STUDIES IN THE FLORA OF AFGHANISTAN XIII: VARIOUS NEW TAXA AND RECORDS

I. C. HEDGE & PER WENDELBO*

ABSTRACT. The following new taxa are described from Afghanistan: *Diaphanoptera ekbergii* Hedge & Wendelbo; *Iris afghanica* Wendelbo; *Salvia cabulica* var. *serotina* Hedge; *Eremurus bactrianus* Wendelbo; *Acantholimon salangense* Bokhari; *Linaria maymanica* Wendelbo. *Acantholimon longiscapum* Bokhari is described from W Pakistan. *Ornithogalum*, *Ostrowskia* and *Dictamnus* are recorded as genera new to the flora of Afghanistan. Various other new records are given and interesting or little understood taxa discussed.

INTRODUCTION

This paper is largely based on some of the results of a collecting trip to Afghanistan in 1969 by the authors and Mr Lars Ekberg. It deals with a variety of new taxa and records in several different families. In the citation of the specimens, the names of the collectors are only given for the new species; in most other cases only the collectors' number is cited. The sequence of the families, and the species within each family, is alphabetical.

The distribution of the 1969 material between Edinburgh (E) and Göteborg (GB) is the same as that of our 1962 collection (see Studies in the flora of Afghanistan I, cited below).

The previous parts in this series of papers are as follows:
I: Acta Univ. Berg. ser. Math. Nat. 1963, 18: 1–56 (1964). II(a): Nytt Mag. Bot. 12: 123–134 (1965). II(b): Acta Univ. Berg. ser. Math. Nat. 1966, 4: 1–18 (1966). III: Notes R.B.G. Edinb. 26: 407–425 (1966). IV: Bot. Notiser 119: 244–248 (1966). V: Acta Hort. Gotob. 28: 57–63 (1966). VI: Notes R.B.G. Edinb. 27: 149–173 (1967). VII: *l.c.* 28: 89–161 (1968). VIII: *l.c.* 28: 163–172 (1968). IX: Bot. Notiser 121: 269–277 (1968). X: *l.c.* 122: 204–206 (1969). XI: Israel Journ. Bot. 19: 220–224 (1970)—the number of this part was inadvertently omitted when published. XII: Notes R.B.G. Edinb. 30: 197–202 (1970).

BIGNONIACEAE

Incarvillea emodi (Lindl.) Chatterjee in Kew Bull. 1948: 185 (1949).
Nangarhar: Torkham, 700 m, shady rock crevices, long pendent woody stems, *W.* 7452.

This is apparently the first localised collection from the Afghanistan side of the frontier with W Pakistan.

Incarvillea olgae Regel, Gartenfl. 29, 3, t. 1001 (1880) et 30: 377 (1881).
Badakhshan: Khumbuk area, S of Qeshm, Khumbuk, streamside, 1800 m, *W.* 9446.

* Göteborg Botanic Garden, Sweden.

The distribution of this handsome plant in Afghanistan is now much better known than a few years ago. It is clearly another good example of a species that grows in the Pamir-Alai region and is fairly widespread in NE Afghanistan stretching in a SW direction towards the Salang pass. At the locality cited above, it was very frequent in large patches at streamsides or on riverside shingle.

CAMPANULACEAE

Ostrowskia magnifica Regel in Acta Hort. Petrop. 8: 686 (1884).
Prov. Badakhshan: Yawarzan, c. 30 km S of Qeshm, growing through *Juniperus*, flowers very pale violet, 1600 m, *W.* 9301.

This remarkable monotypic genus is a new addition to the flora of Afghanistan. Previously thought to be endemic to the Pamir-Alai and Tian Shan districts, the recent find extends considerably its range to the south. It was not a common plant where we found it and was always growing at the base of junipers with the weak stems clinging to their lower branches. The huge flowers measured about 9 cm long and 10 cm across at the corolla mouth; the lobes were six or seven in number.

Taxonomically, *Ostrowskia* is isolated in the family and in Flora URSS (24: 471, 1957) the tribe *Ostrowskieae* was created to accommodate it. The genus does, however, share some features with the African and Macaronesian *Canarina* L.: ± glaucous herbs with thick fleshy roots or tubers; seasonal, hollow stems; leaves opposite or in whorls; flowers large, 5–9-lobed, solitary; ovary 5–7(–9)-locular; $2n = 34$. They differ in: flowers pendent in *Canarina*, ± erect in *Ostrowskia*; fruit baccate with a persistent calyx in *Canarina*, capsular and porose in *Ostrowskia*. In fact, the only apparently important difference lies in the fruit but as is now clear from examples in other phanerogamic families, the difference between a baccate and a capsular fruit is not always a fundamental one. The two genera must certainly be considered as closer allies than previous classifications of the family have suggested. They are, however, very distinct from all other genera of the Campanulaceae.

To Mr D. M. Henderson and Miss H. T. Prentice we are grateful for the following palynological details about *Ostrowskia* and its apparent relationships with *Canarina*.

Grains subspherical, 70 × 82–92 μm, 6-colpate, colpi very poorly defined 25–30 μm long. Exine entirely finely echinulate with scattered round-headed columns, 4–5 μm long × 1 μm thick, 5–7 μm apart. Exine 3 μm thick, nexine 1 μm thick supporting a layer of baculae, sexine tectate with the outer surface finely echinulate.

