

A. A. NERSESYAN

Genus *Dianthus* L.

1753, Sp. Pl.: 409

**GENUS DIANTHUS L. (CARYOPHYLLACEAE)
IN SOUTHERN TRANSCAUCASIA**

Results of taxonomic treatment of the genus *Dianthus* L. are presented. 23 species are reported for Southern Transcaucasia (Armenia, Nakhichevan). *Dianthus takhtajanii* Nersesian and *D. gabrielianae* Nersesian are described as species new to science. Lectotypes of *D. caucaseus* Sims, *D. discolor* Sims, *D. transcaucasicus* Schischk. and *D. anatolicus* Boiss. are designated. Determination key is included.

Dianthus, Southern Transcaucasia, plant taxonomy, new species

Ներսեսյան Ա. Հ. *Dianthus* L. (Caryophyllaceae) ցեղը Հարավային Անդրկովկասում: Բերվում են Հարավային Անդրկովկասի ֆլորայում *Dianthus* L. ցեղի տարսնոմիական մշակման արդյունքները: Պարզվել է, որ Հարավային Անդրկովկասում (Հայաստան, Նախիջևան) *Dianthus* ցեղը ներկայացված է 23 տեսակներով: Նկարագրվում են *Dianthus takhtajanii* Nersesian և *D. gabrielianae* Nersesian նոր տեսակները: *D. caucaseus* Sims, *D. discolor* Sims, *D. transcaucasicus* Schischk. և *D. anatolicus* Boiss. տեսակների համար առանձնացված են լեկտոտիպեր: Տրվում է որոշման բանալի:

Dianthus, Հարավային Անդրկովկաս, բույսերի կարգաբանություն, նոր տեսակներ

Нерсесян А. А. Род *Dianthus* L. (Caryophyllaceae) в Южном Закавказье. Приводятся результаты таксономической обработки рода *Dianthus* L. во флоре Южного Закавказья. Установлено, что род *Dianthus* в Южном Закавказье (Армения, Нахичеван) представлен 23 видами. Описываются новые виды *Dianthus takhtajanii* Nersesian и *D. gabrielianae* Nersesian. Избраны лектотипы видов *D. caucaseus* Sims, *D. discolor* Sims, *D. transcaucasicus* Schischk. и *D. anatolicus* Boiss. Дается определительный ключ.

Dianthus, Южное Закавказье, систематика растений, новые виды

From the taxonomic point of view *Dianthus* L. is one of most difficult genera within the *Caryophyllaceae* family with a series of very polymorphic species of high intraspecific diversity. No monograph has been published since F. Williams's "A Monograph of the genus *Dianthus*" (1893). After E. Boissier (1867) in the Caucasus region the genus was treated for the regional floras (Гроссгейм, 1930, 1945, 1949; Шишкин, 1936; Карягин, 1952; Шишкин, Аветисян, 1956; Гвинианидзе, 1978; Дмитриева, 1990). Sections *Macrolepides* (F. Williams) Klok., *Barbulatum* F. Williams, *Carthusiani* (Boiss.) F. Williams and *Armerium* F. Williams were treated by M. Kuzmina (2002, 2003).

The presented treatment was prepared during taxonomic investigation of the representatives of *Caryophyllaceae* family in Southern Transcaucasia (Armenia, Nakhichevan) and the adjacent countries as well as during the revision of the genus *Dianthus* within the framework of the Projects "Caucasian Flora Conspectus" (sections *Dianthus*, *Fimbriati* F. Williams, *Verruculosi* (Boiss.) Nersesian and "Manual of the Vascular Plants of Armenia".

Material and Methods

Vast herbarium collections of ERE, G, K, LE, TBI, TGM including type specimens have been investigated. Field observations were conducted in 2005—2011.

Macromorphological and comparative geographical methods of investigation have been implemented.

Geographical distribution in Armenia is given according to the floristic regions by A. Тахтаджян (1954). Distribution in the Caucasus is given according to Ю. Меницкий (1991).

Results

It has been revealed that the genus *Dianthus* is represented by 23 species in Southern Transcaucasia. The species belong to 6 sections.

New to science *D. takhtajanii* Nersesian and *D. gabrielianae* Nersesian are described. The first one differs from the related *D. cretaceus* by stiff, spiny at apex leaves of sterile shoots as well as by obtuse-dentate petal limb. The second one is close to *D. caucaseus*, differing by almost linear, long tapered towards apex leaves, by not leaf-like outer epicalyx scales and shorter calyces.

Sect. 1. *Armerium* F. Williams

1. *D. armeria* L. 1753, Sp. Pl.: 410; Grossh. 1930, Фл. Кавк. 2: 431; Schischk. 1936, Фл. СССР, 6: 812; Grossh. 1945, Фл. Кавк. ed. 2, 3: 281; id., 1949, Определ. раст. Кавк.: 557; Karjagin, 1952, Фл. Азерб. 3: 370; Schischk., E. Avet. 1956, Фл. Арм. 2: 200; Gvinian. 1978, Фл. Груз. 4: 201; Dmitrieva, 1990, Определ. раст. Аджар. 2: 105; M. Kuzmina, 2003, Komarovia, 3: 96.

Forest glades, along riversides, 700—2200 m a. s. l. Fl. VI—VII. Fr. VIII. — Armenia: Lori. (Stepanavan), Ijev., Apar., Zang.; Nakhichevan.

The whole Caucasus, Europe, Crimea, Anatolia, N. Iran. Described from Europe: "in sterilibus Gotlandiae, Germania, Galliae, Italiae". Lecto. (Jonsell & Jarvis, 1994, Nord. J. Bot. 14, 2: 145—164): LINN 581.6.

Sect. 2. *Carthusiani* (Boiss.) F. Williams

2. *D. calocephalus* Boiss. 1845, Diagn. Pl. Orient. Nov., 1, 6: 23; Grossh. 1930, Фл. Кавк. 2: 433; Schischk. 1936, Фл. СССР, 6: 819; Grossh. 1945, Фл. Кавк. ed. 2, 3: 284; id., 1949, Определ. раст. Кавк.: 557; Karjagin, 1952, Фл. Азерб. 3: 372; Schischk., Avet. 1956, Фл. Арм. 2: 200; Gvinian. 1978, Фл. Груз. 4: 187; M. Kuzmina, 2003, Komarovia, 3: 91. — *D. cibrarius* auct. non Clementi: M. Kuzmina, 2003, Komarovia, 3: 95.

Meadows, forest edges, dry slopes, 1000—2000 m a. s. l. Fl. VI—VII. Fr. VIII—IX. Armenia: U. Akhur., Shir., Arag., Apar., Sevan., Gegh. (Geghard, Khosrov reserve), Erev., Dar., Zang. (Sisian, N. Hand), Meghri.; Nakhichevan.

The Caucasus [C, E, SW and S Transcauc.], Balkans, Anatolia, Syria, Iran.

Described from Western Turkey: "in rupibus declivitatibus septentrionalis Tmoli, inter Bozdagh et Sardes VII 1842, Boissier". Holo.: "Roches du Tmoli, supra Sardes", G-BOIS!.

M. Kuzmina (2003) reports from the section *Carthusiani* for Southern Transcaucasia *D. cibrarius* Clementi ("In araratoris, Balyk Goll inter Tschingil et Perli Dagh", LE!, "Armenia: in monthe Kethandagh prope pag. Suchojfontan", LE!, "Nakhichevan, Bichenakh pass", LE!). Investigation of the cited specimens revealed that they belong to *D. calocephalus* at the stage of flower buds. *D. cibrarius* (described from W Turkey: "in convalle quadam alpine Olympi bith. latere S. E. Floret Augusto mense", holo. ?GE, ?FI, iso. K) is an endemic species of W Turkey (vilayets Bursa, Istanbul, Bilecik). The species is characterized by small calyx and long sterile shoots with clusters of stiff leaves at the tips.

3. *D. subulosus* Conrath & Freyn ex Freyn, 1895, Bull. Herb. Boiss. 2, 3: 76; Grossh. 1930, Фл. Кавк. 2: 434; Schischk. 1936, Фл. СССР, 6: 814; Grossh. 1945, Фл. Кавк. ed. 2, 3: 282; id., 1949, Определ. раст. Кавк.: 557; Karjagin, 1952, Фл. Азерб. 3: 371; Schischk., E. Avet. 1956, Фл. Арм. 2: 200; Gvinian. 1978, Фл. Груз. 4: 184. — *D. capitatus* auct. non Balb. ex DC.: M. Kuzmina, 2003, Komarovia, 3: 95, p.p. — *D. carmelitarum* auct. non Reut. ex Boiss.: M. Kuzmina, 2003, Komarovia, 3: 95, p.p.

Meadows, grassy slopes, forest glades, 800—2000 m s.m. Fl. VII. Fr. VIII. — Armenia: U. Akhur., Ijev., Apar. (near Charentsavan town), Sevan., Zang. (Kapujukh), Meghri (near v. Vahravar).

The Caucasus [Great Cauc., C., E, SW and S (Armenia) Transcauc.]. Endemic of the Caucasus.

Described from Armenia: "Somkhetien bei Achtala, leg. Conrath". The location of the type material is unknown.

