

FARG‘ONA VODIYSIDA TARQALGAN BURCHOQDOSHLAR OILASIGA MANSUB ASTRAGALUS.L TURKUMI O‘SIMLIKLARI

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ANNOTATSIYA

Mazkur maqolada Farg‘ona vodiysida uchraydigan burchoqdoshlar oilasi Astragalus.L turkumi o‘simliklari haqida umumiy ma‘lumotlar berilgan.

Kalit so‘zlar: Burchoqdoshlar, astragalus.L turkumi.

ABSTRACT

This article provides general information about the family of fabaceae, the family of fabaceae in the Fergana Valley, genus astragalus.L.

Keywords: The family of fabaceae, genus astragalus.L.

АННОТАЦИЯ

В данной статье приведены общие сведения о семействе бобовые, семействе бобовые в Ферганской долине, род astragalus.L.

Ключевые слова: семействе бобовые в Ферганской долине, род astragalus. L.

KIRISH

O‘zbekiston florasida ham (Fabaceae) Burchoqdoshlar oilasi yetakchi oilalardan hisoblanib, uning qariyib teng yarmini Astragalus L. turkumi vakillari tashkil qiladi. So‘nggi tadqiqotlarga ko‘ra, ushbu turkum tarkibiga 283 tur mansubligi, ulardan 32 tur endem turlar ekanligi qayd etilmoqda.

Astragallarni o‘rganish antik davri buyuk allomasi Teofrastdan boshlangan, chunki ushbu o‘simliklar dorivor xususiyati bilan olimlarni o‘ziga jalb etgan. Deyarli 2000 yil o‘tib, 1717 - yilda J.P.Turnefor uzining «Relation d’un voyage du Levante» asarida burchoqdoshlar oilasiga kiruvchi 15 ta turkumni, jumladan Astragalus, Cicer,

Glycyrrhiza, Cassia, Hedysarum, Onobrychis, Alhagi va Medicago larni seksiyalarga ajratadi.

K. Linney uzining 1737 yil nashr etgan «Genera plantarum» kitobida burchoqdoshlar oilasining 49 ta turkumini, shu jumladan, Astragalus turkumini ham qayd etadi.

«Flora orientalis» asarining muallifi E.Boisser uz tadqiqot ishlarida burchoqdoshlar oilasining juda ko'p turkumlarini seksiyalarigacha ajratadi. Keyingi tadqiqotlar «Bunge davri» deb atalgan davr bilan bog'lik. Astragallar bilimdoni sanalgan A.A.Bunge o'zining «Generis Astragali species gerontogae» asarida (1868-1869) 8 kenja turkum va 105 seksiyaga kiritilgan 971 ta astragal turlarini qayd etadi. A.A. Bunge "Fabaceae Lindl" oilasining eng yirik turkumi Astragalus turkumining tizimini ishlab chiqdi.

O'tgan asrda Astragalus turkumi vakillarining sistematikasi va tavsiflari bilan qator taqiqotchilar shug'ullanganlar.

R.V. Kamelin va O'.P. Pratovalar «O'rta Osiyo o'simliklar aniqlagichi» kitobining VI-tomida Fabaceae oilasiga kiruvchi 39 ta turkum va 926 ta turlarni aniqlash uchun kalitlar berilgan. Polimorf hisoblangan yirik turkum Astragalus L. uchun esa seksiyalarni aniqlash kalitlari ishlab chiqilgan.

Asr boshlarida Osiyo qit'asining kam o'rganilgan hududlarini floristik taxlili natijasida D.Podlech va A.Sytin tadqiqotlari hamda «Flora of Afghanistan», «Flora of Iranica» va boshqa ishlarda yangi astragal turlari haqidagi ma'lumotlar keltirildi. Yevroosiyo astragallari sistematikasi bo'yicha A.K.Stin, V.N.Belous, Podlech, T.A.Myakshina va boshqalar, O'zbekiston astragallari bo'yicha A.Esanqulov, J.Qarshibayev va F. Hasanov, A. Esanqulovlarning ishlari e'lon qilindi. Keyingi yillarda Stin A.K va boshqalar tomonidan Astragalus turkumi bir yillik vakillarining filogenetik tuzilishi va turlarini aniqlashning kompyuterlashgan varianti ishlab chiqildi. Ayrim xorij olimlari tomonidan astragallar turkumi vakillarining molekulyar genetik asoslari va sistematik tizimi chuqur taxlil etilmoqda. Respublikamiz cho'l mintaqasida tarqalgan astragallardan - Astragalus chivensis, A. flexus Fisch., A. orbiculatus va A. taschkendicus Bungalarning kimyoviy taxlili natijasida tarkibida qator triterpenli glyukozidlarning tsikloartan qatoriga tegishli birikmalarning mavjudligini aniqlandi. O'simliklar xom ashyosini kimyoviy tarkibi asosida substansiyalarini ajratish ilmiy tadqiqotlarida sikloartan triterpenoidlari manbai sifatida O'zbekiston florasida asosan Astragalus turiga mansub o'simliklar guruhi xizmat qilishi aniqlandi. Ularning kimyoviy tarkibi va farmakologik xususiyatlarini aniqlash, mahalliy xom ashyolar asosida dori vositalari yaratish imkonini berib, farmakologiya soxasida «Farmatsevtika sanoatini yanada rivojlantirish, shuningdek axolini arzon, yuqori sifatli dori va tibbiyot vositalari bilan ta'minlash» bo'yicha

