

# Lectotypifications in the Genus *Astragalus* L. s.l. (*Fabaceae*) in the Flora of Uzbekistan

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**Abstract:** During typification studies in the herbaria TASH and MW eight lectotypes were designated. Description of a new *Astragalus* species found in the western part of Turkestan range as well as a new name for one annual species are given.

**Zusammenfassung:** Während taxonomischer Studien in den TASH und MW wurden acht Lektotypisierungen vorgenommen. Eine neue *Astragalus*-Art aus dem westlichen Teil des Turkestan-Gebirges wurde beschrieben und neuer Name für eine annuelle Art festgelegt.

**Key words:** Taxonomy, *Astragalus*, Uzbekistan.

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## INTRODUCTION

There are about 275 species of the genus *Astragalus* L. in the flora of Uzbekistan and 650 species in the flora of Middle Asia (including species of genus *Astracantha* PODLECH). There is no doubt that the area of Middle Asia can be treated as one of the main centers of diversity in the Old World, as well as the area of Iran and Turkey (PODLECH 2013). The majority of these species have been described by Russian and Uzbek botanists in the 19. and 20. centuries, with most of the type materials being deposited in the herbaria LE, MW and TASH. Lectotypification studies were made in the two latter herbaria, where type materials of Karelin & Kirilloff, Popov, Vvedensky and others taxonomists are stored and conserved.

## RESULTS AND DISCUSSION

1. *A. abolinii* POPOV, Not. Syst. Herb. Hort. Petrop. iv: 154 (1923). In the protologue mentioned 3 different localities (basins of 3 rivers: Aksu, Ugam and Koksu). Within 4 syntypes 1 lectotype and 2 isolectotypes were designated (TASH, n 80779 – Syrdarjinskaja obl., Chimkentsk. U., verkh. ch. bass. r. Aksu, zona stepnaja, vys. ok. 4000 f., konglomer. Stena kanjona Aksu, 19-21 August 1914, n 8272, collected by Abolin, Popov. Determined by Popov).
2. *A. adylovii* F.O. KHAFFANOV et al., Uzbek. Biol. Zhurn., 2: 26 (2010). Holotype (TASH – Khr. Kuldzhuktau, vozle k. Churuk, 11 June 2009, collected by Khassanov, Ergashev, Kadyrov, N 40 47 33 9 E 64 02 00 3, h=572 m. Determined by senior author).
3. *A. aksaricus* PAVLOV, in Vestnik Akad. Nauk Kazak. SSR 1: 30 (1949). Holotype AA, isotype MW (MW – Kaz.SSR, Juzhno Kazakh. Obl., kamenistaja nagornaja stepj, pod ver-shinoy Aksarsaja, bliz pos. Nannay, n 348, 28 June 1948, collected and determined by Pavlov).
4. *A. ammophilus* KAR. & KIR., Bull. Soc. Imp. Naturalistes Moscou 15: 335 (1842). Lectotype MW (MW - In collibus sabulosis Songariae inter fontem Sassykpastau et montes Arganaty, n 1386, 1841, collected by Karelin et Kirilloff. Determined by Kamelin).
5. *A. amygdalinus* BUNGE, Mem. Acad. Sci. Petersb. 26, 2: 228 (1880). Isolectotype MW (MW - gerbariy Krause, po goram, 15 May 1871. Determined by Kamelin).
6. *A. atrovinosus* POPOV EX BARANOV, J. Turkest. Branch Russ. Geogr. Soc. 1924, xvii. 13, 33 (1925). Holotype MW (MW - Turkestansky rayon, v glinistoy stepi po puti v kishlak Svat, tsvety zheltje I buro-krasnye, n 47, 19 April 1930, collected by Lipschitz. Determined by Pavlov).

