

A new subspecies of *Allium decipiens* (sect. *Melanocrommyum*, *Alliaceae*) from the Crimean and NW Caucasus Mts

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Abstract. Up to five different names have been applied by different authors to three species of *Allium* sect. *Melanocrommyum* occurring in Eastern Europe. A comprehensive material was studied in order to untangle this problem and to clear up the name *A. decipiens*. A specimen from LE (Herb. Fischer. *A. decipiens* Fisch. t. Rgl. ... Ekaterinoslaw) was selected as a new, correct lectotype for *A. decipiens* (LE). Two different entities were recognized in *A. decipiens*: *A. d.* subsp. *decipiens*, occurring in the steppe mainland north of the Azov Sea and in the Stavropol Uplands, and the newly described *A. d.* subsp. *quercetorum* from the hardwood forests of the Crimean and Northwest Caucasus mountains. The latter differs by a rose spathe, larger leaves, denser umbel, longer perianth segments, and by habitat. *A. decipiens* should be excluded from the Turkish flora.

Key words: *Alliaceae*, *Allium decipiens*, the Crimea, Caucasus, European Russia, new subspecies, taxonomy, the Ukraine

Introduction

The taxonomy of the *Allium decipiens* group has been rather complicated for almost 180 years. This was due to the fact that three species of *Allium* sect. *Melanocrommyum* Webb & Berth., known to occur in Eastern Europe according to the modern studies (i.e. *A. decipiens* Fisch. ex Schult. & Schult. fil., *A. tulipifolium* Ledeb., and *A. cyrilli* Ten.), were treated by some competent authors as one (Regel 1875; Vvedensky 1935), two (Stearn 1978, 1980; Omelczuk-Myakushko 1979), or three (Czerepanov 1995) species.

The name *A. decipiens* appeared first in Fischer's *Catalogue du Jardin...* (1812) as *nomen nudum*. Later on, it was validly described from "*campis inter Borysthenem et isthmum Tauriae*" in the Ukrainian steppe region

by Schultes & Schultes (1830). Ledebour (1830) described *A. tulipifolium* from the Altai Mts, and it was subsequently reported from the Lower Volga region. Paczoski (1891) regarded *A. tulipifolium* as genuine *A. decipiens*, and therefore described *A. decipiens* s.str. as *A. decipiens* var. *longipedicellatum* Paczoski (holotype in LE: Terra Cosac. Tanaic., Novoczerkassk, in decliv. argilos., 13.05.1889, Paczoski). Schmalhausen (1897) accepted *A. tulipifolium* as a synonym of *A. decipiens* var. *brevipedicellatum* Schmalh described by him. The specific independence of *A. tulipifolium* was later neglected, probably due to confidence of Schmalhausen and Paczoski.

Wulff (1930) in the *Flora Taurica* maintained that there are two taxa in the Crimea: *A. atropurpureum* auct. and *A. multibulbosum* auct. In the *Flora of the*

USSR Vvedensky (1935) accepted solely *A. decipiens* in a broad sense. Omelczuk (1962) combined all Crimean plants (i.e. *A. decipiens* p.p. sensu Vvedensky, *A. atropurpureum* auct. and *A. multibulbosum* auct. sensu Wulff) into an endemic species *A. auctum* Omelczuk. She named all steppe plants (Omelczuk-Myakushko 1979) *A. decipiens* (incl. *A. tulipifolium* from Lower Volga). Unfortunately, Omelczuk-Myakushko did not mention in her studies the identity of *A. decipiens* from NW Caucasus and N Turkey.

Using cytological data, Vakhtina and Kudryashova (1982) showed that *A. auctum* is composed of *A. decipiens* ($2n=16$) and Mediterranean *A. cyrilli* ($2n=32$), which was never reported from Eastern Europe before. *Allium cyrilli* differs from *A. decipiens* by rigid sclerified filaments, which embrace the capsule after anthesis, and by presence of numerous stalked yellowish bulblets. It occurs in Greece, Italy, Bulgaria, and Turkey (Stearn 1978, 1980; Cheshmedzhiev 1983; Kollmann 1984). The holotype of *A. auctum* in KW (Crimean Province, Sudaksky district, Karadagh, Mt Svyataya, forest on summit, 24.05.1941, M. Kotov KW 003711, marked by Omelczuk as *typus speciei*) represents *A. cyrilli*, although there are six specimens of *A. decipiens* in KW collected by Kotov on Mt Svyataya at the same day.

Afterwards, Friesen (1987) and Czerepanov (1995) revived *A. tulipifolium* from the synonyms of *A. decipiens*. It replaces *A. decipiens* in the Lower Volga region, Kazakhstan, Western Siberia (Altai Mts), and NW China (?) (Friesen 1987) and differs from the latter species by its shorter perianth segments, filaments almost equal to the perianth segments, and usually (1–)2(–3) narrowly lanceolate to lanceolate leaves.

In my opinion, the description of *A. auctum* was certainly not an inadvertent error. Omelczuk merged Crimean *A. decipiens* with *A. cyrilli* when she intended to establish a taxon distinct from the steppe *A. decipiens*, because the Crimean forest plants of *A. decipiens* differ from the Eastern European steppe *A. decipiens* by a number of important characters. Unfortunately, she selected the only plant of *A. cyrilli* in Kotov's series of *A. decipiens* as a holotype of *A. auctum*. A study of many recent collections of *A. decipiens* in the Russian (MHA, MW, LE) and Ukrainian (KW, YALT) herbaria have confirmed that *A. decipiens* consists of two geographic races. Plants from the Crimean and NW Caucasus mountains differ from the typical *A. decipiens* by a rose spathe, larger

leaves, more compact umbel, longer perianth segments, etc. Geographic difference goes along with different habitats too.

Allium decipiens subsp. *quercetorum* Seregin subsp. nova (Fig. 1)

Bulbus globosus, 1,5–2,0 cm diametro; tunicae exteriores coriaceo-papyraceae, atro-griseae, fusco-griseae vel fere nigrae. Scapus 40–80 cm longus, sub finem anthesis porrigens (circa 20 cm longus efflorescit), usque ad 1/8(1/6) partem foliorum vaginis hypogaeis tectus. Folia (2)3–4(5), aequilonga, linearia vel anguste lanceolata, (16)19–30(34) cm longa, (4)5–13(22) mm lata, conferta (i.e. distantia inter articulationes vaginali-laminare foliorum infimi et supremi minus 1 cm longa). Spatha anthesi ineunte rosea, nervis intensioribus coloratis, dein exalbescens, circa 1 (ad 2.5) cm longa. Umbella hemisphaerica, sat densa, (3.5)4–5(5.5) cm diametro (in fructu ad



Fig. 1. Holotype of *A. decipiens* subsp. *quercetorum* Seregin (MW).

7 cm). Pedicelli aequales, 1.7–2.0 cm longi (in fructu ad 3 cm), tenues, ebracteolati. Perianthii stellati phylla linearia ad late lanceolata, post anthesin reflexa, (5)6(8) mm longa, 1.0–1.5(2.5) mm lata, apice breviter acutata, in sicco ad normam rosea, raro albida (virescentia), nervo purpureo vel viridi. Filamenta insclerificata, perianthio vix breviora, ad 5–6 mm longa, albida, rarius subrosea, prope basin perianthio et inter se 1 mm connata, aequiformia, basi dilatata superne subulata. Ovarium sessile. Capsula globosa, ad 5(6) mm diametro. Stylus capsulam sesquilogior ad duplo longior. Semina nigra, ad 3 mm longa et 1.5 mm lata.

Ab *A. decipiens* Fisch. ex Schult. ex Schult. fil. subsp. *decipiens*, foliorum vaginis hypogaeis, caulem usque ad 1/8(1/6) partem amplectibus (nec supra terrae parum elevatis, caulem usque ad 1/5 partem amplectibus), foliis latioribus, (4)5–13(22) mm latis (nec 2–6(13) mm latis), umbellis magis densis, (3.5)4–5(5.5) cm diametro (nec 4.5–8(11) cm diametro), spathe anthesi ineunte rosea, nervis intensioribus coloratis, circa 1 (ad 2.5) cm longa (nec alba, nervis inprominentibus, 0.5–1.0 cm longa), pedicellis brevioribus, 1.7–2.0 cm longis (nec (1.5)2.0–4.0(5.0) cm longis), perianthii phylla longioribus, (5)6(8) mm longis (nec (3.5)4–5(5.5) mm longis), filamentis longioribus, perianthio vix brevioribus, ad 5–6 mm longis (nec perianthio conspicue brevioribus, ad 3.5(4) mm latis), atque habitationibus (in nemorosis, nec in locis stepposis) differt.

