

Brullo & al.: Taxonomic revision of *Astragalus angustifolius* group (*Fabaceae*)

Electronic supplementary file 3. *Specimina visa selecta*

*A. angustifolius* Lam. subsp. *angustifolius*

**Armenia:** Armenia, s.d., *Aucher Eloy 1247* (G, W); In Armenia, s.d., *Aucher* (W); Kechlich Dag, Mont Armeniae, s.d., *Aucher 1894* (W);

**Anatolia:** Asiae minor in aridis glareosis Mt. Olympi prope Brussa, VII.1873, *Pichler* (BP, G); In Monte Tauro, Aest.1886, *Kotschy 130* (BP); In graminosis regionis alpinis montis Elmalu, 25.VI.1860, *Bourgeau* (BP); Bithynia ad Bilecik in declivitatibus vallis fluvii Kara-su, 500-400 m., 17.V.1929, *Bornmüller 133616* (BP); Turkey, Prov. Vil. Antalya, Ak Dag (S of Gerik Dag), 2500 m., 28.VIII.1947, *Davis 14332* (M); Ayas bei Ankara Bergsteppe, 9.VI.1933, *Kolts* (M); Turck Gaziantep Nusdag, Gecidi E side of Pass, 700 m., 4.V.1910, *Rix et al. 1565* (M); Mts Smyrnae, s.d., *Boissier* (M); Elmalu in petrosis regioni Monti Elmalu, 2.VI.1860, *Bourgeau* (M); Tk, Prov. Antalya, Distr. Kimali, Bey Dag alt. 2000-2500 m., 28.VII.1960, *Khon et al. 287* (M); Tk, A2 Bursa, Peh Uludag aufteg ver der Wllpemmine zur Zirwe Tepesi unterhalb der Hochfroche, 2050-2330 m., 9.VII.1978, *Buttler & Kroch 23404* (M); Tk Uludag Mt. alpine meadows above the resort, 9.VII.1978, *Kuzmanov 77866* (G); Caria 1843, *Pinard* (G); Mykali (As. min.), 25.VI.1886, *Forsyth-Major 717* (G); Sommet du Mont Sipyle au dessus de Magnesie, 15.6.1854, *Balansa 213* (B, G, G-BOISS, W); Village de Gulek-Boghas pres des Portes Ciliciennes, region montagneuse, 1.VII.1855, *Balansa 484* (G); C2 Mugla, Col Dag NE side of summit 2100-2185 m., 9.VII.1984, *Hartvig-Sekmen & Strid 23459* (G); Cilicia, Trecon Yemandaba Dagh, 1400 m., VII.1872, s.l. 381 (G-BOISS); Erdschias Dagh (Argaeus) auf der Tekajaila c. 2200 m., VII.1902, *Zederbauer* (WU); Erdschias Dagh (Argaeus) auf der Tekajaila c. 2200 m., VI.1902, *Zederbauer* (WU); Iter Troianum, M. Ida in jugo 7.1883, *Sintenis 426* (WU); SE Turkey, Valley ½ mile E-NE of Demierkazik, alt. 9000 ft, 17.8.1965, *Steddy* (W); Cilicie Tauri, Bulgar Dagh in rupestribus montis Gisyl, 8000 ped., 1853, *Kotschy* (W); Turkey, Ala Dag, 2300m, 18.VIII.1988, *Elleberg 58* (B); Smyrna, Nifdag, in pascuis lapidosis cacuminis solo calcareo, 15-1800m, 7.VII.1933, *Schwarz 861* (B); in Sypilos Magnesiae, in summo cacumine, 18-1900m, 12.VIII.1933, *Schwarz 1014* (B); Sultan Dağları, Gay üstleri, Gelincihaua, Tepe güneyi, Öküzini Tepe Civari (Afyon), 2000m, 30.VII.1976, *Dökmeci 35680* (ISTE); Sultan Dağları, Gay üstleri, Yelibayun, Kirazu deremin Mezarlık Gedik Kolunun çıktığı yerler (Afyon), 2250m, 27.VII.1976, *Dökmeci 35445* (ISTE); A1(A) Balıkesir, Marmara Adası, Viranköy Teperi, 12.VII.1978, *Tuzlaci 40330* (ISTE); A5 Amasya, Akdağ, Ormanözü Köğü üstleri, 1900m, 11.VIII.1977, *Alpinar 38377* (ISTE); B5 Kayseri, Erciyas Dağı, Zirve yolu, 2400m, 22.VII.1990, *Alpinar & Hart 62302* (ISTE); Antalya, distr. Kerner (Lycia), between Ovacik and Teke Dag and Sogut Cumasi yayla near Colbali Dag (Antalya), open slopes, 1100-1300m, 13.VII.1949, *Davis 15236* (ISTE); Ak Dag, S. of Geyik Dag, (Antalya), 2500m, 28.VIII.1947, *Davis 14332* (ISTE); Honaz Dağı, Babatepleri, Denizli, yukaridan Kiraçyarlerdi, aşağılarda, 1800-2220m, 30.VI.1972, *Tuzlaci 22826* (ISTE); Kayseri, Erciyas Tekir yaylası, ca.2000m, 26.VIII.1958, *Baytop 5225* (ISTE); C2 Mugla, Fethiye, Baba Dağı, Doğu Yamacları, Kayalık yerler, 1700m, Tuzlaci 51291 (ISTE);

*A. angustifolius* subsp. *echinoides* (L'Hér.) Brullo, Giusso & Musarella

**Crete:** Krete, Nomos Rethymnis, E. Mylopotamion Ide, gebirge Psiloriti SE hange SW Niola-Hochebene v. Zeus grotte 1400-1500 m., 6.VII.1971, *Sauer 12416* (M); Krete, Felsige Abhonge auf der Hachebene Nidna am Ida ca. 1450 m., 30.V.1904, *Dorfler 799* (M); In Cretae Monte Idi, s.d., *Sieber* (M, W); Crete Montagnes de Drakone, 9.VII.1883, *Reverchon 36* (M, W); In summis M. Psiloriti (Ida) Distr. Mylopotamos, Crete, 8.VII.1899, *Baldacci 220* (M, W, WU); Creta, prov. Iraklia, Psiloritis-Gebinge Mida hochebene, ungebung von Idean Andron 1350-1400 m., 6.VI.1983, *Podlech 38116* (M); Creta, Prov. Chania, Levka Ori, W Hange des Gigilasven des Quelle Linasol,