M. Kuzmina (2003) treats *D. subulosus* as a synonym of *D. capitatus* Balb. ex DC. According to our data, *D. subulosus* differs from *D. capitatus* by lack of intensive wax

cover (plants are not glaucous) as well as by fewer flowers in heads and not very inflated sheaths of upper leaves. *D. capitatus* (described from the seeds of unknown origin: "Semina recepti a cl. Babisio sub nomine *D. capitati*") is distributed in SE Europe, the Mediterranean area, W. Turkey as well as in Ciscaucasia, in the Great Caucasus, NW and W Transcaucasia, whereas *D. subulosus* occurs in SW, C, E and S Transcaucasia. Nevertheless, the relationship between *D. capitatus* and *D. subulosus* needs further investigating.

The specimens from the Upper Akhurian floristic region have thinner and narrower bracts not completely enveloping the head. Probably it is a consequence of hybridization between *D. subulosus* and *D. calocephalus*.

The specimen from vicinities of Lake Sevan in Armenia ("Goktschai, Armenia, 04.07.[18]71, G. Radde, No. 342", LE!) mentioned by M. Kuzmina (2003) as *D. carmelitarum* Reut. ex Boiss. proved to be *D. subulosus*. *D. carmelitarum* was described from NE Anatolia (holo.: "Tech-dagh, Jul. 1853, A Huet du Pavillon", G-BOIS!). Its area of distribution spreads through Erzurum vilayet and the regions of N and NE Turkey along the Black Sea coast, including those adjacent to SW Transcaucasia [vilayets ?Bursa, Sinop, Ordu, Giresun, Guemueshane, Rize, Trabzon, Choruh (Artwin)]. The species has coriaceous epicalyx scales tapered into herbaceous apex and obconic flower heads.

Sect. 3. *Barbulatum* F. Williams

4. ***D. raddeanus*** Vierh. 1898, Acad. Wiss. Wien. Sitzungsber., Math.-Naturwiss. Kl. 57 (1): 1145; Grossh. 1930, Фл. Кавк. 2: 431; Schischk. 1936, Фл. СССР, 6: 823; Grossh. 1945, Фл. Кавк. ed. 2, 3: 285; id., 1949, Определ. раст. Кавк.: 558; Karjagin, 1952, Фл. Азерб. 3: 375; Schischk., Avet. 1956, Фл. Арм. 2: 200; M. Kuzmina, 2002, Komarovia, 2: 37. — *D. alpinus* L. var. *glacialis* auct. non Regel: Trautv. 1873, Acta Horti Petropol. 2: 505.

Alpine meadows, scree slopes, 1800—3400 m a. s. l. Fl. VII. Fr. VIII. — Armenia: Shir., Arag., Sevan., Zang.; Nakhichevan (mountains).

The Caucasus (the eastern part of the Great Caucasus mountain range, E, W, SW and S Transcauc.), NE Anatolia (Kars).

Described from Armenia. Holo.: "Armenia, Pylae Gösöldara, 2/7 [18]71, No. 381, G.Radde", LE!, iso. TBI!

5. ***D. caucaseus*** Sims, 1804 in Curtis's Bot. Mag. (London), 20: tab. 795; Grossh. 1930, Фл. Кавк. 2: 432; Gvinian. 1972, Not. Syst. Geogr. Tbilis. 29: 33; id. 1978, Фл. Груз. 4: 189; M. Kuzmina, 2002, Komarovia, 2: 38. — *D. discolor* Sims, 1809 in Curtis's Bot. Mag. (London), 29: tab. 1162; Schischk. 1936, Фл. СССР, 6: 825; Grossh. 1945, Фл. Кавк. ed. 2, 3: 285; id., 1949, Определ. раст. Кавк.: 559; Schischk., E. Avet. 1956, Фл. Арм. 2: 201; Karjagin, 1952, Фл. Азерб. 3: 375. — *D. montanus* auct. non F.W.Schmidt: M.Bieb. 1808, Fl. Taur.-Cauc. 1: 328. — *D. seguieri* auct. non Vill.: Reeve, 1967, Fl. Turk. 2: 122.

Edges of forests, subalpine meadows, stony slopes, 1200—2600 m a. s. l. Fl. VII—VIII. Fr. VIII—IX. — Armenia: Lori., Ijev., Sevan., Apar., Dar. (Vayotsdzor mountain pass).

The Caucasus (except Talysh), NE Anatolia (vilayet Kars: Grossheim, 1945: map 327).

Described by plants grown from seeds originating from the Caucasus ("native of Mount Caucasus"). **Lectotypus (hic designatus)**: tab. 795 in Curtis's Bot. Mag. (London), 1804, 20.

The illustration of *D. caucaseus* in the protologous differs from the typical representatives of the Caucasian species by shortened sterile shoots and deeply incised petals having the same coloration on the both surfaces. Nevertheless, as far as I know, species with such a set of features does not exist in the Caucasus. The drawing might have been made from an atypical specimen, and the under surface of the petals

was coloured pinkish instead of greenish-yellow by mistake. Therefore it seems necessary to me that at this stage of research *D. discolor*, whose drawing in the protologous bears formal resemblance to Caucasian species, should remain as a synonym of *D. caucaseus*.

D. discolor is described from the Caucasus ("native of Mount Caucasus"). **Lectotypus (hic designatus)**: tab. 1162 in Curtis's Bot. Mag. (London), 1809, 29.

6. ***Dianthus gabrielianae*** Nersesian, sp. nov.

Planta perennis. Caules floriferi 20 — 25(30) cm alti, 2 — 6-flori, glabri vel sparse puberuli, in tertia parte superiore laxe ramosi, incrassato-nodosi. Folia anguste lanceolato-lineararia vel fere linearia, apicem versus longe attenuata, acuminata, 25—40×1.5—2 (—2.5) mm, plana vel marginibus leviter involuta, nervo mediano prominente, margine breviter ciliata, vaginis 1.5—2 mm longis. Calyculus 4 (—6)-bracteatus; bractae exteriores dimidiae calycis longitudinis vel basin dentium attingentes, ovatae vel anguste ovatae, in cuspidem subulatam, setulosam, 5—9 mm longam sensim angustatae; interiores 1/2—3/4 calycis longitudinis attingentes, late ovatae, in cuspidem subulatam vel aristam 3—4 mm longam abrupte attenuatae, late membranaceo-marginatae. Calyx 14—17×4—5 mm, cylindricus, viridis vel purpurascens; dentes 4—6 mm longi, late triangulares, acuminati, margine ciliati. Petalorum lamina obovata, 7—10×5—7 mm, supra saturate rosea vel purpurea atropunctata, subtus flavo-virentia, barbata, dentata; unguis e calyce aliquanto exsertus.

Holotypus: Армения, Амасийский район, оз. Арпи, Пеликаний остров, 17.07.1991, Э. Габриэлян, ERE 146671 (fig. 1).

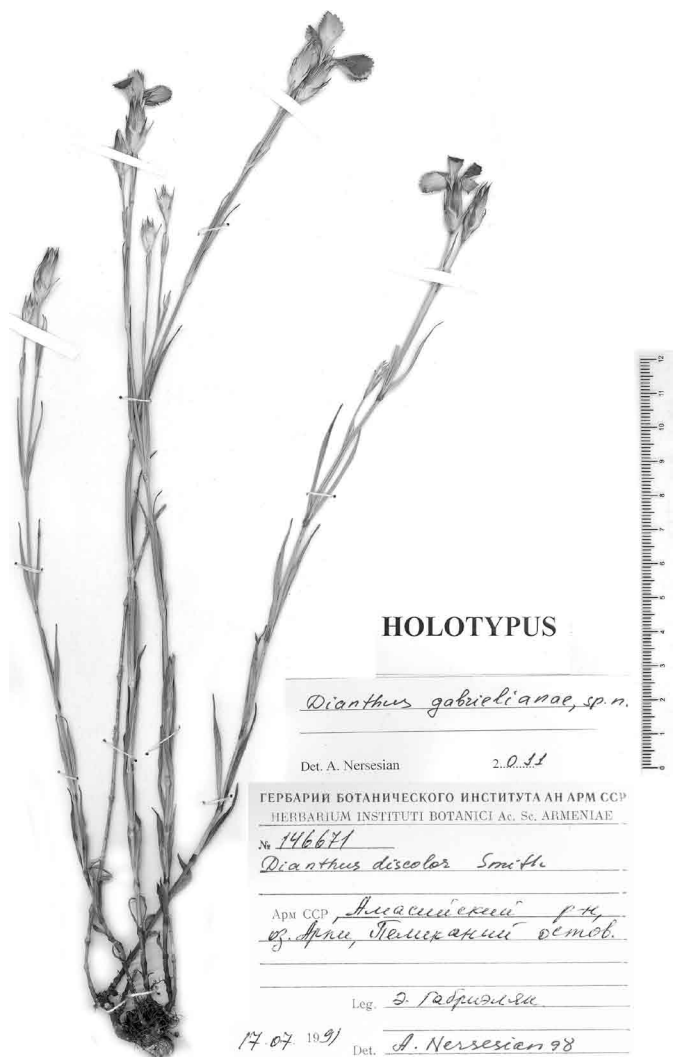


Fig. 1. Holotype of *Dianthus gabrielianae* Nersesian

Paratypes: Georgia: Prov. Tiflis, dist. Achalkalaki (Dzha-vakhetia), prope pagum Gorelovka, 1750 m, 31.07.1924, A. Grossheim, TBI; Джавахети. Выше с. Хавети. Субальпийский луг. 15.07.1983, Л. Хинтибидзе et al., TBI; Armenia: Гукасянский район, между с.с. Саригюх и Бавра, 2050 м над ур. м. 31.07.1980, В. Аветисян, ERE 129401; Амасийский район, с. Тапакей, окр. оз. Арпи, задерненный луг, 17.07.1991, Э. Габриэлян, ERE 146669; Амасийский район, оз. Арпалич, задерненный луг (лугостепь), слева от плотины, 2030 м, 30.07.1998, Э. Габриэлян, М. Оганесян, Э. Назарова, ERE 151531

Habitatio: In pratis subalpinis, 1750—2100 m supra maris aequor.