Bulb globose, 1.5–2.0 cm in diameter; outer tunics coriaceous to papyraceous, brown or dark-grayish, grayish-brown or almost blackish. Stem 40–80 cm long (at the start of anthesis 20 cm long). Leaf sheathes underground, covering to 1/8(1/6) of the stem. Leaves (2–)3–4(–5), of equal length, linear to narrowly lanceolate, (16)19–30(34) cm long, (4)5–13(22) mm wide, closely set (i.e. the stem distance between the lower and the top leaves less than 1 cm). Spathe persistent, 2–3-lobed, rose in anthesis, with purplish veins, later getting whitish, ca. 1 (up to 2.5) cm long. Umbel hemispherical, rather dense, (3.5)4–5(5.5) cm in diameter (up to 7 cm after anthesis). Pedicels equal, 1.7–2.0 cm long (up to 3 cm after anthesis), thin, without bracteoles. Perianth stellate, later reflexed and twisted outwards; segments linear to broadly lanceolate, (5)6(8) mm long, 1.0–1.5(2.5) mm wide, shortly acute on apex, usually rose when dry, occasionally whitish (or greenish), with darker (purple or green) midvein.

Filaments unsclerified, somewhat shorter than perianth segments, up to 5–6 mm long, whitish, occasionally purplish, connate with perianth segments into an annulus ca. 1 mm long at base, equal, dilatate at base and subulate above. Ovary sessile. Capsule globose, up to 5(6) mm in diameter. Style 1.5–2 times as long as capsule. Seeds black, up to 3 mm long and 1.5 mm wide.

Allium decipiens subsp. *quercetorum* differs from *A. decipiens* subsp. *decipiens* by underground leaf sheathes covering up to 1/8(1/6) of the stem (not exerted above ground level and covering up to 1/5 of the stem), wider leaves (4)5–13(22) mm wide (not 2–6(13) mm), spathe rose in anthesis, with purplish veins, ca. 1.0 (up to 2.5) cm long (not white, with whitish veins, 0.5–1.0 cm long), denser umbel (3.5)4.0–5.0(5.5) cm in diameter (not 4.5–8.0(11) cm), shorter pedicels 1.7–2.0 cm long (not (1.5)2.0–4.0(5.0) cm), longer perianth segments (5)6(8) mm long (not (3.5)4.0–5.0(5.5) mm), longer filaments little shorter than the perianth segments, up to 5–6 mm long (not shorter than the perianth segments, up to 3.5(4.0) mm long), and by habitat (hardwood forests, not steppe).

Holotype (original label in Russian): Vicinity of Sudak, Kamenka, *Quercus* & *Carpinus orientalis* forest, in the shade, 24.05.1958, P. Smirnov (MW, with an isotype).

Paratypes (original labels of specimens from KW in Ukrainian and Russian, from other herbaria in Russian):

Russia:

Krasnodar Krai: vicinity of Gelendzhik, Markotkh ridge, ascent from Vinogradny, 01.08.1990, Yu.L. Menitsky, T.N. Popova & O. Morozenko 20 (LE, with a duplicate); Gelendzhiksky district, Markotkh ridge, between Kabardinka and Gelendzhik, meadow, 05.08.1996, A. Zernov (MOSP, n.v. (Zernov 2000)); Novorossiysky district, Maly Utrish, Vtoraya Topolnaya Shchel defile, *Carpinus* forest in the upper part of the slope, 12.06.1999, Ye. Suslova (MWG); Novorossiysky district, vicinity of Maly Utrish, ridge between Pervaya Topolnaya Shchel and Vtoraya Topolnaya Shchel defiles, *Carpinus orientalis* forest, 14.06.2001, A. Seregin C-355, Ye. Suslova (MWG); 44°46'40" N, 37°24'40" E, Anapsky district, projected Utrish Reserve, 8.5 km to NNW from Maly Utrish, N slope of Navagir ridge, shady & stony hardwood forest margin, 390 m, 11.06.2004, A. Seregin C-675, K. Shcherbakov (MWG).

Ukraine:

The Crimea: Yenisala, Kosma & Domian Monastery, 06.05. s.a., anonymous (KW); road from Grushevka to Stary Krym, s.d., Yu. R. Shelyag-Sosonko & G.S. Kukovitsa (KW); Tchatyrdagh, Yalta, Stary Krym, 1845, anonymous (KW); Tchatyrdagh, ½.06.1907, anonymous (KW); Simferopol – Biyuk Yankoy (Mramornoye), 23.05.1912, excursion (KW); Kosma & Domian Monastery, by road, 24.05.1912, anonymous (KW); near Gurzuf, *Fagus* forest, 23.06.1929, V. Vovtchanetsky (KW); Kuybyshevsky forestry, near Orliny Zalet, 17.07.1938, F. Grin (KW); Karadagh, Mt Svyataya, screes in *Quercus* forest, 450 m, 24.05.1941, M. Kotov (KW); Karadagh, Mt Svyataya, forest on summit, 520 m, abundant, 24.05.1941, M. Kotov (KW, with 3 duplicates, excluding holotype of *A. auctum*); Karadagh, Mt Svyataya, slope, abundant in humid forest on summit, 530 m, 24.05.1941, M. Kotov (KW); Lobovoy ridge near W edge of Karagatch ridge, forest on slope, 16.09.1947, M. Kotov & E. Karnaukh (KW); Sudaksky district, near Karadagh biological station, forest near NW slope of Mt Karagatch, 14.05.1948, M. Kotov & E. Karnaukh (KW, a *damaged specimen*); Sudaksky district, vicinity of Karadagh biological station, forest on Mt Svyataya, 23.05.1948, M. Kotov & E. Karnaukh (KW, with two duplicates); Sudaksky district, vicinity of Karadagh biological station, N slope of Karagatch ridge, near shrub in forest, 28.05.1948, M. Kotov & E. Karnaukh (KW); Belogorsky district, Bogatoye, along river, 12.05.1955, M.G. Popov & D.N. Dobrotchayeva (KW); Alushtinsky district, 8 km to W from Alushta, *Fraxinus* & *Quercus* forest, 24.05.1955, M.G. Popov, A.I. Barbaritch & D.N. Dobrotchayeva (KW); Sudaksky district, between Datchnoye & Shchebetovka, 08.06.1955, M.G. Popov, D.N. Dobrotchayeva & A.I. Barbaritch (KW, with 2 duplicates); Sudaksky district, Karadagh, Mt Karagatch, under canopy of *Fraxinus* trees, 09.06.1955, D.N. Dobrotchayeva, A.I. Barbaritch & M.Ya. Kukalo (KW, with a duplicate); Simferopolsky district, N slope of Mt Tchatyrdagh, amongst stones in *Fagus* forest, 11.07.1956, M. Kotov (KW); Alushtinsky district, Mt Demerdzhi, *Fagus* forest, 12.07.1956, M. Kotov (KW, with 3 duplicates); vicinity of Alushta, Angarsky pass, N slope of Mt Demerdzhi, *Fagus* forest, 13.05.1958, M. Kotov & T. Omelczuk (KW); vicinity of Stary Krym, Mt Agarmysh, 20.05.1958, M. Kotov & T. Omelczuk (KW, with 3 duplicates, LE); Karadagh biological station, Mt Karagatch, 02.07.1959, Omelczuk (KW, with 4 duplicates); Karadagh biological station, Mt Karagatch, 02.07.1960, Glagoleva (KW, with a duplicate); Karadagh biological station, Mt Karagatch, NW slope, 05.07.1960, Glagoleva (KW); Baydarskaya Yayla, *Fraxinus* & *Fagus* forest, 15.07.1960, Glagoleva (KW); above Simferopol – Alushta road, 01.06.1961, *illegible sign* (KW); Alushtinsky district, Karadagh, 27.05.1964, G. Kuznetsova (KW); Stary Krym, Mt Agarmysh, 22.06.1964, G. Kuznetsova (KW, with 2 duplicates); Karadagh, for-

