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REVIEW ARTICLE

Prominent botanists of Central Asia: Vvedensky Aleksei Ivanovich (1898–1972)

Furkat Khassanov[1], Olga Cherneva[2], Obidjon Turdiboev[1], Shokhbozbek Turdiboev[1], Komiljon Sh. Tojibaev[1*]

[1]*Institute of Botany, Academy of Sciences of the Republic of Uzbekistan, Tashkent 100125, Uzbekistan*
[2] *Komarov Botanical Institute RAS, St. Petersburg 197376, Russian Federation*

✉ ktojibaev@mail.ru

ABSTRACT

This article honours the memory of the outstanding taxonomist and tireless researcher of the flora of Central Asia, Aleksei Ivanovich Vvedensky, the founder of the most extensive Central Asian herbarium collection, the author of monographic revisions in 'Flora of the USSR', the editor and author of the six volume edition of 'Flora of Uzbekistan', the 'Conspectus Florae Asiae Mediae', and various taxonomic publications Vvedensky described dozens of new genera and hundreds of new species of vascular plants from Central Asia.

Key words: *Allium*; *Iris*, *Eremurus*; bibliography; Vvedensky; taxonomy; Middle Asia

Aleksei Ivanovich Vvedensky was born on March 7, 1898, in the city of Penza (Russia) in the family of a teacher. He discovered his interest in botany early in school. The famous Penzini botanists Profs. I.I. Sprygin and M.G. Popov played an eminent role in the career of their young and energetic student. Under their guidance, Aleksei acquired his first skills in herbarization, biodocumentation, and identification of vascular plants (Butkov et al. 1968).

The professional development of A.I. Vvedensky took place against the backdrop of the violent revolutionary events of 1917–1920, the fall of the Russian Empire as a result of revolutions, the First World War and the Civil War. In 1917, Vvedensky, still very young, became a member of the Penza Society for Natural Sciences, whose chairman was I.I. Sprygin. The following year, his first publication appeared: 'News and the rarity of the Penza flora' (1918). In January 1919, Vvedensky was appointed head of the Herbarium of the Penza Provincial Natural Historical Museum. A year later, he began working at the Penza Zoological and Botanical Garden, which was united with the Museum, while still heading the herbarium and holding the full-time position of taxonomist.

In 1920, by order of the government, a large group of Russian scientists was sent to Tashkent with the mission of creating a higher educational institution in Turkestan. Together with I.I. Sprygin, M.G. Popov, E.P. Korovin, and four other employees of the Penza Museum, Vvedensky arrived to Tashkent and, among the large group of botanists and soil scientists, became actively involved in organizing the botanical department. The Penza botanists who moved to Tashkent were called the 'Group of Sprygin'.

The Department of Botany they created became part of the Physics and Mathematics Faculty of the Turkestan People's University (since 1924 the Central Asian State University; since 1960 Tashkent State University; and

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currently the National University of Uzbekistan). Since the 1920s, many leading botanists of that time began to work there, including R.I. Abolin, A.A. Baranov, A.V. Blagoveschensky, V.P. Drobov, M.G. Popov, E.P. Korovin, M.V. Kultiasov, N.D. Leonov, I.A. Raikova, M.M. Sovetkina and others (Tojibaev et al. 2020). Over time, it was this department that would later serve as a scientific centre for the development of plant science in Central Asia. The Tashkent group of young and talented botanists introduced the scientific world to hundreds of new plant species, as well as to the unique features of the vegetation of Central Asia.

In Tashkent, throughout the 1920s, Vvedensky combined organizational work with scientific research at the university, which may explain his relatively late graduation. Vvedensky completed his higher education in 1929 with the thesis entitled 'Central Asian *Gagea reticulata* s.l. alliance and its path of evolution' (handwritten manuscript, 1929). At that time, Vvedensky worked as a researcher at the Faculty of Physics and Mathematics, head of the herbarium of the Botanical Garden, expert in the Botanical Garden, and head of the herbarium of the Central Asian University (Lipschitz 1947).

The special contribution of A.I. Vvedensky was the creation of the University Herbarium in 1920, originally called Herbarium Horti Botanici Universitatis Asiae Mediae (subsequently Herbarium Universitatis Taschkenticae, acronym TAK) which he himself headed since 1925. From 1923 to 1934, twenty issues of 'Shedae ad Herbarium Florae Asiae Mediae' were published (Vasilchenko, Vassilieva, 1975). The herbarium was created from the collections of the Bureau of Soil and Botanical Research, established in 1909. Much later, in early 1988, the University Herbarium was merged with the Herbarium of the Institute of Botany of the Academy of Sciences of the Uzbek SSR (Pratov and Adylov 1996). The TASH Herbarium (Institute of Botany, Tashkent) (Pratov and Adylov 1996), which already existed at that time, was originally based on the collections of the plant resources sector of the Committee of Sciences created in 1936. At first, in the united herbarium, the university and academic collections existed in parallel, with their own particular nomenclature, and were located in different premises. The collections were merged and reorganized by T.A. Adylov, who was the curator of the Herbarium from 1972 to 1988, in a process of painstaking work. Later, A.I. Vvedensky brought the number of sheets in this collection to around half a million. Under his leadership, there was established a practice of an exchange of duplicates of herbarium specimens with the then Soviet and foreign herbaria, such as W (Vienna), P (Paris), K and BM (London). At that time, this required not only a huge organizational effort, but also the firm authority of Vvedensky.

In working with the herbarium collection, Vvedensky was exceptionally meticulous and pedantic. According to the memoirs of T.A. Adylov, when they brought freshly collected plants, Vvedensky immediately sent the collectors to dry the plant material before proceeding with the identification procedure. At the same time, he did not trust anyone with a significant part of the herbarization work, and preferred to perform it himself, or only with reliable employees (V.K. Pazij, S.S. Kovalevskaya, N.B. Nikiforova, and others). Vvedensky also actively participated in field research and collected huge numbers of herbarium specimens. The samples collected by him personally constituted a significant part of the material he used in the preparation of his major scientific publications. So, when working on the publication 'Herbarium Florae Asiae Mediae' (1924–1928), Vvedensky utilized over 25,000 herbarium sheets, a significant portion of which were collected in field expeditions led by Vvedensky.

In 1935, A.I. Vvedensky was awarded the Candidate of Biological Sciences degree without the need of a dissertation defense (based on the totality of his published works) and was awarded the title of associate professor. In 1943, he was elected a corresponding member of the Academy of

Sciences of Uzbekistan. Vvedensky established the Systematics of Vascular Plants Laboratory at the Institute of Botany of the Academy of Sciences of Uzbekistan, which he headed from 1950 to 1958.

Despite problems with his health that arose with aging, he continued to lead and participate in many field expeditions to various regions throughout Central Asia (Fig. 1.). Although his mobility decreased with age and the expeditions became fewer, he nevertheless was collecting large numbers of samples during field work. Botanists dealing with the scientific heritage of A.I. Vvedensky note the broad spectrum of his floral interests. He was a known expert for all plant groups, from ferns to composites.

In 1923, A.I. Vvedensky published the 'Identification of the Plants of Tashkent: an illustrated guide to the identification of wild vascular spore and flowering plants' (Popov 1923), which focused on the plant diversity of the mountainous surroundings Tashkent city (Tashkentskiy Ala-Too). In fact, this publication served as a textbook for teaching lab classes on the taxonomy of flowering plants at the university, which took place at that time in the vicinity of the village of Kaplanbek (near Tashkent, now belonging to Kazakhstan). Due to the additional coverage of areas with high plant diversity, such as the vicinities of Humsan (Ugam Range), Chimgan (Chatkal Range), and Burch Mullah (Koksuv Range), it became an often used handbook for many Central Asian botanists. The textbook focused on seven families (Araceae, Lemnaceae, Juncaceae, Liliaceae, Amaryllidaceae, Iridaceae and Orchidaceae), 20 genera and 86 species. In the following year, Vvedensky (1924) critically reviewed 150 species for the Herbarium Florae Asiae Mediae. For the Flora of Turkmenistan (vol. 1, 1932), Vvedensky contributed the families Liliaceae (except *Tulipa, Eremurus, Asparagus*), Amaryllidaceae and Araceae, totaling 15 genera and 74 species. Vvedensky also contributed to the multi-volume Flora of the USSR (30 volumes, 1934–1964), for which the team of authors was selected with great care. He revised the genera *Bromus* (Vvedensky et al. 1934), *Tulipa*, *Allium*, *Ungernia*, *Iris*, and *Juno* (Vvedensky 1935); the Rutaceae and the genera *Biebersteinia* and *Erodium* (Vvedensky 1949), *Pedicularis* (Vvedensky 1955), contributing to the Flora of the USSR in total morphological descriptions of 518 species. To the six-volume edition of the Flora of Uzbekistan (1941–1963), he contributed the Eriocaulonaceae, Liliaceae, Amaryllidaceae, Iridaceae (Schreder 1941), Caryophyllaceae (Vvedensky 1953), Brassicaceae and *Rosa* (Vvedensky 1955). Rutaceae, Lythraceae and Onagraceae (Vvedensky 1959), Convolvulaceae, Lamiaceae, Scrophulariaceae, Valerianaceae and Campanulaceae (Vvedensky 1961), and the dichotomous identification key for Asteraceae (Vvedensky 1962). A total of 714 species were referenced by Vvedensky in the Flora of Uzbekistan. The Flora of Uzbekistan included information on 4148 vascular plants of Uzbekistan and in 1962 was awarded the prestigious state scientific prize named after Abu Rayhan Beruni (Sennikov 2016). For the ten-volume Flora of Tajikistan (Ovchinnikov 1963), Vvedensky contributed the Araceae, Liliaceae, Amaryllidaceae, and Iridaceae (28 genera, 236 species). For the first two volumes of the 'Conspectus Florae Asiae Mediae,' he contributed the Potamogetonaceae, Zosteraceae, Najadaceae, and Pteridophyta (Vvedensky 1968) and Liliaceae (Vvedensky 1971).