7. *A. austroferganicus* KAMELIN & KOVALEVSK., *Opred. Rast. Sred. Azii* 6: 356, 203 (1981). Holotype (TASH – Ferganskaja dolina, Yangiarykский irrigatsionniy rajon, po rytvinitomu vodootoku, G.Sursan, n 398, 21 June 1928, collected once by Joffe. Determined by Vinogradova).
8. *A. baldshuanicus* POPOV, *Not. Syst. Herb. Hort. Petrop.* iv: 155 (1923). 2 isotypes (TASH – V gorah mezhdu Kuljabom i Baldshuanom, na sukhikh lessovykh sklonah, n 548, 24 August 1914, collected and determined by Popov).
9. *A. baranovii* POPOV in *Journ. Turkest. Branch Russ. Geogr. Soc.* 1924, xvii: 30 (1925). Type and 2 isotypes (TASH – Syrdarjinskaja oblastj, Tashkentkiy u., skaly B.Chimgana, vysota 2700 m, zapadnyj sklon, 23 August 1924, collected by Baranov, determined by Popov).
10. *A. belolipovii* KAMELIN EX F.O. KHAFFANOV, *Uzbeksk. Biol. Zhurn.* (1): 40 (2010). Type (Photo 1) and 1 isotype (TASH – Turkesyanskiy khr., vyshe Kuljsajskogo lesnichestva, archovnik, 30 August 1969, collected by Belolipov. Determined by Kamelin).
11. *A. bischkendicus* GONTSCH., *Fl. Tadzhik.* 5: 660, 344 (1937). 1 isotype (TASH – Bukhara, Kabad. Bekstvo: Babatag, na vershinah polozhyh vozvyshenostey, n 998, 13 May 1897, collected by Korshinsky. Determined by Pakhomova).
12. *A. borissianus* GONTSCH., *Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R.* 10: 35 (1947). 1 isotype (TASH – Ferganskaja obl., Skobelevskiy u., Anchorskiy uchastok, ovrag Arpa, kamenistiy sklon v zone archi, n 1020, 22 May 1916, collected by Drobow).
13. *A. bossuensis* POPOV, *Trudy Sredne-Aziatsk. Gosud. Univ., Ser. 8b, Bot. 3:* 20 (1928). Type and 2 isotypes in MW and TASH (TASH – n 38400, *Herb. Fl. As. Med.* N 353: Montes meridionales: Tian-Shan Occidentalis, ad declivia saxosa sub cacumine montis Spa in montibus Mogoltau., 15 June 1928, collected by Popov).
14. *A. brachyrhachis* POPOV IN TRAV., *Turkest. Univ., Tashkent No. 4 (Veg. Monts Sary-Taou):* 52, 61 (1922). 3 isotypes (TASH – n 11557, Ferganskaja obl., Santo, n 441, 04 June 1920, collected and determined by Popov).
15. *A. butkovii* POPOV, *Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R.* 10: 22 (1947). Holotype (TASH – n 161790, Zapadnyj Pamiroalaj, verhovja r. Jakkabagdarja, okr. Kishl. Tashkurgan, vyhody krasnuh peschannikov, u kishl. Tashkurgan, n 783, 09 July 1936, collected by Botschantzev, Butkov. Determined by Popov).
16. *A. canoflavus* POPOV, *Fl. Uzbekistana* iii: 621, 798 (1955). Holotype (with drawing of the flower) (TASH – n 84203, Turkestan, Bukharskie vladeniya, gory k zap. ot Bishkenta, n 660a, 29 April 1914, collected by Kultiassov. Determined by Popov).
17. *A. chionanthus* POPOV, *Trudy Sredne-Aziatsk. Gosud. Univ., Ser. 8b, Bot. 3:* 21 (1928). Type and 1 isotype TASH (without label), MW (TASH – n 38398, *Herb. F. As. Med.*, Montes meridionales: Tadzhikorum. In glareosis prope glaciem aeternam Zeravschanicam. 354a, 17 July 1927, fl. et fr. imm., collected by Drobow).