Distributio: In Transcaucasia austro-occidentali (Georgia, Armenia) endemica.

Affinitas: A simili *D. caucaseo* Sims foliis fere linearibus, apicem versus longe attenuatis, bracteis exterioribus non foliaceis, calycibus brevioribus differt.

Species in honorem professoris Eleonorae Gabriellianae florum Armeniae peritissimae denominata est.

Perennial. Flowering shoots 20—25(30) cm tall, glabrous or sparsely puberulent, 2—6-flowered, loosely branched in the upper 1/3; nodes inflated. Leaves narrowly lanceolate-linear, almost linear, long tapered towards apex, acuminate, 25—40×1.5—2 (—2.5) mm, flat or margins slightly involuted; central vein prominent; margins shortly ciliate; sheaths 1.5—2 mm long. Epicalyx scales 4 (6); outer ones 1/2 as long as calyx or reaching the base of calyx teeth, ovate or narrowly ovate, narrowed gradually to a subulate, shortly setose apex 6—9 mm.; inner ones 1/2—3/4 as long as calyx, broadly ovate, abruptly attenuate to an aristate or subulate apex 3—4 mm, margins broadly membranaceous; Calyx 14—17×4—5 mm, cylindrical, green or purplish. Teeth 4—6 mm, broadly triangular, acuminate, margin shortly ciliate. Petal limb obovate, 7—10×5—7 mm, deep pink or purple with dark dots above, greenish-yellow beneath, barbate, dentate; claws slightly exerted (fig. 2—3, page 43).

Habitat: Subalpine meadows, 1750—2100 m a. s. l.

Fl. VII. Fr. VIII.

Distribution: Edemic of SW Transcaucasia (Georgia: Javakheti floristic region, Armenia: Upper Akhuryan floristic region).

Taxonomic relationships: Related to *D. caucaseus* Sims, differing by almost linear, long tapered towards apex leaves as well as by not leaf-like outer epicalyx scales and shorter calyces.

This species is described in honour of a famous researcher of the Armenian flora Prof. E. Ts. Gabrielyan.

7. ***D. grossheimii*** Schischk. 1936, Тр. Бот. инст. АН СССР, 1, 3: 186; Schischk. 1936, Фл. СССР 6: 838; Grossh. 1945, Фл. Кавк. ed. 2, 3: 288; id., 1949, Определ. раст. Кавк.: 559; Schischk., Avet. 1956, Фл. Арм. 2: 201; М. Kuzmina, 2002, Komarovia, 2: 40.

Stony and grassy slopes, mountain steppe, 1900—2300 m a. s. l. Fl. VI. Fr. VII. — Armenia: Sevan. (Janykh), Shir. (Jajur pass), Dar.

The Caucasus (S Transcauc.: Armenia). Endemic of Armenia.

Described from Armenia (Vayots Dzor region): "Armenia, Daralagöz, prope pag. Alaczep [Ag-kend]. Fl. 8 IX 1931, leg. I. Kariagin et B. Safiev". The location of the type material is unknown. According to M. Kuzmina (2003), type material is not in BAK. I didn't find any type material in LE. Grossheim (1945) revealed that the village name Alaczep in the protologue is identical to that of village Ag-Kend [Aghnjadzor]. A specimen collected from locus classicus and determined by V. Schischkin is in ERE: "Азизбековский район, Агкенд. Заросли куст. 20.08.1947, leg. П. Ярошенко, det. В. Schischkin, ERE 58918!".

8. ***D. transcaucasicus*** Schischk. 1929, Изв. Томск. гос. ун-та, 80: 452; Grossh. 1930, Фл. Кавк. 2: 433; Schischk. 1936, Фл. СССР, 6: 819; Grossh. 1945, Фл. Кавк. ed. 2, 3: 284; id., 1949, Определ. раст. Кавк.: 557; Schischk., E. Avet. 1956, Фл. Арм. 2: 200; Gvinian. 1978, Фл. Груз. 4: 186. — *D. masmenaeus* auct. non Boiss.: Reeve, 1967, Fl. Turk. 2: 112, p. p.; M. Kuzmina, 2002, Komarovia, 2: 41.

Stony and loamy slopes, 1000—3000 m a. s. l. Fl. V—VI. Fr. VII. — Armenia: Erev. (Yerevan, collected 15.04.1916).

The Caucasus (SW, S Transcauc.: Armenia), NE Anatolia. Described according to syntypes from Armenia and NE Anatolia. **Lectotypus (hic designatus)**: "Турецкая Армения. Эрзерумский санджак. Окр. Хасанкалы, субальпийские луга. 03.07.1916. В. Сапожников", LE!

Syntypi: Armenia: Закавказье. Окр. Эривани, каменистые склоны. У Челмакчи. 15.04.1916. Б. Шишкин, LE! **NE Anatolia:** Турецкая Армения. Эрзерумский санджак. Караязь-дюз, степь. 11.06.1916 г. В. Сапожников, Б. Шишкин, ERE 1157!, LE!; Турецкая Армения. Эрзерумский санджак. Магалисор — Хныскала, глинистые склоны. 5.106.916. Б. Шишкин, LE!; Сарыкамыш, 27.07.1885, W. Massalsky LE!

Differs from the closely related *D. asperulus* Boiss. et Huet, which has ovate mucronate dents of calyx, by lanceolate calyx dents sometimes alternated with more or less broad-membranaceous ones. I have investigated the type material of *D. asperulus* (holo.: "In via Persiae 2 h. Erzeroum, a Jul. 1853, A Huet du Pavillon", G-BOIS) as well as several specimens from E Turkey ("fentes des rochers pres Baibout, 11. Juillet 1862, no. 55, E. Bourgeau, G-BOIS", "Taurus Cataonicus, Beg dagh, 1865, Ch. Haussknecht", G-BOIS, "Locis subaridis dispersus ad pagum Goschkar alt. 5600', No. 384, 22. 8.1859, Th. Kotschy", G-BOIS, LE). Nevertheless, it is necessary to investigate the additional material from E Anatolia for a more precise definition of relationships between these two taxa having rather overlapping areas of distribution.

H. Reeve (1967), M. Kuzmina (2002) place *D. transcaucasicus* and *D. asperulus* into synonyms of *D. masmenaeus* Boiss. (holo.: "region sous-alpine du Masmeneu-Dagh a 29 lieues au SSO de Césarée, no. 864, 7 Septembre 1855., B. Balansa", G-BOIS!, iso. G!). According to the data obtained, *D. asperulus* and *D. transcaucasicus*, which occur in NE Anatolia, are characterized by flowers in a compact head at the top of the stem. Whereas *D. masmenaeus* distributed in the central and western parts of E. Turkey (vilayets Nigde, Seyhan, Marash, Kayseri, Maltya, Tunceli), has groups of 1—3 flowers scattered on a very branched stem.

9. ***D. aristatus*** Boiss. 1860, in Tchich., Asie Min. Descr. Bot. 1: 222; M. Kuzmina, 2002, Komarovia, 2: 43. — *D. preobrashenskii* Klok. 1927, J. Agric. Bot. Charkov. 1 (3): 170; Schischk. 1936, Фл. СССР, 6: 834; Grossh. 1945, Фл. Кавк. ed. 2, 3: 287; id. 1949, Определ. раст. Кавк.: 559; Karjag. 1952, Фл. Азерб. 3: 377; Schischk., E. Avet. 1956, Фл. Арм. 2: 201. — *D. zonatus* Fenzl var. *aristatus* (Boiss.) Reeve in Hub.-Mor., McNeill, Reeve, 1967, Notes Roy. Bot. Gard. Edinburgh, 28: 21.

Stony slopes, 1000—2700 m a. s. l. Fl. VI. Fr. VII. — Armenia: Shir., Arag., Ijev., Sevan, Erev.; Nakhichevan.

The Caucasus (S. Transcauc.), Anatolia, ?W Syria.

Described from NE Anatolia. Holo.: "Asia minor. OEst. 1858. M. de Tchihatchef. *Dianthus aristatus* sp. nov. Armenia meridion. Propé Uzunbazar", G-BOIS!

