anguste lanceolatis, 2,5 cm longis, 2—5 mm latis, margine integris vel acute 2—5 dentatis. Capitula longe (15—26 cm) pedunculata, solitaria, terminalia. Involucrum 15 cm longum, 1,2 cm latum, glabrum. Phyllaria exteriora oblongo-ovata, breviter acuminata; interiora anguste linearia, 1,5—2 mm lata, appendice parva 1—2 (3) mm longa, oblonga, membranacea. Flores flavi, marginales steriles pauci, paulo tantum aucti, quam centrales bisexuales tubulosi 2—3 mm longiores. Achenia 3—4 mm longa, 1 mm lata; pappus 2—3 mm longus, argenteo-pilosus.

Erect annual plant, strongly branched, glabrous, up to 50 cm high. All leaves more or less petiolate, pinnatisect; lobes narrowly lanceolate, 2,5 cm long, 2,5 mm broad; margin entire or with 2—5 acute teeth; terminal lobe somewhat wider. Capitula with long (15—26 cm) peduncle, solitary, terminal. Involucre 1,5 cm long, 1,2 cm broad, glabrous. Outer phyllaries oblong-ovate, apex shortly acuminate; inner ones linear, 1,5—2 mm broad with small, 1—2 (-3) mm long, oblong, membranous appendages. Flowers yellow; marginal ones sterile, few, somewhat radiant, with 8—9 very short (2 mm long) lobes, exceeding the bisexual, central, tubular ones by 2—3 mm. Achenes 3—4 mm long, 1 mm broad; pappus 2—3 mm long, silvery hairy.

Eponymy. The species is named in honour of Ivan Gubanov, a well known botanist and assiduous explorer of Russian and Central Asian plants.

Site ecology and phenology: *A. gubanovii* grows in the montane belt from 800 to 1000 m a.s. l. on clayey desert or loamy, sandy, or stony steppe.

A. gubanovii flowers in April and May, fruiting in May-June.

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A REVISION OF *PAPAVER* SECT. *ARGEMONIDIUM* SPACH (*PAPAVERACEAE*).

Papaver sect. *Argemonidium* consists of 11 species: *P. argemone*, *P. nigrotinctum*, *P. virchowii*, *P. davisii*, *P. meiklei*, *P. minus*, *P. hybridum*, *P. apulum*, *P. ocellatum*, *P. pavoninum*, and *P. armenii* newly described here. All are briefly characterised, their distribution and relationships are discussed, and a key for their determination is provided. One new subsection is described, *P.* subsect. *Globosa*. Three new combinations are established, *P. meiklei* (Kadereit) M. V. Agab., *P. davisii* (Kadereit) M. V. Agab., and *P.* subsect. *Argemonidium* (Spach) M. V. Agab.

Papaver sect. Argemonidium, distribution, key, new species, new subsection, three new combinations.

Աղաբաբյան Մ. Վ. ***Papaver*** **ցեղի** ***Argemonidium*** **Spach սեկցիայի (*Papaveraceae*) վերաքննում**: *Papaver* ցեղի *Argemonidium* սեկցիան ընդգրկում է 11 տեսակ՝ *P. argemone*, *P. nigrotinctum*, *P. virchowii*, *P. davisii*, *P. meiklei*, *P. minus*, *P. hybridum*, *P. apulum*, *P. ocellatum*, *P. pavoninum*, ինչպես նաեւ առաջին անգամ նկարագրված *P. armenii* տեսակը: Տրվում են բոլոր տեսակների հակիրճ նկարագրությունը, տարածվածությունը, քննարկվել են միջտեսակային կապերը, բերվում է նաեւ տեսակների որոշման բանալին: Նկարագրվել է նոր ենթասեկցիա՝ *P.* subsect. *Globosa*: Հաստատվել են երեք նոր կոմբինացիաներ՝ *P. meiklei* (Kadereit) M. V. Agab., *P. davisii* (Kadereit) M. V. Agab. *P.* subsect. *Argemonidium* (Spach) M. V. Agab.

Papaver ցեղի Argemonidium սեկցիան, տարածվածությունը, բանալին, նոր տեսակ եւ ենթասեկցիա, երեք նոր կոմբինացիա:

Агабабян М. В. Ревизия секции *Papaver* секц. *Argemonidium* Spach (*Papaveraceae*). *Papaver* секц. *Argemonidium* включает 11 видов: *P. argemone*, *P. nigrotinctum*, *P. virchowii*, *P. davisii*, *P. meiklei*, *P. minus*, *P. hybridum*, *P. apulum*, *P. ocellatum*, *P. pavoninum*, а также, впервые описанный *P. armenii*. Все виды коротко охарактеризованы, дано их распространение и обсуждены межвидовые связи, а также приведен ключ для определения видов. Описана новая подсекция, *P.* subsect. *Globosa*. Установлены три новые комбинации: *P. meiklei* (Kadereit) M. V. Agab., *P. davisii* (Kadereit) M. V. Agab., и *P.* subsect. *Argemonidium* (Spach) M. V. Agab.