est on the pass at the road to Nizhniye Kozy, 20.05.1967, M. Klokov (KW); Planerskoye, Karadagh, biological station area, 26.05.1967, M. Klokov (KW, with 2 duplicates); Karadagh, Mt Suyuk-Kaya, forest, abundant, 11.06.1967, M. Klokov (KW); Perevalnoye forestry, *Fagus* & *Carpinus* forest, 15.05.1968, M. Kotov, V. Protopopova & O. Osetrova (KW); Perevalnoye forestry (near Simferopol – Alushta highway), stony slopes, 15.05.1968, M. Kotov & N. Netchaeva (KW); State hunting reserve, Tchernaya Retchka cordon, above 400 m, 16.06.1970, O.N. Dubovik (KW); Perevalnoye forestry, forest, 22.05.1972, anonymous (KW); Simferopol district, Krasnolesye, Zontugay valley, 05.06.1973, O.N. Dubovik (KW, with a duplicate); Stary Krym, Mt Agarmysh, 07.06.1973, O.N. Dubovik (KW); Karagatch ridge, 15.06.1973, O.N. Dubovik (KW); Feodosiysky district, slopes of Etchki-Dagh, *Quercus pubescens* forest, 23.04.1974, Dubovik & Osetrova (KW); Kirovsky district, Grushevskoye forestry, 08.05.1974, O. Dubovik & Osetrova (KW); Slope of Mt Karagatch, near sea, 27.05.1974, *illegible sign* (KW, with a duplicate); along Feodosiya – Sudak highway, near pass, 29.05.1974, *illegible sign* (KW); Yaltinsky Reserve, Opolznevskeye forestry, block 21. *Fagus* forest, 27.07.1974, Ya. Didukh (KW); Alupkinskoye forestry, *Fagus* forest, 19.04.1975, Ya. Didukh (KW); Kirovsky district, Stary Krym, *Quercus pubescens* forest, 28.05.1978, Ya. Didukh (KW); Stary Krym, Mt Agarmysh, 08.07.1979, A.N. Krasnova, N.M. Fedorontcuk, O.L. Lovelius & N.S. Akopyants (KW 004590 & KW 009513); Belogorsky district, Bogatoye, Kubagatch reservation, 08.06.1981, V.M. Lyubtchenko (KW); Karadagh, forest, frequent, 30.05.1952, S.S. Kharkevitch (MHA, KWHA?); near Angarsky pass, among scrub, ca. 650–750 m, 25.06.1967, A.K. Skvortsov (MHA); Angarsky pass, *Quercus* & *Carpinus* forest, 05.06.1974, Ye. Yegorova (MHA); Karadagh, *Carpinus* forest, 200–400 m, 01.06.1975, A.K. Skvortsov (MHA); Karadagh, Syuryu-Kaya ridge, E slope, forest, 26.04.1976, V.G. Shatko (MHA); Karadagh, Mt Svyataya, forest near the summit, 677 m, 06.05.1976, V.G. Shatko (MHA); Karadagh, Mt Svyataya, hardwood forest, 22.05.1977, V. Shatko (MHA); Karadagh, Karagatch ridge, N slope, forest, 200 m, 20.05.1978, V.G. Shatko (MHA); Angarsky pass, Pakhkal-Kaya “cape”, *Carpinus* & *Fagus* forest, 28.05.1981, I.A. Smirnov 157 (MHA); Mt Ayu-Dagh, 02.06.1981, I. Smirnov 346 (MHA, with a duplicate); above Generalskoye, Khapkhall locality, the Ulu-Uzen River gorge, hardwood forest, 16.05.1986, N. Belyanina, V. Shatko, N. Alyanskaya & I. Volkovskaya (MHA); Belogorsky district, between Krasnoselovka and Privetnoye, the Uskut River canyon, forest slope, among stones, 24–25.05.1986, N. Belyanina, V. Shatko, N. Alyanskaya & I. Volkovskaya (MHA); Sudaksky district, Karadagh, Balayan-Kaya ridge, SE steep stony forest slope, 25.05.1987, V. Shatko (MHA); Sudaksky district, to E from Planerskoye, Kutchuk-Yenishar ridge, N slope, scrub, 28.04.1988, V. Shatko, N. Belyanina & N. Shevyreva (MHA); Sudaksky district, to E from Planerskoye, Kutchuk-

Yenishar ridge, scrub, 15.06.1989, N. Belyanina, V. Shatko & I. Volkovskaya (MHA); Feodosiysky district, Biyuk-Yenishar ridge, N steppe slope, 26.05.1992, V.G. Shatko (MHA); Feodosiysky district, Karadagh, Mt Svyataya, S slope, forest below the great escarp, alt. 300 m, 31.05.1993, V. Shatko (MHA); Kara-Dagh, E slope near ravine, 16.05.1968, L. Naumenko & G. Kupatadze (MOSP); between Privetnoye and Belogorsky pass, meadow & steppe communities, 31.05.1981, A. & L. Yelenevsky & G. Kupatadze (MOSP); Angarsky pass, forest margin, 15.06.1991, A.G. Yelenevsky (MOSP); Baydar, 1889, M.I. Golenkin (MW); road from Yalta to Ai-Petri, after Utchan-Su, forest, 14.07.1893, D.P. Syreyschikov 5964 (MW); Sary Krym, *Quercus* scrub near Mt Agarmysh, S slope, 08.06.1927, T. Rybakova (MW); scrubs in Karadagh valley, 15.06.1928, D.P. Syreyschikov 86 (MW, YALT); Karadagh, *Fagus* forest near Otuz, 23.06.1929, V. Katushkin 66 (MW); near Gurzuf, NE slope of Mt Ayu-Dagh, hardwood forest, 300 m, 04.06.1952, P. Smirnov, T. Derviz (MW, with a duplicate); Mt Ayudagh, N slope, *Quercus* forest, 28.07.1956, N. Shvedtchikova, Ye. Kurchenko (MW); Karadagh, N slope of Lobovoy ridge, 16.05.1957, Ye. Kurchenko (MW, with a duplicate); SW from Krasnoselye, *Quercus* & *Carpinus orientalis* forest, 31.05.1957, G. Grosset (MW); Karadagh, Mt Svyataya, summit, *Quercus* & *Fraxinus* forest, 03.06.1957, N. Shvedtchikova (MW); Karadagh, 26.06.1962, Kurchenko (MW); Karadagh, Mt Svyataya, 01.06.1975, T. Kriulina & Yu. Maytulina (MW); Vicinity of Sudak, N slope of Pertchem ridge, *Quercus* & *Carpinus orientalis* forest, 09.06.1976, N. Shvedtchikova (MW); vicinity of Sudak, N slope of Pertchem ridge, hardwood forest, 20.05.1977, N. Shvedtchikova (MW); near Angarsky pass above Alushta, *Fagus* & *Carpinus* forest, 25.06.1979, Yu. Alexeev (MW, with an anonymous duplicate); Tchatyrdagh, Middle plateau, 08.07.1980, T. Vylegzhanina (MW); vicinity of Kurortnoye, Echki-Dagh massive, hardwood forest on N slope, 27.05.1987, N. Shvedtchikova (MW, with a duplicate); vicinity of Schebetovka, E slope of Papas-Tepe massive, hardwood forest, 20.05.1990, N. Shvedtchikova (MW); Karadagh, pass between Mt Legener and Mt Syuryu-Kaya, dense hardwood forest, 30.05.1990, N. Shvedtchikova (MW); vicinity of Krasnolesye, field, 08.06.1963, Mironova (MWG); Soudagh, s.d., C. Steven 1441 (LE); prope Elbuslu, 07.06.s.a., Herbarium Trautvetter 103 (LE); Jeni-Sala, .06.1853, G. Radde (LE); Tavel, *Quercus* forest, 13.06.1893, O.A. Fedtschenko & B.A. Fedtschenko (LE, with 3 duplicates); between Shaytan-Merdven and Skelya, *Fagus* forest, 26.06.1893, O. A. Fedtschenko & B. A. Fedtschenko (LE); near Tchatyrdagh, *Fagus* forest, 20.06.1896, K. Golde (LE); Pendikül, in nemoribus, 15(28).06.1900, K. Golde (LE); near Sudak, 1901, V. Andreyev (LE, with a duplicate, YALT, with a duplicate); Yalta district, vicinity of Alushta, shady scrub, 10.05.1901, Ye. Ispolatov (LE); prope Bjük-Lambat, *Fagus* forest below Yayla, 1000 m, 13.06.1904, A. Jarotzky (LE); Between Koktebel and Otuz, 10.05.1905, N.A. Busch

