

PHYTON

ANNALES REI BOTANICAE

VOL. 11. FASC. 3. — 4.

PAG. 133—303

7. VI. 1966

Contribution to the genus *Astragalus* from West Pakistan

II. The subgenera *Caprinus* and *Cercidothrix**)

By

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With 7 Figures

Received March 3, 1965

Recently the author published a revision of the genus *Astragalus* L. from W. Pakistan and N. W. Himalayas (ALI 1961). Here 106 species have been recognised from the area under consideration. Since the publication of this paper some more material, collected by British Museum Expedition to Chitral in 1958, was received for identification from British Museum (Natural History), London. The present opportunity has been taken to give an account of the additional material belonging to the subgenera *Caprinus* and *Cercidothrix*. The subgeneric classification followed is the same as outlined earlier by ALI 1958, 1961.

Out of twenty species of the two subgenera, two are new to science and three species, hitherto known from Central Asia, are being recorded for the first time from W. Pakistan. The ranges of distribution of three of the species, e. g. *A. webbianus* GRAH. ex BENTH., *A. multiceps* BENTH. and *A. bicuspis* FISCHER, have increased considerably.

The species representing the recently collected material only have been enumerated. In each case information about geographical distribution and flowering period has also been given.

*) Part I of this series "Contribution to the genus *Astragalus* from West Pakistan I. The subgenera *Pogonophace* and *Astragalus*" is published in Bot. Notiser 118(1): 87—96. 1965.

Enumeration of species

Subgenus *Caprinus*

1. *Astragalus (Erionotus) chitralensis* ALI 1958: 308.

Representative Specimens: Chitral: Birmogh Lasht, 35° 55' N, 71° 46' E, dry or moist soil, stony or loam, pinkish white, 28. 5. 1958, S. A. BOWES LYON 720 (BM); Chitral-Mastuj Track, Kuragh, 9,000 ft., on stony slopes, calyx and corolla pale pink, 26. 5. 1958, J. D. A. STAINTON 2522 (BM). — Distribution: Endemic to Chitral. — Flowering Period: May—June.

2. *Astragalus (Myobroma) toppinianus* ALI 1958: 309.

Representative Specimens: Chitral: Turikho river, Istar, 10,000 ft., on stony slopes, calyx brownish green, corolla yellow, 21. 5. 1958, J. D. A. STAINTON 2491 (BM); Khotan, N. of Mastuj, between Turikho and Mastuj rivers, 13,000 ft., on stony ground, corolla yellow, 11. 7. 1958, J. D. A. STAINTON 2851 (BM); Ojhor, 36° 4' N, 71° 48' E, 12,300 ft., dry slope facing north, pale yellow, 10. 6. 1958, S. A. BOWES LYON 867 (BM); Gasin Gol 36° 1' N, 72° 10' E, scree (large boulders with plenty of soil), 11,500 ft., mustard yellow, 18. 6. 1958, S. A. BOWES LYON 951 (BM). — form with large number of leaflets. — Distribution: Endemic to Chitral. — Flowering Period: May—July.

3. *Astragalus (Myobroma) rhizocephalus* BAKER ex AITCHISON in AITCHISON 1880: 46.

Representative Specimens: Chitral: Agram, Arkari Gol, W. Tirich Mir, 11,000 ft., on stony ground, corolla yellow, 10. 6. 1958, J. D. A. STAINTON 2630 (BM). — Distribution: W. Pakistan, Chitral; Afghanistan. — Flowering Period: June.

4. *Astragalus (Myobroma) candolleanus* ROYLE ex BENTH. in ROYLE 1835: 199.

Representative Specimens: Chitral, Golen (Krui Uts), 36° 1' N, 72° 10' E, 13,000 ft., among boulders, in dry soil, pale yellow turning pale purple, 27. 7. 1958, S. A. BOWES LYON 119 (BM); Yarkhun (Ondine), 11,500 ft., between 36° 30' N, 72° 40' E and 36° 48' N, 73° 5' E, deep peat mould beneath willows in stream bed, also seen on sandy glacial bank, greenish yellow, 23. 6. 1958, S. A. BOWES LYON 989 (BM). — Distribution: Kashmir, W. Pakistan, N. W. F. Province. — Flowering Period: June—August.

5. *Astragalus (Myobroma) webbianus* GRAH. ex BENTH. in ROYLE 1835: 199.