27.IX.1975, *Merxmüller & Podlech* (M); Crete, s.d., *Raulin* (G-BOISS); Iter creticum pertotum in M. Volakis Distr. Kamiolike et Sphakia, 8.VII.1893, *Baldacci 64* (W, WU); Creta, Ida, an Felsen in der Hoch ebere Nidha 30.V.1904, *Dörfler 799* (WU); Kreta, Lefkaori, 1800-1200 m., VII.1937, *Lempert 594* (W); Kreta, Nomos Chania, Sfakia am der Strasse En oberhalb Anapoli, circa 1550-1600 m., 16.V.1998, *Horandl & Hadacek 8618* (W); Kreta, Felsige abhängige auf dirtochebene nidlich am Ida, ca. 1550 m., 30.V.1904, *Dörfler 799* (W); Kreta, Lassiti, Aphendi Christo 1700-2000 m., 7.VI.1937, *Lempert 526* (W); Crete, Lassithi, alp. Lekanida am N Hang des Berges Spathi, 1600 m., 24.VI.1961, *Greuter 3700* (Herb.Greuter, W); Kreta, Sphakia, Levka Ori, in saxosis calc. montis Malatira, prope case pastorales colokitas, ca. 1700m, 17.VI.1942, *Reichinger 13893* (W); Kreta, distr. Lassithi, in saxosis montis Aphendi Christos, ca. 1800-2000m, 17.VII.1942, *Reichinger 14* (W); Cr. Eparchia Amari, SW Hang des Psiloriti 1400-2300m, 6.VI.1982, *Risse 654* (B); Cr., Aghios Theodoros, in Chse Rufflineng, Mavros Lakous, im Innalto, 22.VII.1882, *Spreitzenhoferi* (B); Sphakia, road from Anapoli to the Lefka Ori, 1600-1800m, *Bergmeier & Matthas 3252* (B); Lefka Ori, Koukoule, 1500m, 20.VII.1999, *Brullo & Giusso del Galdo* (CAT); Lefka Ori, Horafas Korfi, 26.VIII.2003, *Brullo & Giusso del Galdo* (CAT); Lefka Ori, Mt. Kastro, 6.VI.2000, *Brullo & Giusso del Galdo* (CAT); Lefka Ori, M.te Trocharis, 26.VIII.2003, *Brullo & Bacchetta* (CAT); Lefka Ori, M.te Pachnes, 1.IX.2006, *Brullo & Giusso del Galdo* (CAT); Psiloriti, Hatzı Kalyvi, 6.VII.2003, *Brullo & Giusso del Galdo* (CAT); Psiloriti, Mavros Kumas (presso l'Osservatorio), 7.VI.2000, *Brullo & Giusso del Galdo* (CAT); Dikti, versante occidentale sopra Limnakaro Plateau, 29.VIII.2006, *Brullo & Giusso del Galdo* (CAT);

*A. angustifolius* subsp. *erinaceus* (C. Presl) Brullo, Giusso & Musarella .

**Cephalonia:** In Cephalonia, X-XI.1834, *Scimper & Wiest* (W); In cacumine Montis Nero, Cefalonia, 5000', 1834, *Scimper* (BP);

**Stereia Ellas:** Grecia, Parnasso, s.d., *Spruner* (BP); Stereia Prov. Viotia, distr. Levadhia in latere austro-occidentalis montis Parnassos supra Arahova alt. 1440 m., 15.VI.1963, *Greuter 5968* (B, Herb.Greuter);

**Peloponnisos:** M. Taygetos in regione alpina versus cacumen, VIII.1897, *Heldreich 1422* (B, BP, M); Peloponneses, nom. Akhaia, Ori Aroania, Chelmos massif 1900-2100 m., 4.VII.1855, *Podlech 39584* (M); Delphi, s.d., *Froies* (M); In M. Parnasso, VI.1837, *Samaritani & Guicciardi* (M); In M. Parnassi, regione abetine, supra Livadi, alt. 3500', 5.VII.1852, *Sammartani & Guicciardi 613* (M, W); Parnes, Graecie, 1832, *Spruner* (M); Peloponneses, Nom. Arkadia, Oros Menalo, Hange zwischen Hitte und Hauptgipfel 1800-1980 m., 9.VII.1985, *Podlech 39834* (M); Griechenland, Peloponneses Nom. Lakonia, Taygetos E Hange W von Xirokambi 1300-2000 m., 8.VII.1985, *Podlech 39799* (M); Grece Region Centrale, Nome de Beotie, Delphi (Monts du Parnasse) alt. 1250 m., pelouse aride, 3.IX.1991, *Rousselle* (M); Peloponneses, Nom. Korinthio, Oros Killini, Nordhange SW Trikala, 1600-2000 m., 6.VII.1985, *Podlech 39683* (M); Attica in M. Parnithe supra Dekeleiam (Odie Tatoi), V.1900, *Heldreich* (M); Prov. Messinia, Lakonia Montes Taygetos in declivibus meridionalibus cacuminis 1800 m., 1.VII.1996, *Phitos* (M); In Monte Parnasso in reg. alpina, 4.VIII.1852, *Heldreich* (G-BOISS); In Monte Malevo, Lac., 7-19.VII.1850, *Orphanides 130* (G-BOISS); In Monte Cyllene prope Malacodia 8-20.VI.1852, *Orphanides 2103* (G-BOISS); Morea in summ. Mts. Killene, VII.1876, *Pichler* (G-BOISS); In Mte Parnes Attica, s.d., *Aucher Eloy 1263* (G-BOISS); Parnissos Attica 1842, *Spruner* (G-BOISS); Griechenland, Peloponnes Nom. Lakonia, Taygetos est Hönge W von Xilokambi, 8.VII.1985, *Podlech 39754* (G); Mt. Panachaiko, N. side below de Ote station 1200-1300 m., 20.V.1989, *Strid et al. 29589* (G); Arkadias, Knavrias, Mt. Paronassos, 24 km from Ag. Vassilis to Ag. Petros, 1500 m., *Kit Tan et al. 6768* (G); Morea in sum. Mts. Kyllene, VII.1876, *Pichler* (WU); In omni mont. Parnassos, s.d., *Sartori* (WU); Achaia, in rupestribus calcareis regionis superioris Mt. Panachaicon (Voidia hodie) supra urbem Patras, 1500-