(LE, with 4 duplicates); Imaretsky Forest, 11.05.1905, N.A. Busch (LE, with 6 duplicates); forest on Mt Agarmysh and Maly Tchokrak locality, 12.05.1905, N.A. Busch (LE); Bolgarsky Forest and vicinity of St George Armenian Monastery, near Sary Krym, 13.05.1905, N.A. Busch (LE); ascent to Karabi-Yayla, *Fagus* forest, 19.05.1905, N.A. Busch (LE); S ascent from Demerdzhi to Mt Demerdzhi, 24.05.1905, N.A. Busch (LE); between Demerdzhi and Angarsky pass, 27.05.1905, N.A. Busch (LE, with a duplicate); slope of Mt Babugan to Kosma & Domian Monastery, *Fagus* forest, 31.05.1905, N.A. Busch (LE); along road from Kosma & Domian Monastery to Beshuy, 01.06.1905, N.A. Busch (LE); Boyka, dense forest, 01.06.1907, A. Kryshtofovich (LE); vicinity of Alupka, 06.1911, C. Kossinski (LE); near Limeny, *Fagus* forest, 15.06.1912, S. Ganeshin 104 (LE); Feodosiysky district, Karagatch locality near Sudak, glade, 15.07.1914, V. Transhel (LE); Alushta, slope of seashore, 08.05.1916, A. Deutsch (LE); Yusupovsky Reserve, forest, 04.08.1922, S. Dzevanovsky (LE, with a duplicate: Yusupovsky Reserve, near Kokkozy, 04.08.1922, I. Paczoski); near Kokkozy, mountain forest (chiefly *Quercus sessiliflora* & *Fagus silvatica*), descent from Trapiz to the Kuru-Uzen River by the slope of Kush-Kaya, 26.05.1924, S. Dzevanovsky (LE, YALT); State Forest Reserve, Inzhir-Syrt, *Quercus* forest, 17.06.1925, N. Troitzky & G.N. Poplavskaya 241 (LE, with a duplicate); Karasubazarsky district, Tana-Geldy, *Quercus* forest, 18.07.1926, S. Dzevanovsky (LE); E slope of Mt Agarmysh, lower part of slope, 440 m, 06.08.1946, S. Kozlovskaya (LE); Mons Aju-dagh, in querceto, 11.07.1948, S. Juzepczuk 649 (LE); in ascensu ad jailam Bajdarskaja, 04.06.1949, S. Juzepczuk & L. Kuprianova 1541 (LE); Karadagh, 30.05.1952, M. Kirpichnikov, An. Fedorov & Al. Fedorov (LE); distr. Simferopol, between Alushta and Simferopol, on N side of Alushta pass, edge of deciduous forest, 400 m, 05.06.1959, Davis 33499 (LE, K?); 3 km to E from the pass on Simferopol – Alushta highway, NE edge of Mt Demerdzhi, *Fagus* forest, 03.07.1966, V. Kuvayev 32–3 (LE, MOSM?); Karadagh biological station, forest NW slope of Mt Karagatch, scree, 23.05.1968, M. Kotov, N. Glagoleva & O. Osantsova (LE ex KW); vicinity of Sary Krym, *Carpinus* forest near Armenian Monastery, 21.04.1972, Ye. Mordak 957 (LE); E from Sudak, near N foot of Mt Mandzhil, *Quercus* shrub-wood, alt. 500 m, 19.04.1989, I. Levitchev, Ye. Muravtchenko, L. & V. Sveshnikov 495 (LE); Malaya Bizyuka × Bolshaya Bizyuka, 21.04.s.a., G. Rusina (YALT, with a duplicate); Alushta × Kosma & Domian (Monastery), 14.06.1887, N.M. Zelenetsky (YALT); Kikeneiz × Yayla × Kokozy, 18.07.1887, N.M. Zelenetsky (YALT); Kosma & Domian (Monastery) × Alushta, 06.07.1901, N.M. Zelenetsky (YALT); Ad ped. m. Karadagh, ad silvarum margines, 24.04.1903 & prope Kisiltasch, 26.04.1903, K. Golde (YALT); Feodosiya, Koktebel, 26.04.1903, A. Yunge (YALT); Nasrul-Kaya, 25.05.1905, I.W. Wankow (YALT); Simferopol, Dalniye Dubki, 05.06.1911, N. Yanata (YALT); Taushan-Bazar, 09.05.1916, A.

Deutsch (YALT); (Angarsky) Pass, slope to Alushta, 09.05.1916, A. Deutsch (YALT); Yaltinsky district, Simeiz, *Pinus* forest to Yayla, 08.05.1917, A.N. Petunnikov (YALT); upper part of ascent to Ayu-Dagh, forest, 04.06.1917, S. Stankov (YALT); “Talma” *Fagus* forest, 12.06.1917, S.S. Stankov (YALT); above Paragelmen, stony screes, 12.06.1917, S.S. Stankov (YALT); Mt Kastel, 18.06.1917, S. Stankov (YALT); Yayala above Limeny, 30.06.1918, H.G. Neuimin & S.S. Stankov (YALT); Karadagh, NW slope of Karagatch, 05.06.1919, V. Nevsky & Stankov (YALT); near Ay-Andrit, above Kuru-Uzen, 10.05.1924, E. Wulff (YALT); Karadagh, Armutlaksy forest, 07.07.1926, V. Sarandinaki (YALT); Sary Krym, forest on Agarmysh, 12.05.1928, T. Tsyryna (YALT); slopes of Kastel, amongst shrub, 15.06.1928, illegible sign (YALT); vicinity of Uzundzha, 25.05.1929, V. Vasilyev (YALT); Kurban-Kaya valley, along road to *Fagus* forest, 23.06.1929, Lyaskova (YALT); vicinity of Kuru-Uzen, *Carpinus orientalis* forest, 29.05.1931, V. Vasilyev (YALT, with a duplicate); Karadagh, N slope of Mt Svyataya, 07.06.1932, V. Sarandinaki (YALT); Karadagh, N slope of Karagatch, 11.05.1936, N. Tchernova (YALT); Karadagh, N slope of Shapka Monomakha, shrub, 15.05.1936, Borodina (YALT); Tyrke-Yayla, S herbaceous slope, 21.06.1952, Pribylova (YALT); Karadagh, SW slope of Mt Topsek, 30.05.1955, N.I. Rubtsov & Kozhevnikova (YALT, with a duplicate); Angarsky pass, 05.06.1969, V. Kosykh (YALT); N slope of Agarmysh, *Quercus* forest, 25.06.1969, V. Kosykh & Makhaeva (YALT); Angarsky pass, *Fagus* forest, 09.05.1974, V.N. Golubev (YALT); Karadagh, *Quercus* & *Carpinus orientalis* forest on S pass, 19.05.1975, N. Kolesnichenko & V.M. Kosykh (YALT, with 3 duplicates); summit of Ayu-Dagh, *Quercus* forest, 03.03.1976, V.M. Kosykh (YALT); E slope of Kastel, 21.04.1976, V.M. Kosykh (YALT); near foot of Mt Svyataya, 19.05.1976, V.M. Kosykh (YALT); NE slope of Mt Kastel, 25.05.1976, V.M. Kosykh (YALT); SE slope of Mt Kastel, 25.05.1976, V.M. Kosykh (YALT, with a duplicate); Angarsky pass, Pakhkal-Kaya, *Fagus* forest, 28.05.1976, V.M. Kosykh & M. Karasyuk (YALT); along road to Ayu-Dagh, 31.05.1976, V. Kosykh & M. Karasyuk (YALT, with a duplicate); above Perevalnoye forestry, *Fagus* & *Carpinus* forest, 29.06.1976, V.M. Kosykh & M.I. Karasyuk (YALT); above Perevalnoye forestry, *Quercus* & *Carpinus* forest, 29.06.1976, V.M. Kosykh & M.I. Karasyuk