18. *A. compositus* PAVLOV, *Byull. Moskovsk. Obshch. Isp. Prir., Otd. Biol., n. s. xlv:* 33 (1935). Holotype MW (MW - Turkestan, Turkestan, gory Karatau, obnazhenia pestrotsetnyh glin, v nachale usch. Kyzylata, za selenium Atabaeva, n 204, 15 May 1930, collected by Lipschitz. Determined by Pavlov).
19. *A. dendroides* KAR. ET KIR., *Bull. Soc. Imp. Naturalistes Moscou* 15: 339 (1842). Lectotype MW (MW – n 1396, 1841, collected by Karelin and Kirilloff).
20. *A. densus* POPOV, *Trudy Sredne-Aziatsk. Gosud. Univ., Ser. 8b, Bot. 3:* 42 (1928). 2 syntypes in TASH (TASH - Jakkabag and Bajssun. Mezhdu Bajssunom i sel. Derbent, n 419, 29 April 1916, collected and determined by Popov).
21. *A. dolichocarpus* POPOV, *Trav. Turkest. Univ., Tashkent No. 4 (Veg. Monts Sary-Taou):* 52, 62 (1922). There are 5 syntype specimens collected in 3 localities (Sarytau, Nazarbek and Keles). Lectotype and 1 isotype were designated according to protologue (TASH – n 81691, Ferganskaja obl., Sarytau, n 521, 13 June 1920, collected and determined by Popov).
22. *A. eremobius* POPOV, *Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R.* 10: 17 (1946). Type and 1 isotype (TASH – n 35926, Peski Kattakum, razjezd mezhdu st. st. Termez I Dzharkurgan, barkhany, 24 April 1930, collected by Botschantzev and Vvedensky. Designated by Kamelin).
23. *A. excedens* POPOV & KULT., *Not. Syst. Herb. Hort. Petrop.* iv: 157 (1923). There are 4 syntype specimens collected in 2 localities (Kelif and Bischkent). Lectotype and 1 isotype were designated according to protologue (TASH – n 81745, Turkestan, Buharskie vladeniya, Kelif, u g. Kelifa, na peskah, n 6, 13 April, 1910, collected and determined by Popov).
24. *A. falcigerus* POPOV, *Byull. Sredne-Aziatsk. Gosud. Univ. xiv:* 143 (1926). There are 2 syntypes collected in 2 localities (Almasay and Burnoe). Lectotype and 1 isotype were designated according to protologue (TASH – n 81764 (32367), Aulietinskiy u., ushelje Almasay, v Kujukskih gorah, n 221, 25 June 1922, collected and determined by Popov).
25. *A. ferganensis* (POPOV) B. FEDTSCH. EX A.S. KOROL., *Fl. Tadzhikistana* v: 414 (1937). Type (TASH – n 11683, Prov. Fergana: distr. Kokand, in collibus siccissimis gypsaceis ad petroleas “Santo”, 18 April 1923, fl., collected by Popov and Vvedensky. Designated by Kovalevskaya).
26. *A. flavidus* POPOV, *Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R.* 10: 27 (1947). Holotype (TASH – n 157117, Jugo-zapadnyj Pamiroalay, gory Babatag, okr. Kish. Dzhidabulak, vyhody krasnyh peschannikov u podnozhja khrebtu, n 396, 03 July 1936, collected by Lepeshkin and Mukhamedzhanov. Determined by Popov).
27. *A. harpilobus* KAR. & KIR., *Bull. Soc. Imp. Naturalistes Moscou* 15: 336 (1842). Lectotype MW (MW - In collibus sabulosis Songariae inter fontem Sassykpastau, n 1379, 1841, collected by Karelin et Kirilloff named as “*A. arpilobus*”).
28. *A. janischewskiy* POPOV, *Not. Syst. Herb. Hort. Petrop.* iv: 158 (1923). There are 7 syntype specimens collected in 2 localities (Kitab, Guzar, Gilon, Tashkurgan, Akrabad, Khodzhafileta). Type is stored in LE.