1800 m., 5.VI.1893, *Halacsy* (WU); M. Taygetus in regione alpina versus cacumen, VIII.1897, *Heldreich 1422* (WU); Malevo-Inbirjn (Peloponnes), 14.VII.1877, *Topolis* (WU); Griechenland, Achaia, Kyllene 1500-2300 m., VI.1837, *Lempert 465* (W); Griechenland, Peloponnes (Nom. Achaia) Chelmos (Aroania) von der Chelmos 2100-2310 m., 26.VI.1996, *Hörändl & Hadacek 7522* (W); in M. Parnos, Attica, s.d., *Aucher Eloy 1263* (W); in monte Malevo, 7-19.VII.1850, *Orphanides 130* (W); in summo M. Parnitas, s.d., *Sartori 1949* (W); Nord Peloponnes, Chelmos, umgebene des Hac. Schutzhauses, ca.2000m, 6-8.VII.1983, *Staudinger* (W); Gr. Peloponnesus, Laconia, prope Agios Petros, Cynuriae, 1.V.1937, *Pinatzi* (W); Peloponneses, Lakonien, Taygetos, oberhalb der EOS hutte auf der vagzur Profitis Ilias, 1800-2100 m, 29.V.1986, *Burri & Krendl* (W); Achaia, in pratis Mons Chelmos (Araone) reg. alpina glareosa, 17-1800m, 5.VII.1926, *Bornmuller 532* (W); Chelmos, Aroania Ore, E Hang, V.1960, *Sorger* (B); Sterea Hellas, prov. Fokis, Valdousia, Massiv Sudlich, Kato Moussoonitsa, 1900-2250m, 26.VI.1982, *Hagemann et al. 534* (B); Peloponnes, Mt. Panachaikon, bei OTE Station, ca. 1000 m, 4.VII.1976, *Dambolt* (B); Attica, Mt. Parnes, V.1931, *Guial 58* (B); Grecia, M.te Giona, 10.VI.2004, *Brullo, Giusso del Galdo & Musarella* (CAT); Grecia, M.te Giona, Amfissa, 4.VII.2007, *Brullo & Musarella* (CAT); Grecia, M.te Parnasso, 7.VII.2006, *Brullo, Giusso del Galdo & Musarella* (CAT); Grecia, M.te Parnasso, Arachovas, 7.VI.2007, *Brullo & Musarella* (CAT); Grecia, Peloponneso, M.te Killini, ca. 1700 m, 17.VI.2004, *Brullo, Giusso del Galdo & Musarella* (CAT); Grecia, Peloponneso, M.te Klokos, 30.VI.2007, *Brullo & Musarella* (CAT); Grecia, Peloponneso, M.te Panachaiko, 24.VI.2006, *Brullo, Giusso del Galdo & Musarella* (CAT); Grecia, Peloponneso, M.te Chelmos, presso ski resort, 16.VI.2004, *Brullo, Giusso del Galdo & Musarella* (CAT); Grecia, Peloponneso, M.te Chelmos, Pouliou Grisi, 3.VII.2006, *Brullo, Giusso del Galdo & Musarella* (CAT); Grecia, Peloponneso, Killini, presso M.te Simios, 5.VII.2006, *Brullo, Giusso del Galdo & Musarella* (CAT); Grecia, Peloponneso, M.te Klokos, 2.VI.2007, *Brullo & Musarella* (CAT); Grecia, Peloponneso, M.te Panachaiko, 1.VI.2007, *Brullo & Musarella* (CAT); Grecia, Peloponneso, M.te Menalon, 4.VI.2007, *Brullo & Musarella* (CAT); Peloponneso, M.te Taygetos, 12.VI.2004, *Brullo, Giusso del Galdo & Musarella* (CAT); Peloponneso, M.te Taygetos, 26.VI.2006, *Brullo, Giusso del Galdo & Musarella* (CAT); Peloponneso, M.te Parnon, Prof. Ilias, presso Agriani, 29.VI.2006, *Brullo, Giusso del Galdo & Musarella* (CAT); Peloponneso, M.te Parnon, Prof. Ilias, presso Polidroso, 29.VI.2006, *Brullo, Giusso del Galdo & Musarella* (CAT); Peloponneso, M.te Parnon, Megali Tourla, 29.VI.2006, *Brullo, Giusso del Galdo & Musarella* (CAT);

***A. angustifolius* subsp. *balcanicus*** Brullo, Giusso & Musarella

**Albania** - Mittel Albanien, Mali Jablanices Gipfel des mal i Petritit 180 m., 13.VI.1924, *Markgraf 682* (BP); Alb. in alpinis mt Karab, VII.1908, *Adamovic* (M); Alb. in summo jugo M. Kudesi distr. Volen Montenegro in Mte Lovcen, VI.1908, *Rolena* (M); M. Golo Bardo in declivibus occidentali-bus cacum. Kolonica, solo calcareo, 14.VI.1954, *Vyhodcevsski 461* (B, G, W); Albanien, Mali Tomoras (Galicica) 1500-1800 m., 24.VI.1938, *Lindtner* (W); Albania, In Alpinis mt. Karab, VII.1908, *Adamovic* (M);