Vvedensky devoted much attention to the ornamental bulbous plants of Central Asia. Using the living collection of the Tashkent Botanical Garden (TBG), he monographically revised the genera *Tulipa*, *Eremurus*, *Fritillaria* and *Iris*. He made a thorough revision of the genus *Allium* L., a favorite genus that he worked on throughout his life. The taxonomic revisions by Vvedenskyi were adopted by leading specialists from abroad. His revision of the genus *Allium* L. was appreciated and accepted by R.V. Kamelin (1973) and Per Wendelbo (1971). In his work with *Allium*, Vvedensky mainly used fresh plant materials of the TBG, maintaining close collaboration with the local staff. One result of this close

collaboration was the establishment in the TBG of a section with bulbous geophytes, mainly from the genera *Tulipa* and *Allium*. At one point, this collection consisted of about 6,000 wild species and horticultural varieties (*Tulipa*, *Eremurus*, *Iris*, *Juno*, *Crocus*, *Colchicum*, *Fritillaria*, etc.), of which more than 2000 were wild and garden tulips. In the collection of the TBG, preference was given to wild Central Asian tulips (70% of the area was occupied by wild species and about 30% by various varieties of cultivated tulips, mainly Dutch (Tojibaev 2011).

An article dedicated to Vvedensky's 70th birthday (Butkov et al. 1968) noted the high level of his knowledge of the flora of Central Asia, as well as his great professional erudition and excellent knowledge of botanical nomenclature and geography.

According to oral communication by O.V. Cherneva, A.I. Vvedensky dreamed of compiling a map of ancient soils (variegate outcrops) of the Central Asian region, and 'populating' the outcrops of such soils in Central Asia with ancient plant communities. This task was largely due to Vvedensky's specific scientific approach of involving specialists from all related fields (geographers, geologists, soil scientists, zoologists).

In 1968, the first volume of a 10-volume monograph on the flora of Central Asia appeared (Vvedensky 1968–1993), which was essentially a critical regional flora overview summarizing almost 100 years of research, as well as revisions of the floras of neighbouring to Central Asia regions Iran and Afghanistan. In fact, this multi-volume work served as the basis for the new Flora of Uzbekistan (Sennikov et al. 2016).

In addition to the abovementioned multi-volume publications, A.I. Vvedensky was the editor of the following botanical reports: 18 issues of 'Botanical materials of Herbarium of the Institute of Botany of the Academy of Sciences of the UzSSR' (1941–1948); vols. III–XI 'Flora of Kyrgyzstan' (1951–1965), 'Key of the wild plant species of the Hungary steppe' (1960).

The following monographs were published under the editorship of Vvedensky:

Lapin A.M. 'Key of the plants of the Tashkent oasis, Part 1' (1938);

Korovin E.P. 'Illustrated monograph of the genus *Ferula*' (1947);

Bondarenko O.N. 'Key of the highest plants of the Karakalpakia' (1964);

Puchkova E.G. 'Species of the *Chaetodon* section and its position in the genus *Astragalus*' (1967) and many others.

As a university professor, A.I. Vvedensky supervised undergraduate and graduate students in the areas of floristics, plant taxonomy, and phytogeography with his impressive encyclopedic knowledge. Among his students are: A.Ya. Butkov – one of the leading phytocenologists of Uzbekistan; Z.P. Botschantzeva – a leading scientist on tulips in Central Asia and adjacent territories; S.S. Kovalevskaja – a famous expert on many leading taxonomic groups of the flora of Central Asia, including Asteraceae; V.K. Pazij – an eminent university lecturer who described more then 40 new species from the families Fabaceae, Poaceae, Euphorbiaceae, and Lamiaceae; O.V. Cherneva – an expert in *Cousinia* Cass. and *Jurinea* Cass. In working with his students, Vvedensky had a unique pedagogical style of teaching the students how to conduct scientific research and write the papers. His approach was fascinating and highly motivating. However, Vvedensky became notably disappointed when some of his students, having undergone an extensive training, moved from Tashkent to other scientific institutions of the former Soviet Union republics.

In total, A.I. Vvedensky's botanical contribution to the flora of Central Asia comprises the description of 9 new genera, 20 new sections, about 300 new species, more than 50 new combinations, amounting to more than 1,500 original descriptions of wild plants (Fig. 3.) (Table 1, 2) (Butkov et al. 1968). His invaluable contribution to science was the creation of the TASH Herbarium. Vvedensky educated a large number of talented plant taxonomists. He was the editor of a number of

famous botanical publications and was one of the first to recognize the uniqueness and diversity of the Central Asian flora and its connections with other floristic regions of the world. Without a doubt, Aleksei Ivanovich Vvedensky deserves enormous gratitude and respect from botanists around the world.

A.I. Vvedensky was married and had a daughter. In interpersonal communication A.I. seems to have been a humorous man who loved telling funny stories (Fig. 4.). Many photos have been preserved from happy gatherings with employees (Fig. 2). Other colleagues enviously joked that the Vvedensky group always had the most beautiful women.

Fig. 1. A.I. Vvedensky

Fig. 2. Social gathering, 12 Feb. 1959. A.Y. Butkov, O.V. Cherneva, A.I. Vvedensky, S.S. Kovalevskaya, S. Abdullayeva (from left to right)

On July 27, 1972, at age 74, Aleksei Ivanovich Vvedensky died in Tashkent and was buried at the Botkin cemetery.

It is difficult to overestimate the contributions of Aleksei Ivanovich Vvedensky to the development of plant systematics and the herbaria of Central Asia.

Three genera have been named in honour of Vvedensky (*Vvedenskya* Korovin, *Vvedenskyella* Botsch., *Alexeya* Pachom.), one section of *Allium* – *Vvedenskya* Kamelin and 51 species: *Centaurea vvedenskyi* Popov, *Iris vvedenskyi* Nevski ex Woronow & Popov, *Tragopogon vvedenskyi* Popov, *Psephellus vvedenskii* Sosn., *Gagea vvedenskyi* Grossh., *G. alexejana* Kamelin ex Levichev, *G. alexii* Ali & Levichev, *Juncus vvedenskyi* V.I. Krecz., *Salsola vvedenskyi* Iljin & Popov, *Haplophyllum vvedenskyi* Nevski, *Rheum vvedenskyi* Sumnev., *Polygonum vvedenskyi* Sumnev., *Elytrigia vvedenskyi* Drobow, *Ranunculus vvedenskyi* Ovcz., *Poa vvedenskyi* Drobow, *Bupleurum vvedenskyi* Manden., *Astragalus vvedenskyi* Popov, *A. alexejii* Gontsch., *Frankenia vvedenskyi* Botsch., *Andrachne vvedenskyi* Pazij, *Rosa vvedenskyi* Korotkova, *Allium vvedenskyanum* Pavlov, *Gentiana vvedenskyi* Grossh., *Acantholimon vvedenskyi* Lincz., *Aster vvedenskyi* Bondarenko, *Cousinia vvedenskyi* Tscherneva, *Asparagus vvedenskyi* Botsch., *Ephedra vvedenskyi* Pachom., *Hedysarum vvedenskyi* Korotkova, *Olgaea vvedenskyi* Iljin, *Salvia vvedenskyi* Nikitina, *Potentilla vvedenskyi* Botsch., *Saussurea vvedenskyi* Lipsch., *Scrophularia vvedenskyi* Bondarenko & Filatova, *Tulipa vvedenskyi* Botschantz., *Delphinium vvedenskyi* Pachom., *Strigosella vvedenskyi* Bondarenko & Botsch., *Draba vvedenskyi* Kovalevsk., *Scaligeria vvedenskyi* Kamelin, *Saxifraga vvedenskyi* Abdullaeva, *Viola alexejana* Kamelin & Junussov, *Alexeya vvedenskyi* Pachomova, *Rosularia vvedenskyi* U.P. Pratov, *Pseudoclausia vvedenskyi* Pachom., *Ungernia vvedenskyi* Khamidch., *Valerianella vvedenskyi* Lincz., *Scilla vvedenskyi* Pazij, *Oxytropis vvedenskyi* Filim., *Gentiana vvedenskyi* Grossh., *Lagochilus vvedenskyi* Kamelin & Zuckerw., *Silene vvedenskyi* Lazkov.