(YALT); S slope of Bolshoy Angarsky pass, 09.07.1976, V.M. Kosykh & M.I. Karasyuk (YALT); ascent to middle plateau of Tchatyr-Dagh, 19.07.1976, M.I. Karasyuk (YALT); N slope of Mt Kastel, 23.07.1976, M.I. Karasyuk & V.M. Kosykh (YALT); Babugan-Yayla, 28.04.1977, A. Ivanov (YALT); vicinity of Dzhur-Dzhur waterfall, 23.05.1977, V.V. Korzhenevsky (YALT); Dzhur-Dzhur, 23.05.1977, V.N. Golubev (YALT); to N from Ay-Yori, *Quercus* forest, 10.06.1977, V.M. Kosykh & O. Usatcheva (YALT); W slope of Karagatch, *Quercus* forest, 30.05.1978, V.M. Kosykh & O. Usatcheva (YALT, with a duplicate); Ayu-Dagh, 06.06.1978, O. G. Usatcheva (YALT); Malomayaksky amphitheatre, 13.06.1978, V.V. Korzhenevsky (YALT); to NW from Melikhovo, *Quercus* & *Carpinus* forest, 30.05.1980, O. Usatcheva (YALT); Ayu-Dagh, N slope, 17.01.1981, V.N. Golubev (YALT, with a duplicate); summit of Mt Ayudagh, 10.06.1981, V.N. Golubev & A.V. Sazonov (YALT); NE slope of Mt Svyataya, 29.06.1981, Kosykh (YALT, with a duplicate); N slope of Mt Ayudagh, 04.06.1982, V.N. Golubev, A.V. Sazonov & Yu.S. Volokitin (YALT); descent to Malaya Burultcha, humid glade, 24.05.1983, V.M. Kosykh (YALT); the Ulu-Uzen River valley above Dzhur-Dzhur waterfall, *Fagus* & *Carpinus* forest, 26.08.1986, V.N. Golubev & I.V. Golubeva (YALT); near Alikot-Bogaz pass (Privetnoye), *Tilia* forest with *Cornus mas* in ravine, 11.07.1990, V.N. Golubev (YALT).

The author has also seen specimens of *A. decipiens* subsp. *quercetorum* from the Crimea in CSAU, CWU, LECB, SIMF, WIR, but had no opportunity to revise them again during the preparation of this paper.

Distribution: Forest belt of the Crimean and NW Caucasus¹ Mts (Figs 2, 4).

Flowering time: May–June.

¹ Dots on maps of *A. decipiens* subsp. *quercetorum* and *A. decipiens* subsp. *decipiens* are based solely on the cited specimens. *A. decipiens* was also reported from other localities of N Caucasus (Grossheim 1940; Kudrjashova 2001).

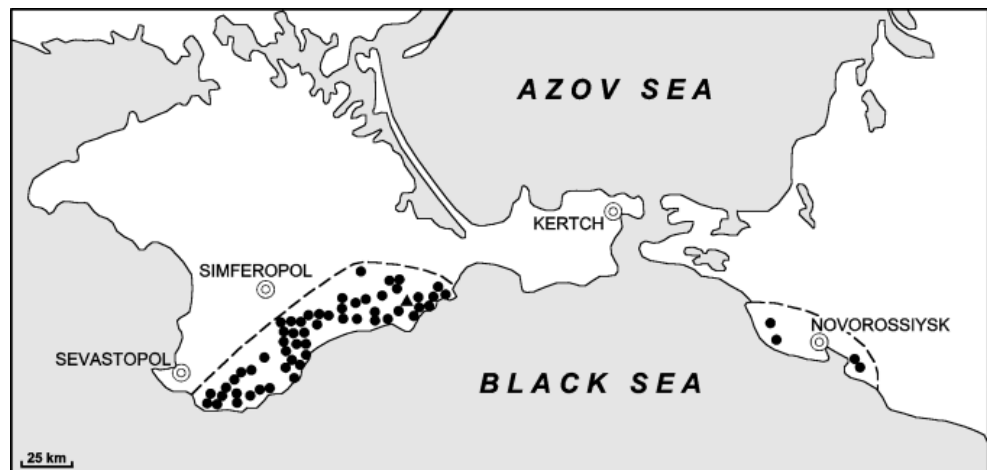


Fig. 2. Distribution of *A. decipiens* subsp. *quercetorum* in the Crimean (Ukraine) and NW Caucasus (Russia) mountains (triangle denotes *locus classicus*).

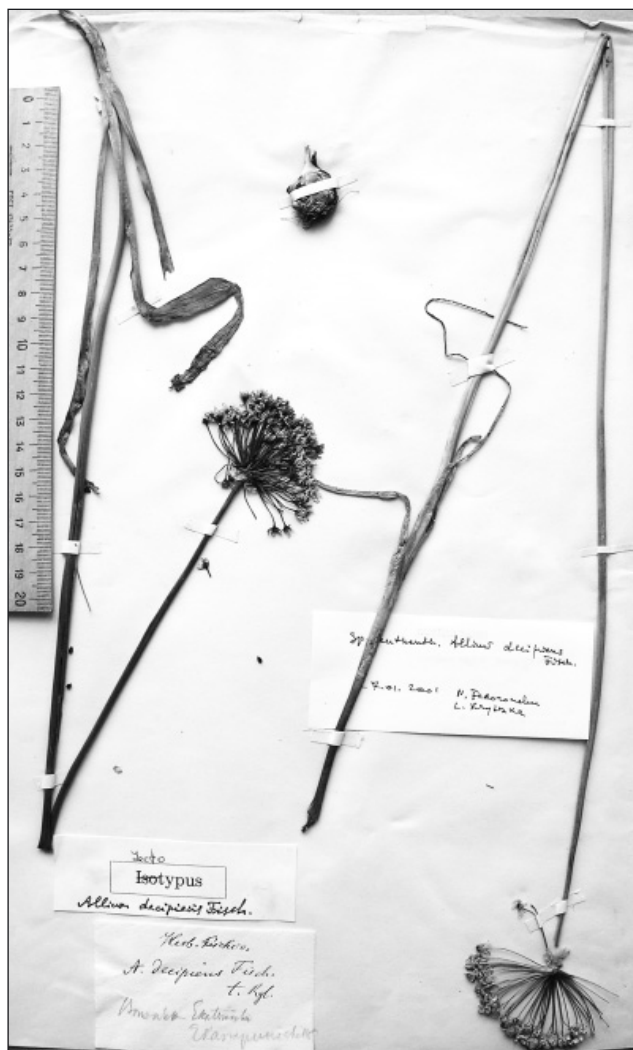


Fig. 3. Lectotype of *A. decipiens* Fisch. ex Schult. & Schult. fil. (LE).

Ecology: Hardwood deciduous forests (*Quercus pubescens*, *Q. petraea*, *Fagus orientalis*, *Carpinus orientalis*, *C. betulus*, *C. caucasicus*, *Fraxinus excelsior* s.l.) and their margins, locally abundant.

Altitude: 50–1000 m a.s.l.

This newly described subspecies is based upon the Crimean and NW Caucasian specimens. The current studies show that *A. decipiens* is absent elsewhere. For instance, eight specimens from Asia Minor named *A. decipiens* in the *Flora of Turkey* (Kollmann 1984) represent another species (or several species?). At least the specimens in K were revised as *A. cyrilli* Ten. by R. Fritsch in 1992 (Stainton 8446), *A. lycaonicum* Seihe ex Hayen by A. Seisums in 1995 (Stainton 8446), and *A. cyrilli* Ten. s.l. by the author in 2003 (Balls 259). The author's cautious attitude to the identity of Turkish plants is also based on the uncertain name *A. eginense* Freyn. One syntype of this species represents *A. decip-*

iens, and another represents *A. chrysantherum* Boiss. & Reuter. A map for Turkish *A. decipiens* auct. is available in Kollman (1984).

The amended characters of *A. decipiens* subsp. *decipiens* are given here on the basis of specimens from Russia and the Ukraine cited below:

Bulb globose, 1.0–1.5 cm diam.; outer tunics coriaceous-papyraceous, light- to dark-grayish or grayish-brown. Stem 40–100 cm long, elongated in anthesis (at the start of anthesis 30 cm long). Leaf sheaths exerted above ground level, covering up to 1/5 of the stem. Leaves 2–4, equal, linear to linear-lanceolate, (10)15–30(36) cm long, 2–6(13) mm wide, remote (i.e. the stem distance between the lower and the top leaves 1–8 cm long). Spathe persistent, 2-3-lobed, white, with whitish veins, 0.5–1.0 cm long. Umbel hemispherical (almost spherical after anthesis), lax, 4.5–8.0(11) cm diam. Pedicels equal, (1.5)2.0–4.0(5.0) cm long, thin, without bracteoles. Perianth stellate, subsequently reflexed and twisted outwards; segments linear to lanceolate, (3.5)4.0–5.0(5.5) mm long, ca. 1.0 (up to 1.5) mm wide, shortly acute on apex, usually whitish (greenish) (occasionally rose when dry), with darker (green or purple) midvein. Filaments non-sclerified, shorter than perianth segments, up to 3.5(4) mm long, whitish, connate with perianth segments into an annulus ca. 0.5 mm long at base, of equal shape, dilatate at base and subulate above. Ovary sessile. Capsule globose, up to 5 mm diam. Style 1.5 × as long as capsule. Seeds black, up to 3 mm long and 1 mm wide.