**Greece** - In reg. super. M. Ossae, Thessaliae, VII.1877, *Richter* (BP); Agion Oros Mt. Athon, alt. 1200-1500 m., VII.1908, *Dimonie* (BP, W); Macedonia or. prov. Kavala distr. Pangeo in latere orientali montis Pangeo, alt. 1250, 5.VII.1973, *Greuter 11380* (Herb. Greuter, B); Macedonia, Galicica in jugo inter Otesovo/Prispa et Pestani Ohsib, ca 1500 m., 4.IX.1969, *Mayer* (M); Prov. Makedonya, Galicica auf der passhöhe der Strasse Trperica-Otesovo steinige Wiesen, ca. 1500 m., 23.VI.1980, *Erben* (M); Macedonia, nomos Kavala Pangeon oros Hange das Hauptgypfels (Pilaf Tepé), 1700-1956 m., 20.VI.1985, *Lippert 20632* (M); Macedonia orientalis in Monte Panteon, Purnar Dagh, 22-27.VII.1936, *Rechinger 10236* (M); Thessalia Larissa, Ossa Gipfer 1900 m., 10.VI.1964, *Raus 2291* (M); Macedonia, Montis Athon Hagion Oros conobium Predioni 1300 m., V.1909, *Dimodie* (M,

WU); Tessalien, Ossa Nordhang alpine matten 1550 m., 3.VI.1981, *Erben* (M); Macedonia occidentalis, Montes Vermion, in jugo Zoodochorus pagi inter Korani et Verova, circa 1200-1500 m., 1.VI.1958, *Rechinger 19808* (M, W); Athos, s.d., *Frivaldszky* (G-BOISS); Athos, 1842, *Grisenbach* (G-BOISS); Kavalas, Pangeon, Mt. Pangeo between Akrovounion and the Ote station, m. 1250, 18.V.1997, *Strid et al. 42137* (G); Macedonia, in saxosis alpinis montis Athon, Hagion Oros, alt. 1200 m., V.1909, *Dimonie* (G); Florinis Mt. Boutsii W part above the village Kristollopoli 1250 m., 11.V.1989, *Strid et al. 1297* (G); M. Athos (Agion Oros) S part of the summit area, 1800-2030 m., 1800 m., 28.VII.1976, *Papanicolau 1608* (G); Epirus, Nom. Joanninan, Ep. Pagoniau, Mt. Dhovskon (Nemarcka) 2 km N of the village Kakolakkos, 15.VII.1979, *Hartvig & Christiansen 7841* (G); Macedonia, Ochrid. Mt. Galicica in pasquis alpinis, 15.VII.1937, *Skrivanek* (G); Macedonia, in summo montis Athon prope Prodromo VII.1908, *Dimonie* (WU); Macedonia, Mt. Keci-Kaja pag. Huma ap. Gjevgejeli, alt. 1800 m., VI.1909, *Dimonie* (WU); In reg. super M. Ossae, Thessal VII.1884, *Heldreich* (WU); Macedon. centr. in petrosis alpinis montis Kossov. prope Zborsko, 26.VI.1893, *Dörfler 14* (WU); Epirus boreali-orientalis in rupestribus calcareis cacuminis Mt. Periteri 2190 m., 15.VII.1893, *Halacsy* (B, WU); Thessalien, Olymp. sudabhary der Sparmos 1200-1500 m., 2.VI.1926, *Hayek* (WU); Athos, s.d., *Frivaldi* (W); Auf dem Velugo in Aetolien, s.d., *Spruner* (W); Macedoniae, in reg. infer. in Galicetra VII.1908, *Dimonie* (W); Grece, in Monte Olympo Thessalae in graminosis siccis Kreliva Trissula, 1360 m., 20.VII.1924, *Handel Mazzetti* (W); Mons Pangaeon, in saxosis calc. declivis boreali orientalis, ca. 1600 m, 27.VI.1965, *Phitos 3170* (W); Mac. Orientalis, Montes Pangaeon, prope Kavalla, in saxosis marmoreis regionis superioris, 15.VII.1970, *Rechinger 38521* (W); Pindus gebirge, Lakmas Oros am Peristerica, ca.1800-2000m, 13.VII.1978, *Krendl* (W); Ohrid. von Pestani, 2km gogo, ca.1200-1300, 15.VII.1976, *Krendl* (W); Gr., Nom. Kozanis, Ep. Eordeas, Siniatsiko, 5,2 Km SO Vlasti, 1350m, 7.VI.1992, *Willing 17245* (B); Nom. Imatias, Ep. Imatias, Vermion, 1,9 Km WSW Kastanea, hohe 1310m, 10.VI.1992, *Willing 17790* (B); Nom. Serres, Ep. Menikior Massif H. Hange, des Sphakokorifi hohe 1340m, 17.VI.1990, *Willing 10620* (B); Nom. Ioannina, Ep. Dhodhonis, 2.3-4.0 Km NO Vradheto, 1700m, 19.VII.1998, *Willing 10053* (B); Makedonia, Kozani ad strasse von Ptolemaida nach Larissa Kurz, inter de Abzweig nach Kozani, ca. 1 Km von der Abzweig, nach Verio, 11.V.1995, *Raabe* (B); Thessalien, Nomos nd Epardia, Larisa, Ossa, Gipfelbereich Nordseite Nordostl. Spilia, 1000-1400 m 13.IX:1981, *Raus & Royl 5379* (B); Epirus, Nom. Ioannina, Ep. Dhodhonis; mt. Mitsekali S ridge W of the village Kriovisi, 1600-1700m, 13.VII.1972, *Hartvig & Christinsen 7737* (B); Gr. Nom. Drannis, Mt. Phalakron (Boz Dag of Drama), ridge W of the summit, 2050-2150m, 1.VII.1981, *Franzen & al. 18409* (B); Nom. Serran, Dramas Mt. Menekion (Boz Dag of Serre), c. 1Km NNE of the summit, 1750-1850, 6.VII.1981, *Franzen & al. 18665* (B); Macedonia, Galicica, Lanina, 1600m, ostlich von Vhrida Lac, 15.VII.1937, *Cohrs* (B);

**Ex-Yugoslavia** - Montenegro, in Mte Lovchen VII.1913, *Rohlene* (BP); M. Athos, s.d., *Kivatosky 714* (BP); Bosnien, Bonianija Planina Ostl Sarajevo Wald wiesse auf der passhohe der Romanya, ca. 1200 m., 1.VII.1984, *Erben 84/5* (M); Jugoslavia Crina jore Stirovnik in rupestribus solo calcareo, cca 1600 m., 3.VII.1964, *Mayer 54565* (M); In rupibus Montis Vis prope Nisch, Serbia, s.d., *Petrovich 1547* (M); In rupestribus calc. M. Ples, Serbia, 4.VIII.1872, *Pancic* (M); in rupibus montis Vis prope Nisch, Serbia, V.1883, *Schultz 1547* (W); Montenegro, Monte Sella, 5000', 7.VII.1868, *Pichler* (G, WU); Hercegov.-Montenegro in alpinis Mt. Lovcen, VII.1903, *Adamovich 62* (W);