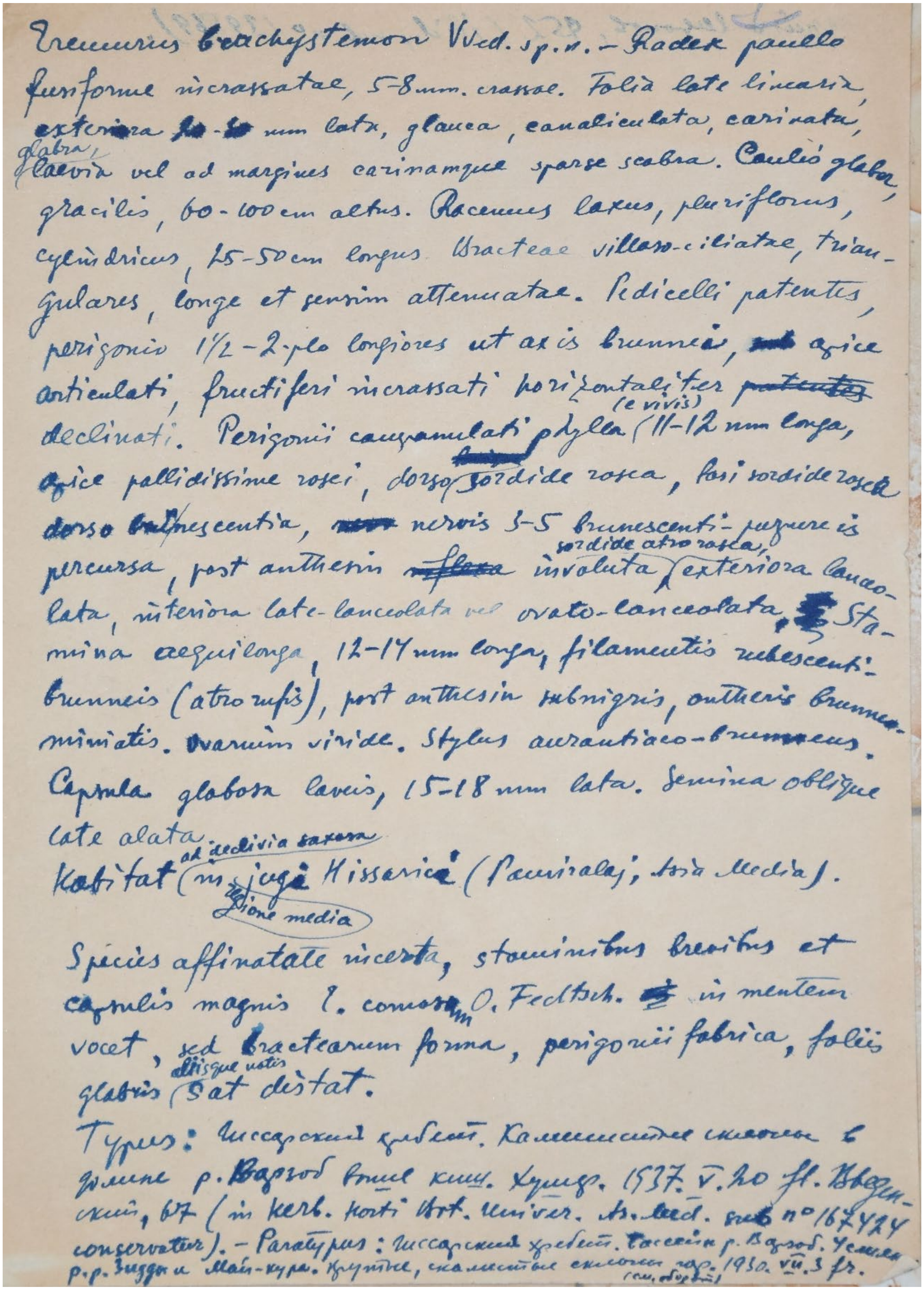
Eremurus brachystemon Vved. sp. n. – Radix paullo fusiforme incrassatae, 5-8 mm. crassae. Folia late linearia, exteriora mm lata, glauca, canaliculata, carinata, glabra, laevia vel ad margines carinamque sparse scabra. Caulis glaber gracilis, 60-100 cm altus. Racemus laxus, pluriflorus, cylindricus, 25-50 cm longus. Bracteae villoso-ciliatae, triangulares, longe et sensim attenuatae. Pedicelli patentes, perigonio 1½-2-plo longiores ut axis brunnei, apice articulati, fructiferi incrassati horizontaliter declinati. Perigonii campanulati (e vivis) phylla (11-12 mm longa, apice pallidissime rosei, dorso sordide rosea, basi sordide rosea dorso fuscescentia, nervis 3-5 brunescenti-purpureis sordide atro rosea, percursa, post anthesin involuta, exteriora lanceolata, interiora late-lanceolata vel ovato-lanceolata. Stamina aequilonga, 12-14 mm longa, filamentis rubescenti-brunneis (atrorufis), post anthesin subnigris, antheris brunneo-miniatis. Ovarium viride. Stylus aurantiaco-brunneus. Capsula globosa laevis, 15-18 mm lata. Semina oblique late alata.
Habitat ad declivia saxosa in jugo Hissarico (Pamiralaj, Asia Media). zone media
Species affinitate incerta, staminibus brevibus et capsulis magnis E. comosum O. Fedtsch. in mentem vocat, sed bractearum forma, perigonii fabrica, foliis glabris aliisque notis sat distat.
Typus: Гиссарский хребет. Каменистые склоны в долине р. Варзоб близ кишл. Хушёр. 1937. V. 20 fl. Введенский, 67 (in herb. horti Bot. Univer. As. Med. sub n° 167424 conservatur). – Paratypus: Гиссарский хребет. Бассейн р. Варзоб. Ущелье р.р. Зидды и Маймура. Кружное, скалистые склоны 1930. VII. 3 fr.

Fig. 3. Manuscript of A.I. Vvedensky with a protologue of *Eremurus brachystemon* (archive of Institute of Botany UAS).

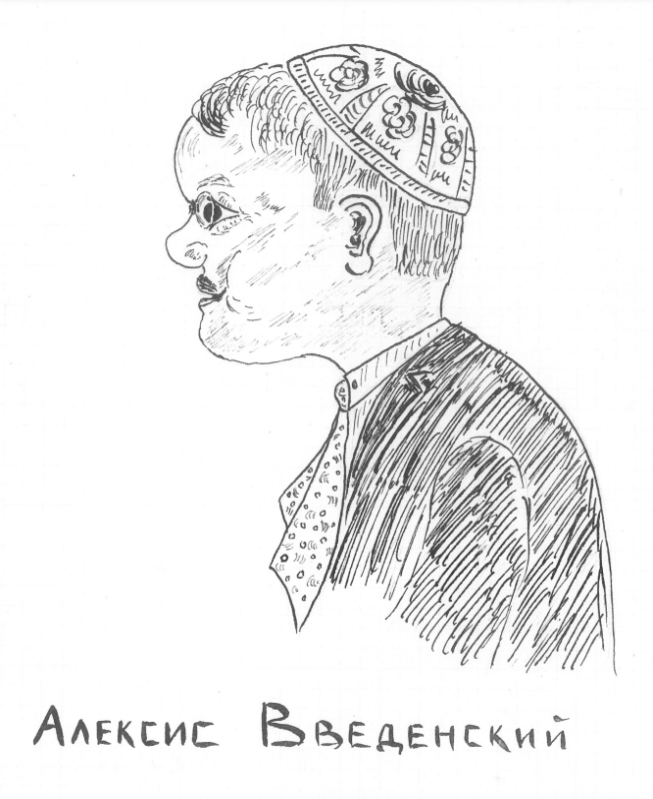

Fig. 4. Friendly cartoon of A.I. Vvedensky, surprisingly found at the Botanical Institute of Komarov in the office of I.A. Linczewsky (Institute of Botany, Kazakh Academy of Sciences) (author is unknown). The original is kept at the Botanical Institute of Komarov (keeper is A.K. Sytin, to whom we are greatly indebted for providing this cartoon).

List of main publications of A.I. Vvedensky

1918

Новости и редкости Пензенской флоры // Труды Пензенского общества любителей естествознания и краеведения. Вып. 3–4 (1917 г.). С. 159–162.

1923

Новый род из семейства губоцветных *Phlomidopsis* // Труды Туркестанского Научного общества при Средне-Азиатском Государственном Университете. Ташкент. Вып. I. С. 119–122. (Совместно с М. Г. Поповым).

Новые виды туркестанских луков // Труды Туркестанского Научного общества при Средне-Азиатском Государственном Университете. Ташкент. Вып. I. С. 122–126.

Определитель растений окрестностей г. Ташкента, вып. I (Polypodiaceae — Urticaceae) / Под ред. М. Г. Попова. — Ташкент: Изд-во САГУ. 80 с. (Совместно с В. П. Дробовым, Е. П. Коровиным, М. В. Культиасовым, М. Г. Поповым, И. А. Райковой).

Определитель растений окрестностей г. Ташкента, вып. II (Urticaceae — Cruciferae) / Под ред. М. Г. Попова. — Ташкент: Изд-во САГУ. 80 с.

1924

Decas Alliorum novorum ex Asia Media // Ботанические материалы Гербария Главного ботанического сада РСФСР. Т. V, вып. 6. С. 89–96.

1925

Species novae e montibus Karatau Turkestaniae // Труды Туркестанского Научного общества при Средне-Азиатском Государственном Университете. Вып. II. С. 29–31.

1932

Семейство Araceae // Флора Туркмении. Т. I. Ленинград: Изд-во Акад. наук СССР. С. 233–236.
Семейство Liliaceae // Флора Туркмении. Т. I. Ленинград: Изд-во Акад. наук СССР. 246–316.

1934

Descriptiones Alliorum novorum // Бюллетень Среднеазиатского государственного университета. Вып. 19. С. 119–130.
Род *Bromus* L. // Флора СССР. Т. 2. Ленинград: Изд-во Акад. наук СССР. С. 554–583. (Совместно с В. И. Кречетовичем, С. А. Невским, В. В. Сочавой).

1935

Род *Allium* L. // Флора СССР. Т. 4. Ленинград: Изд-во Акад. наук СССР. С. 112–280.
Род *Tulipa* L. // Флора СССР. Т. 4. Ленинград: Изд-во Акад. наук СССР. С. 320–364.
Род *Ungernia* Bunge // Флора СССР. Т. 4. Ленинград: Изд-во Акад. наук СССР. С. 481–485.
Род *Iris* L. (секция Juno) // Флора СССР. Т. 4. Ленинград: Изд-во Акад. наук СССР. С. 557–576.
Tulipae et Junones novae // Бюллетень Среднеазиатского государственного университета. Ташкент, Вып. 21. С. 147–152.

1937

Новый род *Korovinia* из сем. Зонтичных // Труды Ботанического института АН СССР. I сер., 4: 272–273. (Совместно с С.А. Невским).
Новый род *Platytaenia* из сем. Зонтичных // Труды Ботанического института АН СССР. I сер., 4: 270–271. (Совместно с С. А. Невским).