The grains of *Ostrowskia* indicate close relationship to *Canarina*. The peculiar ornamentations of the exines with fine echinulation and widely scattered columnar units are shared by both genera. The feebly defined colpi are also similar but those of *Ostrowskia* are proportionately larger than in *Canarina* as described by Hedberg (Svensk bot. Tidsk. 55, 1: 49, 1961). In the three species of *Canarina* the grains are tricolpate whereas in *Ostrowskia* they are hexacolpate. Although the difference is quite striking visually it must be remembered that a doubling of the aperture number is a common consequence of higher ploidy and should not necessarily be given appreciable taxonomic weight.

CAPRIFOLIACEAE

Lonicera bracteolaris Boiss. & Buhse in Mem. Soc. Nat. Mosc. 2, 12: 106 (1860).

Paktiva: Sirkai Kotal, 3000 m, rock crevices, 18 vi 1969, *W.* 8896. Prov. Lugar: Tera Kotal, 2800 m, rocky limestone slopes, 16 vi 1969, *W.* 8849.

This species has not previously been recorded from Afghanistan (cf. Wendelbo, Flora Iranica 10: 10–11, 1965). It has been found in NE Iran as well as in the Kopet Dagh and the Pamir-Alai Mountains of the USSR, and thus these new finds are not unexpected.

It is a yellow-flowered shrub up to 2 m high. The Afghan specimens are striking in having dark brownish-purple young shoots.

CARYOPHYLLACEAE

Diaphanoptera ekbergii Hedge & Wendelbo, **sp. nov.** Fig. 1.

Affinis *D. lindbergii* Hedge & Wendelbo sed caespitibus laxioribus minoribus, foliis angustioribus, cymis paucifloris, calycibus glandulosis, petalis brevioribus distincte differt.

Caespites laxiusculi mediocres, numquam hemisphaerici. *Caudex* 2–3 mm crassus, ligneus, ramosus, residuis foliorum emarcidis tectus, ad apicem foliatus. *Caules* floriferi procumbentes, angulati vel teretes, ad nodos incrassati, internodiis 10–20 mm longis, breviter puberuli. *Folia* in vivo subcarnosa,

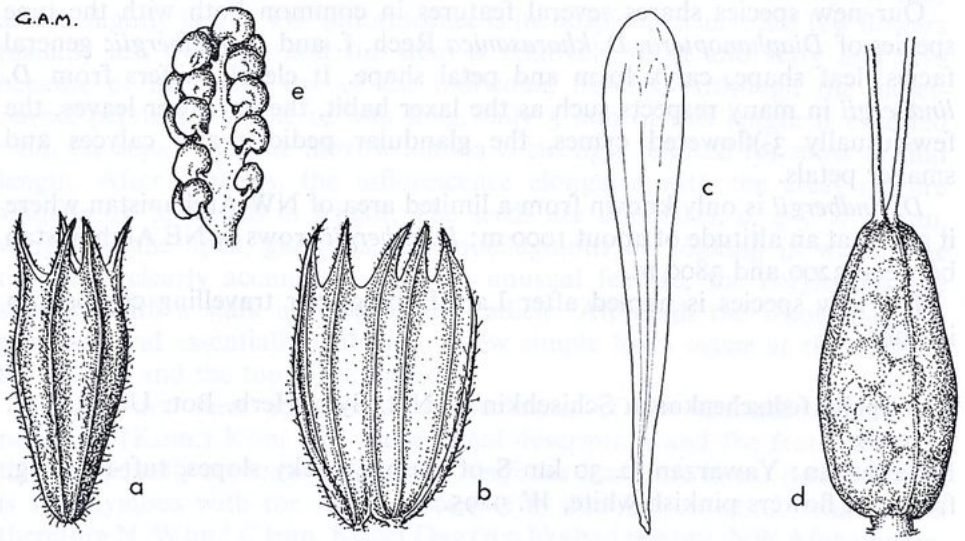

FIG. 1. Floral parts of *Diaphanoptera ekbergii* Hedge & Wendelbo: a, calyx; b, calyx dissected; c, petal; d, gynoecium; e, young ovary; a, b & c x 3; d & e x 7·5.

omnia puberula, linearia, uninervia, breviter indistincte petiolata vel subsessilia, apice acuta, basi attenuata, c. 8–10 × 1–1·5 mm. *Inflorescentia* laxa, pauciflora, flores irregulariter subdichotome dispositi. *Bracteae* bracteolaeque desunt. *Pedicelli* 2–8 mm longi, glanduloso-pilosi. *Calyx* purpureo-suffusus, turbinatus, apice constrictus, basi angustissimus, nervis 5 viridibus, ad 4 mm latus, 7–9 mm longus, dentibus 5 acutis 1·5 mm longis,

glandulis capitatis et pilis albis eglandulosis dense tectus; calyx fructifer modice inflatus. *Petala* 12–15 mm longa, ad 2·5 mm lata, nuda rubro-violacea, albo-marginata, oblanceolata, apice acuta, 3-nervia. *Stamina* 10, filiformia, inclusa. *Ovarium* obovatum, 4–5 mm longum, c. 13–19 ovulatum. *Styli* 2, 6–7 mm longi. *Capsula* ignota. *Floret* Jul.
Afghanistan. Baghlan: N side of Salang pass, with *Cousinia* sp., *Acantholimon* spp., *Arenaria griffithii*, tufts small, petals violet-red with white margins, 3200 m, 22 vii 1969, *Wendelbo & Ekberg*, *W.* 9844! (holo. E; iso. GB). Takhar: Khost-o-Fereng, upper Khaush valley, granite rocks, 3800 m, *Podlech* 11760!

