AE616, AE617, AE620, AE621, AE622; Mersin, Çiftlikköy AE684; Mersin, Eskihamam AE683, AE687, AE689; Mersin, Sultaşa AE688; Mut, Göğden AE703; Mut, Sertavul AE607; Silifke, Uzuncaburç AE788, AE790, AE795, AE797. On calcareous rocks and rocky walls.

***Tortula subulata* Hedw.**

İç.: Mersin, Findikpinari AE704. On soil in crevices of bark.

***Weissia contraversa* var. *crispata* (Nees & Hornsch.) Nyholm**

İç.: Anamur, Küçükkikiz hill AE824 ; Aslanköy AE817; Erdemli, Elvanlı AE557, AE565, AE566, AE568. On soil.

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