1941

Семейство Eriocaulonaceae // Флора Узбекистана. Т. 1. Ташкент: Изд-во Акад. наук УзССР. С. 381–382.
Семейство Liliaceae // Флора Узбекистана. Т. 1. Ташкент: Изд-во Акад. наук УзССР. С. 394–495.
Семейство Amaryllidaceae // Флора Узбекистана. Т. 1. Ташкент: Изд-во Акад. наук УзССР. С. 495–502.
Семейство Iridaceae // Флора Узбекистана. Т. 1. Ташкент: Изд-во Акад. наук УзССР. С.502–522.
Диагнозы новых видов // Флора Узбекистана. Т. 1. Ташкент: Изд-во Акад. наук УзССР. С. 537, 540–545.
Новые виды растений // Ботанические материалы гербария института Ботаники Академии наук Узбекской ССР. Т. III. С. 3–20. (Совместно с В. П. Бочанцевым).
Новый род семейства губоцветных // Ботанические материалы Гербария Ботанического института имени В. Л. Комарова Академии наук СССР. Т. IX, вып. 2. С. 54–55.

1946

Новые лилейные Таджикистана // Ботанические материалы Гербария Ботанического института имени В. Л. Комарова Академии наук СССР. Т. IX, вып. 4–12. С. 232–247.

Новый вид рода *Androsace* из Памира // Ботанические материалы Гербария Ботанического института имени В. Л. Комарова Академии наук СССР. Т. IX, вып. 4–12, С. 213–214. (Совместно с П. Н. Овчинниковым).

1948

Новые виды рода *Haplophyllum* // Ботанические материалы Гербария Инстута ботаники и Зоолигии АН УзССР, 10: 3–5.

Новые крестоцветные из Средней Азии // Ботанические материалы Гербария Инстута ботаники и Зоолигии АН УзССР, 12: 3–12.

Род *Erodium* L'Her. // Флора СССР, Т. 14. Ленинград: Изд-во Акад. наук СССР. С. 63–72.

Семейство Biebersteinia Steph. // Флора СССР, Т. 14. Ленинград: Изд-во Акад. наук СССР. С. 74–76.

Семейство Rutaceae // Флора СССР, Т. 14. Ленинград: Изд-во Акад. наук СССР. С. 198–241.

1952

Новые бобовые из Средней Азии // Ботанические материалы Гербария Инстута ботаники АН УзССР. 13: 19–25.

Новые лилейные Киргизии // Ботанические материалы Гербария Инстута ботаники АН УзССР. 13. 26–34.

1953

Семейство Nyctaginaceae // Флора Узбекистана, Т. 2. Ташкент: Изд-во Акад. наук УзССР. С. 342–343.

Семейство Aizoaceae // Флора Узбекистана, Т. 2. Ташкент: Изд-во Акад. наук УзССР. С. 344.

Семейство Phytolaccaceae // Флора Узбекистана, Т. 2. Ташкент: Изд-во Акад. наук УзССР. С. 344.

Семейство Basellaceae // Флора Узбекистана, Т. 2. Ташкент: Изд-во Акад. наук УзССР. С. 347.

Семейство Caryophyllaceae // Флора Узбекистана, Т. 2. Ташкент: Изд-во Акад. наук УзССР. С. 349–427.

1954

Новые виды из Средней Азии // Ботанические материалы Гербария Инстута ботаники АН УзССР. 14. С. 7–12.

1955

Два новых астрагала // Флора Узбекистана, 3. Ташкент: 798–799. (Совместно с С. С. Ковалевской).

Ключ для определения видов рода *Astragalus*. // Флора Узбекистана, Т. 3. Ташкент: Изд-во Акад. наук УзССР. С. 473–487.

Род *Pedicularis* // Флора СССР, Т. 22. Ленинград: Изд-во Акад. наук СССР. С. 687–795.

Род *Calispepla* Vved. // Флора Узбекистана, Т. 3. Ташкент: Изд-во Акад. наук УзССР. С. 412.

Семейство Cruciferae // Флора Узбекистана, Т. 3. Ташкент: Изд-во Акад. наук УзССР. С. 65–222. (Совместно с В.П. Бочанцевым).

Род *Rosa* L. // Флора Узбекистана, Т. 3. Ташкент: Изд-во Акад. наук УзССР. С. 343–355 (Совместно с В. К. Пазий).

1957

К дискуссии о виде // Известия Академии наук Узбекской ССР, серия биологическая, 2. 41–48.

1959

Заметки о некоторых среднеазиатских видах рода *Pedicularis* // Ботанические материалы Гербария Инстута ботаники АН УзССР, 15: 3–9.

Новая секция рода *Astragalus* // Ботанические материалы Гербария Инстута ботаники АН УзССР. 15: 10–12.

Род *Epilobium* Dill. ex L. // Флора Узбекистана, Т. 4. Ташкент: Изд-во Акад. наук УзССР. С. 243–248. (Совместно с В.К. Пазий).

Семейство Lythraceae // Флора Узбекистана, Т. 4. Ташкент: Изд-во Акад. наук УзССР. С. 231–239.

Семейство Onagraceae // Флора Узбекистана, Т. 4. Ташкент: Изд-во Акад. наук УзССР. С. 240–252.

Семейство Rutaceae // Флора Узбекистана, Т. 4. Ташкент: Изд-во Акад. наук УзССР. С. 62–77.

1960

Определитель дикорастущих растений Голодной Степи. Труды Ташкентского государственного университета. Вып. 178 (Ботаника). Ташкент: С. 216. (Совместно с В.П. Бочанцев, А.Я. Бутков, Н.Б. Никифорова, В.К. Пазий).

1961

Antonina - новый род сем. Губоцветных // Ботанические материалы Гербария Инстута ботаники АН УзССР. Вып. 16. – С. 15–17.

Новый вид из *Ixiolirion* Средней Азии / Ботанические материалы гербария института Ботаники АН УзССР. Вып. 16. С. 18–21. [Совместно с С.С. Ковалевская].

О восстановлении *Astragalus holargyreus* // Ботанические материалы Гербария Института ботаники АН УзССР. 16. 13–14.

Семейство Convolvulaceae // Флора Узбекистана, Т. 5. Ташкент: Изд-во Акад. наук УзССР. С. 123–139.

Семейство Labiatae // Флора Узбекистана, Т. 5. Ташкент: Изд-во Акад. наук УзССР. С. 263–416.

Семейство Scrophulariaceae // Флора Узбекистана, Т. 5. Ташкент: Изд-во Акад. наук УзССР. С. 446–498. (Совместно с О.Н. Бондаренко, С.С. Ковалевской, В.К. Пазий).

Семейство Valerianaceae // Флора Узбекистана, Т. 5. Ташкент: Изд-во Акад. наук УзССР. С. 578–590.

Семейство Campanulaceae // Флора Узбекистана, Т. 5. Ташкент: Изд-во Акад. наук УзССР. С. 618–628.

1962

Семейственная характеристика и ключ для определения родов сем. Сложноцветных // Флора Узбекистана, Т. 6. Ташкент: Изд-во Акад. наук УзССР. С. 23–31.

1963

Семейство Amaryllidaceae // Флора Таджикистана, Т. 2. Москва-Ленинград: Изд-во Акад. наук СССР. С. 290–370.

Семейство Araceae // Флора Таджикистана, Т. 2. Москва-Ленинград: Изд-во Акад. наук СССР. С. 146–154.

Семейство Liliaceae // Флора Таджикистана, Т. 2. Москва-Ленинград: Изд-во Акад. наук СССР. С. 178–290.

Семейство Iridaceae // Флора Таджикистана, Т. 2. Москва-Ленинград: Изд-во Акад. наук СССР. С. 370–396.

1967

Заметки о среднеазиатских видах рода *Eremostachys* // Ботанические материалы гербария института Ботаники АН УзССР. Вып. 18. С. 8–29 [Совместно с Пазый В.К.].

1968

Семейство Potomogetonaceae // Определитель растений Средней Азии. Т. 1. Ташкент: Изд-во «Фан» УзССР. С. 38–43.
Семейство Zosteraceae // Определитель растений Средней Азии. Т. 1. Ташкент: Изд-во «Фан» УзССР. С. 43–44.
Семейство Najadaceae // Определитель растений Средней Азии. Т. 1. Ташкент: Изд-во «Фан» УзССР. С. 44–45.
Ключ для определения родов сем. Gramineae // Определитель растений Средней Азии. Т. 1. Ташкент: Изд-во «Фан» УзССР. С. 94–109 [Совместно с С.С. Ковалевская, Н.Б. Никифорова].
Семейство Pteridophyta // Определитель растений Средней Азии. Т. 1. Ташкент: Изд-во «Фан» УзССР. С. 7–19 [Совместно с Е.Г. Пучкова].

1971

Род *Eremurus* M.Bieb. // Определитель растений Средней Азии. Т. 2. Ташкент: Изд-во «Фан» УзССР. С. 14–27 [Совместно с С.С. Ковалевская].
Род *Gagea* Salisb. // Определитель растений Средней Азии. Т. 2. Ташкент: Изд-во «Фан» УзССР. С. 27–39.
Род *Allium* L. // Определитель растений Средней Азии. Т. 2. Ташкент: Изд-во «Фан» УзССР. С. 39–89.
Род *Tulipa* L. // Определитель растений Средней Азии. Т. 2. Ташкент: Изд-во «Фан» УзССР. С. 94–109 [Совместно с С.С. Ковалевская].
Род *Juno* Tratt. // Определитель растений Средней Азии. Т. 2. Ташкент: Изд-во «Фан» УзССР. С. 132–139.

Table 1. List of new vascular plant genera (9 genera) described by A.I. Vvedensky (including as a co-author) between 1922–1987 (data from IPNI 2022)

Scientific name	Publication year	Endemic to Central Asia (POWO)	IPNI Plant Name Id
Mesostemma Vved.	1941	non-endemic	956774-1
Antonina Vved.	1961	non-endemic	20666-1
Calispepla Vved.	1952	non-endemic	21896-1
Nevskiella V.I. Krecz. & Vved.	1934	non-endemic	18593-1
Platytaenia Nevski & Vved.	1937	non-endemic	40406-1
Stachyopsis Popov & Vved.	1923	non-endemic	21240-1
Prionotrichon Botsch. & Vved.	1948	non-endemic	12943-1
Phlomidoschema Vved.	1941	non-endemic	21112-1
Korovinia Nevski & Vved.	1937	non-endemic	40141-1

Table 2. List of new vascular plant species described by A.I. Vvedensky (including as a co-author) between 1922–1987 (data from IPNI 2022).