The correct genus to which this new species should be assigned is uncertain. It is placed here in *Diaphanoptera* because it seems to be most closely related to *D. lindbergii* Hedge & Wendelbo. But as pointed out in the original description of that species (Acta Univ. Berg. ser. Math. Nat. 1963, 18: 20, 1964), the validity of the genus *Diaphanoptera* is uncertain and, as with the related *Acanthophyllum*, *Allochrusa* and *Gypsophila*, its limits are far from clear. Possibly, all three species of *Diaphanoptera* should be transferred to *Allochrusa* but the status of this genus also is uncertain and in Fl. URSS (6: 799, 1936) it is regarded as a subgenus of *Acanthophyllum*. Only a wide-ranging review of all the species involved, throughout SW Asia, can provide a more satisfactory answer to these problems; local reviews only cloud the issues.

Our new species shares several features in common both with the type species of *Diaphanoptera*, *D. khorasanica* Rech. f. and *D. lindbergii*: general facies, leaf shape, calyx form and petal shape. It clearly differs from *D. lindbergii* in many respects such as the laxer habit, the narrower leaves, the few-(usually 3-)flowered cymes, the glandular pedicels and calyces and smaller petals.

D. lindbergii is only known from a limited area of NW Afghanistan where it grows at an altitude of about 1000 m; *D. ekbergii* grows in NE Afghanistan between 3200 and 3800 m.

The new species is named after Lars Ekberg, our travelling companion in 1969.

Gypsophila fedtschenkoana Schischkin in Not. Syst. Herb. Bot. USSR 4, 3: 7 (1926).
Badakhshan: Yawarzan, c. 30 km S of Qeshm, rocky slopes, tuft-forming, frequent, flowers pinkish white, *W.* 9295.

The identification is provisional as no material has been available for comparison. However from its description *G. fedtschenkoana* closely matches the cited gathering although the stems and leaves are pubescent and the petals are shorter in our plant. In these differences, the Badakhshan plant agrees with the description of *G. villosa* Barkoudah, a recently recognised and little known species of which no specimens have been seen. *G. fedtschenkoana* is recorded from the Tian Shan and Pamir-Alai but not previously from Afghanistan so it appears to be yet another example of the close vegetational links between NE Afghanistan and adjacent parts of Soviet

Central Asia. It was found growing together with other such interesting plants as *Ostrowskia magnifica*, *Salvia pterocalyx*, *Dictamnus albus* and *Lophanthus lipskyanus* Ik.-Gal. & Nevski.

CRUCIFERAE

Chalcanthus renifolius (Boiss. & Hohen.) Boiss., Fl. Or. 1: 212 (1867).
Syn.: *C. tuberosus* (Kom.) Kom. in Acta Hort. Petrop. 26: 613 (1910).
Herat: Sabzak pass on road from Herat to Qala Nau, associated with juniper and growing in open scree, 2200 m, *W.* 8040; Kuh e Darunta above Cheshme Obeh, under juniper trees, 2500 m, *W.* 7831. Badghis: N side of Sabzak pass, 2300 m, *W.* 8088.

This curious, tuberous-rooted Crucifer appears to be a not uncommon plant in suitable habitats in NW Afghanistan. Where we saw it, it was always in more or less close association with juniper stands. The opportunity to examine the plant in its natural habitat showed that there were several features not adequately covered in previous descriptions of the species and these are briefly listed.

The sturdy root, which descends vertically or obliquely, has prominent clavate tuberous swellings, up to 15 mm in diameter, which are either near soil level or down to 12 cm below the soil. At the top of the rootstock, petiolar remains are often present. The basal leaves are long-petiolate, broad, ± cordate, ovate and up to 9 × 9 cm; the amplexicaul cauline leaves are up to 14 × 10 cm and rounded or acuminate at the apex; they are all slightly fleshy. The inflorescence is inconspicuous as it has few flowers (usually less than 12) and the stem is relatively short and leafy and also because of the small size of the individual flowers. Although the violet-purple petals are about 12 mm long, only 5 mm of this length is exserted from the sepals and the narrow lamina is strongly reflexed for most of that length. After anthesis, the inflorescence elongates with the erect mature siliquae up to 20 cm in length. The seeds are uniseriate, c. 4·5 × 2 mm, winged at the apex, glabrous, not mucilaginous on soaking in water; the radicle is clearly accumbent and, an unusual feature, the cotyledons are stipitate with a stalk as long as the radicle. Although the whole plant is glaucous and essentially glabrous, a few simple hairs occur at the base of the calyces and the top of the pedicels.

I have not seen authenticated specimens of the Central Asiatic *C. tuberosus* (Kom.) Kom. but the original description and the features given that supposedly separate it from *C. renifolius* leave me in no doubt that it is synonymous with the latter species. The distribution of *C. renifolius* is therefore N, W and C Iran, Kopet Dag (Aschkabad region), NW Afghanistan, Syr-Darya, Zeravschan and Chimgan (NW of Taschkent).