Papaver секц. Argemonidium, распространение, ключ для определения видов, новый вид, новая подсекция, три новые комбинации.

Introduction

Papaver sect. *Argemonidium* Spach originally consisted of 2 species only: *P. argemone* L. and *P. hybridum* L. E. Spach (1839) provided a fairly full description, stressing the section's two main diagnostic features: capsules covered with bristles and narrowly linear-spatulate, blackish violet staminal filaments. Whereas the section is generally considered to consist of annual species, Spach in his original description already mentioned that it is "... tantôt annuelle, tantôt bisannuelle ...", (the "biennial" growth form is also mentioned by J. W. Kadereit, 1988). Subsequently F. Fedde (1909), in his monograph of the family, recognised 6 species and several varieties in the section, whereas Kadereit (1986) reduced the number of species to four, but recognised several subspecies.

Papaver sect. *Argemonidium* is characterised by a peculiar general habit, uncommon elsewhere in the genus but shared with *Roemeria* Medikus. Same as several other *Papaver* sections it consists of annuals, but the first internode above the basal rosette is robust and significantly longer than the next internodes, the following leaves forming a kind of second rosette from which lateral stems (when present) branch off. The section's primary morphological characteristic is the bristly capsule. At species level, the following characters are significant: overall size, flower bud shape (globose or elongate) and indumentum (white or brownish bristles of varying number and density); pedicels (always curved in bud but erect or nodding at anthesis); colour and shape of petals (distinctive for each taxon, but unfortunately colour is difficult to describe, and impossible to observe on dried specimens where it turns to either blackish or pale rose); and, most importantly, indumentum and shape (globose

to narrowly cylindrical) of the capsules, shape of stamen filaments (clavate, subulate or filiform) and anther colour (green, blue, grey or yellow).

Papaver sect. ***Argemonidium*** Spach, Hist. Nat. Vég. Phan. 7: 19. 1839 ≡ *P.* sect. *Argemonorhoeades* Fedde in Engler, Pflanzenr. 40: 326. 1909, nom. illeg.

Type (Code, Art. 22.6; confirmed by Kiger in Taxon 22: 580. 1973). *P. argemone* L.

Papaver subsect. ***Argemonidium*** (Spach) M. V. Agab., **comb. nov.** (basionym: see above).

1. **P. argemone** L., Sp. Pl.: 506. 1753

Described from "Europe". Lectotype (Jonsell & Jarvis in *Nordic J. Bot*. 14: 162. 1994): Herb. Linn. No. 669.2 (LINN, photo!).

Mediterranean Europe, from Spain to the Balkan Peninsula, extending northward as far as Sweden and the Baltic republics and eastward to Belorussia and Moldova; also reported from Morocco and Algeria. Treated in an excessively wide sense by Kadereit (1997) and Egorova (1998). The former restricted the distribution of *P. argemone* subsp. *argemone* to Europe (plus N. Africa) and recognised several subspecies in the eastern Mediterranean and W Asia. On the basis of morpholgy, distribution and chromosome numbers at least three of Kadereit's subspecies deserve to be accepted as separate species.

As defined here, *Papaver argemone* can be distiguished from its relatives by its erect, tall, green stems, leaves with very scarce indumentum, elongate to pyriform flower buds, petals rounded distally, never contiguous or overlapping, reddish orange to brick or rusty red with a small diffuse dark spot near the base, and a clavate capsules attenuate at the base. Chromosome number (Kadereit, 1986): $2n = 40, 42$.

2. **P. nigrotinctum** Fedde in Engler, Pflanzenr. 40: 330. 1909 ≡ *P. argemone* subsp. *nigrotinctum* (Fedde) Kadereit in Notes Roy. Bot. Gard. Edinburgh 44: 37. 1986.

Lectotype (Kadereit, 1986): Achaia: in collibus siccis prope Neo-Corinthum, nec non ad radices Acrocorinthi, 26.04.1885, *Heldreich 816* (B!, isolectotypes: BM, E No. 00062051!, G, GB, W).

Confined to Greece and Turkey. Its area does not overlap with that of *P. argemone*.

Originally described as a hybrid between *Papaver argemone* and *P. apulum,* then accepted by Kadereit (1986) at subspecies level.