Representative Specimens: Chitral: Chitral-Mastuj Track, Sanoghar, 7,500 ft., on stony ground, light clump, 1 ft. across, corolla yellow, 17. 5. 1958, J. D. A. STAINTON 2472 (BM); Birir, 36° 38' N, 71° 44' E, 8,000 ft., 9", river bed, pale greenish yellow, 20. 5. 1958, S. A. BOWES LYON 685 (BM); Gangalwat Gol (Kafiristan), S. W. of Chitral, 11,500 ft., on stones at edge of stream, in mats 3 ft. across, corolla yellow, 18. 6. 1958, J. D. A. STAINTON 2727 (BM); Rosh Gol, N. E. of Tirich Mir, 13,000 ft., on moraine, in mats 3 ft. across, corolla yellow, 6. 7. 1958, J. D. A. STAINTON 2813 (BM). — Distribution: Kashmir, W. Pakistan, Chitral; India, N. Punjab; W. Tibet. — Flowering Period: May—July.

6. *Astragalus (Myobroma) staintonianus* ALI 1960: 17, t. 13, 16.

Representative Specimens: Chitral: Khot An, N. of Mastuj, between Turikho and Mastuj rivers, 14,000 ft., on stones, corolla pale yellow, leaf stem pink, 12. 7. 1958, J. D. A. STAINTON 2874 Type no. (BM); Sora Lasht, 36° 17' N, 72° 2' E, north side, 13,000 ft., dry barren hillside, semi scree facing east, pale yellow, leaf stalk crimson, leaf reddish grey, 6. 7. 1958, S. A. BOWES LYON 1080 (BM). — Distribution: W. Pakistan, Chitral; Kashmir. — Flowering Period: July—August.

7. *Astragalus (Myobroma) rhizanthus* ROYLE ex BENTH. in ROYLE 1835: 200.

Representative Specimens: Chitral: Chitral Gol, W. of Chitral, 11,000 ft., on open slopes, corolla yellow, 14. 6. 1958, J. D. A. STAINTON 2674 (BM); Shoghot Aviret (?), 36° 1' N, 71° 45' E, 10,500 ft., hillside facing east, in deep loam among fennel, leaf stalk plae green or dull red, 30. 5. 1958, S. A. BOWES LYON 745 (BM); Birmogh Lasht, 35° 55' N, 71° 46' E, 9,500 ft., deep loam, on hillside facing west, bright yellow, 29. 5. 1958, S. A. BOWES LYON 728 (BM). — Distribution: W. Pakistan, N. W. F. Province; Kashmir; India, Punjab; Afghanistan (RECHINGER f. 1957). — Flowering Period: May—July.

8. *Astragalus (Myobroma) gilgitensis* ALI, species nova (Fig. 1 and 6).

Radix haud visa. Caulis abbreviatus, internodiis c. 1 mm longis; stipulis persistentibus et foliorum basibus obtectis. Folia imparipinnata, stipulis lateralibus, c. 10—14 mm longis, pilosis, rhachide quam 24—25 cm longa, petiolo c. 3—6 cm longo. Foliola 45—59, opposita vel subopposita, pilosa, petiolulo quam 1 mm longiore, lamina elliptica vel oblonga, c. 8—14 mm longa, c. 4—8 mm lata, utrinque hirsuta, margine integra. Inflorescentia umbellata, in foliorum axillis. Flores pedicellis c. 3—4 mm longis, pilosis. Calyx c. 18—19 mm longus, dentibus c. 9—10 mm longis, patente

pilosis. Corolla subflava, vexillo c. 21 mm longo, 8–10 mm lato; alis c. 18 mm longis, c. 3 mm latis; clave c. 9–10 mm longa; carina c. 15 mm longa, c. 4 mm lata, clave c. 8–9 mm longa. Stamina diadelfia, (5+4) 1, filamentis c. 14–15 mm longis. Ovarium stipite c. 2 mm longo subtentum, c. 5–6 mm longum, c. 1–2 mm latum, subflavipilosum, stylus 7–8 mm longus, c. 2 mm ab apice angulo recto superne curvatus; stigma obliquum. Fructus non vidi. — Holotype: Gilgit, Nomal to Naltar, 17. 7. 1954, R. R. STEWART 26492 (RAW). — This species is related to *A. rhizocephalus*