Chalcanthus is an isolated genus, now monotypic, without obvious close allies or relatives. It is generally placed in the Brassiceae-Moricandiinae and, although anomalous here, there are no clear reasons for transferring it elsewhere.

Isatis boissieriana Rchb. f. in Journ. Bot. 14: 46 (1876).
Fariab: gorge immediately west of Belcheragh, 1200 m, *W.* 8401. Balkh: Ali Kuh, 18 km S of Mazar-i-Sharif, 1300 m, *W.* 8472.

This very distinct annual, characterised by the thick crustaceous loculi of the silicules with narrow inrolled wings, grows in the lowlands, usually near cultivation, along much of northwest and north of Afghanistan. This type of distribution, from Herat or Badghis to Kunduz and, across the frontier, in adjacent lowland or semi-desert areas of the USSR clearly occurs in numerous species.

Sameraria bullata (Aitch. & Hemsl.) B. Fedtsch., Rast. Turkmen. 447 (1915).
Samangan: S side of mountain W of Tangi Taschkurgan, 650 m, *W.* 9102.

The identification is provisional as the specimen has broader fruits than has previously been mentioned for the species and has thicker wings than the only other specimen that I have seen. There are a few allied species to the north of Afghanistan in the lowlands of Soviet Central Asia, such as *S. aitchisonii* (Korsch.) B. Fedtsch (which from its description appears to be merely a canescent-fruited form of *S. bullata*) and *S. turcomanica* (Korsch.) B. Fedtsch. No specimens of these species have been seen but from their distribution in the USSR, it would be surprising if they were not also in northern Afghanistan. A revision of this species complex is needed both to determine specific limits more exactly and to decide whether they should be in *Isatis* or *Sameraria*. The differences between *Isatis* and *Sameraria* (essentially style present in the latter and absent in the former) are very slender and the characters of such species as *Isatis boissieriana* Rchb. f. and the above-mentioned *Sameraria* species are rather intermediate between the two genera.

Thlaspi ceratocarpum (Pall.) J. A. Murray in Comm. Goett. 5: 26 (1775).
Syn.: *Lepidium ceratocarpum* Pall., Reise 2, Anhang 740, n. 112 (1773).
Carpoceras ceratocarpum (Pall.) N. Busch, Fl. Sib. & Or. Extr. 1: 119 (1913).
Bamian: N side of Hajigak pass, streamside, 2800 m, *W.* 9824.

This annual has not previously been recorded either from Afghanistan or within the confines of the Flora Iranica region. The overall species distribution is apparently E Anatolia, Soviet Central Asia, Mongolia and Siberia. Although very little material from these areas has been available, the Afghanistan plants appear to differ in their much smaller stature (4–6 cm v. 20–50 cm) and larger siliculae (11 × 7·5 mm v. 7 × 6 mm). However, in the very small petals, the hastate leaf bases and the ± sessile stigmas, they agree well with *T. ceratocarpum*; the identification is, however, provisional.

In the Flora URSS (8: 592, 1939), the distribution in the USSR is given as W Siberia (Upper Tobol, Irtysh, Altai) and Central Asia (Balkhash). This means that the nearest localities to the Afghan site are NE Turkey, c. 1400 miles to the west, and Balkhash, c. 800 miles to the north. Phytogeographically, it is remarkable that the same species, even though an annual, should be in these three widely disjunct areas. In C Asia it is recorded from streamsides and saline habitats; in Turkey, where it is known only from a few gatherings, it grows in cultivated places; and in Afghanistan it was found at a streamside.

ERICACEAE

Rhododendron afghanicum Aitch. & Hemsl. in Journ. Linn. Soc. (Bot). 18: 75 (1881). *l.c.* 19: t. 21 (1882). Wendelbo in Rech., Fl. Iranica 11: 2 (1965). Hedge & Wendelbo in Rhododendron and Camellia Year Book 1970: 177–181.
W Pakistan. Safed Kuh, Mt. Sikaram, 2700 m, *W.* 9010. Afghanistan. Paktiva: Safed Kuh, Mt. Sikaram, in *Abies* forest, up to 50 cm, flowers greenish white, 3000 m, *W.* 8988. Laghman: Alishang, middle parts of Darrah Rastyon, crevices of cliffs, flowers white, 1900 m, *W.* 9706.

These are probably the first collections of the species since the type gatherings. On Safed Kuh, it was growing in fairly dense *Abies spectabilis* forest on steep, shaded, north-facing limestone rocks; in Nuristan (Laghman), which is an entirely new station for the species, it was in *Pinus gerardiana—P. wallichiana* forest in south-east facing gneiss (?). The new locality is about 180 km N of the type locality and separated from it by the low hot Jalalabad basin. A distinct relict endemic with no obvious allies, *R. afghanicum* is usually placed, with the west Szechuan *R. hanceanum*, in the bitypic subseries *Hanceanum* of series *Triflorum*.