**Bulgaria** - Bulgaria in graminosis montis Alibotus 22.VII.1930, *Skrivanek* (M); Bulgaria, Salvjanka mt. limestone rocks by the summit Carev 2200 m., 6.VIII.1980, *Kuzmanov BK802827* (G); Bulgarie de l'ouest, m. Metcka, les collines calcaires, 9.VI.1960, *Kogeoucharov 28* (G); Bulgaria, Rhodopen, Katclite, Tal. Itarvinaca, 2.VIII.1937, *Baschant* (B);

*A. angustifolius* subsp. *postianus* Brullo, Giusso & Musarella

**Lebanon and Syria:** Syria, Lebanon 1839, *Wurtemberg* (M); Syria, Beirut, Hauran Tharsus, 1839, *Wurtemberg* (M); Lebanon, de Menguiz Ylaci à Bech Olouk, VI.1937, *Delbes* (G); Les Cedres, 5.VII.1933, *Mouterde 2513* (G); Sommité Djebel Akra, 8.VII.1931, *Mouterde 252* (G); Sved Damé, 4.VI.1933, *Mouterde 2349* (G); Ht. Liban, Tripoli à Dahr Akabid (Col du Cudun) 2500 m., 11.VII.1878, *Mauhs* (G); Syrie Cassiacumen, VI.1846, *Boissier* (G); Col d'Ainata (Liban) 2600 m., 22.VIII.1955, *Pabot* (G); Syria Borealis, Amano prope Beilan, in jugis alpinis Daas Dagli supra Beilan frequens, alt. 6500', 19.VI.1862, *Kotschy 30* (BP, W).

*A. angustifolius* subsp. *aegeicus* Brullo, Giusso & Musarella

**Aegean Islands:** Samos, 17.VI.1886, *Forsyth-Major 469 a* (G); Insel Samos, Kerkis hauptgipfel, ca.1200-1440 m, Felsraften calc., 21.VI.1983, *Krendl* (W); Nom. Chiou, Ep. Chiou, Chios Mt. Oros the upper part of the valley, 1.5 Km SW of the summit, 900-950 mt, 18.VI.1991, *S. & W. Snogerup 8337* (B); Mytilini, Lesvos, summit of Mt. Olympos, 965m, VI.1988, *Hansen & Nielsen 5072* (B); Samos, Mt. Kerkis. ca. 1000m, 9.VI.2005, *Brullo & Musarella* (CAT); Samos, Mt. Kerkis. ca. 1100m, 2.VII.2003, *Brullo & Giusso del Galdo* (CAT); Chios, M.te Marathovounos, 700-800m, 27.VIII.2008; Chios, M.te Plakes. ca. 800m, 27.VIII.2008, *Brullo & Giusso del Galdo* (CAT).

*A. angustifolius* subsp. *odonianus* Brullo, Giusso & Musarella

**Thassos:** Insula Thassos, Mt. Elios, 23.V.1891, *Halácsy 508* (B, M); Kavalas, Thasos M. Ipsario, sud west of the summit, 900 m., 24.V.1997, *Strid. et al. 42780* (G); Insula Tassos, M. Elios, 23.V.1891, *Sintenish & Bornmüller 508* (W, WU); Agaischen Inseln, inseln Thasos, Ipsarion gipfelbereich, ca.900-1045m, 28.V.1979, *Krendl* (W).

*A. pungens* Willd.

**Anatolia:** Cappadocia, Kee Olouk, s.d., *Siehe* (BP); Offene Strassenbosching, 1080 m., exp. W, 5 km Korkiteli, C3 Antalya SW-An, 10.V.2002, *Ulrich* (M); Prov. Ankara, Gelkoy Sergenkaia, 1810 m., 13.VI.1996, *Lamont 633* (M); Tokal in montibus apricis alt. 700m., 12.VI.1889, *Bornmüller 94* (M, WU); Tk C4 Vilagei Konya Sudseite des Sertavul passes, Almwiese 1300 m., 20.V.1986, *Dorn 551* (M); C6 Adana, Osmanyen, Fevzipasa, 500 m. von Nurdagi Gecidi 1100 m., 24.V.1987, *Nydeggei 42478* (M); B3 Isparta, Gelendost, Askehir W Passohohe 1850 m., 29.V.1992, *Nydeggei 46118* (M); In collibus circa montem Ballou Klarderer prope Elmalu, 22.V.1960, *Bourgeau 66* (G, M); C4 Konia Beloren 52 km S Konia, 1040 m., 16.V.1993, *Nydeggei 47204* (M); C4 Konia, Konia, Borkir S-Koyacilar, 1380 m., 17.V.1993, *Nydeggei 47216* (M); C3 Konia, Dogarsehier-Beyschir, 18 km N Beyschir, 1130 m., 2.VI.1992, *Nydeggei 46150* (M); B6 Sivas, Kongol Divrige 6 km E Kongol, 1460 m., 15.6.1992, *Nydeggei 46282* (G, M); C5 Nidge gegen Narpiz Gorge abberhalb Curcuradag, 1650 m., 25.VII.1992, *Nydeggei 46855* (G); Tk Alidagh, 3.VI.1883, *Pichler 233* (G, WU); In gramineis regionis alpinae Montis Helmalu, 25.VI.1860, *Bourgeau 63* (G); Bursa Uludag Gipfel 1900 m., 7.VII.1979, *Nydeggei 14075* (G); Isparta Gelendost Aksehir W Passhohe, 1850 m., 29.V.1992, *Nydeggei 46118* (G); C6 Adana Osmaniye-Fevzi Pass, 500 m. von Nurdagi-Gecidi, 1100 m., 25.V.1987, *Nydeggei 42473* (G); C4 Konya, Konya-Beloren 5 km S Konya, 1040 m., 16.V.1993, *Nydeggei 47204* (G); Sivas (Pontus) Zara-Suseheri Westhang des Kose Dag, 43 km nordlich Zara, Urgestein, 1880 m., 1.VII.1953, *Huber Morath 11929* (G); C4 Konya, Konya-Bozkir, S Kayacilar 1380 m., 17.V.1993, *Nydeggei 47210* (G); Akadag, 1837, *Aucher Eloy* (G); Region alpine di Mourad Dag (Phrygia) vers. 2200 m. d'alt., 28.VI.1857, *Balansa 319* (G-BOISS); Auf den südlichen