Scientific name (taxa)	Publication year	Endemic to Central Asia (POWO)	IPNI Plant Name Id	Holotype/lectotype
Acanthophyllum cyrtostegium Vved.	1941	endemic	978235-1	TASH001024
Acanthophyllum leiostegium Vved.	1941	endemic	978236-1	LE
Acanthophyllum ruptile Vved.	1941	non-endemic	978237-1	TASH
Allium alaicum Vved.	1934	endemic	527542-1	LE
Allium albovianum Vved.	1935	endemic	527555-1	G00165237
Allium alexandrae Vved.	1924	endemic	527559-1	LE
Allium anisotepalum Vved.	1934	endemic	527606-1	LE
Allium aroides Popov & Vved.	1934	endemic	527628-1	TASH000334
Allium brachyscapum Vved.	1934	non-endemic	527710-1	TASH000339
Allium brevidens Vved.	1924	endemic	527717-1	LE
Allium brevidentiforme Vved.	1971	endemic	527718-1	TASH000341
Allium clausum Vved.	1971	endemic	527844-1	TASH000350
Allium confragosum Vved.	1971	endemic	527864-1	TASH000351
Allium crystallinum Vved.	1934	endemic	527892-1	TASH000356
Allium dasyphyllum Vved.	1925	endemic	527914-1	TASH000359
Allium dictyoscordum Vved.	1924	non-endemic	527944-1	LE
Allium dodecadontum Vved.	1971	endemic	527952-1	TASH000362
Allium dolichomischum Vved.	1971	endemic	527954-1	TASH000364
Allium dolichostylum Vved.	1934	non-endemic	527955-1	LE
Allium drepanophyllum Vved.	1934	endemic	527961-1	TASH000367
Allium drobovi Vved.	1923	endemic	527962-1	TASH
Allium dshungaricum Vved.	1971	non-endemic	77177072-1	LE
Allium eremoprasum Vved.	1924	endemic	527992-1	TASH000380
Allium eriocoleum Vved.	1952	endemic	527994-1	TASH000381
Allium eugeni Vved.	1934	endemic	528001-1	LE
Allium ferganicum Vved.	1924	endemic	528026-1	LE
Allium filidentiforme Vved.	1952	endemic	528034-1	LE
Allium flavellum Vved.	1946	endemic	528047-1	LE
Allium glaciale Vved.	1934	endemic	528091-1	TASH000384
Allium goloskokovii Vved.	1971	endemic	528101-1	AA
Allium gracillimum Vved.	1946	endemic	528110-1	TASH000386
Allium gypsaceum Popov & Vved.	1924	endemic	528134-1	LE
Allium gypsodictyum Vved.	1941	endemic	528135-1	TASH000388
Allium helicophyllum Vved.	1934	non-endemic	528146-1	TASH000391
Allium hexaceras Vved.	1963	endemic	528152-1	TASH000392
Allium hissaricum Vved.	1963	endemic	528162-1	TASH003028
Allium inconspicuum Vved.	1924	endemic	528191-1	TASH000395

Allium incrustatum Vved.	1946	endemic	528192-1	LE
Allium inops Vved.	1924	endemic	528196-1	LE
Allium insufficiens Vved.	1934	endemic	528198-1	LE
Allium jajlae Vved.	1934	non-endemic	528212-1	LE
Allium jaxarticum Vved.	1971	endemic	528219-1	TASH000397
Allium jodanthum Vved.	1971	endemic	528223-1	TASH000401
Allium jucundum Vved.	1934	endemic	528225-1	LE
Allium komarovianum Vved.	1929	non-endemic	528258-1	LE
Allium kopetdagense Vved.	1934	non-endemic	528260-1	LE
Allium kujukense Vved.	1923	endemic	528265-1	TASH000404
Allium kunthianum Vved.	1932	non-endemic	528267-1	LE
Allium lasiophyllum Vved.	1934	endemic	528287-1	LE
Allium leptomorphum Vved.	1952	endemic	528305-1	LE
Allium lipskyanum Vved.	1971	endemic	528321-1	TASH000408
Allium litvinovii Drobow ex Vved.	1932	endemic	528325-1	TASH000410
Allium longiradiatum (Regel) Vved.	1925	endemic	528338-1	LE
Allium lutescens Vved.	1971	endemic	528352-1	TASH000412
Allium majus Vved.	1941	endemic	528377-1	TASH000419
Allium margaritiferum Vved.	1971	endemic	528384-1	TASH000423
Allium marschallianum Vved.	1935	non-endemic	528389-1	TASH000335
Allium minutum Vved.	1934	endemic	528416-1	LE
Allium mogoltavicum Vved.	1934	endemic	528426-1	TASH000427
Allium monophyllum Vved.	1934	non-endemic	528436-1	LE
Allium nevskianum Vved.	1971	endemic	528484-1	TASH000437
Allium nothum Vved.	1923	endemic	528500-1	TASH000438
Allium ophiophyllum Vved.	1928	endemic	528533-1	TASH000442
Allium oreodictyum Vved.	1934	endemic	528538-1	LE
Allium oreoprasoides Vved.	1925	endemic	528541-1	TASH000444
Allium oreoscordum Vved.	1924	endemic	528543-1	LE
Allium parvulum Vved.	1934	endemic	528588-1	LE
Allium pauli Vved.	1946	non-endemic	528596-1	LE
Allium popovii Vved.	1923	endemic	528642-1	TASH000450
Allium praemixtum Vved.	1946	endemic	528653-1	TASH000451
Allium pseudoflavum Vved.	1934	non-endemic	528675-1	LE
Allium pseudoseravschanicum Popov & Vved.	1935	non-endemic	528679-1	LE
Allium pumilum Vved.	1934	non-endemic	528688-1	LE
Allium rhodanthum Vved.	1941	endemic	528732-1	TASH000454
Allium schachimardanicum Vved.	1971	endemic	528815-1	TASH000458
Allium schugnanicum Vved.	1946	non-endemic	528827-1	LE
Allium scrobiculatum Vved.	1923	endemic	528837-1	TASH000459
Allium sergii Vved.	1934	endemic	528850-1	MW
Allium sordidiflorum Vved.	1946	endemic	528885-1	LE

Allium stephanophorum Vved.	1924	endemic	528918-1	LE
Allium sulphureum Vved.	1946	endemic	528954-1	LE
Allium svetlanae Vved. ex Filim.	1982	endemic	899127-1	TASH000466
Allium taciturnum Vved.	1971	endemic	528964-1	TASH000471
Allium taeniopetalum Popov & Vved.	1934	endemic	528965-1	LE
Allium trachyscordum Vved.	1925	endemic	529026-1	TASH000473
Allium transvestiens Vved.	1935	non-endemic	529029-1	TASH000480
Allium tytthanthum Vved.	1934	endemic	529071-1	TASH000482
Allium ugami Vved.	1923	endemic	529074-1	TASH000485
Allium vavilovii Popov & Vved.	1934	non-endemic	529098-1	TASH000488
Allium victoris Vved.	1971	endemic	529109-1	TASH000490
Alyssum stenostachyum Botsch. & Vved.	1941	non-endemic	978254-1	TASH001324
Androsace acrolasia Vved. & Ovcz.	1946	non-endemic	700154-1	TASH002598
Antonina debilis (Bunge) Vved.	1961	non-endemic	444843-1	LE
Arabis karatavica (Lipsch.) Botsch. & Vved.	1957	endemic	278325-1	LE
Arabis popovii Botsch. & Vved.	1948	endemic	278522-1	TASH001245
Asparagus ferganensis Vved.	1941	endemic	531103-1	TASH000563
Asparagus gypsaceus Vved.	1946	endemic	531133-1	TASH000567
Asparagus komarovianus Vved.	1946	non-endemic	531156-1	LE
Asparagus monoclados Vved.	1946	endemic	531208-1	LE
Astragalus devestitus Pazij & Vved.	1952	endemic	477126-1	TASH001651
Astragalus drobovii Popov & Vved.	1926	endemic	477213-1	TASH001660
Astragalus lachnolobus Kovalevsk. & Vved.	1955	endemic	478198-1	TASH001714
Astragalus leptophysus Vved.	1959	endemic	478311-1	TASH001726
Astragalus rubescens Kovalevsk. & Vved.	1955	endemic	479585-1	TASH001788
Astragalus stenophysus Vved. & Zakirov	1952	endemic	479951-1	TASH001797
Astragalus thaumatothamnus Vved.	1952	endemic	480190-1	TASH001834
Astragalus uninodis Popov & Vved.	1922	endemic	480379-1	TASH001840
Bellevalia inconspicua Vved.	1946	non-endemic	531813-1	LE
Calispepla aegacanthoides Vved.	1952	endemic	483026-1	TASH003683
Campyloptera carnea (Banks & Sol.) Botsch. & Vved.	1955	non-endemic	279891-1	LE
Cerastium bungeanum Vved.	1953	non-endemic	152129-1	LE
Cerastium taschkendicum Adylov & Vved.	1971	endemic	152692-1	TASH000931
Chrysanthemum santoanum Krasch., Popov & Vved.	1928	endemic	193733-1	LE
Cistanche jodostoma Butkov & Vved.	1961	non-endemic	661958-1	TASH003056