Sect. 4. *Dianthus*

10. ***D. cretaceus*** Adams, 1805, in Weber & Mohr, Beitr. Naturk. 1: 56; Grossh. 1930, Фл. Кавк. 2: 429; id. 1945, Фл. Кавк. ed. 2, 3: 289; ibid., 1949, Определ. раст. Кавк.: 558; Karjagin, 1952, Фл. Азерб. 3: 379; Schischk., E. Avet. 1956, Фл. Арм. 2: 201; Gvinian. 1978, Фл. Груз. 4: 195; Dmitrieva, 1990, Определ. раст. Аджар. 2: 107. — *D. petraeus*

M. Bieb. 1808, Fl. Taur-Cauc. 1: 328, non Waldst. & Kit. 1807; Schischk. 1936, Фл. СССР 6: 845. — *D. liboschitzianus* Ser. ex DC. 1824, Prodr. 1: 360.

Described from Georgia: «in Iberia locis cretaceis». Holo.: «*Dianthus cretaceus* m. Adams », LE!

a. subsp. **cretaceus**.

Meadows, grassy and stony slopes, 1500—2500 (2800) m a. s. l. Fl. VI—VII. Fr. VIII. — Armenia: U. Akhur., Shir., Apar., Sevan., Gegh., Erev., Dar.; Nakhichevan.

The Caucasus (Transcaucasia, except W, Talysh), NE Anatolia, NW Iran.

Extremely polymorphic subspecies varying in the stem height, length and the colour of calyx and petals, in the shape and size of epicalyx scales.

b. subsp. **multicaulis** (Boiss. & Huet) Nersesian, 2011, Новости сист. высш. раст., 42: 112. — *D. multicaulis* Boiss. & Huet, 1856, Diagn. Pl. Or. Nov. 2, 5: 53; Grossh. 1945, Фл. Кавк. ed. 2, 3: 290; id., 1949, Определ. раст. Кавк.: 558; Schischk. 1936, Фл. СССР, 6: 846; Reeve, 1967, Fl. Turk. 2: 112; Gvinian. 1978, Фл. Груз. 4: 196; Dmitrieva, 1990, Определ. раст. Аджар.: 106. — *D. liboschitzianus* Ser. ex DC. *multicaulis* (Boiss. & Huet) Boiss. 1867, Fl. Or. 1: 487. — *D. cretaceus* var. *multicaulis* (Boiss. & Huet) Grossh. 1930, Фл. Кавк. 2: 430.

Stony slopes, fissures of rocks, 2300—3900 m a. s. l. Fl. VII—VIII. Fr. VIII—IX. — Armenia: Lori. (Geghasar), Gegh. (top of Gegham mountain range).

The Caucasus [W, C, SW and S (Armenia) Transcauc.], NE Anatolia.

Described from NE Anatolia. Lecto. (Nersesian, 2011, Новости сист. высш. раст., 42: 113): «Palanteuken 7—8000' Jul. 1853. A. Huet du Pavillon», G-BOIS! Syntypi: «In valle Tech-dagh, 6—7000', Jul. 1853, A. Huet du Pavillon», G-BOIS!, «Erzeroum, Aucher-Eloy-Herbier d'Orient, No. 496», G-BOIS!, G!.

c. subsp. **dmanissianus** (M. Kuzmina) Nersesian, 2011, Новости сист. высш. раст. 42: 113. — *D. dmanissianus* M. Kuzmina, 1996, Бот. журн. 81, 8: 80.

Meadows, 1600—2200 m a. s. l. Fr. VI—VII. Fl. VIII—IX. — Armenia: Lori., Ijev.

The Caucasus [C, SW, E, and S (Armenia) Transcauc.]. Endemic of Transcaucasia.

Described from Georgia. Holo.: «Georgia, reg. Dmanissi, Gantiadi — Dmanissi, 25.06.1976. J. Menitzky», LE!

Specimens with petals slightly exceeding calyx dents and with underdeveloped stamens frequently occur.

d. subsp. **sevanensis** Nersesian, 2011, Новости сист. высш. раст. 42: 113.

Subalpine meadows, 2000—2500 m a. s. l. Fl. VII—VIII. Fr. VIII—IX. — Armenia: Sevan. (Sevan mountain ridge).

The Caucasus (S. Transcauc.: Armenia). Endemic of Armenia.

Described from Armenia. Holo.: «Prope Djil, in fauc. Dali-aga, In pratis subalpinis 7000'—8000', 03.07.1928, A. Schelkovnikov, E. Kara-Murza», ERE 1286!

11. **D. zangezuristicus** Nersesian, 2011, Новости сист. высш. раст. 42: 115. — *D. cretaceus* auct. non Adams: Grossh. 1930, Фл. Кавк. 2: 429, p. min. p.; ibid. 1945, Фл. Кавк. ed. 2, 3: 289, p. min. p.; ibid. 1949, Определ. раст. Кавк.: 558, p. min. p.; Schischk., E. Avet. 1956, Фл. Арм. 2: 201, p. min. p.

Grassy slopes, 1800—3200 m a. s. l. Fl. VI—VII. Fr. VIII. — Armenia: Zang., Meghri.

The Caucasus (S. Transcauc.: Armenia). Endemic of Armenia.

Described from Armenia. Holo.: «Армения, обл. Сюник, гора Хуступ, под зубцом, 3170 м над ур. м.,

39°08'N/46°20'E, 27.07.2006, А. Нерсисян, М. Агабабян, М. Саркисян», ERE 174571!, iso. ERE 174572!, LE!

The species is closely related to *D. cretaceus*, differing by long apices of outer epicalyx scales, by a long-tapered calyx and a roll under the teeth of immature capsule.

Several samples from Meghri mountain range have rather deep dentate petal limb.

12. **Dianthus takhtajanii** Nersesian, sp. nov.

Planta perennis, caespitosa. Caules floriferi 10—14 cm alti simplices uniflori. Folia angustissime lineari-lanceolata, rigida, recta, plana vel conduplicata, margine breviter rigide ciliata, vaginis albidis. Folia basalia divaricata, 15—22×0.5—1 mm, fere subulata, spinescentia, nervis inconspicuis. Folia caulina 15—25×0.6—1 mm, cauli appressa, acuminata, nervis 3 prominentibus, vaginis 2—3 mm longis. Bractee calyculi 4—6, tertiam partem calycis longitudinis attingentes, late ovatae, in apiculum 1—3 mm longum abrupte attenuatae, late membranaceo-marginatae. Calyx 15—17×4 mm, cylindricus, basi purpurascens, medio virescens; dentes calycis 5—6 mm longi, anguste triangulares, basi purpurascens, acuti, margine ciliolati. Petala alba; limbus 6—7×5—6 mm, late obovatus, glaber, distincte obtuse dentatus; unguis e calyce aliquanto exsertus.

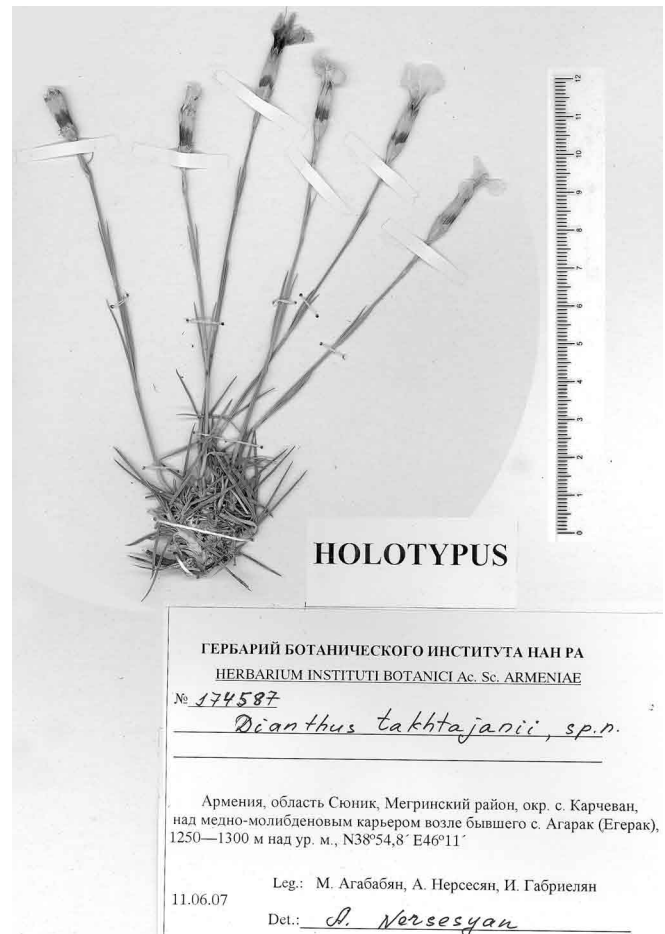


Fig. 4. Holotype of *Dianthus takhtajanii* Nersesian

Holotypus: Армения, Мегринский р-н, окр. с. Карчеван, над медно-молибденовым карьером возле бывшего с. Агарак (Егерак) 1250—1300 м над ур. м., N 38° 54.8' / E 46° 11', 11.06.2007, М. Агабабян, А. Нерсисян, И. Габриелян, ERE 174587 (fig. 4).

Habitatio: In clivis aridis, 1200—1300 m supra maris aequor.

Distributio: In Armeniae regione floristica Meghri endemica.

Affinitas: A simili nimis polymorpho *D. cretaceo* Adams foliis basalibus rigidis spinescentibus divaricatis et limbo petalorum late obovato, obtuse dentato differt.

Speciem nostram botanicorum celeberrimum A. L. Takhtajan commemorat.