uchinchi ustivor yoʻnalish doirasida qoʻyilgan vazifalarni bajarishda muhim ahamiyatga egadir.

Bugungi kunga qadar *Astragalus* turkumiga mansub 93 turdagi oʻsimliklardan 236 ta sikloartanlar qatoriga mansub glikozidlar ajratib olingan. X.F. Shomurodov Orol dengizining qurigan tubida *Astragalus agameticus*, *A. unifoliolatus*, *A. turbinatus*, *A. villosissimus* xamda *Ammodendron conollyi* turlarining tuzga chidamliligi boʻyicha oʻsishi va rivojlanishini oʻrganib, ular yashovchanligi 29,0 - 17,1 % ni tashkil etishi va oʻsimlik turlari uchinchi yildan boshlab generativ fazaga kirishini taʼkidlaydi. Respublikamizda dorivor oʻsimlik turlarini, jumladan astragal turkumi vakillari tabiiy zaxiralarini oʻrganish boʻyicha maʼlum ishlar olib borilgan. Jumladan, P.D. Zokirov va T. Norboboyevlar tomonidan 211 dorivor, 42 vitaminli, 113 efir-moyli, 53 glikozidli va boshqa oʻsimliklarning tarqalishi, xayotiy shakli hamda xoʻjalik ahamiyati boʻyicha tahliliy maʼlumotlar eʼlon qilindi. O.A. Ashurmetov, R.N. Nigmonova Qizilqumda oʻsuvchi *Astragalus villosissimus* Bunge, *A. unifoliolatus* Bunge va *A. ammotrophus* Bunge larning morfogenezini tadqiq etish tugʻrisidagi maʼlumotlarni eʼlon qilganlar. Ularning fikricha, *A. villosissimus* va *A. unifoliolatus* larning oʻsish jarayoni, shakli va oʻsimlik turining tuzilishi bir-biriga oʻxshash ekanligi, *A. ammotrophus* xayotiy shakliga koʻra koʻp yillik oʻt oʻsimligi emas, balki chala buta degan xulosaga kelganlar. Demak, astragallar turkumining dorivor va ozuqabop turlarini ilmiy jixatdan oʻrganish borasida koʻpgina ilmiy tadqiqotlar amalga oshirilgan.

ADABIYOTLAR TAHLILI VA METODOLOGIYA

Respublikamiz choʻl mintaqasida tarqalgan astragallardan - *Astragalus chivensis*, *A. flexus* Fisch., *A. orbiculatus* va *A. taschkendicus* Bungalarning kimyoviy taxlili natijasida tarkibida qator triterpenli glyukozidlarning tsikloartan qatoriga tegishli birikmalarning mavjudligini aniqlandi. Oʻsimliklar xom ashyosini kimyoviy tarkibi asosida substansiyalarini ajratish ilmiy tadqiqotlarida sikloartan triterpenoidlari manbai sifatida Oʻzbekiston florasida asosan *Astragalus* turiga mansub oʻsimliklar guruhi xizmat qilishi aniqlandi.

R.V. Kamelin va Oʻ.P. Pratovalar «Oʻrta Osiyo oʻsimliklar aniqlagichi» kitobining VI-tomida Fabaceae oilasiga kiruvchi 39 ta turkum va 926 ta turlarni aniqlash uchun kalitlar berilgan. Oʻzbekiston “Qizil kitob” ning 2009- yilgi nashri maʼlumotlariga koʻra kiritilgan 324 tur vakillarining oilalar boʻyicha tadbiq qilinganda eng koʻp tur burchoqdoshlar 57 tur oʻsimlik haqida maʼlumot berilgan boʻlib, umumiy kiritilgan turlar ichida 17,59%ni tashkil qiladi. M.M. Arifxanova birinchi marta Fargʻona vodiysi florasida uchun 97 oila, 717 turkumga mansub 2625 tur keltirgan. Fargʻona vodiysining choʻl, adir, togʻ, yaylov hududlarida uchraydi. “Oʻzbekiston Florasi” kitobini tahlil

qilish natijasidada Fargʻona vodiysi florasida uchun burchoqdoshlar oilasi vakilaridan 26 turkum 95 ta tur oʻsishi aniqlandi.