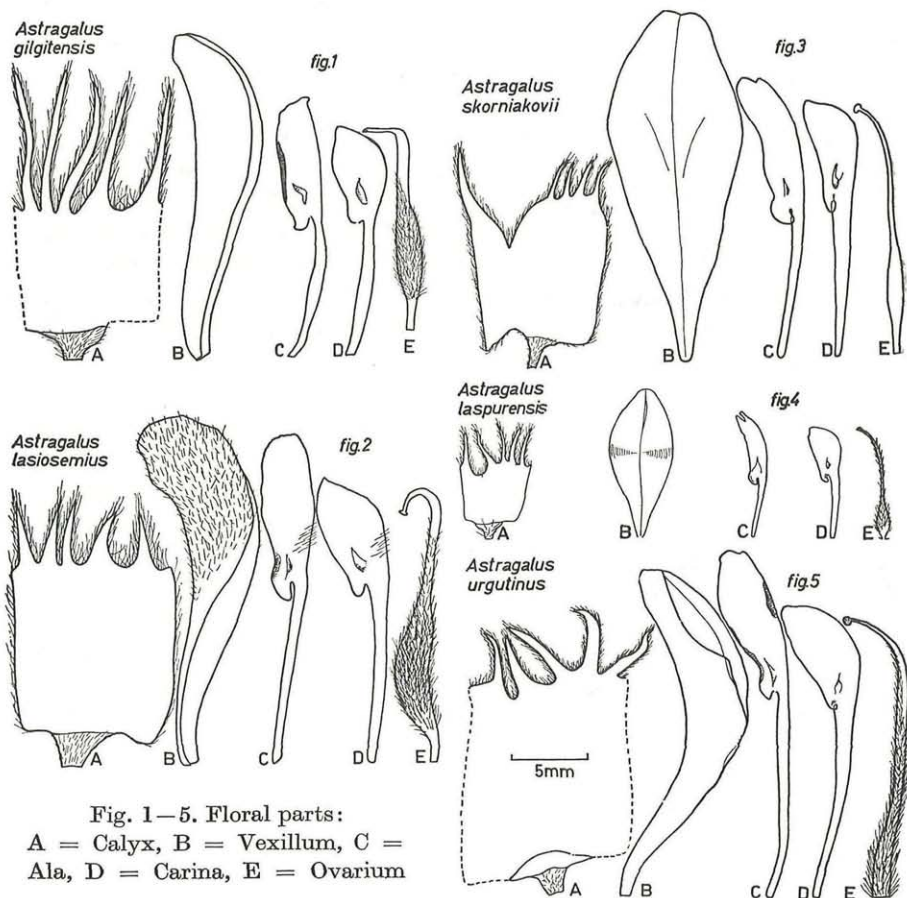


Fig. 1–5. Floral parts:
A = Calyx, B = Vexillum, C = Ala, D = Carina, E = Ovarium

BAKER AITCHISON, from which it differs mainly in the shape of vexillum. In *A. rhizocephalus* BAKER ex AITCHISON, panduriform vexillum is present; in *A. gilgitensis* ALI the vexillum is ovate to subovate (Fig. 1 B) — Flowering Period: July.