Tufted perennial. Flowering shoots 10—14 cm tall, single-flowered, unbranched. Leaves very narrowly linear-lanceolate, stiff, straight, flat or conduplicate, margins shortly stiff-ciliate, sheaths whitish. Leaves of sterile shoots divaricate, 15—22×0.5—1 mm, almost subulate, spinescent, with inconspicuous veins. Cauline leaves 15—25×0.6—1 mm, appressed to the stem, acuminate, with 3 prominent veins, sheaths 2—3 mm long. Epicalyx scales 4—6, 1/3 as long as calyx, broadly ovate, abruptly attenuate into subulate apices 1—3 mm, margins broadly membranaceous. Calyx 15—17×4 mm, cylindrical, light purple at its base and at the base of the teeth, greenish in the middle. Teeth 5—6 mm, narrowly triangular, acute, margin shortly ciliate. Petals white; petal limb 6—7×5—6 mm, broadly obovate, ebarbulate, distinctly obtuse-dentate; claw slightly exerted from the calyx.

Habitat: Dry slopes, 1200—1300 m a.s.l.

Fl. VI. Fr. VII.

Distribution: Endemic of Armenia (Meghri floristic region).

Taxonomic relationships: Closely related to the very polymorphic *D. cretaceus* Adams, distinguishing by stiff, spinescent divaricate basal leaves and broadly obovate, obtusely dentate petal limb.

This species is dedicated to the memory of the prominent botanist A. L. Takhtajan.

13. ***D. inamoenus*** Schischk. 1936, Фл. СССР, 6: 897, ib.: 842; Grossh. 1945, Фл. Кавк. ed. 2, 3: 289; id., 1949, Определ. раст. Кавк.: 558; Karjagin, 1952, Фл. Азерб. 3: 378; Schischk., Avet. 1956, Фл. Арм. 2: 201; Gvinian. 1978, Фл. Груз. 4: 193. — *D. lenkoranicus* Kharadze, 1951, Not. Syst. Geogr. (Tbilis.) 16: 46.

Described from Georgia. Holo.: “Тифлис. По р. Вере, каменистые склоны. 26.V. 1917. Б. Шишкин” ?LE, iso. TBI!. I didn't find the holotype in LE collections,

Limestone stony slopes, 500—700 m a. s. l. Fl. VII. Fr. VIII. — Armenia: Ijev. (Bagratashen), Meghri. (Shvanidzor).

The Caucasus (?the eastern part of the Great Caucasus, C, E, S Transcauc., Talysh), ?E Anatolia, NW Iran.

Type material of *D. lenkoranicus* (syntypi: “Талыш. Лес на горе Нудус-галаси (7000’), 17.VI.1894. А. Ломакин”, TBI!; “Prov. Vaku, distr. Lenkoran, Lerik. In silva. 20.VII.1917. A. Grossheim”, TBI!) differs from *D. inamoenus* only by size of calyces, but not by calyx shape. Calyx colour and shape of calyx dents proved to be not stable. That is why *D. lenkoranicus* is treated as a synonym of *D. inamoenus*.

14. ***D. anatolicus*** Boiss. 1842, Diagn. Pl. Or. Sér. 1, 1: 22. — *D. parviflorus* Boiss. 1842, Diagn. Pl. Or. Sér. 1, 1: 21; Schischk., E. Avet. 1956, Фл. Арм. 2: 202. — *D. anatolicus* var. *parviflorus* Boiss. 1867, Fl. Or. 1: 490.

Stony and grassy slopes, 1900—2000 m a. s. l. Fl. VII. Fr. VIII. — Armenia: Dar. (v. Khachik, v. Gnishik).

The Caucasus (S Transcauc.: Armenia), Anatolia.

Described from Turkey. **Lectotypus (hic designatus)**: “Sypili dumosis supra Magnesia[m], Jul. 1842” [E. Boissier], G-BOIS!

15. ***D. floribundus*** Boiss. 1860, in Tchich., Asie Min. Descr. Bot. 1: 221; Grossh. 1930, Фл. Кавк. 2: 429; Schischk. 1936, Фл. СССР, 6: 845; Grossh. 1945, Фл. Кавк. ed. 2, 3: 289; Karjagin, 1952, Фл. Азерб. 3: 378; Schischk., E. Avet. 1956, Фл. Арм. 2: 209; Gvinian. 1978, Фл. Груз. 4: 194 — *D. tabrisianus* Bien. ex Boiss. 1867, Fl. Or. 1: 496; Grossh. 1930, Фл. Кавк. 2: 428; Schischk. 1936, Фл. СССР, 6: 855; Grossh. 1945, Фл. Кавк. ed. 2, 3: 294; id., 1949, Определ. раст. Кавк.: 560; Karjagin, 1952, Фл. Азерб. 3: 385. — *D. schischkinii* Grossh. 1949, Бот. Мат. (Ленинград), 11: 83; id., 1949, Определ. раст. Кавк.: 561. — *D. woronowii* Schischk. in sched.

Dry, stony slopes, 1000—1500 m a. s. l. Fl. VI. Fr. VII. — Armenia: Shir., Apar., Sevan., Erev., Dar.; Nakhichevan.

The Caucasus (W, SW and S Transcauc.), NE Anatolia, W Iran.

Described from NE Anatolia: “Armenia inter origines fl. Araxis, huc Eritchan [Erichtak] dicti, ad pedem septentrionalem jugi Mille Lacuum (Bingoel-dagh) alt. c. 2000 m, T.; Tchihat. pl. As. Min. exsicc. An. 1858, N 866”. Holo.: “Asia minor. OEst. 1858. M. de Tchihatchef. Armenia ad radices boriales Bingöl dagh”, G-BOIS!, iso. K.

D. schischkinii (holo.: “Azkur. No. 313. [06.] Jun. [18]75. G. Radde”, LE!, iso. LE!), *D. tabrisianus* [lecto. (K. H. Re-chinger, 1988, Fl. Iran, 163: 146): “Nehmetabad prope Tabris. Jun. 1859”, G-BOIS!, isolecto. LE!] and *D. woronowii* (in sched.: “Батумская обл. Округ. г. Артина, с. Ломашены, г. Махлузе, 9. VI. 1909, П.В. Нестеров”, LE!) are removed into the synonyms of *D. floribundus*, because the shape of epicalyx scales as well as the degree of the petal limb dissection of these taxa are not constant and cannot serve as diagnostic features.

16. ***D. canescens*** K. Koch, 1841, Linnaea, 15: 710; Grossh. 1930, Фл. Кавк. 2: 432; Schischk. 1936, Фл. СССР, 6: 854; Фл. Кавк. ed. 2, 3: 294; id., 1949, Определ. раст. Кавк.: 560; Schischk., E. Avet. 1956, Фл. Арм. 2: 209. — *D. fimbriatus* M. Bieb. *canescens* (K. Koch) Boiss. 1867, Fl. Or. 1: 496; — *D. orientalis* auct. non Adams: Reeve 1967, Fl. Turk. 2: 120, p.p.; M. Assadi 1985, Iran. Journ. Bot. 3, 1: 34, p. p.

Stony slopes, 800—1000 m a. s. l. Fl. VI. Fr. VII. — Armenia: Erev.

The Caucasus (S. Transcauc.: Armenia), NE Anatolia.

Described from Armenia: “In deserto petroso prope claustrum Etschmiadsin frequenter”. Type material is lost.

The species was included into *D. orientalis* by E. Boissier (1867). The same opinion express H. Reeve (1967) and M. Assadi (1985). Nevertheless, thick petals and thin epicalyx scales obviously indicate close relationships with *D. floribundus*, but not with *D. orientalis*.

Sect. 5. ***Fimbriati*** (Boiss.) F. Williams

17. ***D. libanotis*** Labill. 1791, Ic. Pl. Syr. Dec. [Rar.], 1: 14, tab. 4; Grossh. 1930, Фл. Кавк. 2: 428; Schischk. 1936, Фл. СССР, 6: 848; Grossh. 1945, Фл. Кавк. ed. 2, 3: 292; id., 1949, Определ. раст. Кавк.: 560; Karjagin, 1952, Фл. Азерб. 3: 381; Schischk., E. Avet. 1956, Фл. Арм. 2: 202.

Dry slopes, 800—1300 m. Fl. VIII. Fr. IX. — Armenia: Erev., Dar.; Nakhichevan.

The Caucasus [S Transcauc.], W Asia.

Described from Lebanon: “in altis montibus Libani [J. J. H. de Labillardiere]». Holo.: «Orient. Labill.», G-DC!

18. ***D. crinitus*** Sm. 1794, Trans. Linn. Soc. London (Bot.), 2, 1: 300; Grossh. 1930, Фл. Кавк. 2: 428; Schischk. 1936, Фл. СССР, 6: 850; Grossh. 1945, Фл. Кавк. ed. 2, 3: 292; id., 1949, Определ. раст. Кавк.: 560; Karjagin, 1952, Фл. Азерб. 3: 381; Schischk., E. Avet. 1956, Фл. Арм. 2: 202; Gvinian. 1978, Фл. Груз. 4: 197.

Dry, stony slopes, mountain steppes, 1000—2000 (3000) m a. s. l. Fl. VI—VII. Fr. VIII. — Armenia: all regions, except of U. Akhur. and Gegh.; Nakhichevan.