P. nigrotinctum is charcterised not only by its morphology (mostly globose flower buds, petals with a dark basal mark of half of their total length, and small ellipsoidal capsules), but also by its chromosome number (Kadereit, 1986): $2n = 14$.

3. **P. virchowii** Aschers. & Sint. ex Boiss., Fl. Or. Suppl.: 23. 1888 (fig. 1, page 43).

Lectotype (designated here): Thymbra in collibus, 4.5.1883, *P. Sintenis: Iter Trojanum 37 p. p.,* det. P. Ascherson (B No. 100279425!, isolectotypes: B No. 100279426 (in flower)!, BM No. 000574923!, E No. 00438568!, E No. 00062069 p. p. (in flowers)!, LE!, K No. 000653130!, K No. 000653130 (collibus in valle Kimar-Szu)!, K No. 000653132!, US No. 00099721! Other syntypes: Thymbra in collibus, 7.6.1883, *P. Sintenis: Iter Trojanum 37 p. p.,* (B No. 100279426 p. p. (in fruit)!, E No. 00062069 p. p.(in fruit)!; Smyrna, *Aucher-Eloy 374* (K No. 000653133 p. p., left plant)!

= *P. virchowii* f. *paucisetosum* Fedde in Engler, in Engler, Pflanzenr. 40: 330. 1909

— *P. virchowii* f. *genuinum* Fedde in Engler, in Engler, Pflanzenr. 40: 330. 1909, design. inval.

Known from the eastern coasts of Aegean Sea. First collected by Virchow (Troas, Assos, 27.04.1879; specimen: B100279421), then again by Syntenis whose specimens were named *Papaver virchowii* by Ascherson. That name was used in most Floras and treatments at the beginning of last century, Sintenis' collections having been distributed to many large herbaria. As Ascherson provided no description, it was subsequently validated by E. Boissier (1888). F. Fedde (1909) added a form, based on the low number of bristles per capsule. In fact, most capsules lose theirs bristles at maturity, and in the same plant one can observe nearly glabrous and bristly capsules depending on the stage of maturation (see B No. 100279426, plant with fruits).

Included by Kadereit (1986) in *Papaver minus* s. str. as doubtfully distinct even at varietal level, this name was dropped from use. The species differs from. *P. minus* by its decumbent or spreding habit, widely obovate flower buds, large cup-shaped flowers, and greyish not yellow anthers; from other related species by its deep-red petals that usually bear a second, smaller, subapical dark blotch in addition to the large basal one (a feature that unfortunately is often lost in dried specimens), and long narrow cylindrical capsule borne on a thickened pedicel.

4. **P. davisii** (Kadereit) M. V. Agab., **comb. nova** ≡ *P. argemone* subsp. *davisii* Kadereit in Notes Roy. Bot. Gard. Edinburgh 44: 38. 1986.

Holotype: Turkey. C1 Mugla: d. Bodrum, Musgebi to Karatoprak, 50—100 m. Sandy igneous slopes, or edge of fields. Annual, petals crimson, with large black blotch, 12.4.1965, *Davis 40979* (E No. 00062068!; isotype: K No. 000653128!).

Thought by Kadereit (1986) to be restricted to Mediterranean Turkey, the species has also been collected in mainland Greece (prov. Evritania) (*Phitos & Kamari 21871b,* PAL-Gr).

Papaver davisii is characterised by its large size (to 85cm tall), subglabrous, bipinnatisect leaves with apically rounded, elongate segments, broadly obovoid to globose flower buds, and very large, up to >3 cm wide crimson petals.

5. **P. meiklei** (Kadereit) M. V. Agab. **comb. nova** ≡ *P. argemone* subsp. *meiklei* Kadereit in Notes Roy. Bot. Gard. Edinburgh 44: 38. 1986.

Holotype: Flora of Cyprus: Mandria, 4000 ft. alt., in cultivated plot by roadside. Erect or decumbent; leaves mid-green; petals deep rich scarlet with violet basal blotch; stigmas blue. 3.5.1962, *R. D. Meikle 2836* (K No. 000653129!; isotype C).

Endemic to Cyprus.

The species is characterised by its small size, an appressed indumentum of white hairs, obovate bright red or scarlet petals, and an elongate, subcylindrical capsule with but a few bristles distally, below the stigmatic disk. It shares conspicuously thickened fruiting pedicels with the next following species, from which it differs by the bluish-green, not yellow colour of the anthers. Chromosome number (Kadereit, 1986): $2n = 28$.