Lectotype: Herb. Fischer. *A. decipiens* Fisch. t. Rgl.

Ekaterinoslaw (LE) (Fig. 3) – *hic designatus*. – Type citation in the protologue of *A. decipiens* is “*in campis inter Borysthenem et isthmum Tauriae*” (Schultes & Schultes 1830), i.e. the territory roughly equaling the south of Kherson Province of the Ukraine.

There are three specimens of *A. decipiens* s.l. from Fischer's herbarium in LE. Specimen no. 1 bears two labels: (1) Herb. Fischer. *Allium an decipiens?* in the vicinity of Orenburg and (2) *Allium decipiens* Fisch. teste Rgl. There are two plants in this specimen, a rather tall and slender *A. tulipifolium* and a robust *A. cepa* L. divided into four parts. There are three attached labels to the specimen no. 2: (1) Herb. Fischer. Herb. Pallas. Circa Achmetschak, (2) *Allium decipiens* Fisch. teste Rgl., and (3) Lectotypus *Allium decipiens* Fisch., 27.01.2001, N. Fedoronchuk & L. Krytzka.

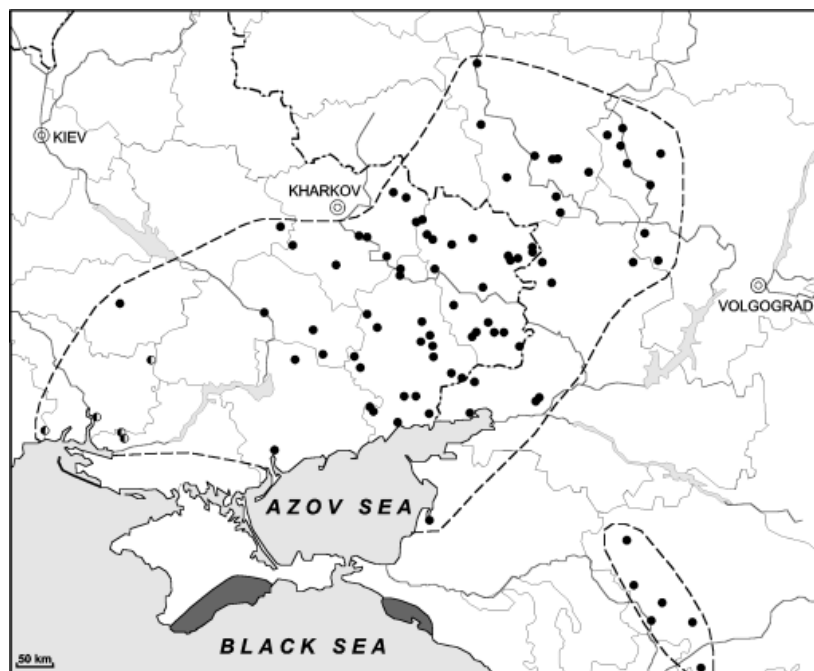


Fig. 4. Distribution of *A. decipiens* subsp. *decipiens* [circles denote specimen-based records, semicircles denote Rehmann (1872) & Paczoski (1914) indications] and *A. decipiens* subsp. *quercetorum* (filled area). A remote locality from the trans-Volga part of Volgograd Province (Valuyevskaya Agricultural Station, near Karaulov) is outside the map frame (ca. 220 km to NE from Volgograd).

Two plants of *A. tulipifolium* of excellent quality are mounted in this specimen. Specimen no. 3 also bears three labels: (1) Herb. Fischer. *A. decipiens* Fisch. t. Rgl. ... Ekaterinoslaw, (2) Lectotypus *Allium decipiens* Fisch., and (3) Sp. authent. *Allium decipiens* Fisch., 27.01.2001, N. Fedoronchuk & L. Krytzka. This is the only specimen with two plants of typical *A. decipiens* collected not far from *locus classicus* (the present Dnepropetrovsk Province).

Specimen no. 2 selected as lectotype by Fedoronchuk & Krytzka (is this choice published?) originated from the Pallas herbarium and was collected probably in Kazakhstan (*Achmetschak* is a Turk name), where *A. tulipifolium* is a common plant. Regel (1875) accepted *A. decipiens* in the broad sense and that is why his identifications should not be used as a direct instruction for lectotype selection. The choice of Fedoronchuk & Krytzka should be rejected as completely incorrect under Article 9.17b of ICBN.

Specimen no. 3, already annotated as *A. decipiens*' lectotype by an anonymous author, is a better choice for lectotypification of the name *A. decipiens*, because it corresponds to a certain extent with the protologue.

Studied specimens (original labels of specimens from KW in Ukrainian and Russian, from other herbaria in Russian):

Russia:

Krasnodar Krai: Primorsko-Akhtarsk, system of salt lakes, 17.06.1963, Gomozova & Florenskaya (MW);

Rostov Province: near Millerovo, dry slopes along road to agricultural school, 28.05.1930, M.P. Bilozor (KW); Tscherk(assk), 1816, Henn(ing) (MW); vicinity of Taganrog and Novotcherkassk, Arkhiereyskaya Datcha, 20.05.1880, Kramsakov (MW); vicinity of Taganrog and Novotcherkassk, Arkhiereyskaya Datcha, 02.06.1880, Kramsakov 38 (MW); vicinity of Taganrog and Novotcherkassk, cemetery, 14.05.1881, Kramsakov (MW); vicinity of Taganrog and Novotcherkassk, Botanic garden, 14.05.1881, (Kramsakov) (MW); vicinity of Taganrog and Novotcherkassk, Botanic garden of Novotcherkassk, 19.05.1883, Kramsakov (MW); vicinity of Taganrog and Novotcherkassk,

Arkhiereyskaya Datcha, 24.05.1884, Kramsakov (MW); vicinity of Taganrog and Novotcherkassk, Provaln., 17–27.05.1885, Kramsakov (MW); Nowotschercassk, 16.06.1856, Pabo (LE); meadow along the Tchir River near Tchistyakovka, 19.06.1887, D. Litvinov (LE); Miuskoye Forestry, Kruglik, debris glade, 1911, G.N. Vysotsky, G.A. Stepunin 269 (247) (LE); Millerovo, 4th branch of Millerovsky corn sovkhov, 2 km to W from Yamovka, N slope of Krinitchnaya ravine, 18.06.1939, M.I. Kurlyushkin (LE);

Stavropol Krai: Kislovodsk, 3000', 29.06.1886, I. Akinfiew (LE); Nevinnomysskaya station, 15.05.1889, W. Lipsky (LE); Yalkul ravine near Sultanovskaya, 17.05.1889, I. Akinfiew (LE); Rybnoye lake, 24.05.1892, W. Lipsky (LE); Alexandrovsky district, Udelnaya steppe, Kalyuzhny, low plateau (depression), *Festuca* & *Stipa* steppe, 30.04.1915, S. Turkevich 57 (LE); Solenye lakes, steppe, 01.06.(1888–1890), F.I. Poltoratsky (MW, with a duplicate);

Volgograd Province: Novo-Annensky on the Buzuluk River and vicinity, among young forest cultures, 1953, N.M. Galkovsky (MHA); Nekhaevsky district, to S from Lukovskaya, steppe plot among scrub, 03.06.1972, N. Zubakova & Ye. Sorokina (MHA, with a duplicate by O. Kibireva & A. Klopova); Nekhaevsky district, to S from Lukovskaya, steppe plot among scrub, 04.06.1972, A. Podschipkova & A. Sukhinina (MHA); Podtelkovsky district, 10 km to NNE from Fedoseevskaya, locality Mogilina Gora, scrub on slope, 1–02.06.1982, N. Belyanina & S. Udintseva (MHA); Nekhaevsky district, reservation at 5 km to N from Krasново, margin of *Quercus* gully forest, in cultures, 06–07.06.1982, N. Belyanina & S.