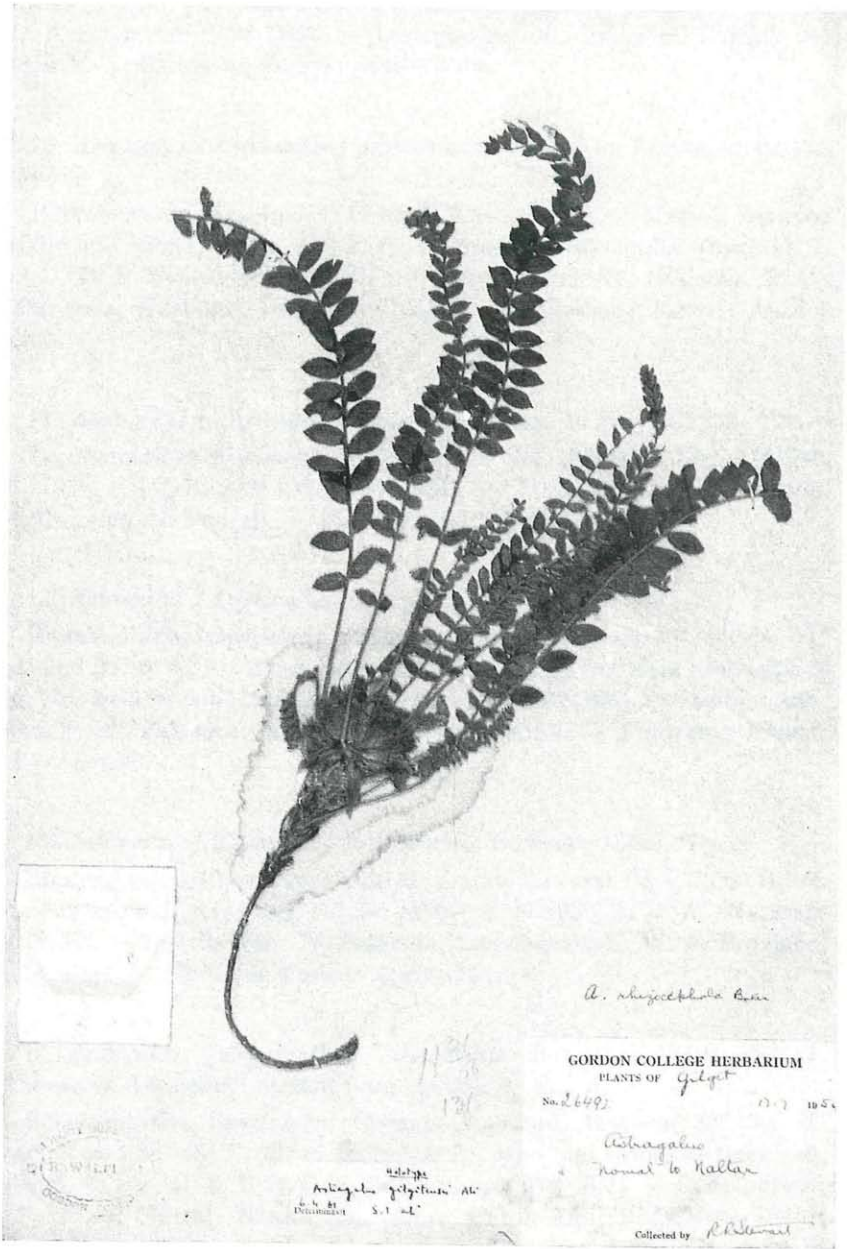


Fig. 6. Holotype of *Astragalus gilgitensis* ALI

9. *Astragalus (Aegacantha) genistoides* BOISSIER 1849: 94.

Representative Specimens: Agram, Arkari, W. of Tirich Mir, 10,000ft., on stony ground, prostrate bushes, 1 ft. across, corolla yellow, 9. 6. 1958, J. D. A. STAINTON 2622 (BM). — Distribution: W. Pakistan, Chitral; Afghanistan. — Flowering Period: April—June.

10. *Astragalus (Aegacantha) grahamianus* ROYLE ex BENTH. in ROYLE 1835: 199.

Representative Specimens: Chitral: Khot An, N. of Mastuj, between Turikho and Mastuj rivers, 13,000 ft., on open slopes, corolla white, 11. 7. 1958, J. D. A. STAINTON 2871 (BM). — Distribution: W. Pakistan, N. W. F. Province; Kashmir; India, N. Punjab. — Flowering Period: April—August.

11. *Astragalus (Aegacantha) multiceps* BENTH. in ROYLE 1835: 199.

Representative Specimens: Chitral: Oihor Gol, 10,500 ft., bright yellow, 8. 6. 1958, S. A. BOWES LYON 837 (BM). — Distribution: W. Pakistan, Chitral; India, N. Punjab. — Flowering Period: May—June.

12. *Astragalus (Aegacantha) bicuspis* FISCHER 1853: 406.

Representative Specimens: Chitral: Lutko, between 30° 55' N, 71° 18' E and 36° 6' N, 71° 48' E, 7,000 ft., among large boulders near edge of river, pale yellow, 6. 6. 1958, S. A. BOWES LYON 810 (BM). — Distribution: Kashmir; W. Pakistan, Chitral; India, N. Punjab. — Flowering Period: June—August.

13. *Astragalus (Myobroma) psilacanthus* BOISSIER 1849: 97.