6. **P. minus** (Boiv. ex Bél.) Meikle in Kew Bull. 3: 545. 1957 ≡ *Closterandra minor* Boiv. ex Bél., Voy. Indes Or.: t. 3, fig. B. 1834—1836 ≡ *Papaver belangeri* Boiss. Fl. Or. 1: 117. 1867, nom. illeg. ≡ *P. argemone* subsp. *belangeri* Takht. in Takhtadzhjan & Fedorov, Fl. Erevana, ed. 2: 65. 1972 ≡ *P. argemone* subsp. *minus* (Boiv. ex Bél.) Kadereit in Notes Roy. Bot. Gard. Edinburgh 44: 39. 1986.

Lectotype (Meikle 1957): Persia, 1825, *Bélanger* (FI, G, P), not extant; **new lectotype (designated here)**: "*Closterandra minor* Boiv." in Bélanger Voy. aux Indes-Orient, t. 3, fig. B; **epitype (designated here)**:. Prope ruinas

u[rbis] Persepolis, 18.4.1842, *Th. Kotschy, Pl. Pers. austr. ed. Hohenacker 253!* sub *P. argemone* (K No. 000653135!; isoepitypes: B No. 100279422! G-BOIS!, P No. 00738910, P No. 00738911!).

= *P. desertorum* Grossh. in: Grossgejm & Šiškin, Sched. Herb. Pl. Or. Exs. 1: 23. 1924.

W. Asia, from eastern Anatolia to Armenia and Iran, extending southward to Egypt. Kotschy's plants were the basis of Boissier's (1867) description. Boissier considered *Closterandra minor* to be a nomen nudum ("Icon. absque descriptione"), but as it was accompanied by an illustration with analysis it is nevertheless validly published. The specimens cited by R. D. Meikle (1957) as type, assuming they were not merely conjectural, are apparently all lost, and the original plate appears to be the only element available for lectotypification. *Papaver desertorum,* described from Nakhichevan, was accepted by Grossheim (1928) but later (1950) treated by him as a synonym of *P. belangeri*. D. A. Mikheev (1993) unaccountably used the junior synonym *P. desertorum* for the combined taxon, declaring the older epithets to be inappropriate.

Papaver minus differs from *P. argemone* by its small size (usually 5—20 cm), dense indumentum (all parts covered by long dense whitish bristles), thickened fruiting pedicels, saturate-red rhomboidal or elliptic, distally narrowed petals with a distinct black, rhomboidal mark, and bright yellow anthers. The capsule is cylindrical rather than clavate, densely covered with bristles, with a conical, 3- to 5-rayed stigmatic disc. Chromosome number (Kadereit, 1986): $2n = 14, 28$.

Papaver subsect. ***Globosa*** M. V. Agab., **subsect. nov.**

Typus: *P. hybridum* L.

Capsulae setosae, obovoideo-globosae.

7. **P. hybridum** L., Sp. Pl.: 506. 1753 ≡ *Cerastites hybrida* (L.) Gray, Nat. Arr. Brit. Pl. 2: 704. 1821 ≡ *P. hispidum* Lam., Fl. Franç. 3: 174. 1779, nom. illeg.

Lectotype: (Aghababyan & Raimondo 2011): *Argemone capitulo breviore* Bauh. *Argemon* Rötlin, Lutetiae et Monspelii, Hb. Burser 9: 56 (UPS).

= *P. siculum* Guss., Fl. Sicul. Syn. 2(1): 6. 1844 ≡ *P. hybridum* subsp. *siculum* (Guss.) Arcang., Comp. Fl. Ital.: 24. 1882 ≡ *P. hybridum* var. *siculum* (Guss.) Raimomdo & Spadaro in Bocconea 20: 12. 2007.

= *P. hybridum* var. *lanuginosum* Fedde in Engler, Pflanzenr. 40: 333. 1909.

= *P. hybridum* var. *tenuifolium* Chevall. in Bull. Herb. Boissier, ser. 2, 3: 765. 1903.

= ? *P. hybridum* f. *latifolium* Maire & Weiller in Bull. Soc. Hist. Nat. Afrique N. 30: 329. 1939.

This species is considered to have an immense distributional area extending from Europe to Central Asia and N. Africa. Most of the Asian material, however, belongs to different species (see below). The few recorded occurrences in Tadzhikistan, Afghanistan and Pakistan might be the result of wrong determination, or of recently introduced plants growing in cultivated fields or at roadsides, as in the case of S. Russia, Caucasia, and Iran. The main area of *Papaver hybridum* proper is restricted to the countries all around the Mediterranean Sea, but even there it is very variable and needs additional study. Some of the infraspecific synonyms listed above, documenting its variability, may well deserve taxonomic recognition.