The Caucasus (?the eastern part of the Great Caucasus, W, C, E, SW and S Transcauc., Talysh), Anatolia, N and W Iran, ?Middle Asia.

Described from Armenia: «in Armeriâ. Variat flore albo. Tournefort». Location of the type material is unknown.

Very polymorphic species varying in the height and branching degree of the stem, in the number and shape of epicalyx scales, in the petal colour and the shape of petal limb.

19. ***D. crossopetalus*** (Fenzl ex Boiss.) Grossh. 1930, Фл. Кавк. 2: 428; Grossh. 1930, Фл. Кавк. 2: 428; Schischk.

1936, Фл. СССР, 6: 850; Grossh. 1945, Фл. Кавк. ed. 2, 3: 292; id., 1949, Определ. раст. Кавк.: 560; Karjagin, 1952, Фл. Азерб. 3: 381; Schischk., E. Avet. 1956, Фл. Арм. 2: 209. — *D. crinitus* Sm. . *crossopetalus* Fenzl ex Boiss. 1867, Fl. Or. 1: 496.

Rocks, screes, 800—1600 m a. s. l. Fl. VI. Fr. VII. — Nakhichevan. Could be found in the South of Armenia.

The Caucasus (S. Transcauc.: Nakhichevan, Talysh), Anatolia, N and W Iran.

Described from Iran. Lecto. (Rechinger, 1988, Fl. Ir. 163: 179): «In l. arenosis et lapidosis prope urben Teheran, no. 21, 15.Apr.1843, Th. Kotschy. Pl. Pers. bor. Ed. R. F. Hohenacher. 1846.», W, isolecto. G-BOIS!

The species differs from the closely related polymorphic *D. crinitus* by the combination of short stem (5—20 cm) with a very long calyx (30—45 mm) and with long herbaceous apices of epicalyx scales.

20. ***D. orientalis*** Adams, 1805, in B. Weber et Mohr, Beitr. Naturk. 1: 54; Grossh. 1930, Фл. Кавк. 2: 427; Schischk. 1936, Фл. СССР, 6: 854; Grossh. 1945, Фл. Кавк. ed. 2, 3: 295; id., 1949, Определ. раст. Кавк.: 560; Karjagin, 1952, Фл. Азерб. 3: 382; Schischk., E. Avet. 1956, Фл. Арм. 2: 209; Gvinian. 1978, Фл. Груз. 4: 198. — *D. fimbriatus* M. Bieb. 1808, Fl. Taur.-Cauc. 1: 332.

Described from Georgia. Holo.: “habitat circa Tiflis, Adams”, LE!

a. subsp. ***orientalis***.

Rocks, 1000—3100 m a. s. l. Fl. VI—VII. Fr. VIII—IX. — Armenia: U. Akhur., Lori., Ijev., Shir., Apar., Arag., Sevan., Gegh. (Geghard), Erev., Dar., Zang., Meghri.; Nakhichevan.

The Caucasus (the eastern part of the Great Caucasus, Transcauc., Talysh), Anatolia, Iraq, Iran.

b. subsp. ***aphanoneurus*** Rech. f. 1986, Pl. Syst. Evol. 151: 290. — *D. aphanoneurus* (Rech. f.) M. Kuzmina, 1996, Бот. журн. 81, 8: 82.

Rocks, 1200—1900 m a. s. l. Fl. VII. Fr. VIII. — Armenia: Dar., Zang., Meghri.; Nakhichevan.

The Caucasus (S Transcauc.), W and S Iran.

Described from Western Iran. Holo.: “Persia occidentalis: Prov.: M. Sawers, Luristan, 9000', Juli 1868, C. Haussknecht” W, digital image!, sp. auth. G-BOIS!, G!

Armenian specimens differ from type specimens by ebarbulate petal limb.

Intermediates between *D. orientalis* subsp. *orientalis* and *D. orientalis* subsp. *aphanoneurus* occur in Darelegis floristic region of Armenia.

c. subsp. ***nassireddinii*** (Stapf) Rech. f. 1986, Pl. Syst. Evol. 151: 292. — *D. nassireddinii* Stapf. 1886, Denkschr. Akad. Wiss. Math.-Naturw. (Wien), 51: 279. — *D. fimbriatus* M. Bieb. var. *brachyodontus* Boiss. et Huet 1856 in Boiss., Diagn. Pl. Or. Nov. 2, 5: 53, p. p. — *D. dumulosus* Boiss. et Huet, 1853, in Pl. Arm. Exs., in sched.; Grossh. 1930, Фл. Кавк. 2: 427. — *D. brachyodontus* Grossh. 1945, Фл. Кавк. ed. 2, 3: 294; id. 1949, Определ. раст. Кавк.: 560; Karjagin, 1952, Фл. Азерб. 3: 382.

Rocks, 1300—2100 m a. s. l. Fl. VI—VII. Fr. VIII—IX. — Armenia: expected to be found. Nakhichevan: expected to be found.

Caucasus (Talysh), NE Anatolia, N Iraq, W Iran.

Described from Western Iran. Holo.: «In monte Elwend (Media). 1882. Legit Th. Pichler», WU, digital image!, iso. K!, WU, digital images, 2 ex.!

Two specimens, cited by M. Kuzmina (1996) as *D. nassireddinii* (“Нах. АССР, юго-зап. склон Зангезурского хребта, Капуджух, 27.08.1952, А. Федоров”, LE!, “Inter Ordubad et p. Meghri, in fauc. Fl. Arax. 25.06.1929, A.

Schelkovnikov et E. Kara-Murza”, ERE!, LE!) seem to be hybrids between *D. cretaceus* and *D. crinitus*, because the petals are white and completely ebarbulate, whereas *D. orientalis* subsp. *nassireddinii* has pink and barbulate petals).

d. subsp. ***obtusisquameus*** (Boiss.) Rech. f. 1986, Pl. Syst. Evol. 151: 291. — *D. fimbriatus* M. Bieb. . *obtusisquameus* Boiss. 1867, Fl.Or. 1: 495.

Rocks, 1400—1800 m a. s. l. Fl. VI. Fr. VI. — Armenia: Dar.

The Caucasus (S Transcauc.: Armenia), W and C Iran. Described from Iran. Lecto. (K. H. Rechinger, 1988, Fl. Ir.: 162): “In valle Talagon m. Elbrus, 515, 14.07.1843. leg. Kotschy”, G-BOIS!

21. ***D. martuniensis*** M. Kuzmina, 1996, Бот. журн. 81, 8: 81

Rocks, stony slopes, 2200—2300 m a. s. l. Fl. VII—VIII. Fr. VIII—IX. — Armenia: Sevan., Dar.; Nakhichevan (v. Kjukju).

The Caucasus (S Transcauc.), NE Anatolia.

Described from Armenia. Holo.: “Армянская ССР, Мартунинский р-н, Селимский перевал, 18.VIII.1954, С. Г. Тамашян, Г. А. Денисова”, LE!

The species is morphologically close to *D. orientalis* subsp. *macropetalus* (Boiss.) Rech. f. which is distributed in Iraq and W Iran (syntypi: “in rup. M. Schahu, 8000', [no.] 187, Jul. 1867. Haussknecht”, G-BOIS!, “In rup. calc. m. Avroman, 7000' no. 188, Jul.1867, Haussknecht”, G-BOIS!). *D. martuniensis* differs by branched in the upper part stems, reddish, fusiform-narrowed towards apex and smaller calyces (18—20×2—3 mm) as well as by densely barbulate petal limbs.

Intermediates between *D. martuniensis* and *D. orientalis* with long epicalyx scale apices and wide leaves in combination with ebarbulate petal limb, short leaf sheaths of stem leaves and numerous shortened sterile shoots at the base of stems occur in Sevan and Darelegis floristic regions of Armenia.

22. ***D. jacobsii*** Rech. f. 1983, Pl. Syst. Evol. 142: 243

Rocks, stony slopes. 1200—1800 m. Fl. VI. Fr. VII. — Nakhichevan (Komadara). Armenia: expected to be found.

The Caucasus (S Transcauc.), NE Anatolia, Iran.

Described from Iran. Holo.: «Persia: W: Prov. Kurdistan, Sanangaj. Low rolling mountains of dark slaty rock with open herbaceous vegetation, 35°03'N, 46°57'E, 1200—1400 m s. m., 21.VI.1963. Jacobs 6979”, W, digital image!, iso. E.

Specimens of *D. crinitus* with 6—8 epicalyx scales and large calyces occur in Lori, Darelegis and Zangezur floristic regions of Armenia (“Спитак, 18.07.1938, А. Тахтаджян”, ERE 29234!, “Арм. ССР, между Селимским перевалом и с. Ахкенд, левый борт, грунт нагорных ксерофитов, западный каменистый склон, 2200 м, 30.08.1956, Я. Мулкиджанян, Р. Карапетян”, ERE 73094!, “Зангезур, Сисианский р-н, окр. с. Шамб, левый борт ущелья р. Воротан, 1350 м над ур. м., на диатомитовых отложениях, 12.10.1983, В. Манакян”, ERE 122502!, “Горисский р-н. Окр. с. Хнацах, на границе с Азерб.ССР, 30.08.1972, Н. Ханджян, К. Таманян, ERE 104095!”). The specimens are close to *D. jacobsii*, differing, nevertheless, by deeply fimbriate petal limb.