NATIJALAR Fargʻona vodiysi florasida tarqalgan astragalus.L turkumining turlari

Astragalus L. Sp. Pl. 2: 755 (1753).

Subgenus **Phaca** (L.) Bunge

Section **Stipitella** Podlech

1. Astragalus dictamnoides Gontsch.

= *Astragalus stenophysus* Vved. & Zakirov

Herbs perennial.

Stony and gravelly slopes in juniper forests, 2400–2600 m.

I. Central Asian Mountain Province: I-3 Fergana-Alay.

Central Asia.

Section **Hemiphaca** Bunge

2. Astragalus kokandensis Bunge

Herbs perennial.

Stony slopes of high mountain zone, up to 2500 m.

I. Central Asian Mountain Province: I-3 Fergana-Alay.

Central Asia.

3. Astragalus vicarius Lipsky

Herbs annual.

Clayey and stony-gravelly slopes, 700–1500 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan, I-3 Fergana-Alay, I-4 Nuratau (I-4-a Nuratau), I-5 Kuhistan, I-6 Western Hissar.

Central Asia, North-West Afghanistan, North-East Iran, China (Xinjiang).

4. Astragalus subspinescens Popov (sect. Caprini according to Podlech)

Herbs perennial.

Stony-gravelly, rocks, 2600–3100 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (except I-1-f near-Tashkent), I-3 Fergana-Alay, I-5 Kuhistan (I-5-a Northern Turkestan), I-6 Western Hissar (I-6-a Kashkadarya, I-6-d Kuhitang).

Central Asia.

Herbs perennial.

5. Astragalus farctissimus Lipsky (sect. Caprini according to Podlech)

= *Astragalus janischewskyi* Popov

Herbs perennial.

Clayey and gravelly slopes of mid and high mountain zone, 1800–2600 m.

I. Central Asian Mountain Province: I-4 Nuratau (I-4-a Nuratau), I-5 Kuhistan (I-5-a Northern Turkestan, I-5-b Malguzar, I-5-c Urgut), I-6 Western Hissar.

Central Asia.

6. *Astragalus alexeji* Gontsch. (sect. Caprini according to Podlech)

Herbs perennial.

Calcareous slopes of foothills, 800–1200 m.

I. Central Asian Mountain Province: I-6 Western Hissar (I-6-c Baysun), I-7 Hissar-Darvaz.

Central Asia.

7. *Astragalus kusnetzovii* Popov ex Kovalevsk. (sect. Caprini according to Podlech)

Herbs perennial.

Gypsum slopes, 800–1100 m.

I. Central Asian Mountain Province: I-6 Western Hissar.

Central Asia.

8. *Astragalus substipitatus* Gontsch. (sect. Caprini according to Podlech)

Herbs perennial.

Clayey and gravelly slopes of foothills,

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-a Ugam-Pskem, I-1-b Western Chatkal, I-1-d Kurama, I-1-e Chorkesar), I-3 Fergana-Alay, I-4 Nuratau, I-5 Kuhistan (I-5-c Urgut), I-6 Western Hissar (I-6-a Kashkadarya, I-6-b Tarkapchigay, I-6-c Baysun), I-7 Hissar-Darvaz.

Central Asia.

9. *Astragalus syreitschikovii* Pavlov (sect. Caprini according to Podlech)

Herbs perennial.

Clayey-gravelly slopes, pebbly banks of streams of mid-mountain zone, 1600–2700 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (except I-1-f near-Tashkent)

Central Asia.

10. *Astragalus atrovinosus* Popov ex Baranov (sect. Caprini according to Podlech)

Herbs perennial.

Clayey-gravelly slopes, screes of mid and high mountain zone, up to 3000 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (except I-1-f near-Tashkent)

Central Asia.

11. *Astragalus macronyx* Bunge (sect. Caprini according to Podlech)

Herbs perennial.

Clayey-gravelly slopes, screes of lowlands and foothills, mid-mountain zone, up to 1800 m.

I. Central Asian Mountain Province: all regions (except highlands).

Central Asia, North Afghanistan.

12. *Astragalus varzobicus* Gontsch. (sect. Caprini according to Podlech)

Herbs perennial.

Clayey-gravelly slopes, among shrubs in high mountain zone, 1500–2000 m.

I. Central Asian Mountain Province: I-6 Western Hissar (I-6-c Baysun), I-7 Hissar-Darvaz, I-8 Panj.

Central Asia.