Udintseva (MHA); Uryupinsky district, Shemyakinskaya Forestry reservation, steppe meadows, 08–09.06.1982, N. Belyanina & S. Udintseva (MHA, with a duplicate); 49°07' N, 42°30' E, Kletskyi distr., 4–5 km W of Perelazovskyi, edge of gully forest, 14.06.1994, A. Skvortsov, V. Bochkin & G. Klinkova (MHA, with 2 duplicates); 15 km on S of Krutovski, steppe on ravine slope near the dam, 17.06.1994, V.D. Bochkin & G. Klinkova (MHA); Novouzensky district, Valuyevskaya agricultural station, near Karaulov, low plot near dam, 27.05.1900, D. Yanishevsky (LE); Uryupinsky district, forest margin and scrub near former Tchernitchkin orchard, 02.06.1930, A.I. Alyushin 146 (LE);

Voronezh Province: Bogutcharsky district, Bogutchar, forest, 29.05.1968, A.P. Khokhryakov (MHA); prope urbem Woronesch, to W from Sosnovskaya station, margin of small forest, on dry sandy sod soil with dwarf scrub, 30.06.1875, L.F. Gruner (MW); Ostrogzhsky district, 1879, anonymous (MW); Bogutcharsky district, Shlepchino locality in vicinity of Krinitza, *Stipa lessingiana* interfluvial steppe, locally abandoned, 11.06.1960, S.V. Golitsyn (MW, VU?); Pavlovsky district, N margin of Tcheremshansky *Quercus* forest near Semenovka, 20.05.1891, G. Tanfilyev (LE); Pavlovsky district, Vorontsovskiy steppe, 21.05.1891, G. Tanfilyev (LE); Pavlovsky district, among scrub, 23.05.1891, G. Tanfilyev (LE); Pavlovsky district, glades in Bolshoy Semenovskiy forest of Vorontsovskaya steppe, 20.06.1891, G. Tanfilyev (LE); Pavlovsky district, Vorontsovskaya steppe, Semenovka, scrub, 29.VI.1891, G. Tanfilyev (LE); Bogutcharsky district, Staraya Kriusha, 30-years fallow on the foot of chalky mount, 22.V.1911, V.A. Dubyansky 110 (LE, with a duplicate); Bogutcharsky district, Staraya Kriusha, grove, second terrace, 13.06.1911, Dubyansky (LE); vicinity of Pavlovsk, flood-plain meadow along the road from Pavlovsk to Takhtarka, 07.06.1912, O. Smirnova (LE); Rossoshansky district, 3 km to NE from Soprino, sparse pine forest, 19.06.1975, Šatkauskas 30 (LE).

Ukraine:

Dnepropetrovsk Province: Alexandrovsky district, meadow near Pavlovka, 08.06.1911, V. Alekhin (MW); near Yekaterinoslav, s.d., N. C. Sredinsky (LE); Ekaterinoslav, s.d., Herb. Fischer (LE – lectotype of *A. decipiens*); Alexandrovsky district, Pokrovskoye, 17.06.1896, F. Alexeenko (LE);

Donetsk Province: Mariupol, Shpili, scrub, s.d., Verzibitsky (KW); (Slavyansky district), Pavlovka, 07.1855, B. Czerniaew (KW); Yenakiyevsky district, Olkhovatka, road to Ploskaya Balka ravine, 19.06.1895, anonymous (KW, with a duplicate). Amvrosievka station, chalk, 17.05.1913, V. Taliev (KW); Khanzhonkovo, limestone outcrops of Sarmatskaya Balka ravine; several individuals near road, 31.05.1923, Ye. Lavrenko & A. Lavrenko (KW); vicinity of Uspenskaya, virgin steppe of the (reserve) branch, 14.06.1924, Ye. Lavrenko (KW); vicinity of Karan, Prinzfeld, granite screes on the left slope of Shirokaya Balka ra-

vine, 16.06.1924, Ye. Lavrenko (KW); Mariupolsky district, Klenfer, granite outcrops above the Kalmius River, 28.05.1927, G. Kleopow (KW); Lyuksemburgsky district, Kamyannye Mogily, virgin slope beyond the Karatysh River, 05.06.1927, G. Kleopow (KW); Velikoyanisolsky (Veliko-Novoselkovsky) district, Komar, loamy slopes in Krutoy-Kamenny Balka ravine, 26.06.1927, G. Kleopow (KW); Avdeyevsky district, Shcheglovka, gully forest, 08.06.1928, G. Kleopow (KW); Khartsyzskoye station × Zuyevka, gully forest, 10.06.1928, G. Kleopow (KW); and saline ravine, marsh edge, 10.06.1928, G. Kleopow (KW); Tchistyakovsky district, Polozyukov × Troitsko-Khartsyzsk, sandstone & limestone outcrops, 11.06.1928, G. Kleopow (KW); Grishinsky district, Krivorozhskaya community, Krasnaya Zarya agricultural artel, virgin steppe, marmot hill, 19.06.1928, *illegible sign* (KW); Velikiy Yanisol. Loamy & sandy Sarmatian outcrops above the Mokrye Yaly River, 30.06.1928, G. Kleopow (KW); Makeyevsky district, Khartsyzskoye station, Kolesnikova Balka ravine, virgin steppe on slope, 04.06.1932, G. Nakonetchnaya (KW); Makeyevsky district, vicinity of Khartsyzsk station, Kolesnikova Balka ravine, near dairy farm, steppe slope, 09.06.1932, M. Kotov 414 (KW); Makeyevsky (Khartsyzsky) district, Zuyevka, steep slope on forest margin above the Krynka River, 16.07.1932, G. Nakonetchnaya (KW); Slavyansky district, Svyatye Gory, on chalk among *Rhus cotinus* scrub, 16.07.1935, Lypa (KW); Budennovsky district, Khomutovskaya Steppe, slope of the left bank of the Gruzsky Yelantchik River, steppe on Pontic limestone, 07.06.1939, M. Kotov & Ye. Karnaukh (KW, with 3 duplicates); vicinity of Yenakiyev, Gorno-Zavodskoye forestry, slope, 05.06.1949, M. Kotov (KW); Budennovsky district, Khomutovskaya Steppe, profile from central office to Brandta, 03.06.1952, D. Dobrotchayeva (KW); Volodarsky district, Nazarovka, Kamennye Mogily Reserve, 01.06.1954, Dobrotchayeva (KW); Volodarsky district, Nazarovka, Kamennye Mogily Reserve, rocks, 01.06.1954, Kuznetsova (KW); Volodarsky district, Nazarovka, Kamennye Mogily Reserve, slope, 16.06.1954, Kuznetsova (KW); Budennovsky district, Khomutovo, Khomutovskaya Steppe Reserve, slope, 01.07.1954, Kuznetsova (KW); Volodarsky district, Nazarovka, Kamennye Mogily Reserve, 05.07.1954, Kuznetsova (KW); Budennovsky district, Khomutovo, Khomutovskaya Steppe Reserve, slope to the Gruzsky Yelantchik River, 07.06.1957, Kuznetsova (KW); Volodarsky district, Kamennye Mogily Reserve, slopes, 16.07.1957, L. Panova (KW); Novoazovsky district, Khomutovo, Khomutovskaya Steppe Reserve, 04.06.1958, G. Kuznetsova, O. Nabotchenko & N. Shaposhnikova (KW, with 8 duplicates); Volodarsky district, Kamennye Mogily Reserve, steppe, 20.05.1960, L. Panova (KW); Novoazovsky district, Khomutovo, Khomutovskaya Steppe Reserve, 28.05.1962, T. Omelczuk (KW); Amvrosiyevsky district, Svisruny, Mt Zagorodnyaya, slopes, 28.04.1964, O. Dubovik (KW); Vicinity of Yenakiyev, Yenakiyevskoye forestry, Ploskoye local-

ity, near Olkhovatka, glades, 06.06.1969, M. Kotov, D. Ivashchik & A. Kharkhota (KW); vicinity of Amvrosiyevka, slopes of Bely Yar, chalk, 09.06.1969, M. Kotov & al. (KW); Bakhmutsky district, near Gorlovka, 13.06.1884, N.C. Sredinsky 584 (LE); interfluvium to S from Svyatye Gory escarp on the Donets River, near Mayaki, 05.06.1895, G. Tanfilyev (LE); Svyatye Gory, Mt Mushroom near monastery, top of S slope, meadow, 12.06.1911, A. Bulavkina (LE); Krasnoarmeysky district, near Galitsinovka, gully forest, 23.06.1976, A. Deripova (LE);