Representative Specimens: Chitral: Ziarat, Lowarai Pass, 7,500 ft., on dry stony ground, calyx red, corolla yellow, 2. 5. 1958, J. D. A. STAINTON 2350 (BM). — Distribution: W. Pakistan, Baluchistan, N. W. F. Province; Afghanistan. — Flowering Period: April—May.

14. *Astragalus (Aegacantha) lasiosemius* BOISSIER 1849: 96; *A. yarkhunensis* ALI nomen nudum (mss. name). — Fig. 2.

Representative Specimens: Chitral: Yarkhun, between 36° 30' N, 72° 40' E and 36° 48' N, 73° 5' E, 10,500 ft., sand and stones in river bed, Kull sun, yellow, 21. 6. 1958, S. A. BOWES LYON 979 (BM). — Distribution: W. Pakistan, Chitral; Russia, Tien Shan, Pamir-Alai (BORISSOVA 1946); Afghanistan. — Flowering Period: June. — This is the first record of this species from W. Pakistan.

Subgenus *Cercidothrix*

15. *Astragalus (Eudomus) peduncularis* ROYLE ex BENTHAM in ROYLE 1835: 199.

Representative Specimens: Chitral: Yarkhun (Gurawr), between 36° 30' N, 72° 40' E and 36° 48' N, 73° 5' E, dry soil facing north, 10,000 ft., flowers pale yellow green and dull purple, 16. 6. 1958, S. A. BOWES LYON 920 (BM); Khot An N. of Mastuj, between Turikho and Mastuj rivers, 12,000 ft., on dry slopes, in tufts, 3 ft. across, calyx and corolla greenish yellow, 12. 7. 1958, J. D. A. STAINTON 2880 (BM). — Distribution: W. Pakistan, N. W. F. Province; Kashmir; India, N. Punjab; Russia, Tien Shan, Pamir Alai (GONTSCHAROV 1946). — Flowering Period: June—July.

16. *Astragalus (Xiphidium) xanthoxiphidiopsis* RECHINGER f. 1957: 169.

Representative Specimens: Chitral: Turikho river, Istar, 10,000 ft., on stony slopes, height upto 1 ft., straggly, corolla pale mauve, 21. 5. 1958, J. D. A. STAINTON 2488 (BM); Shoghot Airvet (?), 36° 1' N, 71° 45' E, 9,500 ft., steep stony slope, facing west, pale purplish violet, 30. 5. 1958, S. A. BOWES LYON 744 (BM). — Distribution: W. Pakistan, Chitral; Afghanistan. — Flowering Period: May—June.

17. *Astragalus (Xiphidium) subuliformis* DE CANDOLLE 1802: 134.

Representative Specimens: Chitral: Chitral-Mastuj track, Kuragh, 9,000 ft., on open slopes, calyx bluish green, corolla yellow, 26. 5. 1958, J. D. A. STAINTON 2524 (RAW). — Distribution: W. Pakistan, Baluchistan, N. W. F. Province; Kashmir; Afghanistan; Russia, Bessarabia, Middle Dnieper, Volga-Don, Lower Don, Trans Volga, Crimea, Caucasia, Upper Tobol (GONTSCHAROV & POPOV 1946). — Flowering Period: May—July.

18. *Astragalus (Cystium) skorniakovii* B. FEDTSCHENKO 1905; *A. owirensis* ALI nomen nudum (mss. name). — Fig. 3.

Type: B. FEDTSCHENKO has cited the following specimens along with the original description: Aracan. 7—11,000 ft. 8. 5. FETISOW; Managilid to Alabugi, 6—7,000 ft., 4. 6. 1880, A. REGEL; Tian-Shan: Dolin, Bolshaga, Narin, 8—11,000 ft., 25. 7. 1882, FETISOW; Altai Range, Chak, at the mouth of the R. Kok-su, 1. 7. 1878, SKORNIKOW; near the camp, 18. 7. 1878 and near the Katin wall, 19. 7. 1878, KUZAKEVITZ; Pamir, Khargoshi, 6. 7. 1878, KUZABEVITE & AMURBIEV (LE — not seen). — It is desirable to choose one of these as lectotype. — Representative Specimens: Chitral: Owir, 36° 7' N, 71° 55' E, 11,000 ft., moist soil between rocks, pale yellow, violet tinge, 11. 6. 1958, S. A. BOWES LYON 874 (BM). — Distribution: Russia, Pamir-Alai, Tien Shan, Mountain Turkmenia (BORISSOVA 1946);