13. *Astragalus rotundus* Gontsch. (sect. Caprini according to Podlech)

Herbs perennial.

Gypsum and calcareous slopes of foothills, 900–1200 m.

I. Central Asian Mountain Province: I-6 Western Hissar.

Central Asia.

14. *Astragalus lipskyi* Popov (sect. Caprini according to Podlech)

Herbs perennial.

Clayey-gravelly slopes of mid-mountain zone, 1500–1700 m.

I. Central Asian Mountain Province: I-4 Nuratau (I-4-a Nuratau), I-5 Kuhistan (I-5-a Northern Turkestan), I-6 Western Hissar (I-6-a Kashkadarya, I-6-b Tarkapchigay, I-6-c Baysun, I-6-d Kuhitang), I-7 Hissar-Darvaz.

Central

15. *Astragalus bossuensis* Popov (sect. Dissitiflori DC.)

Herbs perennial.

Hilly slopes, among *Artemisia* steppes of foothills and mid-mountain zone, 700–1500 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-a Ugam-Pskem, I-1-b Western Chatkal, I-1-d Kurama, I-1-e Chorkesar, I-1-f near-Tashkent).

Central Asia.

16. *Astragalus canoflavus* Popov (sect. Dissitiflori DC.)

Herbs perennial.

Sand-gravel slopes of foothills and mid-mountain zone, 700–1600 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-e Chorkesar), I-3 Fergana-Alay, I-6 Western Hissar (I-6-d Kuhitang, I-6-e Surkhan-Sherabad).

Central Asia.

17. *Astragalus fedtschenkoanus* Lipsky (sect. Dissitiflori DC.)

Shrubs.

Gravelly and stony slopes of mid-mountain zone, 1700–1900 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-b Western Chatkal), I-3 Fergana-Alay.

Central Asia.

18. *Astragalus neolipskyanus* Popov (sect. Dissitiflori DC.)

Shrubs.

Gravelly, stony and sometimes loess slopes, among shrubs at mid-mountain zone, 1900–2100 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-b Western Chatkal, I-1-d Kurama).

Central Asia.

19. *Astragalus juratzkanus* Freyn & Sint. (sect. Dissitiflori DC.)

Uzbekistanskije obrazzy otnosyatsya k tipovomu podvidu

= *Astragalus maverranagri* Popov

= *Astragalus lancifolius* Gontsch.

Semishrubs.

Loess and gypsum slopes of foothills and mid-mountain zone, 1300–1700 m.

I. Central Asian Mountain Province: I-4 Nuratau (I-4-a Nuratau, I-4-b Aktau), I-5 Kuhistan (I-5-a Northern Turkestan), I-6 Western Hissar (I-6-a Kashkadarya, I-6-d Kuhitang), I-7 Hissar-Darvaz, I-8 Panj.

Central Asia, Afghanistan, Iran.

20. *Astragalus kabadianus* Lipsky (sect. Dissitiflori DC.)

= *Astragalus cisdarvazicus* Gontsch.

Shrubs.

Gravelly, stony and loess slopes of foothills, mid-mountain zone, 1900–2100 m.

I. Central Asian Mountain Province: I-5 Kuhistan (I-5-d Ziadin-Zirabulak), I-6 Western Hissar (I-6-a Kashkadarya, I-6-c Baysun, I-6-e Surkhan-Sherabad), I-7 Hissar-Darvaz, I-8 Panj.

Central Asia, North Afghanistan.

21. *Astragalus kudrjaschovii* A.S. Korol. (sect. Dissitiflori DC.)

= *Astragalus ischnocarpus* Gontsch.

Shrubs.

Gravelly, stony and clayey slopes of foothills, mid-mountain zone, 1900–2100 m.

I. Central Asian Mountain Province: I-5 Kuhistan (I-5-d Ziadin-Zirabulak), I-6 Western Hissar, I-7 Hissar-Darvaz.

Central Asia, North Afghanistan.

22. *Astragalus lorinserianus* Freyn (sect. Dissitiflori DC.)

Shrubs.

Clayey, stony slopes of foothills, mid-mountain zone,
I. Central Asian Mountain Province: I-3 Fergana-Alay.

Central Asia.

23. *Astragalus macrotropis* Bunge (sect. Dissitiflori DC.)

Herbs perennial.

Stony and gravelly slopes, loess hills of foothills and mid-mountain zone, up to 2300 m.

I. Central Asian Mountain Province: I-2 Fergana, I-3 Fergana-Alay, I-4 Nuratau (I-4-a Nuratau, I-4-b Aktau), I-5 Kuhistan, I-6 Western Hissar (I-6-a Kashkadarya).