Rh. collettianum Aitch. & Hemsl. in Journ. Linn. Soc. (Bot.) 18: 75 (1881). *l.c.* 19: t. 20 (1882). Wendelbo in Rech., Fl. Iranica 11: 1 (1965). Hedge & Wendelbo in Rhododendron and Camellia Year Book 1970: 177–181.
Paktiva: Safed Kuh, Mt. Sikaram, limestone stony slopes, up to 1 m, 3500–3600 m, *W.* 8975.

This was the first re-gathering from the type locality since Aitchison's collection in 1879. It was locally dominant on a north-facing limestone slope about the upper limit of the tree-line. At this altitude, the lower level forests of cedar, pine, spruce and silver-fir had thinned out and only *Juniperus communis*, especially var. *nana*, with some scattered trees of *Picea smithiana* remained. Although the base rock here is limestone, *R. collettianum* was growing in a rather thick layer of humus. Dr Siegmar-W. Breckle, with whom we travelled to Mt. Sikaram, measured the pH and found values of 6·7 and 6·1; these are quite high for Rhododendron. The Rhododendron formed dense, almost impenetrable, three feet high thickets. The flowers are pinkish in bud becoming white with a pinkish tube. Although an abundant shrub at this locality we never saw it elsewhere in the area. The corolla shape of *R. collettianum* is fairly typical of the *Anthopogon* series, of which it is a member, but it is clearly a distinct relict species without any close ally.

IRIDACEAE

It is now quite clear that the treatment of Iridaceae in Symbolae Afghanicae IV (Biol. Skr. 10, 3: 185–191, 1958) was very much a preliminary review of the situation in Afghanistan. Several more species have been found since then but there are still groups in which the taxonomy is not yet clear.

Iris afghanica Wendelbo, **sp. nov.** Sect. *Regelia* Lynch. Fig. 2.

Herba perennis, caespitosa, rhizomate elongato breviter ramoso, collo residuis foliorum reticulato-fibroso, brunneo-comososo. *Folia* scapo per $\frac{1}{2}$–$\frac{1}{3}$ longitudinis includentia, in parte inferiore conduplicata, 2·5–6 mm lata, margine membranacea, falcata; folia interiora surculorum sterilium angusta, stricta. *Scapus* 10–20 cm longus. *Bracteae* 2, 6·5–7 cm longae, acuminatae, virides brunneo-violaceae tinctae. *Flos* solitarius; tubus perigonii c. 2 cm longus; tepala exteriora ascendentia dimidio superiore circiter reflexa, 7·5–8·5 × 2·8 cm, elliptico-oblonga ad elliptico-lanceolata, apice subacuta, basi c. 1·2 cm lata, valde purpureo-venosa parum infra medium macula atro-purpurea, e basi maculam versus barba lata ex pilis cinereo-brunneis 2–3 mm longis constanti; tepala interiora erecta, 7–7·5 × 1·8 cm, anguste obovato-elliptica, apice obtusa, pallide lutea introrsum secus medianum barba viridescenti ultra medium attingenti; parum supra basin utrinque auricula atropurpurea involuta. *Filamenta* 12 mm longa; antherae 12–16 mm longae, flavescentes; pollen luteum. *Styli* 3–3·5 × 1·8 cm, tepalis exterioribus adpressi, obcordato-cuneati, bilobi, lobis 5 mm longis rotundatis, maculis cinereo-brunneis provisi.

Afghanistan. Baghlan: Salang pass, north side, 2100 m, 4 v 1969, *Hedge, Wendelbo & Ekberg, W.* 7561 (holo. GB; iso E).

This new species is probably most closely related to *Iris darvasica* Regel but differs in the narrower leaves, the rather longer tepals and most markedly in the colours of the tepals as well as in the rounded lobes of the style. *I. afghanica* has pale yellow inner tepals which show a great contrast to the heavily purplish-veined outer tepals.

Furse (Journ. Roy. Hort. Soc. 93: fig. 6, 1968) has illustrated *Iris afghanica* by a colour photograph (as *Iris* sp., *Furse* 8026) and in Iris Year Book 1968, p. 65 he mentions it as a possible new species.

I. bucharica Foster in Gard. Chron. 31: 385 (1902).

Badakhshan: above Yawarzan c. 30 km S of Qeshm, 1500 m, 4 vii 1969, bulbs only, *W.* 9460; flowered Bot. Gard. Göteborg, 28 ii 1970.

Furse (Iris Year Book 1968: 70) recorded this species for the first time from Afghanistan under the name *I. orchioides*. The true *I. orchioides* Carr., however, has winged claws on the outer tepals. This is perhaps not evident from the illustration of the original description (Rev. Hort. 52: 337, fig. 68, 1880) but Carrière's comparison of the form of the outer tepals with those of *Iris xiphioides* should leave no doubt on this point.

I. cycloglossa Wendelbo in Biol. Skr. 10, 3: 187, fig. 72 (1958).

Herat: near top of Kotal-e Mir Ali, 1680 m, wet ground at streamside, 8 v 1969, *W.* 7727.

This attractive species, which does not seem to have been recollected with certainty since originally gathered by Koeie in 1949, was found growing in masses. It was in full flower on May 8th, at a time when other Juno Irises of the area were at fruiting stage. Also remarkable was its habitat: a very wet meadow. All other Irises of this group seem to grow in very dry localities. The immature seeds do not show any sign of an aril.