Papaver hybridum differs from its relatives by its tall size (usually 50—90 cm), much-branched stems, bipinnatisect leaves with apically rounded, short segments, broadly obovoid or globose flower buds, small, bluish-pink or mauve, contiguous but not overlapping petals, bright blue anthers, subglobose to broadly obovoid capsules with thick spreading bristles and a 6- to 10-rayed stigmatic disc. Chromosome number (Kadereit, 1986): $2n = 14$.

8. **P. apulum** Ten., Fl. Neapol. Prodr. App. 5: 16. 1926 ≡ *P. hybridum* var. *apulum* Trautv. in Acta Hort. Petrop. 1: 27. 1871—1872 = *P. argemonoides* Cesati, Stirp. Ital. 1: 346. 1838.

Lectotype (designated here by Aghababyan & Raimondo): In Apuliae pratis montanis [manu Tenore] Tenore misit 1830" (K No. 000653113!).

Originally described from fields of Apulia, *Papaver apulum* occurs on both sides of the Adriatic Sea and perhaps on some Aegean Islands.

It differs from other species by its small, globose or broadly ellipsoidal capsules densely covered with appressed, rather soft bristles, flower buds of 0.5—1 cm in diametre, and elliptical, orange red petals sligthly darkened but lacking a pronounced spot at the base but. Chromosome number (Kadereit, 1986): $2n = 12$.

9. **P. ocellatum** Woronow in Izv. Kavkazsk. Muz. 11: 276. 1918 ≡ *P. pavoninum* subsp. *ocellatum* (Woronow) Kadereit in Notes Roy. Bot. Gard. Edinburgh 44: 30. 1986.

Lectotype (M. Popov, 1937): Uročišje Goris-tskali, 5.6 1902, *Dgebuadze* (TBI!). Numerous sytypes! (fig. 2.)

= *P. hybridum* var. *grandiflorum* Boiss., Fl. Orient. 1: 117. 1867.

= *P. hybridum* var. *microcarpum* N. Busch, Fl. Caucas. Crit. 3(4): 35. 1905.

= *P. pavoninum* var. *incornutum* Fedde in Engler, Pflanzenr. 40: 333. 1909.

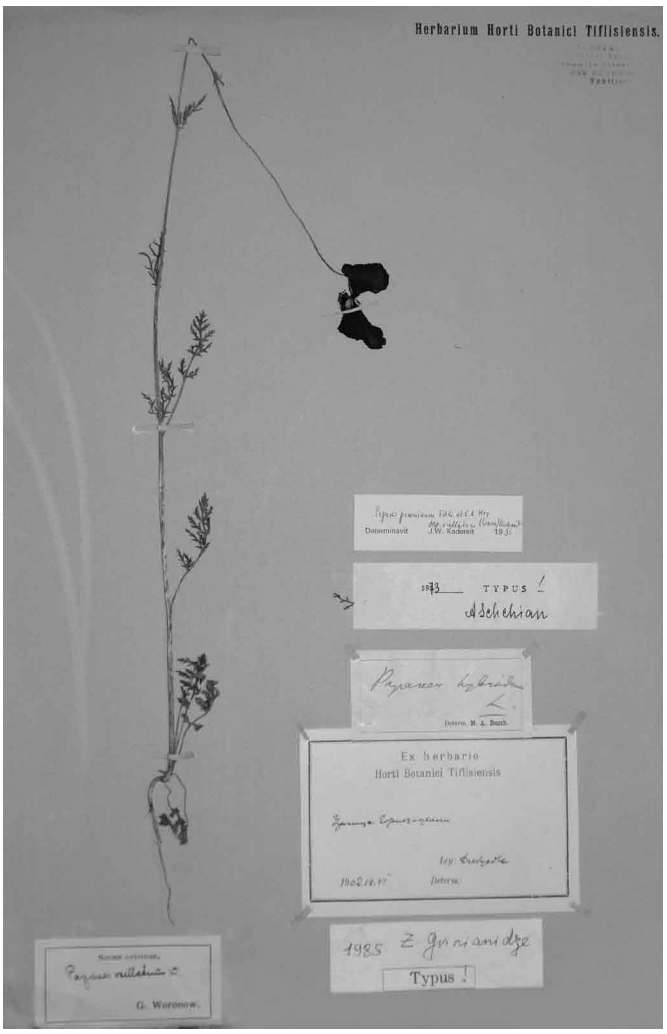

Fig. 2. Lectotype of *Papaver ocellatum*

= *P. ocellatum* var. *turcomanicum* Popov in Herb. Asiae Mediae. fasc. 23: No. 568. 1934.

Growing in Daghestan, Azerbaidjan, and Iran.