Abheingen das montes Olymp., VI.1873, *Pichler* (G-BOISS); Bithynia, 1846, *Pestolazza* (G-BOISS); Bithynia, Asia Minore, 1842, *Grisenbach* (G-BOISS); Caria, 1843, *Pinard* (G-BOISS); Lyciae in collibus circa Montem Ballouclardan prope Elmalu, 22.V.1860, *Bourgeau 66* (G-BOISS); Natolia, prope Angora in Monte Kulsein-Kasi, s.d., *Wiedemann 2* (G-BOISS); Ad vias in subalpinis prope Starfouuti, 1852, *Noe 1093* (G-BOISS); Natolia, Kamanili et Safroubol., s.d. *Wiedemann 7* (G-BOISS); Akdag, Cappadocia, s.d., *Aucher Eloy 1251* (G-BOISS); Tk. Bozkir- Kuruncay ociklik ca. 1300 m, 17.VI.1968, *Culik 147* (G); Between Inoni and Kütahya, 21.V.1966, *Beytop 9344* (G); Burdur, Yesilova, Tefenni-Yesilova, Steppe 14 Km nordlich Tefenni, 1140 m, 1.VI.1962, *Huber-Morath 16851* (G); Bythyn. in Monte Kitirladagh ad Brussam, VII.1874, *Pichler 199* (W, WU); Asia Minor, in aridis glareosis Montis Olympi Pr. Brussa, VII.1873, *Pichler 632* (WU); In Olympii Bith. reg. superiori, 23.VIII.1850, *Clementi* (WU); Phrygia, in regione alpina Montis Sultandaghi prope Ascheher (wilajet Konia) 1900 m., 21.VI.1899, *Bornmüller 4408* (B, WU); Erdschias Dag (Argaeus) bei Ilghiu circa 1200 m., V.1902, *Zederbauer* (WU); Asia Minor in aridis glareos Mti Olympo, Pr. Brussa, 7.1879, *Pichler* (W, WU); Armeria Turcika, Ezinghan, Sipicordaghi, 3.7.1899, *Sintenis 1259* (B, W, WU); Turkey 40 km N of Zara (Zara 71 km east of Sivas) 1900 m., 26.VI.1969, *Andersen & Peterseen 18* (W); Sommet de l'Olympe de Bitine, 14.VII.1833, *Aucher* (W); Tk, Uludag, Dornpallsteige, 2300m, 30.VII.1960, *Fitz* (W); Tk, 5m W of summit (summit 30 miw Elmalyi, S. of Antalia, 3800'), 4.VI.1961, *Stutz 1513* (W); Anatolia Oriental, Tocal, in montibus apricis alt.700m, 12.VI.1889, *Bornmuller* (W); Paphlagonia, wilajet Kastanbuli, Tarsia, Schechdere in declivibus, 13.V.1892, *Sintenis 367* (B); Cilicien, weiss gusquital 1400m, 1895-96, *Siehe 262* (B); Lydia, sinus Smyrnaeus in monte Dyo Adelpia 1 k Kardasch, 870m, 15.VI.1906, *Bornmuller 9410* (B); Lydia, Magnesia in regione subalpinae et alpine montis Sypileos, 1200m, 9-10.VI.1906, *Bornmuller 1412* (B); Anatolia, nordlich von Eskisehir in eichengebush auf Bergen, 2.VI.1995, *Walter* (B); Bythiniae, in summo monte Olympus, 23-2500m, 17.IX.1886, *Bornmuller 3302* (B); Amasia, in rupestribus montanis, 4-900m, 2.V.1889, *Bornmuller 93* (B); Phrygia, Raengerace, 13 km sudwestlich von Kutahya, 6.VI.1935, *Reese* (B); Wiedetrift bei Beysehkir, Turkey, 1000m, 1.VI.1974, *Ern 141* (B); Cappadocia, boretis, in summo Mt Akdag, 20-2300m, 1.VIII.1889, *Bornmuller 1407* (B); Amasia, in summo monte Ak Dag, 19-2000m, 19.VI.1889 *Bornmuller 90* (B); B3 Kütahya, c.3 km NE of Kütahya along the main road, Çınarlı Menkii near Yazıkauar Petrol Service station, 950m, 21.V.1990 *Lampinen 7212* (ISTE); Liönü, Kütahya arasi, Kurak Tepeleri 21.V.1966, *Baytop & Çubukcy 9344* (ISTE); Koyakeeri, Deeveli Golu (Kayseri), 1750m, 10.VI.1971, *Baytop 20271* (ISTE); Ankara, Elmadag, 25.VI.1935, *Kuntay & Çelebioğlu 1395* (ISTE); Uludag (Bursa), alpin mentika, 13.VIII.1953, *Baytop 1397* (ISTE); Kayseri, Kysarcik, 14.VI.1944, *Bağda 1396* (ISTE).