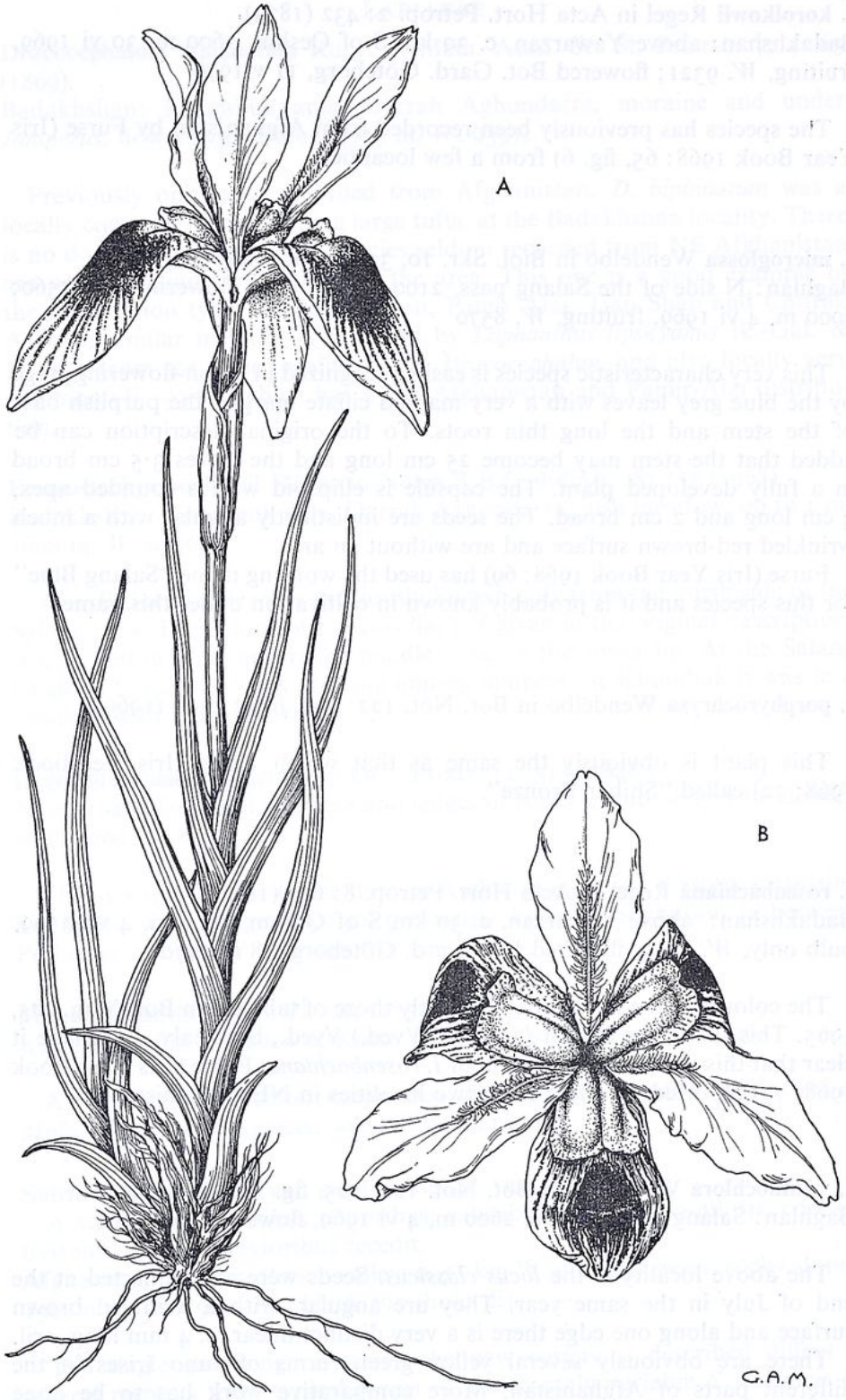

FIG. 2. *Iris afghanica* Wendelbo: A, habit; B, flower; both x c. $\frac{2}{3}$.

I. korolkowii Regel in Acta Hort. Petrop. 2: 432 (1873).
Badakhshan: above Yawarzan, c. 30 km S of Qeshm, 1600 m, 30 vi 1969, fruiting, *W.* 9321; flowered Bot. Gard. Göteborg, 11 v 1970.

The species has previously been recorded from Afghanistan by Furse (Iris Year Book 1968: 65, fig. 6) from a few localities.

I. microglossa Wendelbo in Biol. Skr. 10, 3: 189, fig. 74 (1958).
Baghlan: N side of the Salang pass, 2100 m, 4 v 1969, flowering, *W.* 7560; 2000 m, 4 vi 1969, fruiting, *W.* 8570

This very characteristic species is easily recognized in a non-flowering stage by the blue grey leaves with a very marked ciliate margin, the purplish base of the stem and the long thin roots. To the original description can be added that the stem may become 25 cm long and the leaves 3·5 cm broad in a fully developed plant. The capsule is ellipsoid with a rounded apex, 4 cm long and 2 cm broad. The seeds are indistinctly angular with a much wrinkled red-brown surface and are without an aril.

Furse (Iris Year Book 1968: 69) has used the working name "Salang Blue" for this species and it is probably known in cultivation under this name.