Fig. 1: Type of *Astragalus belolipovii* KAMELIN EX F.O. KHASS. & SULEIM.

29. *A. juniperetorum* GONTSCH., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 7: 145 (1938). 2 isotypes (TASH – n 35589, Bajssunskie gory, Tuada, khr. Ketmenjchapy, archovnik, 20 May 1930, collected by Lepeshkin).
30. *A. kaschkadarjensis* GONTSCH., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 9: 130 (1946). Holotype MW (MW - Gissarskiy khr., Khozretsultan, mezhd u k. Schut u perev. Kamar, kamenistyj sklon, n 264, 15 July 1933, Chilikina, Gordienko. Designated as holotype by Kamelin).
31. *A. kelleri* POPOV, Trudy Turkestansk. Nauch. Obsc. i: 36 (1923). There are 8 specimens collected in 3 localities by Popov (Khodzhafileta, Kysylalma, Kugitang) Lectotype and 1 isolectotype (n 276) were designated (TASH – n 82118, Turkestan, Buharskie vladenia, u s. Khodzhafileta, n 295, 21 April 1916, collected and determined by Popov).
32. *A. krauseanus* REGEL, Trudy Imp. S.-Peterburgsk. Bot. Sada iii: 104 (1875). Isotype MW (MW – gerbariy Krause).
33. *Astracantha kuramensis* (RASSULOVA & B.A. SHARIP.) Podlech, Mitt. Bot. Staatssamml. München 19: 21 (1983). 1 isotype (TASH – Kuraminskiy khrebet, grebenj gor, mezhd u gorodami Altynotpan i Tabashar, archovnik, n 171, 13 July 1962, collected by Botschantzev).
34. *A. kuznetzovii* POPOV EX KOVALEVSK., Opred. Rast. Sred. Azii 6: 354, 157 (1981). 1 isotype (TASH – 82186, Turkestan, Buharskie vladenia, u s. Kugitang, na krasnopeshannikovyh holmah, G 246a, collected and determined by Popov).
35. *A. lachnolobus* KOVALEVSK. ET VVED., Fl. Uzbekistana iii: 799, 648 (1955). Holotype (TASH – Alajskiy khrebet, okr. Kishl. Shachimrdan, 08 June 1948, collected by Shafeev. Determined by Vvedensky).
37. *A. lanuginosus* KAR. ET KIR., Bull. Soc. Imp. Naturalistes Moscou 14: 409 (1840). 1 isotype TASH (Photo 2) and MW (TASH – n 39453, in arenosis ad rivulum Burgan circa montes Tarbagataj, nec non in campestribus ad radicem montium Aktschauly, n 205, leg. Karelin et Kirilloff, a 1840).
37. *A. leptophysus* VVED. in Not. Syst. Herb. Inst. Bot. Acad. Sci. Uzbekistan. xv: 10 (1959). Type and isotype (TASH – Nuratau, na jug jugo-zap., v 10 km ot k. Yangykishlak (Farish), na kamenistom sklone, n 183, 14 May 1956, collected by P. Zakirov, determined by Vvedensky).
38. *A. leucocalyx* POPOV, Byull. Sredne-Aziatsk. Gosud. Univ. xiv: 140 (1926). Syntype (TASH – n 82295, Kaplanbek, Stolovaja gora, n 340, collected by Popov. Designated by Kamelin).
39. *A. mackewiczii* GONTSCH., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 9: 133 (1946). Holotype (TASH – n 82786, Angren, saj Itelge, v sae. V sukhom meste na solznepeke, nechasto, n 192, 11 June 1931, collected by Mackewicz. Designated by Gontscharov as a type).
40. *A. melanocomus* POPOV, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 10: 24 (1947). Isotype (TASH – Ferganskaya obl., Skobelevskiy u., Anchorskiy uchastok, ovrag Teketash, kamenistyj sklon v sredney chasty, n 1053, 23 May 1916, collected by Drobow. Determined by Popov and Gontscharov).