Papaver ocellatum was described as related to *P. apulum* and *P. pavoninum*. In the protologue Woronow also mentions some similarity with *P. virchowii*. The original material consists of annual plants covered with long white bristles up to the flower buds, of which the golden-brown, appressed indumentum is a distinctive feature within the section. According to the original description, the petals resemble those of *P. pavoninum* (bright red, with a large dark basal blotch bordered with white and surrounding a crimson central spot), but differs by its non-corniculate flower buds.

10. **P. pavoninum** Schrenk, Enum. Pl. Nov. 2: 64. 1842.

Neotype (M. Popov, 1937): Cultiviert im bot. Garten zu Ptrbg., die Saamen aus der Songorei, M. 1847 [manu Schrenk] (LE!). (fig. 3.)

= *P. cornigerum* Stocks *in* Hooker's J. Bot. Kew Gard. Misc. 4: 142. 1852.

= *P. pavoninum* var. *freynii* Fedde in Engler, Pflanzenr. 40: 334. 1909.

Papaver pavoninum occurs between the Caspian Sea and the West Himalayas. The name has been erroneously attributed to Fischer & C. A. Meyer, e.g. by Kadereit (1986) who in fact only reprinted Schrenk's diagnosis. In the protologue there is a detailed Latin description but no cited specimen, only indication of seed provenance ("Semina lecta ad lacum Alakul"). The accepted type cannot be original material (none of which is known), because even though the label was written by Schrenk it is of a later date.

Very variable but easily recognised by its corniculate flower buds, large bright red bimaculate petals, and filiform filaments. The plants are usually erect and relatively tall, and when in full bloom they may tinge the whole landscape with red. Chromosome number (Kadereit, 1986): $2n = 12, 14$.

11. **P. armenii** M. V. Agab., **spec. nova**

Holotypus: Арм. ССР, Мегринский район, правый борт ущелья Агарак, выше с. Карчеван, окр. ГРП, сухие склоны, 900—1100м над уровнем моря. 7.06.1985, Ханджян Н.С. и Манакян В.А. [Armenia, prov. Meghri, right side of Agarak gorge, near Karchevan, on arid slopes, 900—1100 m. 7.6.1985, *Khanjan & Manakian*] (ERE No. 129605; isotypes: ERE Nos. 129604; 129606; G No. 337035! as *P. persicum*). (fig. 4.).

Planta annua?, adscendens, 15—25 cm alta, glauca, caule ramosissimo. Folia plus minusve hispida, pinnatisecta, segmentis lineari-lanceolatis apice subobtusis. Pedicelli tenuissimi elongati, pilis raris adpressis obsiti. Alabastrum parvulum ovato-globosum apice tuberculatum, setis raris albescentibus ornatum. Petala dilute rubra basi bimaculata, maculis roseo-ocellatis. Staminum filamenta ellipsoidea apice dilatata. Capsula ovato-globosa, costata, setosa. Capsulae discus subconicus, angulatus.

Papaver hybridum nostro affine alabastro apice tuberculis carente, petalis macula basali parva atra concolori instructis differt; *P. ocellat*um alabastro majore setis aureo hirsutis induto, caule simplici, petalorum macula vinoso-ocellata, *P. pavoninum* sepalis longe corniculatis, filamentis filiformibus discedit.

This new species is dedicated to the memory of great botanist Armen Takhtajan.

So far only known from Armenia (Erev. & Meghri), in sandy semidesert and arid stony slopes, at 900—1100 m of altitude.

The new species shows close affinities with *Papaver ocellatum* and *P. pavoninum,* from which it differs by its small size, ascending habit, branched stems, small globose