Clausia gracillima Popov ex Botsch. & Vved.	1941	endemic	978246-1	TASH001373
Clausia tschimganica Popov ex Botsch. & Vved.	1941	endemic	978247-1	TASH001379
Convolvulus pseudocantabrica subspec. *askabadensis* (Bornm. & Sint.) Vved.	1925	non-endemic	77188795-1	BM000832678
Convolvulus tschimganicus Popov & Vved.	1927	endemic	267145-1	TASH002660
Cousinia allolepis Tscherneva & Vved.	1962	endemic	198647-1	TASH003132
Cousinia butkovii Tschern. & Vved.	1961	endemic	198731-1	TASH003394
Cousinia mogoltavica Tschern. & Vved.	1961	endemic	199109-1	TASH003479
Cousinia praestans Tschern. & Vved.	1961	endemic	199211-1	TASH003523
Cousinia pseudodshizakensis Tschern. & Vved.	1961	endemic	199222-1	TASH003527
Cousinia strobilocephala Tscherneva & Vved.	1961	endemic	199350-1	TASH003145
Crepis distincta Popov & Vved.	1933	endemic	199820-1	TASH003679
Cymatocarpus popovii Botsch. & Vved.	1955	endemic	281908-1	TASH001199
Dianthus angrenicus Vved.	1941	endemic	978238-1	TASH001031
Dianthus brevipetalus Vved.	1941	endemic	978239-1	TASH001035
Dianthus helenae Vved.	1941	endemic	978240-1	TASH001042
Dianthus ugamicus Vved.	1941	endemic	978241-1	TASH001056
Dictamnus tadshikorum Vved.	1949	non-endemic	772379-1	LE
Dipcadi turkestanicum Vved.	1941	endemic	534000-1	TASH000557
Eminium regelii Vved.	1941	endemic	87000-1	TASH000205
Epilobium acradenum Pazij & Vved.	1959	non-endemic	611567-1	TASH002164
Epilobium turkestanicum Pazij & Vved.	1959	endemic	612410-1	TASH002166
Eremostachys anisochila Pazij & Vved.	1961	endemic	446770-1	TASH002863
Eremostachys codonocalyx Pazij & Vved.	1961	endemic	446786-1	TASH
Eremostachys eriolarynx Pazij & Vved.	1961	endemic	446799-1	TASH002882
Eremostachys impressa Pazij & Vved.	1961	endemic	446814-1	TASH000205
Eremostachys integior Pazij & Vved.	1961	endemic	446815-1	LE
Eremostachys isochila Pazij & Vved.	1961	endemic	446816-1	TASH000236
Eremostachys labiosissima Pazij & Vved.	1961	endemic	446824-1	TASH002788
Eremostachys leiocalyx Pazij & Vved.	1961	endemic	446829-1	TASH002791

Eremostachys sogdiana Pazij & Vved.	1961	endemic	446863-1	TASH002792
Eremurus ambigens Vved.	1941	non-endemic	534671-1	LE
Eremurus ammophilus Vved.	1971	endemic	534672-1	LE
Eremurus brachystemon Vved.	1946	endemic	534682-1	TASH000223
Eremurus candidus Vved.	1946	endemic	534685-1	TASH000224
Eremurus cristatus Vved.	1952	endemic	534692-1	TASH000228
Eremurus dolichomischus Vved. & Wendelbo	1966	non-endemic	534693-1	W-2780
Eremurus fuscus (O. Fedtsch.) Vved.	1952	non-endemic	534696-1	LE
Eremurus hilariae Popov & Vved.	1924	endemic	534700-1	TASH061356
Eremurus hissaricus Vved.	1946	endemic	534702-1	TASH000232
Eremurus iae Vved.	1941	endemic	534703-1	TASH000236
Eremurus lachnostegius Vved.	1954	endemic	534713-1	LE
Eremurus micranthus Vved.	1946	endemic	534718-1	LE
Eremurus pubescens Vved.	1946	endemic	534726-1	TASH
Eremurus regelii Vved.	1928	endemic	534728-1	LE
Eremurus roseolus Vved.	1946	non-endemic	534730-1	LE
Eremurus subalbiflorus Vved.	1971	non-endemic	534740-1	TASH000243
Eremurus tadshikorum Vved.	1946	endemic	534743-1	LE
Eremurus tianschanicus Pazij & Vved. ex Pavlov	1958	endemic	534747-1	TASH000248
Eremurus zenaidae Vved.	1952	endemic	534753-1	TASH
Eremurus zoae Vved.	1971	endemic	534754-1	TASH000251
Erysimum chrysanthum Botsch. & Vved.	1941	endemic	978243-1	TASH001258
Erysimum clausioides Botsch. & Vved.	1948	endemic	283714-1	TASH001262
Erysimum ferganicum Botsch. & Vved.	1948	endemic	283799-1	TASH001269
Erysimum gypsaceum Botsch. & Vved.	1941	endemic	978244-1	TASH001273
Erysimum jodonyx Botsch. & Vved.	1941	endemic	978245-1	TASH001278
Erysimum microtrichon Botsch. & Vved.	1948	endemic	283988-1	TASH001282
Erysimum nuratense Popov ex Botsch. & Vved.	1948	endemic	284025-1	TASH001288
Erysimum popovii Botsch. & Vved.	1948	endemic	284093-1	TASH001289
Fritillaria olgae Vved.	1932	endemic	535249-1	TASH000492
Gagea capillifolia Vved.	1923	non-endemic	535467-1	TASH000260
Gagea circumplexa Vved.	1952	non-endemic	535479-1	TASH000261
Gagea delicatula Vved.	1941	endemic	535495-1	TASH000267
Gagea exilis Vved.	1946	non-endemic	535512-1	TASH000270
Gagea gageoides (Zucc.) Vved.	1932	non-endemic	535521-1	G
Gagea graminifolia Vved.	1932	non-endemic	535530-1	TASH000276

Gagea gymnopoda Vved.	1941	endemic	535538-1	TASH000277
Gagea incrustata Vved.	1941	endemic	535552-1	TASH000283
Gagea kopetdagensis Vved.	1932	endemic	535562-1	LE
Gagea minutissima Vved.	1946	endemic	535589-1	LE
Gagea paedophila Vved.	1946	non-endemic	535605-1	LE
Gagea parva Vved. ex Grossh.	1935	non-endemic	535608-1	TASH000295
Gagea popovii Vved.	1925	endemic	535621-1	TASH000298
Gagea praemixta Vved.	1977	endemic	77176982-1	TASH000308
Gagea pseudoreticulata Vved.	1932	non-endemic	535627-1	TASH000310
Gagea subtilis Vved.	1941	endemic	535669-1	TASH000320
Gagea triquetra Vved.	1923	endemic	535669-1	TASH000323
Gagea vegeta Vved.	1946	non-endemic	535706-1	TASH000327
Gagea villosula Vved.	1946	endemic	535710-1	LE
Geranium charlesii (Aitch. & Hemsl.) Vved.	1937	non-endemic	372883-1	BM000606788
Geranium transversale Vved. ex Pavlov	1934	non-endemic	373752-1	MW
Gypsophila ferganica Vved.	1941	endemic	978233-1	TASH001009
Gypsophila knorringiana (Schischk.) Vved.	1953	endemic	154509-1	LE
Haplophyllum ciscaucasicum (Rupr.) Grossh. & Vved.	1949	non-endemic	773861-1	TASH000205
Haplophyllum ferganicum Vved.	1948	endemic	773865-1	TASH002053
Haplophyllum foliosum Vved.	1948	endemic	773866-1	TASH000232
Haplophyllum leptomerum Lincz. & Vved.	1949	non-endemic	773877-1	TASH002061
Haplophyllum multicaule Vved.	1949	endemic	773883-1	TASH002063
Haplophyllum ramosissimum (Paulsen) Vved.	1949	endemic	773889-1	LE
Haplophyllum tenuisectum Lincz. & Vved.	1949	non-endemic	773897-1	TASH002066
Hedysarum setosum Vved.	1952	non-endemic	498104-1	TASH001980
Hyacinthus saviczii (Woron.) Vved.	1932	non-endemic	536826-1	TBI
Hypogomphia bucharica Vved.	1954	endemic	447910-1	TASH002852
Hypogomphia purpurea (Regel) Vved. ex Kochk.	1986	endemic	943708-1	LE
Iris amankutanica O. Fedtsch. ex Vved.	1924	endemic	77241657-1	LE
Iris brevituba (Maxim.) Vved.	1951	non-endemic	438439-1	LE
Iris kopetdagensis Vved.	1935	non-endemic	438765-1	TASH
Iris magnifica Vved.	1935	endemic	438839-1	TASH000609
Iris maracandica Vved.	1935	endemic	438845-1	TASH000612
Iris popovii Vved.	1935	endemic	438982-1	TASH001288
Iris subdecolorata Vved.	1923	endemic	439145-1	TASH000617
Iris tadshikorum Vved.	1935	endemic	439159-1	LE

Iris thianschanica (Maxim.) Vved.	1932	non-endemic	439179-1	LE
Iskandera alaica (Korsh.) Botsch. & Vved.	1955	endemic	285888-1	LE
Ixiolirion ferganicum Kovalevsk. & Vved.	1961	endemic	65679-1	TASH000584
Juno baldshuanica (O. Fedtsch. & B. Fedtsch.) Vved.	1963	non-endemic	439666-1	LE
Juno bucharica (Foster) Vved.	1941	non-endemic	439667-1	P01846412
Juno capnoides Vved.	1971	endemic	439668-1	TASH000599
Juno hippolyti Vved.	1941	endemic	439678-1	TASH0000314
Juno inconspicua Vved.	1971	endemic	439680-1	TASH000604
Juno leptorrhiza Vved.	1935	endemic	439684-1	LE00050076
Juno linifolia (O. Fedtsch.) Vved.	1935	endemic	439685-1	LE
Juno narbuti (O. Fedtsch.) Vved.	1941	endemic	439689-1	LE00050088
Juno narynensis (O. Fedtsch.) Vved.	1941	endemic	439690-1	LE00050091
Juno nicolai Vved.	1935	endemic	439691-1	TASH000613
Juno orchioides (Carrière) Vved.	1941	endemic	439693-1	BM001191245
Juno parvula Vved.	1963	endemic	439696-1	TASH000615
Juno rosenbachiana (Regel) Vved.	1935	non-endemic	439704-1	LE00050101
Juno svetlanae Vved.	1971	endemic	439710-1	TASH000616
Juno tubergeniana (Foster) Vved.	1941	endemic	439712-1	LE00050146
Juno vicaria Vved.	1963	endemic	439714-1	TASH000598
Juno warleyensis (Foster) Vved.	1941	endemic	439716-1	Lectotype: [Icon] "*Iris warleyensis*" in Foster, Gard.Chron., ser. 3, 31: 386, f. 134. 1902 (lectotype designated by Boltenkov 2016: 231)
Juno willmottiana (Foster) Vved.	1941	endemic	439717-1	Lectotype [Icon]: *Iris willmottiana* in Foster (1901: fig. 100) (lectotype designated by Boltenkov (2016: 231)
Juno zenaidae Vved.	1971	endemic	439721-1	TASH000619
Korovinia tenuisecta (Regel & Schmalh.) Nevski & Vved.	1937	non-endemic	843908-1	LE
Lagochilus gypsaceus var. *linearilobus* Vved. ex Zuckerw.	1985	endemic	918980-1	TASH
Lagochilus gypsaceus Vved.	1961	endemic	448727-1	TASH002901
Lagochilus hirsutissimus Vved.	1961	endemic	448728-1	TASH002900