41. *A. mogoltavicus* POPOV, Byull. Sredne-Aziatsk. Gosud. Univ. xiv: 139 (1926). Type and 1 isotype (TASH – n 82629, Mogoltau, n Kug 797, collected and determined by Popov).
42. *A. namanganicus* POPOV, Byull. Sredne-Aziatsk. Gosud. Univ. xiv: 140 (1926). Type and isotype (TASH – n 11912, Ferganskaya obl., Namanganskiy u., v kholmah bliz Takhtalykkulja, 4 May 1925, collected by Soljkina).
43. *A. nenilini* F.O. KHASS. & I.I. MALTZEV, Dokl. Akad. Nauk Uzb. SSR 9: 52 (1989). Type and 1 isotype (TASH – Zap. Chastj Zaravschansky khrebet, khr. Karatepa, okr. Pos. Agalyk, krupno kamenistyj sklon pod grebnem, 31 May 1981, collected by Kazakbaev, Levichev. Designated by Khassanov).
44. *A. neo-lipskyanus* POPOV, Trudy Sredne-Aziatsk. Gosud. Univ., Ser. 8b, Bot. 3: 24 (1928). Type and 1 isotype (TASH – Montes meridionales: Tian-Shan occidentalis. Ad declivia argilloso-saxosa in valle rivuli Aktash in montibus Karzhan-tau, in dumetis herbis, n 358, 14 May 1928, fl., collected by Popov and Vvedensky).
45. *A. nigrocapus* F.O. KHASS. & I.I. MALTZEV, Dokl. Akad. Nauk Uzb. SSR 3: 54 (1989). Holotype (TASH – Gissarskiy khrebet, bass, r. Tupalang, Zevarsay, Akdzhar h=2400 m., 21 July 1987, collected Maltzev. Designated by Khassanov).
46. *A. nucleosus* POPOV, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 10: 19 (1947). Holotype (TASH – n 81218, Angrenskaja ekspeditsia, levaja chastj bassejna Angren, protiv kishlaka Ablyk, kamenistyj sklon, n 1458, 22 June 1922, collected by Berezin, determined by Popov).
47. *A. nuratensis* POPOV, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 7: 111 (1938). Type and 2 isotypes (TASH 82847 – n 3/117, Zaravschanskaja obl., gory Aktau, k severu ot s. Khodzha-Kolyshan, mest. Jangakly, 08 June 1926, collected and determined by Popov).
48. *A. petunnikovii* LITV., Sched. Herb. Fl. Ross. v. 76 (1905). Isotype MW (MW – Turkestan, Buhara, in declivibus arinoso-argillosis, pr. Farab, ad fl. Amudarja, 04 May 1904, Androssow and Kelow).
49. *A. platyphyllus* KAR. & KIR., Bull. Soc. Imp. Naturalistes Moscou 15: 345 (1841). Isotype MW (MW – In montibus rupestribus Alatau ad fl. Lepsa, et Sarchan, 1841, collected by Karelin et Kirilloff).
50. *A. popovii* PAVLOV, Bull. Soc. Nat. Mosc. Ser. Biol. 44, 1-2: 36 (1935). Holotype MW (MW – Turkestansky rayon, gory Karatau, kamenistoe plato perevala Akkulj, melkaja shebenka na plato, n 179a, 25 May 1930, collected by Lipschitz).
51. *A. pseudodianthus* NABIEV, Not. Syst. Herb. Inst. Bot. Acad. Sci. Uzbekistan. xiv: 21 (1954). Type and isotype (TASH – Karavanskiy rajon, ur. Dzhidasay, ot zimovki Z J-Z, v 3 km, na melozemistyh krutyh sklonah, n 121, 14 May 1952, collected by Nabiev. Designated by Kamelin).
52. *A. pseudonobilis* POPOV, Trudy Sredne-Aziatsk. Gosud. Univ., Ser. 8b, Bot. 3: 30 (1928). Type and isotype TASH and MW (TASH – Montes meridionales: Tian-Shan Oc-