Sect. 6. ***Verruculosi*** (Boiss.) Nersesian, **stat. nov.** — § 1. *Verruculosi* 1867, Fl. Or. 1: 479. 482, stat. indefin.

23. ***D. cyri*** Fisch. & C. A. Mey. 1837, Index Sem. Hort. Bot. Petropol. 4: 34; Grossh. 1930, Фл. Кавк. 2: 427; Schischk. 1936, Фл. СССР, 6: 860; Grossh. 1945, Фл. Кавк. ed. 2, 3: 295; id. 1949, Определ. раст. Кавк.: 558; Karjagin, 1952, Фл. Азерб. 3: 385; Schischk., E. Avet. 1956, Фл. Арм. 2: 210; Gvinian. 1978, Фл. Груз. 4: 201; Dmitrieva, 1990, Определ. раст. Аджар. 2: 106.

Dry slopes, riverside sands, 800—1100 m a. s. l. Fl. V—VI. Fr. VII. — Armenia: Erev., Dar.; Nakhichevan.

The Caucasus (Transcauc., Talysh), W Asia.
Described from the Transcaucasia. Holo.: "In desertis ad
fl. Kur. In prov. Elisabethpol, Jul. Hohenack." LE!

D. barbatus L., **D. caryophyllus** L. and **D. plumarius**
L. are cultivated in the region and sometimes are natural-
ized.

**Determination key to *Dianthus* species
in Southern Transcaucasia**

1. Flowers in heads at the top of stems. Petal limb purple, with dark dots, barbate. 2
- Flowers not in heads 5
2. Annual or biennial. Calyx pubescent, 17—20 mm long. Stem 10—45 cm 1. **D. armeria** L.
- Perennials. Calyx glabrous, rarely puberulent 3
3. Sheaths of stem leaves 3—4 mm long. Stems 20—35 cm 8. **D. transcaucasicus** Schischk.
- Sheaths of stem leaves 8—20 mm long. Stems 40—70 cm 4
4. Bracts 1.5—2 times wider than the epicalyx scales, enveloping the inflorescence, stiff and coriaceous. Sheaths of the upper stem leaves inflated 3. **D. subulosus** Freyn & Conrath
- Bracts almost equal to the epicalyx scales, not enveloping the inflorescence, thin, scarious. Sheaths of the upper stem leaves not inflated 2. **D. calocephalus** Boiss.
5. Annuals. Calyx verruculose. Petals pink, dentate, ebarbate. Stems 15—30 cm 23. **D. cyri** Fisch. & C. A. Mey.
- Perennials. Calyx glabrous. 6.
6. Petal limb entire, dentate, or deeply dentate; if nearly to 1/3 dissected into broad lobes, then thick 7
- Petal limb thin, to 1/4 and deeper fimbriate, sometimes shortly fimbriate. 18
7. Petal limb barbate, pink, reddish or purple, with darker spots, yellowish-green beneath 8
- Petal limb ebarbate, white, yellowish-white, rarely pinkish, without darker spots, of the same colour from both sides or olive-greenish beneath 12
8. Epicalyx scales 0—2(4). Caespitose plants 5—15 cm tall 4. **D. raddeanus** Viehr.
- Epicalyx scales 4—6(8). Plants taller 9
9. Calyx 3—4 mm wide, narrowly cylindrical. 10
- Calyx 4—7 mm wide, cylindrical 11
10. Flowering stems loosely branched from the base or in the upper half. Leaves almost linear. Flowers solitary. Apices of all the epicalyx scales aristate. Stems 15—30 cm 9. **D. aristatus** Boiss.
- Flowering stems compactly branched in the upper 1/4. Leaves lanceolate. Flowers usually approximate. Apices of the outer epicalyx scales flat, green. Stems 20—40 cm 7. **D. grossheimii** Schischk.
11. Leaves from narrowly lanceolate to lanceolate, gradually acuminate, 3—5 mm wide. Outer epicalyx scales leaf-like. Calyx 15—22×4—6 mm. Stems 20—40 cm. 5. **D. caucaseus** Sims
- Leaves narrowly lanceolate-linear, almost linear, long tapered towards apex, 1.5—2 (2.5) mm wide. Outer epicalyx scales not leaf-like. Calyx 14—17×4—5 mm. Stems 20—25(30) cm. 6. **D. gabrielianae** Nersesjan
12. Epicalyx scales patent, mucronate, up to 1/3 of calyx length. Petals whitish or yellowish-green, crenate to dentate. Stem 20—45 cm. 13. **D. inamoenus** Schischk.
- Epicalyx scales adpressed to calyx 13
13. Petals thick, yellowish-white or pinkish above, olive-greenish beneath 14
- Petals thin, white, rarely pinkish, of the same colour above and beneath 16
14. Calyx 5—11 mm, contracted under the teeth. Petal limb finely dentate. Stem 10—20 cm 14. **D. anatolicus** Boiss.
- Calyx larger, cylindrical. Petal limb deeply dentate or up to 1/3 dissected into broad lobes. 15
15. Calyx 15—20 mm. Petal limb cuneate, gradually narrowed into claw; white or pinkish above. Stems 15—20 cm, glabrous above, rarely very shortly puberulous 15. **D. floribundus** Boiss.
- Calyx 22—30 mm. Petal limb broadly cuneate, abruptly narrowed into claw; whitish above. Stems 20—25 cm, densely puberulous at the base 16. **D. canescens** K. Koch
16. Immature capsules with well expressed roll beneath teeth. Outer epicalyx scales with herbaceous apices, often reaching calyx teeth or even longer. Calyx 25—30 mm, long tapered towards apex. Stems 20—40 cm 11. **D. zangezuristicus** Nersesjan
- Immature capsules without well expressed roll. Epicalyx scales with subulate or herbaceous apices, usually not exceeding calyx length. Calyx not long tapered . . . 17
17. Basal leaves stiff, almost subulate, spinose, divaricate. Petal limb broadly obovate, obtuse-dentate, whitish. Stems 10—14 cm 12. **D. takhtajanii** Nersesjan
- Basal leaves not stiff, not spinose, not divaricate. Petal limb white, rarely pinkish, broadly cuneate, entire, crenate, rarely acute-dentate 10. **D. cretaceus** Adams
- i. Calyx 10—20 mm, abruptly contracted beneath of divaricate teeth, usually dark-reddish. Outer epicalyx scales herbaceous. Petals 1/5—1/4 longer than calyx 10. c. subsp. **dmanissianus** Boiss. & Huet) Nersesjan
- Calyx 15—25 mm, not contracted above, with straight or slightly divaricate teeth. Outer epicalyx scales subulate. Petals exceeding calyx up to 1/3—1/2 of its length ii
- ii. Immature capsules with slightly expressed roll beneath teeth or without it. Epicalyx scales 4—6, tapered into rigid apex 10. d. subsp. **sevanensis** Nersesjan
- Immature capsules without any roll. Epicalyx scales usually 4, tapered into not rigid apex iii
- iii. Densely caespitose plants. Stems 10—15(20) cm. Calyces reddish. Occurs at an altitude of 2300—3900 m. 10. b. subsp. **multicaulis** (Boiss. & Huet) Nersesjan
- Loosely caespitose plants. Stems (15)20—40 cm. Calyces greenish, rarely reddish. Occur at an altitude of 1500—2500 (2800) m 10. a. subsp. **cretaceus**
18. Calyx 30—40 mm. Leaves rigid, spinose. Outer epicalyx scales cuspidate, patent. Stems robust, 25—60 cm. Petal limb white with reddish spots, up to 1/2 fimbriate. Flower with a strong odour 17. **D. libanotis** Labill.
- Calyx shorter. Leaves herbaceous. Epicalyx scales adpressed to calyx. Plants not robust 19
19. Petals limb more than to 1/2 fimbriate. 20
- Petal limb up to 1/3 fimbriate 21
20. Calyx 25—30(35) mm. Stems 15—40 cm, with numerous nodes. Epicalyx scales 4—6(8), without long herbaceous apices. 18. **D. crinitus** Sm.
- Calyx 30—35(45) mm. Stems 5—15 (20) cm, with 2—5 nodes. Epicalyx scales 4(6), outer ones with long herbaceous apex 19. **D. crossopetalus** (Fenzl ex Boiss.) Grossh.
21. Calyx 30—35 mm. Petals pale-pink. Epicalyx scales 6—8 (10), oblong or roundish, with long thin apex or mucronate. 22. **D. jacobsii** Rech.f.

- Calyx shorter, 15—27 mm. Petals pink 22.
22. Epicalyx scales 6—8, abruptly tapered into acicular apex 1.5—2 mm. Shortened sterile shoots absent. Petals densely barbate. Stems 20—40 cm 21. **D. martuniensis** M. Kuzmina
- Epicalyx scales 4—14, without acicular apices. Shortened sterile shoots present. Petals ebarbate or rarely barbate. Stems 10—30 cm 20. **D. orientalis** Adams
- i. Epicalyx scales (4) 6—8 (14), imbricate ii
- Epicalyx scales (4) 6, not imbricate iii
- ii. Epicalyx scales (4) 6—8 (10), acuminate or gradually tapered into short apex. Stems not virgate 20a. subsp. **orientalis**
- Epicalyx scales 8—12 (14), shortly mucronate. Stems virgate 20b. subsp. **aphanoneurus** Rech. f.
- iii. Epicalyx scales roundish or emarginated at the apex, acuminate. Calyx 15—20 mm. Petal limb oblong-cuneate, ebarbate 20d. subsp. **obtusiquameus** (Boiss.) Rech. f.
- Epicalyx scales abruptly mucronate. Calyx 20—25 mm. Petal limb obovate, barbate 20c. subsp. **nassireddinii** Stapf

Acknowledgements

I would like to express my deepest gratitude to the Curators and Directors of the herbaria G, K, LE, TBI, TGM for their valuable advices and kind assistance. My special thanks to Prof. Werner Greuter for the correction of the Latin diagnoses.