#### **A. valdeviolaceus** Brullo, Giusso & Musarella

**Anatolia:** In petrosis regionis alpina Monti Elmalu, 9.VI.1860, *Bourgeau 69* (B, G-BOISS, W); Mugla Fethiye Altinyayla 13 km S Altinyayla, 1390 m., 13.VI.1989, *Podlech 44152* (M); C2, Vilaget Antalya, Abhange des Akdag Hohl dem Sinekcibali Pass Weisen und Weider 1500 m., 14.V.1986, *Dorn 446* (M); C2 Mugla Fethiye, Altinyayla 13 km S Altinyayla 1390 m., 13.VI.1989, *Nydeggei 44157* (M); Antalya, Korkuteli, Elmali-Korkuteli, 1300 m, 31.V.1962, *Huber-Morath* (G); Caria, 1843, *Pinard* (W); In Monte Tauro aestate 1836, *Kotschy 130* (W); Antalya, Kuhu Dag, S von Elmali gebiet von Ciiglikara, 16.VI.1969, *Fitz & Spitzenberger 862* (W); C2, Antalya, Akdag, Bachrand Bergisteppe, 1400m, 23.VI.1965, *Sorger 65-2643* (W); In collibus circa montem Ballou Klarderi prope Elmalu, 22.V.1960, *Bourgeau 66* (B); Turkey, Antalya, Beydaglari, Erdan Dag bei Cakilar, Feslekan Yayla, 7.VI.1983, *Engel 7* (B); C2 Mugla, Sandras Dag, W side of the summit area, 2100-2200m, 7.VII.1984, *Hartvig-Sekmen & Strid 23343* (B).

***A. hubermorathii*** Brullo, Giusso & Musarella

**Anatolia:** Lycaonia in Monte Karadja – Dag supra Salyr valley, 23.VII.1911, *Andrasovszky 448* (BP); Lycaonia, Village de Gulek-Boghas pres des Portes Ciliciennes, region montagneuse, 1.VII.1855, *Balansa 484* (BP); Steiler Felsigen Hang 1060 m., exp. SE, 50 km NE Mahmutler (Alanya) C4 Antalya, S-An, 14.VI.2002, *Ulrich* (M); Tk Vilaget Eskisehir (Strasse O. Eskisehir, 5,8 kirka 69), 5,8 S Eskisehir an des Strasse nach Akpınar Koyu Kanpp unter halb des Passes Steppae, 970 m, 10.VI.1969, *Buttler 13401* (M); C4 Konia, Koras 37 km S Ayranci 1600 m., 17.6.1989, *Nydeggei 44191* (M); B3 Konia Doyanhisar, Beysehir 21 km N Huyuk, 1300 m., 1.VI.1992, *Nydeggei 46146* (M); Trockenhang 1450 m., exp. E Shadim (Ri.Taskent) C4 Konia 16.6.2002, *Ulrich* (M); Ankara, Beyham, Ataturk forest road, 7.VII.1998, *Lamps* (M); Turkey Prov. Ankara, N Verilubuk 1530 m., beweidete Flaken, 1995, *Maxtad 22/70* (M); Burdur, Pisidien, Burdur- Antalya, Steppe 10 km sudlich Burdur, 10.VI.1938, *Huber-Morath 5314* (G); Pisidien, vilajet Burklemandin Antalya, 800 m., 11.VI.1938, *Huber-Morath 5311* (G); B3 Isparta, Egridir Suttan Dag sudliche zwischen Aksehir und Egridir, 3.VI.1935, *Reese* (G); Turkey B3, Prov. Konya Sultandaglari an der Strasse von Aksehir nach Gelendost, 5 km NE unterhalb des passes zwischen Engiri und Orchenez (=Bagkonak) ca. 1500-1600 m., 10.VII.1978, *Ehrendorfer et al. 787-20-2* (WU); Erdschias Dag (Argaeus) auf Stamigen Abhorigeendes Lifas, c. 2400 m., VII.1902, *Zederbauer* (WU); Aksehir, Tekke Kögü üstleri, Danasekisi sirtlari (Konya), 1800m, 29.V.1974, *Dökmeci & Döğantan 28781* (ISTE); Aksehir, Topyeri üstleri (Konya), 1040-1250m, 1.VI.1974, *Dökmeci & Döğantan 28911* (ISTE); Aksehir, Monas Kögü, Sakartaş mevkii (Konya), 1500m, 30.V.1974, *Dökmeci & Döğantan 28846* (ISTE); Sultan Dağlari, Derecine üstündeki, Büyük yayla (Afyon), 1820m, 2.VI.1974, *Baytop, Dökmeci & Döğantan 29155* (ISTE); Ilgaz, Çaukuri on pass (Çaukuri), 5.VI.1954, *Davis 16224* (ISTE); Davraz Dağı, Sav Köyü üstleri (Isparta), Kenaç Tepleri, 23.V.1966, *Baytop & Çubukcy 9612* (ISTE).

***A. hermoneus*** Boiss.

**Lebanon and Syria:** Jebel Jannine (Liban) 1800 m., 20.VII.1930, *Gambault 1388* (M); Syria Gebel Damelh, V-VII.1846, *Boissier* (G-BOISS); Gebel Baruck, 1846, *Boissier* (G-BOISS); Inter Akoura et Yamouna, 9.VI.1883, *Peyron* (G-BOISS); Iter Syriacum, circa Zebdaine prope Damascus, caespites dense per vallem Martisch efformat, alt. 6500 ped., 4.VI.1855, *Kotschy 82* (G, M, W); Hermon, regio superior. Syria, V-VI.1846, *Boissier* (G-BOISS); Aux Cedres, 12.IX.1864, *Blanc 3116* (G-BOISS); Lebanon, Djebel Makhmel Felsgrat 2006, 21.III.1936, *Bertschinger 1449* (G); Lebanon, Bjebel Makhmel Qorhetes-Souda, Geröll 2980 m., 18.VII.1936, *Bertschinger 1450* (G); Libani, in regione alpina jugi Sarim 2000 m., 20.VII.1897, *Bormüller 567* (B, WU, W); Antiliban, regione alpina in declivitatibus supra Baalbek, 2150-2200 m., 31.V.1910, *Bormüller 11592* (B, WU); in Hermone fine Junii, 1896, *Fonek* (W); Syria, S. Jebel Druz, environs of Tel Jiune, 20.VI.1932, *Eig & Zohary* (W); Nord Libanon, Gestemflum, bei Zederimalachen on Beschaire, ca.1900m, 6.VI.1931, *Zermy* (W); Syria, ad Arisson, VI.1820-1826, *Ehremberge* (W); Syria, 1846, *Pinard* (W); Lebanon, Jebel Kesrouane (sopra Faraya), 1900-2000m, 1.VI.2010, Brullo, Giusso del Galdo & F. Abdel Samad (CAT);

***A. sirinicus*** Ten.

**Italy:** Prov. Potenza (Basilicata) M. Serino in locis graminosis saxosis aridissimis jugi M. del Papa, 1900 – 2000 m., VII.1898, *Rigo 3834* (BP, M); Lucania (Basilicata) in pascuis petrosis abunde in M. Serino pr. Lagonegro, solo calcareo, 2000-2100 m., 14.VII.1877, *Huter, Porta & Rigo 463* (BP, M); Lucania in pascuis petrosis 14.VII.1877, *Huter* (M); M. dei Fiori, Abruzzo, 2.VIII.1887, *Mascorini* (M);

***A. tymphresteus*** Boiss. & Spruner

**Albania:** Montis Albaniae, Joredi orientalis inter opp. Prisiren et Debia jacentes montis nivales Golica Luns in lottidoris declivibus orientalis supra pago Bicas, alt. circa 2100 m., 14.VII.1918, *Kummerle* (BP).