Lagochilus intermedius Vved.	1961	endemic	448738-1	TASH002903
Lagochilus pubescens Vved.	1954	endemic	448756-1	TASH002905
Lagochilus setulosus Vved.	1955	endemic	448761-1	TASH002907
Lepidium subcordatum Botsch. & Vved.	1941	endemic	978255-1	TASH001159
Linum heterosepalum subsp. *tianschanicum* Vved.	1941	endemic	978255-1	TASH003956
Malcolmia malacotricha Botsch. & Vved.	1952	endemic	286715-1	TASH001309
Malcolmia pamirica Botsch. & Vved.	1952	non-endemic	286721-1	TASH001314
Malcolmia spryginioides Botsch. & Vved.	1952	non-endemic	286726-1	TASH001318
Matthiola czerniakowskae Botsch. & Vved.	1941	endemic	978252-1	TASH001324
Melandrium glaberrimum Bondarenko & Vved.	1971	endemic	155293-1	TASH001007
Melandrium turkestanicum (Regel) Vved.	1953	endemic	155388-1	LE
Mesostemma karatavicum (Schischk.) Vved.	1941	endemic	961833-1	LE
Mesostemma kotschyanum (Fenzl ex Boiss.) Vved.	1941	non-endemic	961834-1	LE
Micromeria gontscharovii Vved.	1961	non-endemic	451781-1	LE
Micromeria popovii (B. Fedtsch. & Gontsch.) Vved.	1961	non-endemic	451863-1	LE
Mulgedium roseum Popov & Vved.	1925	no information	233741-1	TASH003656
Nevskiella gracillima (Bunge) V.I. Krecz. & Vved.	1934	non-endemic	409502-1	LE
Onobrychis amoena Popov & Vved.,	1927	non-endemic	509836-1	TASH001989
Oryzopsis tianschanica Drobow & Vved.	1941	non-endemic	410235-1	TASH000055
Otostegia glabricalyx Vved.	1954	endemic	453639-1	TASH002910
Otostegia megastegia Vved.	1954	endemic	453646-1	TASH002913
Oxytropis aulieatensis Vved.	1948	endemic	511307-1	TASH001864
Oxytropis echidna Vved.	1925	endemic	511442-1	TASH001869
Oxytropis ervicarpa Vved. ex Z.N. Filimonova	1982	endemic	900445-1	TASH001874
Oxytropis jucunda Vved.	1948	endemic	511565-1	TASH001876
Oxytropis pilosissima Vved.	1948	endemic	511775-1	TASH003919
Parrya angrenica Botsch. & Vved.	1941	endemic	978248-1	TASH001332
Parrya crassifolia Botsch. & Vved.	1948	endemic	287963-1	TASH001335
Parrya darvazica Botsch. & Vved.	1965	endemic	287964-1	LE
Parrya minuta Botsch. & Vved.	1948	endemic	287992-1	TASH001347
Parrya nuratensis Botsch. & Vved.	1941	endemic	978249-1	TASH001351

Parrya pamirica Botsch. & Vved.	1965	non-endemic	287995-1	LE
Parrya saxifraga Botsch. & Vved.	1941	endemic	978250-1	TASH001349
Parrya subscapigera Botsch. & Vved.	1948	endemic	288018-1	TASH001355
Parrya villosula Botsch. & Vved.	1941	endemic	978251-1	TASH001357
Pedicularis alatavica Stadlm. ex Vved.	1955	endemic	806750-1	H
Pedicularis allorrhampha Vved.	1961	endemic	806758-1	TASH003042
Pedicularis amoeniflora Vved.,	1955	endemic	806768-1	LE
Pedicularis argutiserrata Vved.	1955	non-endemic	806793-1	LE
Pedicularis chroorrhyncha Vved.	1955	non-endemic	806908-1	LE
Pedicularis gypsicola Vved.	1959	endemic	807121-1	TASH003047
Pedicularis hyperborea Vved.	1955	non-endemic	807164-1	LE
Pedicularis inconspicua Vved.	1955	endemic	807178-1	TASH003049
Pedicularis macrochila Vved.	1925	endemic	807314-1	TASH003050
Pedicularis pallasii Vved.	1955	non-endemic	186447-2	LE
Pedicularis popovii Vved.	1955	endemic	807486-1	TASH003051
Pedicularis pubiflora Vved.	1955	endemic	807526-1	TASH003052
Pedicularis schistostegia Vved.	1955	non-endemic	807614-1	LE
Pedicularis sibirica Vved.	1955	non-endemic	807638-1	LE
Pedicularis talassica Vved.	1955	endemic	807699-1	TASH003054
Pedicularis uralensis Vved.	1955	non-endemic	807773-1	LE
Pedicularis verae Vved.	1955	non-endemic	807781-1	LE
Pedicularis willdenovii Vved.	1955	non-endemic	186481-2	LE
Petilium eduardii (Regel) Vved.	1941	non-endemic	539769-1	LE
Phlomidoschema parviflorum (Benth.) Vved.	1941	non-endemic	453773-1	M
Phlomis hypoleuca Vved.	1954	endemic	453913-1	TASH002813
Phlomis tschimganica Vved.	1954	non-endemic	454096-1	TASH002828
Phlomis tytthaster Vved.	1954	non-endemic	454100-1	TASH002827
Phyteuma occultans Popov & Vved.	1925	endemic	144436-1	TASH003123
Platytaenia pamirica (Lipsky) Nevski & Vved.	1937	non-endemic	847195-1	LE
Platytaenia tragioides (Boiss.) Nevski & Vved.	1937	non-endemic	847201-1	G-BOISS
Prionotrichon erysimoides (Kar. & Kir.) Botsch. & Vved.	1948	endemic	288191-1	MW
Prionotrichon pseudoparrya Botsch. & Vved.	1948	endemic	288193-1	TASH001256
Pyrethrum santoanum Krasch., Popov & Vved.	1928	endemic	240929-1	TASH003261
Rhammatophyllum frutex Botsch. & Vved.	1952	endemic	288565-1	TASH001251
Rhinopetalum arianum Losinsk. & Vved.	1935	non-endemic	540388-1	LE

Rhinopetalum gibbosum (Boiss.) Losinsk. & Vved.	1935	non-endemic	540392-1	G-BOISS
Salvia submutica Botsch. & Vved.	1954	endemic	457324-1	TASH002972
Saponaria gypsacea Vved.	1941	endemic	978242-1	TASH001137
Saponaria spathulifolia (Fenzl) Vved.	1935	endemic	156659-1	LE
Saussurea hypargyrea Lipsch. & Vved.	1954	non-endemic	242312-1	LE
Scutellaria andrachnoides Vved.	1954	endemic	458127-1	TASH002738
Scutellaria angrenica Juz. & Vved.	1954	endemic	458129-1	TASH003775
Scutellaria glabrata Vved.	1954	endemic	458287-1	TASH002744
Scutellaria heterotricha Juz. & Vved.	1951	endemic	458325-1	LE
Scutellaria nevskii Juz. & Vved.	1951	endemic	458489-1	LE
Scutellaria popovii Vved.	1954	endemic	458578-1	TASH002762
Scutellaria rubromaculata Juz. & Vved.	1951	endemic	458625-1	LE
Scutellaria urticifolia Juz. & Vved.	1954	endemic	458738-1	LE
Scutellaria velutina Juz. & Vved.	1954	endemic	458746-1	TASH002778
Silene acutidentata Bondarenko & Vved.	1971	endemic	156737-1	TASH000943
Silene eviscosa Bondarenko & Vved.	1971	endemic	157315-1	TASH000969
Silene excedens Bondarenko & Vved.	1971	non-endemic	157319-1	TASH000968
Silene fedtschenkoi Bondarenko & Vved.	1971	endemic	157338-1	TASH000973
Silene megalantha Bondarenko & Vved.	1971	endemic	157792-1	LE
Silene monantha Bondarenko & Vved.	1971	endemic	157848-1	LE
Silene paranadena Bondarenko & Vved.	1971	endemic	158010-1	TASH000991
Silene pubicalyx Bondarenko & Vved.	1971	endemic	158160-1	TASH000996
Silene schischkinii (Popov) Vved.	1953	endemic	158325-1	TASH003915
Sophiopsis micrantha Botsch. & Vved.	1952	non-endemic	289972-1	TASH001241
Spergularia adenophora Vved.	1941	non-endemic	957737-1	TASH000937
Spergularia glaucophylla Vved.	1941	non-endemic	978230-1	LE
Spergularia microsperma (Kindb.) Vved.	1953	non-endemic	158952-1	P00388961
Spergularia microspermoides Vved	1941	non-endemic	978231-1	LE
Spergularia nematopoda Vved.	1941	non-endemic	978232-1	LE
Stachyopsis lamiiflora (Rupr.) Popov & Vved.	1923	non-endemic	459252-1	LE
Stachyopsis oblongata (Schrenk) Popov & Vved.	1923	non-endemic	459254-1	LE