Kharkov Province: Isium, s.d., Czerniaew (KW); Voltchansky district, Otradnoye near Burluk, 23.05.1848, Czerniaew (KW); Voltchansky district, Veliky Burluk, 6–12.06.1850, Czerniaew (KW, with a duplicate); From Balakleya to Vetrovka, sand along the Donets River, 26.05.1868, B. Czerniaew (KW); Near Pestchanoye, sand, 26.05.1868, B. Czerniaew (KW); Konstantinogradsky district, 1895, N.L. Girshman (KW); Kasyanovka, meadows, 02.06.1909, Vasilyev (KW); NE of Kupyansky district, Kislovka railway station – Verkhnyaya Dubenka, 27.05.1915, M. Klovov (KW); Kupyansky district, Kislovka station, Kotchinovskiye steppes, 05.06.1915, M. Kotov (KW); Konstantinograd, Ukrainian Line, 06.06.1923, S. Illitchevsky (KW); Konstantinograd, bank of Ukrainian Line, 03.07.1924 (?), S. Illitchevsky (KW); Izyumsky district, near Bantyshevo station of Southern railway, fallows of the Bantyshev River, 30.05.1914, K. Zalessky 880 (MW); Konstantinograd, bank of the Ukrainian Line, 31.05.1919, S. Illitchevsky (LE); Balakleysky District, 9–10 km to W from Balakleya, 4 km to SW from Yankovsky, slope of terrace to the Donets River flood-plain with oak trees, 03.08.1972, N. Tzvelev 232 (LE);

Kirovograd Province: circa Elisabethgrad, s.d., anonymous (LE);

Lugansk Province: Starobelsky district, Streletskaia virgin steppe, 24.05.1902, G. Schirjaew (KW); margins of the Derkul River flood forest, 28.06.1902, G. Schirjaew (KW); Starobelsky district, Popovsky field, hay meadow, 05.06.1912, Kontrolsky (KW); Kupyansky district, Kremennaya, sands in pine-forest, 24.05.1916, M. Kotov (KW); Rovenetsky district, Medvezhinskiy community, Shlyakhtino, gully forest in Balka Zhuravtsy ravine, 2 June 1917, S. Grebenyova 8 (KW); Uspensky metal-working plant, Nikolayevka, Mogila Rylovka barrow, 28.07.1925, Ye. Lavrenko (KW); (Sverdlovsky district), Provalskaya Steppe, 02.06.1928, S. Postryganj 25 (KW); Uspensky district, Kamenka, slope opposite to Zeleny Gay, 27.06.1928, S. Grebenyova 6 (KW); Starobelsky district, Balakirev, slope on the margin of lime-forest, very rare, 06.06.1938, N. Osadtcha & M. Mikhalenko (KW); Starobelsky district, Balakirev, margin of lime-forest, locally infrequent, 06.06.1938, Z. Sova (KW); Starobelsky district, Balakirev, slope on the margin of lime-forest, frequent, 06.06.1938, Z. Sova (KW); Mostkovsky district, Mostki, Rossokhovaty forest, glade, unique, 12.06.1938, N. Osadtcha (KW); Svatovo, gully forest, margin, 02.06.1939, A.I. Barbarytch & V.P. Dentchik (KW); Melovskoy

district, Yezhatchy, Streletskaia Steppe Reserve, 13.06.1953, Bauman (KW); Melovskoy district, Streletskaia Steppe Reserve, 14.06.1953, N.P. Bauman (KW); Melovskoy district, Streletskaia Steppe Reserve, slopes, 04.04.1958, O. Dubovik (KW); Melovskoy district, Streletskaia Steppe Reserve, 05.06.1960, O. Dubovik (KW); Melovskoy district, Streletskaia Steppe Reserve, 11.06.1960, O. Dubovik (KW); Melovskoy district, Derkulskaia virgin steppe, ravine slope between Baranikovka and Novy Derkul, 14.06.1960, O. Dubovik (KW, with a duplicate); Melovskoy district, Streletskaia Steppe Reserve, 1966, Z. Sarytcheva (KW); Ivanovka, forestry, forest cultures, 06.06.1969, M. Kotov (KW, with 4 duplicates); Sverdlovsky district, Provalye, Grushevsky plot, 07.06.1978, T.T. Tchuprina (KW, Herbarium of Donetsk Botanic garden?); Streltsovskaya Steppe Reserve, forb-*Stipa* interfluvium steppe, 11.06.1956, A. Khokhryakov (MHA); Melovskoy district, near Yezhatchiy, State Marmot Reserve, plateau to S from reserve office, forb-*Stipa* steppe, 08.06.1962, V.V. Makarov 1204 (MHA); Streltsovskaya steppe, 30.05.1968, A.P. Khokhryakov (MHA, with a duplicate); Derkul, steppe, 07.1955, N. Barabanova (MOSP); State Marmot Reserve, chalky Mts, 13.06.1960, Zaytseva (MW); Streletskaia Steppe Reserve to E from Starobelsk (near Tchertkovo railway station), steppe, 10.06.1962, V. Pavlov 117 (MW); Melovskoy district, Streletskaia Steppe Reserve, ravine, 20.06.1964, Krylova (MW); Belovodsky district, Derkulskaia experimental station on field protection forestry, Belovodskaya forestry, forest margin, 25.06.194?, Vinokurova (MWG); Starobelsky district (E part), Krinitchny ravine, Dashinsky plot, W slope, rare, 11.06.s.a., Stepanov (LE); Starobelsky district, the lower Aydar flood-plain, 08.06.1895, G. Tanfilyev (LE); Derkulskaia chernozem virgin steppe, among scrub, 26.05.1899, G. Tanfilyev (LE); Starobelsky district, between Tisharovka and Lozovovka, *Prunus spinosa* scrub, 08.07.1904, I. Schirajewsky (LE); Starobelsky district, Derkulskaia virgin steppe, “Lago-Magiore”, 25.06.1905, I. Schirajewsky (LE, KW); Starobelsky district, Streletskaia Zavod, Zhuravlevo, steppe, 25.05.1910, F. von Ettingen 6b (LE); Starobelsky district, Streletskaia Zavod, 28.05.1910, F. von Ettingen 12b (LE); Kolpakovo station of Donetskaya railway to Shterovka, barrow near German colony, 24.06.1927, L. Sokolova 65 (LE); Vicinity of Teplogorsk (former Irmino), slope near forest cultures, scattered, 30.05.1989, A. Deripova (LE);

Poltava Province: Konstantinogradsky (Karlovsky) district, steppe slope of the right bank of the Orel River opposite to Varvarovka, 17.04.1897, N. Zinger (KW);

Zaporozhye Province: Melitopolsky district, Mordvinovka, salt-marsh on flood plain of the Molotchnaya River, 18.05.1939, illegible sign (KW); Alexandrovsky district, 1864, Graff (MW); Alexandrovsky district, near Mirgorodovka, steppe slope of Ternovaya Balka ravine, 2/2.05.– 1/2.06.s.a., V. Alekhin (MW); Alexandrovsky district, 1860, Graff (LE).

During the preparation of this paper I have not tested the specimens of *A. decipiens* subsp. *decipiens* seen by me earlier in LECB, DSU, and CWU.

Rehmann (1872) indicated this plant for Tiligulsky Liman on the border of Nikolayev and Odessa provinces of the Ukraine. Later Paczoski (1914) described *A. decipiens* in other western-most localities in present day Kherson and Nikolayev provinces as a very rare plant. He cited the following specimens (conserved probably in Paczoski memorial herbarium in MSUD):

Ukraine:

Kherson Province: between Muzykino and Vavilovo, Belozerka ravine, SW slope, rare, 22.V.1898, Ryabkov; near Muzykino, loamy slope with sparse vegetation, rare, 12.VI.1901, Paczoski;

Nikolayev Province: Nikolayaev, below N wall of the Admiralty behind the fridge across the Ingul River, 1 individual, 16.V.1906, Yanata; Avdotyevka × Nikolayevka Vtoraya, small depression with *Prunus spinosa* scrub and meadow vegetation, 2 individuals, 16.V.1907, Paczoski.

Distribution: The steppe zone of the Ukraine and European Russia (from the Dniepr Basin to the Don Basin), including several localities in the Stavropol Uplands (Fig. 4).

Flowering time: May–June.

Ecology: Steppe and steppe scrub, occasionally in saline meadows.

Results

As a result, *A. decipiens* consists of two subspecies: *A. d.* subsp. *decipiens* (steppe habitats) and *A. d.* subsp. *quercetorum* Seregin (mountain forest of the Crimea and NW Caucasus). A new, correct lectotype for *A. decipiens* from Fischer's herbarium (LE) is designated. The chromosome numbers reported by Vakhtina and Kudryashova (1982) for *A. decipiens* referred to subsp. *quercetorum* ($2n = 16$). *A. decipiens* should be excluded from Turkish flora.

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