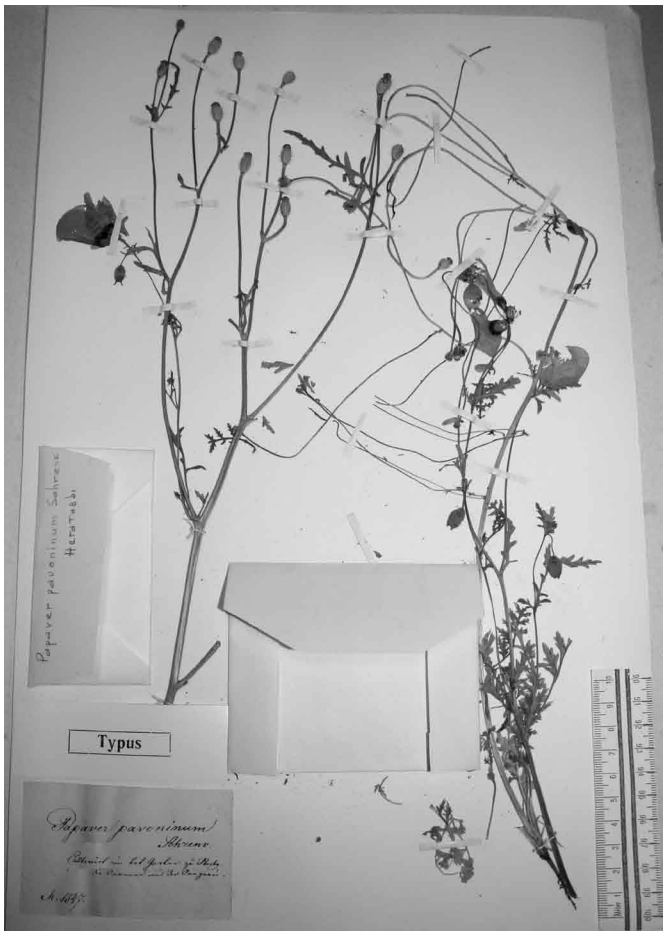

Fig. 3. Neotype of *Papaver pavoninum*

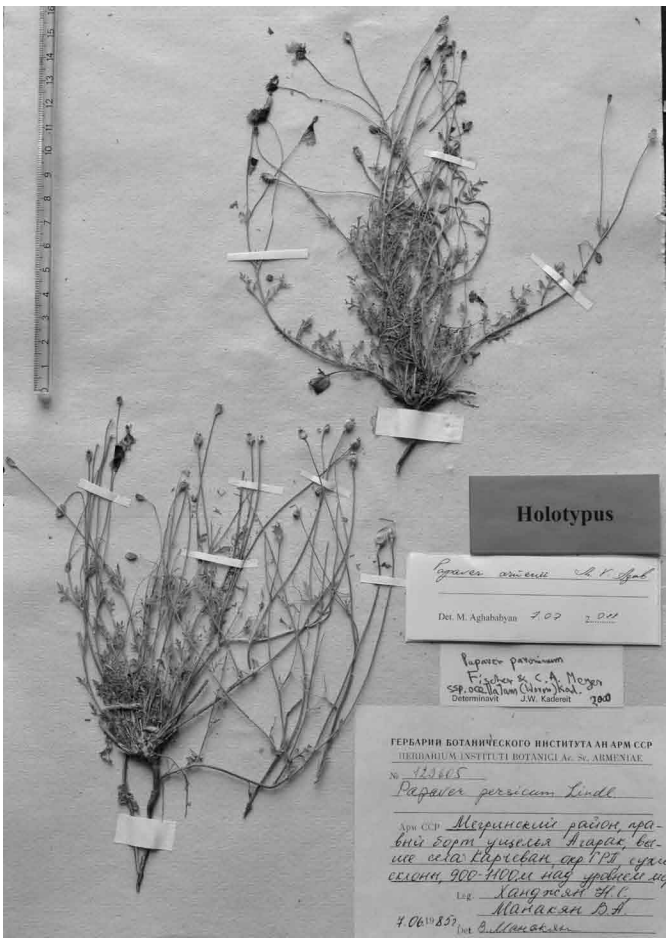

Fig. 4. Holotype *Papaver armenii*

apically tuberculate, subglabrous flower buds with but a few bristles. It is a rare plant, only known from two areas so far. The type locality is close to the Iranian and Nakhichevan border; the second locality is near Erevan on the sands of Gorovan. Subsequent attempts to find the plant again were so far unsuccessful.

Key

1. Filaments filiform . . . . . **P. pavoninum**
— Filaments thickened in upper part attenuate on the base . . . . . 2.
2. Capsule clavate, elongate-elliptical, or narrowly cylindrical . . . . . 3.
— Capsule subglobose or obovate . . . . . 8.
3. Capsule clavate or elongate-elliptical . . . . . 4.
— Capsules narrowly cylindrical . . . . . 6.
4. Petals orange-red or deep red, not darkening significantly . . . . . 5.
— Petals crimson, becoming dark when dry . . **P. davisii**
5. Erect, weakly branched plants 30—70 cm tall; flower buds elongate; petals not contiguous; stigmatic disk flat, with 6—8 rays. . . . . **P. argemone**
— Decumbent or ascending, much-branched plants 10—20 cm tall; flower buds globose; petals overlapping; stigmatic disk conical, with 4—5 rays . **P. nigrotinctum**
6. Capsules covered with numerous, eventually deciduous bristles along their whole length. . . . . 7.
— Capsules with few, persistent bristles in its distal 1/3 only . . . . . **P. meiklei**
7. Plants erect, weakly branched; flower buds narrow, elongate; petals rhomboidal, contiguous, deep tomato red, with a single small black basal mark. . . **P. minus**
— Plants decumbent or spreading, much-branched; flower buds ellipsoidal to broadly obovoid; petals broadly obovate, overlapping, deep red or crimson with a large black basal mark and a second, smaller apical one . . . . . **P. virchowii**
8. Petals with a black basal mark. . . . . 9.
— Petals with a pale, diffuse violet mark . . . **P. apulum**
9. Black mark small, concolorous . . . . . **P. hybridum**
— Black mark large, with a pink or red central spot . 10.
10. Plants erect, 15—50 cm tall, weakly branched; flower buds densely covered with golden brown patent bristles; pedicels long; anthers bright yellow, stigmatic disk with 5—6 rays . . . . . **P. ocellatum**
— Plants ascending, 15—25 cm tall, much-branched; flower buds with scattered, appressed white bristles; pedicels short; stigmatic disk with 4—5 rays . . . . **P. armenii**