I. porphyrochrysa Wendelbo in Bot. Not. 122: 204, fig. 1 D–F (1969).

This plant is obviously the same as that which Furse (Iris Yearbook 1968: 72) called "Shibar Bronze".

I. rosenbachiana Regel in Acta Hort. Petrop. 8: 675 (1884).
Badakhshan: above Yawarzan, c. 30 km S of Qeshm, 1500 m, 4 vii 1969, bulb only, *W.* 9491; flowered Bot. Gard. Göteborg, 18 iii 1970.

The colours of the flower match exactly those of tab. 483 in Bot. Mag. 175, 1965. This should be typical *I. nicolai* (Vved.) Vved., but Sealy, *l.c.*, made it clear that this is just a colour form of *I. rosenbachiana*. Furse (Iris Year Book 1968: 73) reported the plant from two localities in NE Afghanistan.

I. xanthochlora Wendelbo in Bot. Not. 122: 205, fig. 1 A–C (1969).
Baghlan: Salang pass, N side, 2600 m, 4 vi 1969, flowering, *W.* 8568.

The above locality is the *locus classicus*. Seeds were also collected at the end of July in the same year. They are angular, with a wrinkled brown surface and along one edge there is a very distinct linear, c. 4 mm long, aril.

There are obviously several yellow-green forms of Juno Irises in the different parts of Afghanistan. More comparative work has to be done before their taxonomy can be fully cleared up.

LABIATAE

Dracocephalum bipinnatum Rupr. in Mem. Acad. Sc. St. Petersb. 7, 4: 65 (1869).
Badakhshan: Khumbuk area, Darrah Aghondarra, moraine and under *Juniperus*, flowers violet blue, 2700 m, *W.* 9397.

Previously only once recorded from Afghanistan, *D. bipinnatum* was a locally common plant, forming large tufts, at the Badakhshan locality. There is no doubt that many of the species seldom recorded from NE Afghanistan are probably quite widespread in the area. This one is a good example of the distribution type NE Afghanistan, Pamir Alai, Tian Shan and Chitral. Another similar instance is provided by *Lophanthus lipskyanus* Ik.-Gal. & Nevski, from the same locality as the *Dracocephalum* and also locally very common (*W.* 9353), which has a NE Afghanistan and Pamir-Alai distribution.

Eremostachys podlechii Hedge in Notes R.B.G. Edinb. 28: 155 (1968).
Badakhshan: Khumbuk area, Darrah Aghondarra, lush meadow, up to 1 m, 2600 m, *W.* 9390.

This distinct species was previously known only from the north side of the Salang pass. The colour of the corolla, not given in the original description, is light yellow with an orange middle lobe on the lower lip. At the Salang locality, *E. podlechii* was growing among junipers; at Khumbuk it was in a meadow with junipers nearby.

Lagochilus cuneatus Benth. in DC., Prodr. 12: 515 (1848).
Nangarhar: Torkham, crevices and ledges of rocks, shrub up to 1 m, flowers white, 700 m, *W.* 7453.

This is a species new to the flora of Afghanistan. It is a scarcely surprising extention of its range since its previously known distribution is between Peshawar and the W Pakistan frontier.

Molucella laevis L., Sp. Pl. 587 (1753).
Kabul: weed in a garden at Korte Tschor, 1800 m, *Breckle* A. 2265.

A native of the Mediterranean area, this is apparently the first record of *Molucella* as an introduced weed in Afghanistan.

Salvia cabulica Benth. var. **serotina** Hedge, **var. nov.**

A var. *cabulica* floribus minoribus, calycibus eglanduloso-pilosis, connectivis antherarum brevioribus recedit.
Afghanistan. Kunar: Petsch valley, c. 55 km W of Chaga Serai, rocky slopes, 1300 m, 3 viii 1967, *Breckle* A 591 (holo. E).

The single gathering on which the new variety is described differs in several respects from typical forms of the scarcely variable *S. cabulica*. In addition to the differences in the diagnosis, the central lobe of the lower

corolla lip in the type variety is clearly longer and broader than the lateral lobes whereas in the new variety the three lobes are subequal. Despite the apparently important differences between the two varieties, the possibility that this is an atypical specimen flowering out of season cannot be ruled out. The type variety generally flowers in April or May and the new variety in August. The only other specimen of *S. cabulica* seen in flower as late as this (*Lace* 4008 from nr. Quetta) was in no way different from the earlier flowerers.

Salvia pterocalyx Hedge in Notes R.B.G. Edinb. 23: 163–164 (1960).
Badakhshan: Yawarzan, 30 km S of Qeshm, very frequent on rocky slopes with *Pistacia vera*, *Prunus* sp., *Artemisia* sp., 1600–2250 m, *W.* 9292. Takhar: Khost-o-Fereng, upper Kala valley, 2700 m, *Podlech* 11780. Baghlan: N side of Salang pass in the *Juniperus* zone, 1900 m, *W.* 8578!

Since the original discovery of this species at the Mirza Atbili pass in Samangan in 1956, it has been found in several other localities to the south and east. At the new Badakhshan station, in contrast to the other localities where it occurs in scattered communities, it was a dominant plant colouring the hillsides with its large purplish calyces and rose corollas. It occurs, at all its known stations, in association with either *Juniperus*, *Pistacia* or *Prunus*.