**Astragalus lanuginosus Kar. et Kir.**

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*Isotypus!*  
 SPECIMEN AUTHENTICUM.

205. *Astragalus lanuginosus* Kar. et Kir.  
 In arenosis ad rivulum Burgan circa montes Tarbagatai; nec non in campestribus ad radicem montium Aktschauly.  
 leg. Karelin et Kiriloff a. 1840.  
 Soc. Imp. Nat. Cur. Mosqu.

Fig. 2: Isotype of *Astragalus lanuginosus* KAR. & KIR.

- cidentalis, ad declivia saxosa sub cacumine montis Spa in montibus Mogoltau., 15 June 1928, collected by Popov).
53. *A. pskemensis* POPOV, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 10: 13 (1947). Isotype (TASH – 37986, Verkhovja saja Ispay, schebnistyie sklony, 31 August 1928, collected by Popov and Smirnova, determined by Popov).
  54. *A. rotundus* GONTSCH., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 9: 120, f. 3 (1946). Type and isotype TASH, MW (n 245) (TASH – M.m. Sogdiano-transoxanii, ad declivia argillosa rubra, gypsacea, prope fontem Khodzhaipak, in promontoriis montium Chulbair, 21 May 1930, collected by Botschantzev, Vvedensky. Designated by Gontscharov).
  55. *A. rubescens* KOVALEVSK. & VVED., Fl. Uzbekistana 3: 798, 548 (1955). Holotype (TASH – 130768, Pamiroalaj, gory Khodzhaigurta, krasnye gliny v verhovjah Kysylsaja, n 322, 23 June 1934, collected by Butkov, determined by Vvedensky as *A. rubescens*).
  56. *A. rubri-galli* POPOV, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 10: 5 (1947). Holotype (TASH – n 30236, Kysylhuraz, k sev. ot g. Kelif, 08 May 1928, collected by Rjabov. Determined by Popov).
  57. *A. rusanovii* F.O. KHA., ESANKULOV & SARYBAEVA, Stapfia 92: 25 (2010). Type (TASH – Zap. Pamiroalaj, Turkestansky khr., okr. K. Kuljsaj, 2400 m., 27 July 2010, collected by Khassanov, Esankulov. Designated by Khassanov).
  58. *A. schutensis* GONTSCH., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 9: 126 (1946). Holotype MW (MW – Gissarskiy khr., Khozretsultan, mezhdru k. Schut u perev. Kamar, vysokogornaja stepj, n 191, 16 July 1933, collected by Chilikina, Gordienko. Designated by Kamelin).
  59. *A. spryginii* POPOV, Bull. Univ. As. Centr. vii. Suppl. 18 (1924). 1 isotype (TASH – Gory Mogoltau, Kug 11, 09 April 1915, collected and determined by Popov).
  60. *A. subrosularis* GONTSCH., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 9: 127 (1946). Holotype (TASH – 151294, Pamiroalaj, pestrtsetnye gory k jugo-vostoku ot g. Guzar, khreb. Uljmas, perev Koktugaj, subalpijsk. luzhajk., n 12, 06 September 1935, collected by Lepeschkin. Designated by Gontscharov).
  61. *A. subschachimardanus* POPOV, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 10: 28 (1947). 1 isotype (TASH – Ferganskaya obl., Skobelevskiy u., Anchorskiy uchastok, ovrage Arpa, kamenistiy sklon v zone archi, n 1031, 22 May 1916, collected by Drobow. Determined by Popov).
  62. *A. subspinescens* POPOV, Trudy Sredne-Aziatsk. Gosud. Univ., Ser. 8b, Bot. 3: 21 (1928). There are 10 specimens from 3 localities (Khodzhaifiljata, Kampyrjtube and Kodzhaankan). Lectotype and 1 isotype were designated (TASH – 83628, Turkestan, Buharskie vladenia, g. Kugitang, v archevom lesu, po severnomu skatu gor protiv sel. Khodzhaifiljata, Kug 523g, 07 May 1915, collected and determined by Popov).