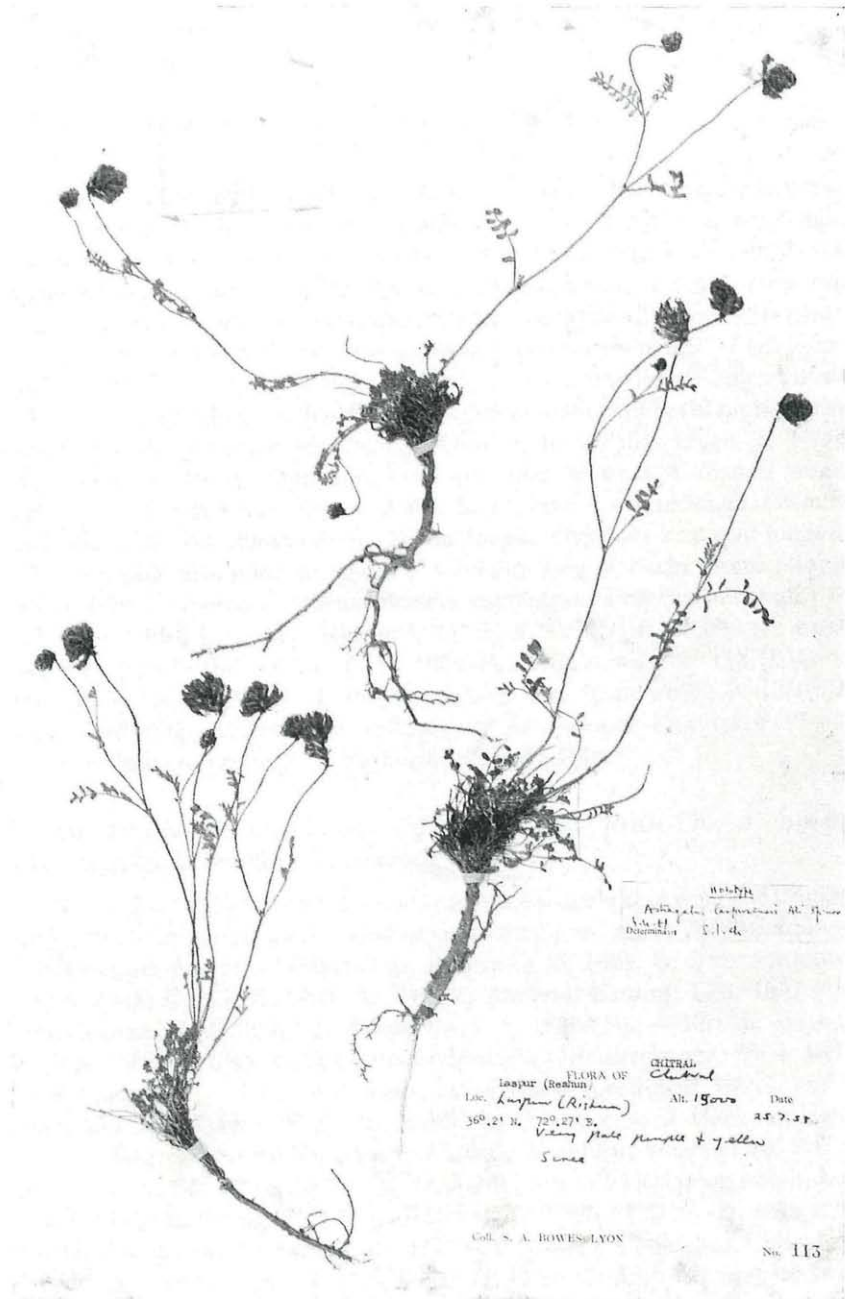


Fig. 7. Holotype of *Astragalus laspurensis* ALI

W. Pakistan, Chitral. — Flowering Period: June. — This is the first record of this species from W. Pakistan. Hitherto it has been considered as a Central Asian endemic.

19. *Astragalus (Onobrychium) laspurensis* ALI, species nova (Fig. 4 and 7).