Discussion

Papaver sect. *Argemonidium* stands out from among the other sections of the genus by its bristly capsule and peculiar growth habit. It appears to be isolated within the genus, and most closely resembles the genus *Roemeria*. By the structure of their stigmatic disk (the placental ridges, meeting at the centre underneath the disk, expand distally at maturity and eventually cause the disk to break away, leaving the capsule wide open to complete dissemination of the seeds), the members of this section resemble *P. macrostomum* of the monotypic *P.* sect. *Carinatae* Fedde. This particular feature, particularly prominent in *P. macrostomum,* is not found elsewhere in the genus *Papaver* and has been considered as highly specialised, placing *P.* sect. *Carinatae* in a terminal position in the classification of the genus. By all other characters, *P. macrostomum* closely resembles *P.* sect. *Papaver,* so that the specialised disk structure is probably the result of convergent evolution rather than of affinity between *P.* sect. *Argemonidium* and sect. *Carinatae*. Conversely, there are good arguments for a close affinity of *P.* sect. *Argemonidium* with *Roemeria* (which has its own, different capsule opening mechanism), such as the narrowly clavate filaments of *R. refracta* DC., in addition to the features mentioned before. Interestingly, a recent phylogenetic analysis of *Papaver* and its allies (Carolan & al., 2006) and our own molecular study confirms the close relationship of *Roemeria* and *P.* sect. *Argemonidium*.

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Fig. 4. Mt. Ashutas (Google Earth 2011) — the locus classicus of *Amberboa takhtajanii* and fossil *Magnolia takhtajanii* (see page 35).

Fig. 1. Papaver virchovii (Bob Gibbons / Science Photo Library) (see page 38).

Fig. 2—3. *Dianthus gabrielianae*. Photos by A. Nersesian (see page 44)

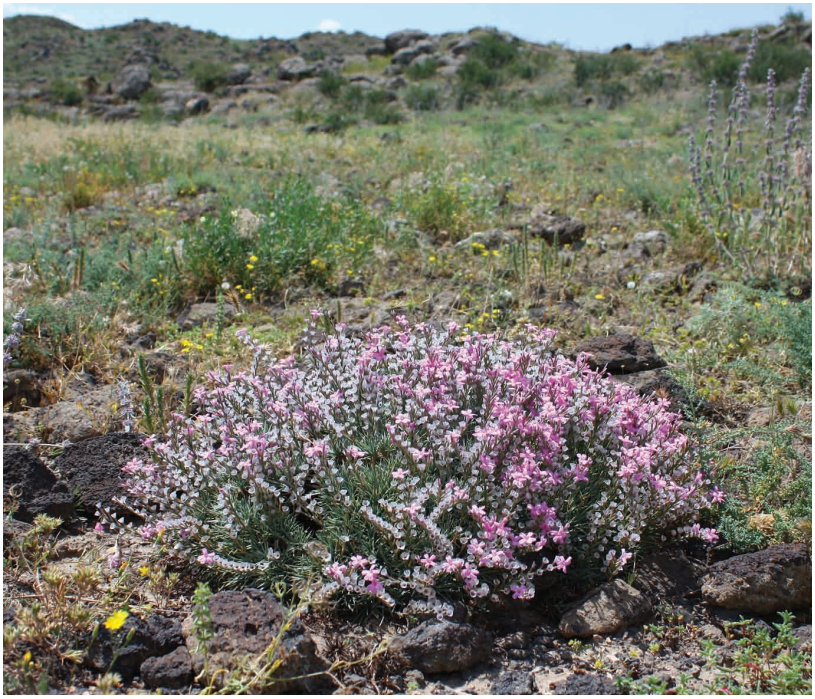

Fig. 2. *Acantholimon takhtajanii* — type plant (see page 51)