Central Asia, China (Xinjiang).

24. *Astragalus marguzaricus* Lipsky (sect. Dissitiflori DC.)

Herbs perennial.

Stony, gravelly and grassy slopes of mid and high mountain zone, up to 2600 m.

I. Central Asian Mountain Province: I-4 Nuratau, I-5 Kuhistan (I-5-a Northern Turkestan, I-5-b Malguzar, I-5-c Urgut), I-6 Western Hissar (I-6-a Kashkadarya, I-6-c Baysun, I-6-d Kuhitang), I-7 Hissar-Darvaz.

Central Asia.

25. *Astragalus nigrocarpus* F.O. Khass. & I.I. Malzev (sect. Dissitiflori DC.)

Herbs perennial.

Stony slopes of mid-mountain zone, 2400 m.

I. Central Asian Mountain Province: I-7 Hissar-Darvaz.

Central Asia.

26. *Astragalus petunnikovii* Litv. (sect. Dissitiflori DC.)

= *Astragalus eremobius* Popov

Herbs perennial.

Sands.

I. Central Asian Mountain Province: I-6 Western Hissar (I-6-e Surkhan-Sherabad).

II. Turan Province: II-4 Bukhara (II-4-b Lower Zeravschan), II-3 Kyzylkum (II-3-a Kyzylkum).

Central Asia, North Afghanistan.

27. *Astragalus pskemensis* Popov (sect. Dissitiflori DC.)

Herbs perennial.

Gravelly and stony slopes, of mid-mountain zone, 1900–2100 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-a Ugam-Pskem).

Central Asia.

28. *Astragalus scleroxylon* Bunge (sect. Dissitiflori DC.)

Shrubs.

Stony, gravelly, sometimes sands of deserts, 300–600 m.

II. Turan Province: II-3 Kyzylkum.

Central Asia.

29. *Astragalus urgutinus* Lipsky (sect. *Dissitiflora* DC.)

Shrubs.

Stony slopes, among stones, loess soils of mid-mountain zone, high mountain zone, 1200–2200 m.

I. Central Asian Mountain Province: I-4 Nuratau (I-4-a Nuratau), I-5 Kuhistan (I-5-b Malguzar, I-5-c Urgut), I-6 Western Hissar (I-6-a Kashkadarya, I-6-c Baysun), I-7 Hissar-Darvaz.

Central Asia.

30. *Astragalus variegatus* Franch. (sect. *Dissitiflora* DC.)

Shrubs.

Gravelly and stony slopes of mid and high mountain zone, 1700–2500 m.

I. Central Asian Mountain Province: all regions (except lowlands, subalpine and alpine zone).

Central Asia, East Afghanistan.

31. *Astragalus zaaminense* F.O. Khass. & Esankulov (sect. *Dissitiflora* DC.)

Herbs perennial.

Among juniper forests of mid-mountain zone, 1700–2100 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-a Ugam-Pskem, I-1-b Western Chatkal, I-1-d Kurama, I-1-e Chorkesar, I-1-f near-Tashkent).

Central Asia.

32. *Astragalus exilis* A.S. Korol. (sect. *Ornithopodium*)

Herbs perennial.

Red sandstone slopes of foothills and mid-mountain zone, 900–1700 m.

I. Central Asian Mountain Province: I-6 Western Hissar (I-6-a Kashkadarya, I-6-b Tarkapchigay, I-6-c Baysun), I-7 Hissar-Darvaz.

Central Asia.

Astragalus dipelta Bunge (semeystvo [Fabaceae](#))

Qo'sh urug'li astragal. Astragal dvoychatoplodny

33. *Astragalus spryginii* Popov (sect. *Dissitiflora* DC.)

Shrubs.

Clayey slopes of foothills and mid-mountain zone, 1200–1500 m.

I. Central Asian Mountain Province: I-2 Fergana.

Central Asia.

Section ***Falcigera*** Kamelin ex F.O. Khass. & Esankulov (sect. *Dissitiflora* DC.)

34. *Astragalus falcigerus* Popov (sect. *Dissitiflora* DC.)

Semishrub.

Stony and gravelly slopes of mid-mountain zone, 1600–1800 m.

I. Central Asian Mountain Province: I I-4 Nuratau (I-4-a Nuratau).

Central Asia.

Section **Aureophora** Kamelin ex F.O. Khass. & Esankulov (sect. Dissitiflori DC.)

35. Astragalus dianthus Bunge (sect. Dissitiflori DC.)

Herbs perennial.

Loess hills, dry stony slopes of lowlands and foothills, 500–700 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-b Western Chatkal, I-1-f near-Tashkent).

Central Asia.