Herba perennis. Radix lignosa elongata. Caulis ramosus, cylindricus, albi-pilosus. Folia imparipinnata, stipulis amplexicaulibus, c. 2 mm longis; rhachide c. 4—26 mm longa, petiolo c. 3—13 mm longo. Foliola 5—15, opposita vel alterna, petiolulo quam 1 mm longiore, lamina 2—6 mm longa, c. 1—2 mm lata, obovata, margine integra, apice obtuso vel truncato, utrinque albi-pilosa. Inflorescentia racemosa, pedunculo c. 3.5—7 cm longo. Flores pedicellis c. 1 mm longis, bracteis c. 2—3 mm longis, nigri-pilosis. Calyx c. 7—8 mm longus, dentibus c. 2—3 mm longis, albi- vel nigri-pilosis. Corolla pallide purpurea vel flava; vexillo c. 9—10 mm longo, c. 4 mm lato; alis c. 8—10 mm longis, c. 1—2 mm latis, clave c. 4—5 mm longa; carina c. 7—8 mm longa, c. 1.5—2 mm lata, clave c. 4 mm longa. Stamina diadelphica, (5+4)], filamentis c. 7 mm longis. Ovarium c. 3 mm longum, c. 1 mm latum, albi-pilosum, stylus c. 4—5 mm longus, basin versus pilosus, supra glaber, superne curvatus. Stigma capitatum. Fructus non vidi. — Holotype: Chitral, Laspur (Reshun), 30° 2' N, 72° 27' E, 15,000 ft., scree, very pale purple and yellow, 25. 7. 1958, S. A. BOWES LYON 113 (BM). — This species is related to *A. djigensis* FRANCHET from which it differs in having fewer (5—15) obovate leaflets. In *A. djigensis* FRANCHET 17—33 ovate leaflets are present. — Flowering Period: July.

20. *Astragalus (Xiphidium) urgutinus* LIPSKY 1910: 179. *A. argentalcalyx* ALI nomen nudum (mss. name). — Fig. 5.

Type: LIPSKY has cited the following specimens along with the original description 'In promontoriis Bucharae australis et prov. Samarkand. — Samarkand district. Dzamskoya gorge: 13. 5. 1869, O. FEDTSCHENKO; Urqut, 3,800 ft., 21. 5. 1892, KOMAROV; Ammani-Kutani, 1. 6. 1897 (!!); Sang-dzaman, 2. 6. 1896 (!!); Gizdevan, 1. 6. 1896 (!!). — Kitab. Kainar, on slopes of loess hills south of Sharisyabskage (?Shahr) range, 23. 4. 1897, KARCHINSKY.' — I have not seen any of these specimens, which are in Leningrad Herbarium. It is desirable to choose one of these as lectotype. — Representative Specimens: Chitral: Yarkhun; between 36° 30' N, 72° 40' E and 36° 48' N, 73° 5' E, 10,000 ft., by hillside facing north, buff yellow, pink tip. 19. 6. 1958, S. A. BOWES LYON 965 (BM). — Distribution: Russia, Pamir-Alai (GONTSCHAROV & POPOV 1946); W. Pakistan, Chitral. — Flowering Period: June. — This is the first record of this species from W. Pakistan. Hitherto it has been regarded as a Central Asian endemic (GONTSCHAROV & POPOV 1946).

Acknowledgements

I am grateful to the authorities of British Museum (Natural History), London, for kindly sending the specimens on loan and for attending to my various queries. I beg to express my indebtedness to Sir George TAYLOR, Director, Royal Botanic Gardens, Kew for his kind advice and encouragement. I am thankful to Dr. A. BORISSOVA of the Botanical Institute of the Academy of Sciences of the U.S.S.R., Leningrad, who has kindly checked and corrected the identification of some of the taxa. My thanks are also due to Mr. B. L. BURTT of Edinburgh, Dr. K. H. RECHINGER of Vienna, Dr. W. WEIBEL of Geneva and Dr. A. MELDERIS of London for helping me in various ways.

Summary

Two species, *A. gilgitensis* ALI and *A. laspurensis* ALI are new to science. *A. lasiosemius* BOISS., *A. skorniakovii* B. FEDTSCH. and *A. urgutinus* LIPSKY are reported for the first time from W. Pakistan.

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Zeitschrift/Journal: [Phyton, Annales Rei Botanicae, Horn](#)

Jahr/Year: 1966

Band/Volume: [11 3 4](#)

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Artikel/Article: [Contribution to the genus Astragalus from West Pakistan, II. The subgenera Carpinus and Cercidothrix. 133-140](#)