References

- Гвинианидзе З. И. 1978. *Dianthus* L. // Флора Грузии, 4: 181—203. Тбилиси.
- Гроссгейм А. А. 1930. Флора Кавказа, 2. Тифлис—Эривань. 438 с.
- Гроссгейм А. А. 1945. Флора Кавказа, изд. 2, 3. Баку. 321 с.
- Гроссгейм А. А. 1949. Определитель растений Кавказа. М. 747 с.
- Дмитриева А. А. 1990. Определитель растений Аджарии, изд. 2, 2. Тбилиси. 278 с.
- Карягин И. И. 1952. *Dianthus* L. // Флора Азербайджана, 3: 368—385. Баку.
- Кузьмина М. Л. 1996. Новые виды, комбинации и находки рода *Dianthus* (*Caryophyllaceae*) на Кавказе // Бот. журн. 81, 8: 79—82.
- Меницкий Ю. Л. 1991. Проект «Конспект флоры Кавказа». Карта районов флоры // Бот. журн., 76, 11: 1513—1521.
- Тахтаджян А. Л. 1954. Флора Армении, 1: 3. Ереван.
- Шишкин Б. К. 1936. *Dianthus* L. // Флора СССР, 6: 803—861. Москва—Ленинград.
- Шишкин Б. К., Аветисян Е. М. 1956. *Dianthus* L. // Флора Армении, 2: 188—210. Ереван.
- Assadi M. 1985. The genus *Dianthus* L. (*Caryophyllaceae*) in Iran // Iran. Journ. Bot. 3, 1: 9—54.
- Kuzmina M. L. 2002. The sections *Macrolepides* (F. N. Williams) Klok. and *Barbulatum* F. N. Williams of the genus *Dianthus* L. (*Caryophyllaceae*) in East Europe and the Caucasus // Komarovia, 2: 29—54.
- Kuzmina M. L. 2003. The sections *Carthusiani* and *Armerium* of the genus *Dianthus* L. (*Caryophyllaceae*) in East Europe and the Caucasus // Komarovia, 3: 85—102.
- Reeve H. 1967. *Dianthus* // Flora of Turkey, 2: 99—131. Edinburgh.
- Rechinger K. H. 1988. *Dianthus* // Flora Iranica, 163: 128—188. Graz.
- Williams F. N. 1893. A monograph of the genus *Dianthus* L. // J. Linn. Soc. Bot. (London), 29: 346—378.

Institute of Botany, Armenian National Academy of Sciences, 0063, Yerevan, Acharian str. 1; anush_nersesyan@yahoo.com

OGANESIAN M. E.

GENUS ACANTHOLIMON BOISS. (PLUMBAGINACEAE) IN SOUTH TRANSCAUCASIA (ARMENIA, NAKHICHEVAN)

Instead of 19 species cited for South Transcaucasia (Мирзоева, 1956, 1981; Тамашян, 1967) we count 15. Two species have been described new to science, *A. manakyanii* and *A. takhtajanii*, the latter was previously wrongly identified by Caucasian authors as *A. armenum* Boiss. or *A. balansae* (Boiss. & Huet) Bunge. Two species (*A. festucaceum* (Jaub. & Spach) Boiss. and *A. tenuiflorum* Boiss.) are new for the flora of Armenia and South Transcaucasia. Nine species (*A. avenaceum* Bunge, *A. calvertii* Boiss., *A. lepturoides* (Jaub. & Spach) Boiss., *A. acerosum* (Willd.) Boiss., *A. puberulum* Boiss. & Balansa, *A. echinus* (L.) Boiss., *A. quinquelobum* Bunge, *A. armenum* Boiss., *A. scorpius* (Jaub. & Spach) Boiss.) have been excluded from the floras of the Caucasus or South Transcaucasia. The species cited as *A. scorpius* (Гроссгейм, 1939) and not mentioned afterwards by С. Г. Тамашян (1967) is identified as *A. tragacanthinum* (Jaub. & Spach) Boiss. The lectotype of *A. vedicum* Mirzoeva has been designated. A checklist of the genus in South Transcaucasia and a key to the species are enclosed.

Acantholimon, taxonomy, new species, South Transcaucasia

Նովահանրիսյան Մ. Է. *Acantholimon* Boiss. ցեղը Հարավային Անդրկովկասում (Նայասարան, Նախիջևան): Հարավային Անդրկովկասի համար նշված 19 տեսակի փոխարեն (Мирзоева, 1956, 1981; Тамашян, 1967) մենք ընդունում ենք 15-ը: Նկարագրվում է զիրույթյան համար 2 նոր տեսակ՝ *A. manakyanii* և *A. takhtajanii*: Վերջինս Կովկասի բոլոր բուսաբանների կողմից որոշվել է ոչ ճիշդ՝ որպես *A. armenum* Boiss. կամ *A. balansae* (Boiss. & Huet) Bunge. Նայասարանի և Հարավային Անդրկովկասի ֆլորաների համար բերվում են 2 նոր տեսակ (*A. festucaceum* (Jaub. & Spach) Boiss. և *A. tenuiflorum* Boiss.): 9 տեսակ (*A. avenaceum* Bunge, *A. calvertii* Boiss., *A. lepturoides* (Jaub. & Spach) Boiss., *A. acerosum* (Willd.) Boiss., *A. puberulum* Boiss. & Balansa, *A. echinus* (L.) Boiss., *A. quinquelobum* Bunge, *A. armenum* Boiss., *A. scorpius* (Jaub. & Spach) Boiss.) հանվում են Նայասարանի և Հարավային Անդրկովկասի ֆլորաների կազմից: Տեսակ, բերված որպես *A. scorpius* (Гроссгейм, 1939) և չհիշարարված Թ-անամշյանի (Тамашян, 1967) կողմից, մեր կողմից որոշված է որպես *A. tragacanthinum* (Jaub. & Spach) Boiss. *A. vedicum* Mirzoeva տեսակի համար առանձնացված է լեկտոտիպ: Աշխարհաբնորոշ բերվում են Հարավային Անդրկովկասում աճող տեսակների կոնսպեկտը և նրանց որոշման բանալին:

Acantholimon, կարգաբանություն, նոր տեսակներ, Հարավային Անդրկովկաս

Оганесян М. Э. Род *Acantholimon* Boiss. в Южном Закавказье (Армения, Нахичеван). Вместо приводимых для Южного Закавказья 19 видов (Мирзоева, 1956, 1981; Тамашян, 1967) нами принимается 15. Описываются 2 новых для науки вида (*A. manakyanii* и *A. takhtajanii* — вид, ошибочно идентифицируемый всеми кавказскими авторами как *A. armenum* Boiss. или *A. balansae* (Boiss. & Huet) Bunge). 2 вида являются новыми для флор Армении и Южного Закавказья (*A. festucaceum* (Jaub. & Spach) Boiss. и *A. tenuiflorum* Boiss.). 9 видов (*A. avenaceum* Bunge, *A. calvertii* Boiss., *A. lepturoides* (Jaub. & Spach) Boiss., *A. acerosum* (Willd.) Boiss., *A. puberulum* Boiss. & Balansa, *A. echinus* (L.) Boiss., *A. quinquelobum* Bunge, *A. armenum* Boiss., *A. scorpius* (Jaub. & Spach) Boiss.) исключены из флоры Кавказа или Южного Закавказья. Вид, приводимый как *A. scorpius* (Гроссгейм, 1939), и затем не упоминаемый С. Г. Тамашян (1967) определен нами как *A. tragacanthinum* (Jaub. & Spach) Boiss. Избран лектотип вида *A. vedicum* Mirzoeva. Приводится конспект рода в Южном Закавказье и ключ для определения видов.

Acantholimon, систематика, новые виды, Южное Закавказье

Introduction

The first significant works on the group, limited to *Statice* L., Subgenus *Armeriastrum* Jaub. & Spach, belong to H. F. Jaubert & E. Spach (1842—1843, 1843). After the description of the genus *Acantholimon* (Boissier, 1846), the first monograph on the genus in whole belongs to A. Bunge (1872). The account of the genus in E. Boissier's "Flora Orientalis" (1875) was monographic in nature. S. Mobayen (1964) investigated the genus worldwide, but incompletely. In particular, he did not investigate the Caucasian material. All the other works on the genus in the Caucasus, Turkey and Iran are either accounts for the regional "Floras" or material for them (Кузнецов, 1902; Гроссгейм, 1932, 1939; Линчевский, 1952; Манденова, 1952; Мирзоева, 1955, 1956; Прилипко, 1957; Тамашян, 1967; Мирзоева,