  63. *A. subverticillatus* GONTSCH., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 9: 119, f. 2 (1946). Type and isotype TASH and MW (TASH – M.m. Tadzhiokorun, ad declivia schistosa in promontoriis montium Tschuljbair, inter p.p. Vakhshuar et Lukka, n 696, 01 June 1929, collected by Vvedensky. Designated by Gontscharov, with later determination of Vassilzenko).
  64. *A. talassicus* POPOV, Not. Syst. Herb. Hort. Petrop. iv: 153 (1923). Type and 2 isotypes (TASH – Syradarjinsk. obl., Chimkentsky u., g. Akbashtau (s. Dorofeevka), subalpijskaja luzhajka, n 8087, 10 August 1921, collected by Abolin and Popov. Determined by Popov).
  65. *A. terrae-rubrae* BUTKOV, Bot. Mater. Gerb. Bot. Inst. Uzbekistansk. Fil. Akad. Nauk S.S.S.R. 6: 6 (1941). Type and 2 isotypes (TASH – n 161726, Zapadny Pamiroalaj, verhovja r. Jakkabagdarja, okr. kishl. Tashkurgan, melkozemistyie obryvy r. Jakkabagdarja u kishl. Tashkurgan, n 235, 22 June 1936, collected by Botschantzev, Butkov, designated by Butkov). In the Flora URSS (1946) locus classicus was wrongly mentioned (Khodzhaigurata) instead of prototype (Butkov 1941).
  66. *A. turczaninowii* KAR. & KIR., Bull. Soc. Imp. Naturalistes Moscou xv: 342 (1842). Isotypes in TASH and MW (TASH – n 39645, In sabulosis Songariae inter montes Arganaty et fontem Sassykpastan, n 1393, 1841, collected by Karelin et Kiriloff).
  67. *A. uninodus* POPOV & VVED. IN TRAV. Turkest. Univ., Tashkent No. 4 (Veg. Montes Sary-Taou): 63 (1922). Holotype (TASH – Ferganskaja obl., Sarytau, n 592, 21 June 1920, collected and determined by Popov).
  68. *A. vvedenskyi* POPOV, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 10: 19 (1947). Type and 1 isotype (TASH – n 82798, Sherabadskaja dolina, vykhody pestrosvetnyh porod, u Bozrabatdagana, n 295, 13 June 1927, collected and determined by Popov and Vvedensky).
  69. *A. willisii* POPOV, Not. Syst. Herb. Hort. Petrop. iv: 155 (1923). There are 9 specimens from 3 localities (Khodzhaifiljata, Kysylalma and Kodzhaankan). Lectotype and 1 isotype were designated (TASH – 83931, Turkestan, Buharskie vladenia, g. Kugitang, severnyj sklon protiv sel. Khodzhaifiljata, Kug 524, 07 May 1915, collected and determined by Popov).
  70. *A. xanthomeloides* KOROVIN & POPOV, Byull. Sredne-Aziatsk. Gosud. Univ. vii. Suppl., 15 (1924). Type and 1 isotype MW (TASH – n 38408, Montes meridionales: Sogdiano-transoxanae, ad cacumina calcarea montium Samarcandicorum prope pagum Sazagan, n 11, 13 May 1925, fl., collected by Popov).
  71. *A. xiphobus* POPOV, Trudy Sredne-Aziatsk. Gosud. Univ., Ser. 8b, Bot. 3: 39 (1928). Type and 1 isotype MW (TASH – n 38871, Montes meridionales: Tian-Shan Occidentalis, ad collium indeclivia argillosa gypsacea prope st. v.f. Sarygatsch, n 11, 28 May 1928, fl., collected by Granitov).
  72. *Astracantha stipulosa* (BORISS.) PODLECH, Mitt. Bot. Staats-samm. München 19: 20 (1983). Isotype MW (Turkestan, in montibus pr. Samarcand, ad trajectorum Takhtakara-

ginsky, circ. 4000, n 1415, 23 July 1911, collected by Litvinov. Designated by Kamelin).