**Greece:** Eurytania (Aetolia ea Karnania) Montis Tymphrestos ad pagum Karpenision monte Veluchi (ypsili koryphi), 1400-1500 m., 22-24.VII.1932, *Rechinger f. 2935* (BP) ; Evritania Ftri M. W side E-NE of the village Kitahori 1700 m., 11.VI.1997, *Strid et al. 43699* (G); Fokialas M. Valdousia, near the Eos Katafigion 1900-2100 m., 7.VI.1998, *Strid et al. 46133* (G); Ioanninan, Dodonis Mt. Timfi near the Eos Kataphigion of the Astraka Saddle 1850 m., 22.V.1999, *Strid et al. 49354* (G); Grevenan, Mt. Smolikas 3 km W of Samarina, E of the peak Bogdanis 2100 m., 27.VI.1976, *Hartvig et al. 5366* (G).

**Bulgaria:** Mont Pisin, Sinanicavoh, alt. 2000-2300 m., 11.VII.1938, *Dvliejhly* (BP).

**Macedonia:** in Mt. Ali Botus, 1929, *Urumov 15* (BP); in M. Pirini, 1915, *Urumov 195* (BP).

***A. taygeteus*** Perss. & Strid

**Peloponnisos:** Prov. Peloponnisos, Nom. Messinia, Taygetos am aufstieg von Kataphygon des Alpin Klubs, Sparta, über auf ostflanke des Profitis Ilias, zur Shade, 1800-2000 m., 25.VI.1982, *Lippert 21430* (M); Griechenland, Peloponnisos Nom. Lakonia, Taygetos, E Hange W von Xirokambi 1300-2000 m., 8.VII.1985, *Podlech 39754* (M); Morea in sum. mts. Taygetos, VI.1876, *Pichler* (G-BOISS); Peloponneses, Taygetos Gebirge, Profitis Elias, 2100-2300m, 15-16.VII.1881, *Staudinger* (W); Peloponneso, M.te Taygetos, 12.VI.2004, *Brullo, Giusso del Galdo & Musarella* (CAT); Peloponneso, M.te Taygetos, 26.VI.2006, *Brullo, Giusso del Galdo & Musarella* (CAT);

***A. heideri*** Wettst.

**Anatolia:** Turkey, Isparta, Sagalassos, ca. 1600m, 27.VI.2010, *Brullo & Giusso del Galdo* (CAT);

***A. genargenteus*** Moris

**Sardinia:** Sard. Prov. Nuoro, Bruncu Spina, Nordwesthang 1616 -1800 m., 17.VI.1996 *Erben* (M); in M. Genargentu Sardiniae, VII.1827, *Müller* (BP, M); Prov. Nuoro, Arcu Correbai an den Osthangen des Mt. Arbu 1450 m., 6.X.1979, *Erben* (M); Prov. Nuoro, Mont. del Gennargentu M. Arbu Sudhang ca. 1350 m., 9.X.1979, *Erben* (M); Sardinia, s.d., *Moris* (BP)

***A. gennarii*** Bacch. & Brullo

**Sardinia:** see Bacchetta & Brullo (2006).

***A. greuteri*** Bacch. & Brullo

**Corsica:** Cors. Serra di Scopame, par Sortene, 9.VI.1879, *Reverchon 1* (M); Serra di Scopamene près de Sortene (Corse), 9.VI.1870, *Tiller* (BP); Cors. Bergeries de Costa Valle de l'Erco, Monte Cinto, 20.VI.1919, *Cousturier 3310* (M); Col de Vizzavona Ainwege zur Festung env. 1200 m., 6.VI.1908, *Retzdorff* (M); Corte in graminosis aridis vallis Tavignaro (ca. 1200 m.), 27.VI.1832, *Shrivaneck* (M); Im felsschutt am Sudhang Kurz unterhalb des Col de Bavella, 15.IV.1977, *Mexmüller & Lippert 31278* (M); Sudosthange des Monte Cinto unterhalb der Bergerie d'Ascias, 1350-1400 m., 5.VI.1963, *Roessler 4518* (M); Cors, dep Corse du Sud, Col de Vaccia, entre Aullene et Zicavo, alt.

en. 1190, 31.V.1988, *Lambinon 88/CO/63* (M); Col de Vizzavona offeri Hange über den pass 1280 m., 28.V.1961, *Roessler 3755* (M); Vizzavona, Corsica 1200 m., V.1931, *Meebold 4372* (M); Basatela, Mont Renoso 6.VI.1879, *Reverchon 1* (BP).

*A. croaticus* Alegro & al.

**Croatia:** Dalmatien Biokovo, Stemtuft kalk., 1400 m., 20.VI.1959, *Mayer 20781* (M); Dalmatia Biokovo supra Makarska in graminosis lapidosis solo calcareo cca 900 m., 29.VI.1958, *Mayer* (M); Dalmazia, Monte Biohovo, 21.VII.1988, *Gelin* (WU); Dalmatien, Mosar Planina, am Tussiveg an der südliche der Ljubirna, ca. 1000 m., 9.VI.1908, *Janchen* (WU); Dalmatien auf dem Konim der Mosar Planine, 9.VI.1908, *Janchen* (WU); Dalmatien, Biokovo, in karstgestein der Alpe, 22.VI.1927, *Korb* (W).