Stroganowia angustifolia Botsch. & Vved.	1948	endemic	290225-1	TASH001172
Stroganowia longifolia (Boiss.) Botsch. & Vved.	1948	non-endemic	290235-1	G
Stroganowia minor Botsch. & Vved.	1941	endemic	978256-1	TASH001178
Stroganowia tianschanica Botsch. & Vved.	1948	endemic	290242-1	TASH001187
Stubendorffia curvinervia Botsch. & Vved.	1952	endemic	290250-1	TASH001192
Stubendorffia pterocarpa Botsch. & Vved.	1941	endemic	978257-1	TASH001193
Tetracmidion glochidiatum Botsch. & Vved.	1941	endemic	978253-1	TASH001307
Thymus subnervosus Vved. Nabiev & Tulyag.	1987	no information	934225-1	TASH002985
Trichanthemis radiata Krasch. & Vved.	1929	endemic	256198-1	TASH003359
Trichochiton umbrosum Botsch. & Vved.	1948	non-endemic	290864-1	TASH001321
Tulipa anisophylla Vved.	1935	endemic	542823-1	LE
Tulipa bifloriformis Vved.	1971	endemic	542848-1	TASH000502
Tulipa binutans Vved.	1952	non-endemic	542850-1	TASH000503
Tulipa carinata Vved.	1971	non-endemic	542871-1	TASH000506
Tulipa dasystemonoides Vved.	1935	non-endemic	542898-1	TASH000507
Tulipa dubia Vved.	1935	endemic	542902-1	LE
Tulipa dykesiana Vved.	1935	non-endemic	542903-1	LE
Tulipa ferganica Vved.	1935	endemic	542911-1	TASH000508
Tulipa hissarica Popov & Vved.	1935	endemic	542948-1	TASH
Tulipa karatavica (Regel) Vved. ex Lipsch.	1932	non-endemic	542961-1	LE
Tulipa korshinskyi Vved.	1935	endemic	542969-1	LE
Tulipa mogoltavica Popov & Vved.	1971	non-endemic	543007-1	TASH000513
Tulipa orithyioides Vved.	1935	endemic	543025-1	TASH000514
Tulipa orthopoda Vved.	1971	endemic	543029-1	TASH000516
Tulipa paradasystemon Vved.	1935	non-endemic	543032-1	TASH
Tulipa platystemon Vved.	1935	endemic	543039-1	LE
Tulipa prolongata Vved.	1971	non-endemic	543047-1	LE
Tulipa rosea Vved.	1971	endemic	543063-1	TASH000520
Tulipa subbiflora Vved.	1971	endemic	543100-1	TASH000523
Tulipa subpraestans Vved.	1971	endemic	928395-1	TASH000524
Tulipa subquinquefolia Vved.	1946	endemic	543103-1	LE
Tulipa zenaidae Vved.	1935	non-endemic	543153-1	TASH000555
Ungernia ferganica Vved. ex Artjush.	1970	endemic	66973-1	TASH000513
Ungernia minor Vved.	1935	endemic	66975-1	LE

Ungernia oligostroma Popov & Vved.	1959	endemic	66977-1	TASH000578
Ungernia tadschicorum Vved. ex Artjush.	1970	endemic	66979-1	TASH000529
Ungernia victoris Vved. ex Artjush.	1970	endemic	66983-1	TASH000349
Veronica mogoltavica Popov ex Vved.	1925	non-endemic	812325-1	LE
Veronica nanella Vved.	1961	non-endemic	812358-1	TASH003025
Veronica stylophora Popov ex Vved.	1925	endemic	812697-1	TASH003028
Viola alaica Vved.	1928	endemic	867575-1	LE
Xiphion winkleri (Regel) Vved.	1941	endemic	442093-1	LE
Ziziphora pedicellata Pazij & Vved.	1961	endemic	462010-1	TASH002979
Ziziphora suffruticosa Pazij & Vved.	1961	endemic	462028-1	TASH002981

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References

Bondarenko ON (1964) An identification guide of vascular plants of the Karakalpakia. Tashkent: Fan Publisher.

Butkov AYa, Kovalevskaya SS, Nabiev MM (1968) Alexey Ivanovich Vvedenskiy (for his 70th birthday). *Botanicheskiĭ Zhurnal* 11: 1658–1661.

Fedtschenko OA, Fedtschenko BA (1906–1916) Conspectus Florae Turkestanicae, 1–6. Saint Petersburg & Yuriev.

Herbarium Florae Asiae Mediae, in Schedae 1–20, Bull. SAGU (1924–1928).

IPNI (2022). International Plant Names Index. Published on the Internet http://www.ipni.org, The Royal Botanic Gardens, Kew, Harvard University Herbaria & Libraries and Australian National Botanic Gardens. [Retrieved 18 July 2022].

Kamelin RV (1973) Florogenetic analysis of the native flora of the Mountain Middle Asia. Nauka, Leningrad

Khassanov FO (2015) Conspectus Florae Asiae Mediae. Volume 11. Fan Publishers, Tashkent. [in Russian]

Komarov VL (1934–1964) Flora of the U.S.S.R. Volumes 1–30. Moskow. Akademy Nauk SSSR. [in Russian]

Korovin EP (1947) Illustrirovannaya monographiya roda *Ferula* L. [Generis *Ferula* L. monographia illustrata]. Tashkent: Academy of Sciences of the Uzbek SSR. [In Russian and Latin]

Korovin EP (1947) Species novae Umbelliferarum Florae Uzbekistanicae. *Botaničeskie Materialy Gerbarija Instituta Botaniki & Zoologii Akademii Nauk Uzbekskoj SSR* 8: 9–24. [in Russian and Latin]

Korovin EP (1953) Flora of Uzbekistan. Volume 2. Uzbek branch of Academy of Sciences of the USSR, Tashkent.

Lapin AM (1938) Key to plants of the Tashkent oasis, Volume 1. Tashkent. [in Russian]

Lipschitz SYu (1947) Aleksei Ivanovich Vvedenskiy. Russian botanists. Volume 4. Moskow. 70-74. [in Russian]

Ovchinnikov PN (1963) Flora of Tajikistan. Volume 2. Moskow-Leningrad. [in Russian]

Popov MG (1923) Identification of the Plants of Tashkent: an illustrated guide to the identification of wild vascular spore and flowering plants. Tashkent, Volume 2. 1–160. [in Russian]

Pratov UP, Adylov TA (1996) The Central Herbarium of the Botanical Institute, Academy of Sciences of the Republic of Uzbekistan. *Taxon* 45:143–144.

Puchkova EG (1967) Species of the *Chaetodon* section and its position in the genus *Astragalus*. Tashkent, FAN. [in Russian].

Schreder RR (1941) Flora of Uzbekistan. Volume 1. AScUSSR publisher, Tashkent. [in Russian]

Sennikov AN (2016) Flora of Uzbekistan. Volume 1. Navroʻz Publishers, Tashkent. [in Russian]

Sennikov AN, Tojibaev KSh, Khassanov FO & Beshko NY (2016). The Flora of Uzbekistan project. *Phytotaxa*, 282: 107–118.

Tojibaev KSh (2011) Tulip collection of ZP Botschanzeva – the national heritage of Uzbekistan. *Daffodilol, Snowdrop and Tulip Yearbook*, 64–67.

Tojibaev KSh, Rakhimova TT, Khassanov FO, Beshko NYu, Rakhimova NK (2021) 80th anniversary of the Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan. *Turczaninowia* 24: 210–224.

Vasilchenko IT, Vasilieva LI (1975) Herbariums of the Soviet Union. Leningrad. Fan. [in Russian]

Vvedenskiy AI (1953–1962) Flora of Uzbekistan. Vol. 3–6. AScUSSR publisher, Tashkent. [in Russian]

Vvedenskiy AI (1968–1993) Conpectus Florae Asiae Mediae. Volumes 1–10. Tashkent. Fan. [in Russian]

Vvedensky AI (1935) *Allium, Tulipa, Ungernia*, sect. *Juno (*incl. genus *Iris)*. In: Komarov VL (Ed.) Flora of the U.S.S.R. 4. Izdatel'stvo Akademii Nauk SSR, Moscow, pp. 141–280, 329–364, 482–485, 560–576. [in Russian]

Vvedensky AI (1949) *Biberstenia, Erodium*. Family Rutaceae. In: Komarov VL (Ed.) Flora of the U.S.S.R. 14. Izdatel'stvo Akademii Nauk SSR, Moscow, pp. 10–62, 64–71, 199–241. [in Russian]

Vvedensky AI (1953) Caryophyllaceae, Flora of Uzbekistan. Volume 1. AScUSSR publisher, Tashkent. [in Russian]

Vvedensky AI (1955) Brassicaceae and genus *Rosa*, Flora of Uzbekistan. Volume 1. AScUSSR publisher, Tashkent. [in Russian]

Vvedensky AI (1955) *Pedicularis*. In: Komarov VL (Ed.) Flora of the U.S.S.R. 22. Izdatel'stvo Akademii Nauk SSR, Moscow, pp. 699–794. [in Russian]

Vvedensky AI, Kreczetovicz VI, Nevski SA, Soczave VB (1934) *Bromus*. In: Komarov V.L. (Ed.) Flora of the U.S.S.R. 2. Izdatel'stvo Akademii Nauk SSR, Moscow, pp. 558–582. [in Russian]

Wendelbo P (1971) Alliaceae. In: Rechinger KH (ed.). Flora Iranica. Graz: Akademische Druck- und Verlagsanstalt.Volume 76: 123.

Zakirov KZ, Kovalevskaya SS (1983) Floral heritage of Alexei Ivanovich Vvedensky // *Journal of Biology of Uzbekistan* 3: 38–51. [in Russian]