73. *Astracantha transoxana* (FISCH. EX BUNGE) PODLECH, Mitt. Bot. Staatssamml. München 19: 21 (1983). Isotype MW (Turkestan, in montibus pr. Samarcand, ad trajectorum Takhtakaraginsky, circ. 4000, n 1413, 23 July 1901, collected by Litvinov, determined by Kamelin).

74. *Astragalus zaaminensis* F.O. KHASS. & ESANKULOV sp. nov. (Sect. *Xiphidium* Bunge, Fig. 3).

**Type:** Western Pamiralaj, Turkestan mountain range, Zaamin reserve, Bojkungrsaj, near by the river, N 40°31'03, E 68°12'28, Khassanov, Esankulov, 05 July 2014 (TASH, isotype TASH).

Plant perennial, 25–45 cm high. Stems several, covered by white pressed hairs. Stipules 2–3 mm long, widely lanceolate, covered by black and white pressed hairs. Laves 5–8 cm long, 5–7-paired. Leaflets linear, 10–13 mm long, 1–2 mm width, covered by white pressed hairs, sharp on the top. Flower stalks straight, longer than leaves. Inflorescence sparse. Bracts 1–2 mm long. Peduncle 1–1.5 mm long. Calyx 12–13 mm long, covered by black and white pressed hairs, teeth 2–3 mm long. Corolla yellow, later on drooping. Vexillum 17–18 mm long, 3–4 mm width. Wing petals 14–15 mm long, auriculated. Carina 13–14 mm long. Legumes inside the calyx, 6–8 mm long, covered by white pressed hairs, assidenous, straight, bivalve, beak curved, 1–1.5 mm long.

Ab *A. bossuensis* POPOV racemis longioribus, floribus et leguminibus minoribus differt; ab *A. canoflavus* Popov floribus et leguminibus minoribus differt.

During the revision it was revealed that according to Melbourne Code (2012) epitheth *Astragalus remanens* Nabiev given in 6 vol. of *Conspectus Florae Asiae Mediae* (Kamelin et al. 1981) became ivalid (Art. 41.3) because basionym was not mentioned. Previously, it was described by M. Popov (1947) as *A. cinerascens* Popov. Nevertheless, this name was already used by A. de Candolle (Stuedel, 1840) и Tsai & Yu (1940). Moreover, I. Tideström (1937) made new combination from genus *Pterophaeus* to *Astragalus* with the same name.

*Astragalus nabievii* F.O. KHASS. & ESANKULOV nomen novum (Sect. *Oxyglottis* Bunge). Basionym: *A. remanens* NABIEV, Opred. Rast. Sred. Azii 6: 103 (1981) nom. illeg., non *A. cinerascens* POPOV, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 10: 4 (1947) nom. illeg., non *A. cinerascens* DC. EX STEUD., Nomencl. Bot. [Stuedel], ed. 2. 1: 160 (1840), non *A. cinerascens* TSAI & YU, Bull. Fan Mem. Inst. Biol. Bot. 9: 259 (1940), non *A. cinerascens* (RYDB.) TIDESTR., Proc. Biol. Soc. Washington 50: 21 (1937) nom. illeg.

This species grows on the low mountains of Kysylkum desert.

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**Fig. 3:** *Astragalus zaaminensis* F.O. KHASS. & ESANKULOV, sp.nov.

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