36. Astragalus dianthoides Boriss. (sect. Dissitiflori DC.)

Herbs perennial.

Gravelly slopes, conglomerates of foothills, 700–1200 m.

I. Central Asian Mountain Province: I-3 Fergana-Alay.

Central Asia.

37. Astragalus pseudodianthus Nabiev (sect. Dissitiflori DC.)

Herbs perennial.

Gravelly slopes of foothills, 700–750 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-e Chorkesar).

Central Asia.

38. Astragalus knorringianus Boriss. (sect. Dissitiflori DC.)

Herbs perennial.

Gravelly and clayey slopes of foothills and mid-mountain zone, 700–750 m.

I. Central Asian Mountain Province: I-4 Nuratau, I-5 Kuhistan.

Central Asia.

Section **Picrophace** Bunge

39. Astragalus amarus Pall.

Herbs perennial.

Sands.

II. Turan Province: II-8 Ustyurt.

Central Asia, Russia (Astrakhan).

Section **Proselius** Bunge (sect. Incani DC.)

40. Astragalus cottonianus Aitch. & Baker (sect. Incani DC.)

Herbs perennial.

Red sandstones of foothills and mid-mountain zone, 1200–1700 m.

I. Central Asian Mountain Province: I-6 Western Hissar, I-8 Panj.

Central Asia.

41. *Astragalus taschkenticus* Bunge (sect. Incani DC.)

Herbs perennial.

Loess slopes of foothills and mid-mountain zone,

I. Central Asian Mountain Province: I-5 Kuhistan (I-5-c Urgut), I-6 Western Hissar (I-6-a Kashkadarya), I-8 Panj.

Central Asia, North Afghanistan.

42. *Astragalus platyphyllus* Kar. & Kir. (sect. Incani DC.)

Herbs perennial.

Loess slopes of foothills and mid-mountain zone, up to 2100 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-d Kurama), I-5 Kuhistan (I-5-a Northern Turkestan, I-5-b Malguzar), I-6 Western Hissar (I-6-a Kashkadarya).

Central Asia, China (Xinjiang).

Section *Cytisodes* Bunge

43. *Astragalus dolichocarpus* Popov

Herbs perennial.

Loess hills, gravelly slopes of mid-mountain zone,

I. Central Asian Mountain Province: I-1 Western Tien Shan, I-3 Fergana-Alay, I-4 Nuratau, I-6 Western Hissar (I-6-a Kashkadarya).

Central Asia.

44. *Astragalus kelleri* Popov

Herbs perennial.

Stony-gravelly and stony slopes of foothills and mid-mountain zone, 800–1700 m.

I. Central Asian Mountain Province: I-4 Nuratau, I-6 Western Hissar.

Central Asia.

45. *Astragalus nucleosus* Popov

Herbs perennial.

Stony and clayey slopes of mid-mountain zone, 1700–2000 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-b Western Chatkal, I-1-d Kurama).

Central Asia.

46. *Astragalus stenocarpus* Gontsch.

Herbs perennial.

Stony slopes of alpine zone, up to 3200–3300 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan, I-3 Fergana-Alay, I-4 Nuratau, I-6 Western Hissar (I-6-a Kashkadarya).

Central Asia.

47. *Astragalus xipholobus* Popov

Herbs perennial.

Gravelly and clayey slopes of foothills and mid-mountain zone, 1300–1600 m.

Section **Bucharica** V. Fedtsch. (sect. **Macrocystodes** Popov)

48. *Astragalus bucharicus* Regel (sect. **Macrocystodes Popov)**

Herbs perennial.

Gypsum slopes, among shrub vegetation of foothills and mid-mountain zone, 800–1700 m.

I. Central Asian Mountain Province: I-6 Western Hissar (I-6-a Kashkadarya, I-6-b Tarkapchigay, I-6-c Baysun, I-6-d Kuhitang), I-7 Hissar-Darvaz, I-8 Panj.

Central Asia.

49. *Astragalus chrysomallus* Bunge (sect. **Macrocystodes Popov)**

Herbs perennial.

Gravelly and stony slopes, in juniper forests of mid-mountain zone, 1900–2300 m.

I. Central Asian Mountain Province: I-5 Kuhistan (I-5-c Urgut).

Central Asia.

50. *Astragalus namanganicus* Popov (sect. **Macrocystodes Popov)**

Herbs perennial.

Gipsy slopes, dry streams of foothills and mid-mountain zone, 1500–1700 m.

I. Central Asian Mountain Province: I-2 Fergana.

Central Asia.

51. *Astragalus pseudomegalomerus* Popov (sect. **Macrocystodes Popov)**

Herbs perennial.

Shale screes, among limestone rocks of mid-mountain zone, 1600–2200 m.

I. Central Asian Mountain Province: I-5 Kuhistan (I-5-c Urgut), I-6 Western Hissar (I-6-a Kashkadarya, I-6-c Baysun, I-6-d Kuhitang).

Central Asia.

52. *Astragalus pseudorhacodes* Gontsch. (sect. **Macrocystodes Popov)**

Herbs perennial.

Dry stony slopes of mid-mountain zone, 1700–1900 m.

I. Central Asian Mountain Province: I-8 Panj.

Central Asia.

53. *Astragalus rhacodes* Bunge (sect. **Macrocystodes Popov)**

Herbs perennial.

Clayey, clayey-gravelly, sometimes gravelly slopes of mid-mountain zone, 1600–1800 m.

I. Central Asian Mountain Province: I-3 Fergana-Alay.

Central Asia.

Section **Helmia** Bunge

54. Astragalus macropetalus Schrenk

Herbs perennial.

Gravelly and clay slopes of foothills and mid-mountain zone, 1200–1700 m.

I. Central Asian Mountain Province: I-4 Nuratau (I-4-a Nuratau), I-5 Kuhistan (I-5-a Northern Turkestan).

Central Asia.

55. Astragalus lachnolobus Kovalevsk. & Vved.

Herbs perennial.

Stony and gravelly slopes of mid-mountain zone, 1600–1700 m.

I. Central Asian Mountain Province: I-3 Fergana-Alay.

Central Asia.

Section **Inceni** DC.

56. Astragalus brachyrachis Popov

Herbs perennial.

Gypsum slopes of foothills, 700–800 m.

I. Central Asian Mountain Province: I-3 Fergana-Alay.

Central Asia.

Section **Trachycercis** Bunge

57. Astragalus subauriculatus Gontsch.

Herbs perennial.

On the banks of irrigation ditches, 300–350 m.

II. Turan Province: II-1 Central Fergana.

Central Asia.

58. Astragalus testiculatus Pall.

Herbs perennial.

Clayey slopes, 300–400 m.

II. Turan Province: II-8 Ustyurt.

Central Asia, China (Xinjiang), Iran, Russia (European part, Siberia), Caucasus, Ukraine.

Section **Tropidolobus** Gontsch.

59. Astragalus borissianus Gontsch.

Herbs perennial.

Stony slopes of mid-mountain zone, 1300–1700 m.

I. Central Asian Mountain Province: I-3 Fergana-Alay.

Central Asia.

Section **Erioceras** Bunge

60. *Astragalus erioceras* Fisch. & C.A. Mey.

Herbs perennial.

Sands, gypsum soils, 300–350 m.

II. Turan Province: II-8 Ustyurt.

Central Asia.

61. *Astragalus ferganensis* (Popov) V. Fedtsch. ex A.S. Korol.

Herbs perennial.

Clayey and gravelly slopes of foothills, 600–800 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-e Chorkesar), I-2 Fergana, I-3 Fergana-Alay, I-5 Kuhistan (I-5-a Northern Turkestan, I-5-c Urgut).

II. Turan Province: II-1 Central Fergana (II-1-a Kayrakum-Yazyavan).

Central Asia.

62. *Astragalus subbijugus* Ledeb.

Herbs perennial.

Stony-gravelly slopes, cracks of rocks of foothills and Remnant Mountains, 400–700 m.

I. Central Asian Mountain Province: I-4 Nuratau (I-4-b Aktau).

II. Turan Province: II-3 Kyzylkum (II-3-b Kyzylkum outlier mountains).

Central Asia.

Section **Chaetodon** Bunge

63. *Astragalus allotricholobus* Nabiev

Herbs perennial.

Gravelly slopes of foothills, 900–1100 m.

I. Central Asian Mountain Province: I-2 Fergana.

Central Asia.

64. *Astragalus ambigens* Popov

Herbs perennial.

Gravelly slopes of mid-mountain zone, 1500–1900 m.

I. Central Asian Mountain Province: I-5 Kuhistan (I-5-c Urgut, I-5-d Ziadin-Zirabulak).

Central Asia.

65. *Astragalus aschuturi* V. Fedtsch.

Herbs perennial.

Stony and gravelly slopes, screes of high mountain, subalpine and alpine zone, up to 3400 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-a Ugam-Pskem), I-5 Kuhistan (I-5-a Northern Turkestan, I-5-b Malguzar).

Central Asia.

66. *Astragalus cyrtobasis* Bunge ex Boiss.

Herbs perennial.

Stony-gravelly slopes of foothills and mid-mountain zone, 800–1800 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-b Western Chatkal, I-1-d Kurama, vv I-1-e Chorkesar).

Central Asia.

67. *Astragalus melanocomus* Popov

Herbs perennial.

Dry stony, stony-gravelly slopes of foothills, 700–1100 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-e Chorkesar), I-2 Fergana, I-3 Fergana-Alay.

Central Asia.

68. *Astragalus polyzygus* Popov

Herbs perennial.

Stony-gravelly slopes of foothills, 700–1100 m.

I. Central Asian Mountain Province: I-5 Kuhistan (I-5-c Urgut, I-5-d Ziadin-Zirabulak).

Central Asia.

69. *Astragalus stenocystis* Bunge

= *Astragalus excelsior* Popov

= *Astragalus nigrimontanus* Popov

Herbs perennial.

Stony-gravelly slopes of foothills and mid-mountain zone, 800–1800 m.

I. Central Asian Mountain Province: I-5 Kuhistan (I-5-a Northern Turkestan, I-5-c Urgut), I-4 Nuratau, I-6 Western Hissar (I-6-a Kashkadarya).

Central Asia.

Section **Laguopsis** Bunge

70. *Astragalus alabugensis* V. Fedtsch.

Herbs perennial.

Sandy-loamy slopes of mid-mountain zone, 1700–1800 m.

I. Central Asian Mountain Province: I-4 Nuratau (I-4-a Nuratau).

Central Asia.

71. *Astragalus centralis* E. Sheld.

Herbs perennial.

Stony slopes, 450–700 m.

II. Turan Province: II-3 Kyzylkum (II-3-b Kyzylkum outlier mountains).

Central Asia.

72. *Astragalus inaequalifolius* Basil.

Herbs perennial.

Stony, stony-gravelly and limestone slopes of mid-mountain zone, 1200–2500 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-a Ugam-Pskem, I-1-b Western Chatkal), I-4 Nuratau, I-5 Kuhistan (I-5-a Northern Turkestan, I-5-d Ziadin-Zirabulak).

Central Asia.

73. *Astragalus kuldzhuktauense* F.O. Khass., Shomur. & Esankulov

Herbs perennial.

Gravelly slopes, 500–700 m.

II. Turan Province: II-3 Kyzylkum (II-3-b Kyzylkum outlier mountains).

Central Asia.

74. *Astragalus nenilini* F.O. Khass. & I.I. Maltzev

Dokl. Akad. Nauk Uzb. SSR 1989(9): 52 (1989)

75. *Astragalus megalomerus* Bunge

Herbs perennial.

Stony, stony-gravelly slopes, 700–1700 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan.

Central Asia.

76. *Astragalus neurophyllus* Franch.

Herbs perennial.

Gravelly and stony slopes, among trees and shrubs, 700–1700 m.

I. Central Asian Mountain Province: I-5 Kuhistan (I-5-c Urgut), I-6 Western Hissar (I-6-a Kashkadarya).

Central Asia.

77. *Astragalus rubrivenosus* Gontsch.

Herbs perennial.

Gravelly, clayey slopes, 1700–2500 m.

I. Central Asian Mountain Province: I-1 Western Tien Shan (I-1-b Western Chatkal).

Central Asia.

78. *Astragalus xanthomeloides* Korovin & Popov

Herbs perennial.

Rocky, gravelly, clayey slopes, 1200–1700 m.

I. Central Asian Mountain Province: all regions.

Central Asia.

MUHOKAMA

Mazkur maqolada Fargʻona vodiysida uchraydigan burchoqdoshlar oilasiga mansub *Astragalus* L turkumi turlari tavsifi, bu sohada olimlar tomonidan toʻplangan maʼlumotlardan foydalanilgan.

XULOSA

Fargʻona vodiysida *Astragal* turkumi boʻyicha olib borilgan tadqiqotlar va ilmiy ishlar tahlil qilingan. *Astragalus* L. turkumining yaylovlarda tarqalgan yem-xashak ozuqabop turlari *A.ispahanicus* Boiss., *A.schmalhauseni* Bunge, *A. vicarius* Lipsky, *A. campylotrichus* Bunge, *A. filicaulis* ssp. *rytilobus* Fisch. et Mey., *A.psiloglottis* Stev., *A.campylorrhynchus* Fisch. et Mey., *A.commixtus* Bunge, *A. Stalinskyi* Sirj., *A. sieversianus* Pall., *A.nuciferus* Bunge, *A. turkestanus* Bunge, *A.alopezias* Pall., *A.eximius* Bunge, *A.mogoltavicus* M.Pop., *A.globiceps* Bunge, *A.turbinatus* Bunge, *A.micidus* Bunge, *A.kudrjaschovii* turlari adir mintaqalarida keng tarqalgan boʻlib yaylovlarni hosil qilishida muhim ekanligi aniqlangan.

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