Stachyopsis oblongata (Schrenk) M. Pop. & Vved. in Trud. Turk. nauch. Obshch. 1: 121 (1923).
Syn.: *S. maleolens* (Rech. fil.) Hedge in Notes R.B.G. Edinb. 28: 142 (1968).
Lugar: E side of Shutur Gardan Kotal, 2930 m, *W.* 9158. Badakhshan: Khumbuk area, Darrah Aghondarra, fls. purple-violet, 2600 m, *W.* 9394.

The three species of *Stachyopsis*—*S. oblongata*, *S. marrubioides* (Rgl.) Ik.-Gal. and *S. lamiiflora* (Rupr.) M. Pop.—have had chequered taxonomic careers, previously being variously placed in *Phlomis*, *Leonurus* or *Stachys*. *Stachyopsis* has points of similarity with all of them but does appear to merit independant status although to which genus it is closest is not clear. The nutlets of *Stachyopsis* are very characteristic: markedly trigonous, smooth and obliquely truncate at the apex.

At the Badakhshan locality, *S. oblongata* was a very frequent plant in a lush meadow. It varied considerably in the degree of leaf toothing: in some plants the margins were entire, in others serrate. As the subentire leaf margin of the species originally described by Rechinger as *Stachys maleolens* was the only way of distinguishing it from *Stachyopsis oblongata*, the reason for its maintenance as a separate species disappears. In the specimens studied the anther filaments are covered with very fine glandular hairs and the thecae are either glabrous or slightly pilose.

LILIACEAE

Eremurus bactrianus Wendelbo, **sp. nov.** sect. *Henningia*. Fig. 3.

Herba (0·75–)1·25–2 m alta. *Folia* exteriora usque ad 70 × 8 cm, subtus carinata, nitido-viridia, in paginis ambabus glabra vel glabrescentia sed basin versus plerumque parum pubescentia, apice margine carinaque ± pubescentia pilis brevibus aliquantum crispis; folia interiora angustiora c.

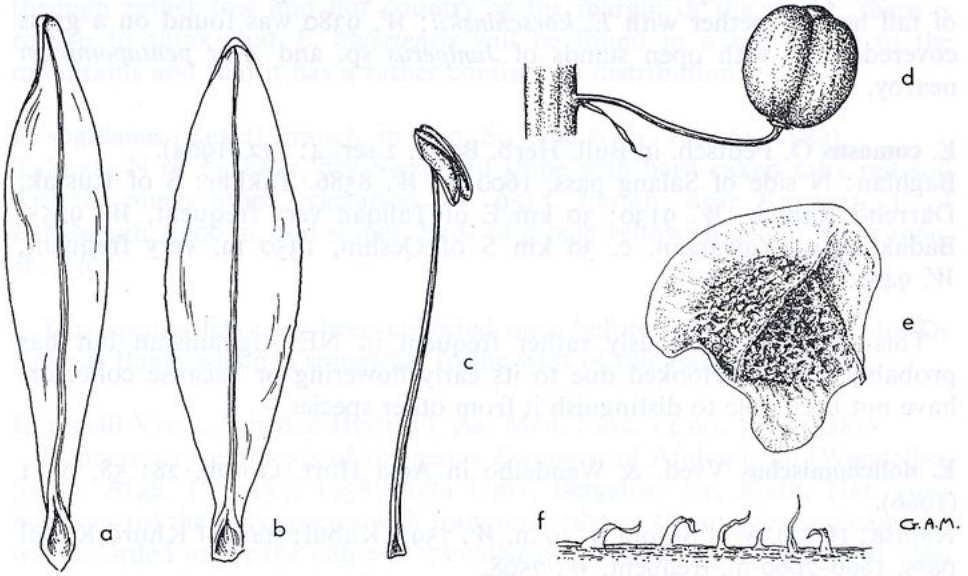

FIG. 3. *Eremurus bactrianus* Wendelbo: a, outer tepal; b, inner tepal; c, stamen, allx 3; d, capsule with pedicel and bract x $\frac{2}{3}$; e, seed x 4; f, indumentum on leaf x c. 33.

1 cm lata, dense pubescentia pilis longioribus. *Scapus* 1–1·3 cm diametro, teres, inferne aliquantum dense pubescens, superne glabrescens. *Racemus* scapo subaequilongus densus. *Bracteae* c. 2 cm longae, e basi dilatata subulatae, villosae. *Pedicelli* floriferi 3–3·5 cm longi, ascendentes, recti; pedicelli fructiferi non elongati, manifeste incrassati, patentes vel aliquantum ascendentes. *Perigonium* rotatum; tepala apice cucullata, alba, basin versus flavescentia; tepala exteriora 22 × 6 mm, anguste elliptica; tepala interiora 22 × 7·5 mm, elliptica. *Filamenta* 15–18 mm longa; antherae c. 4 mm longae, flavae, polline aurantiaco. *Ovarium* flavum. *Stylus* tepalum excedens. *Capsula* c. 2 cm diametro, globosa. *Semina* c. 6 mm longa, triquetra, ala 3 mm lata provisa, canescentia.

Afghanistan. Badakhshan: S of Qeshm, Khumbuk area, side valley SW of Robat, 2700 m, 3 vii 1969, *Hedge & Wendelbo, W.* 9426 (holo. GB; iso. E); c. 30 km S of Qeshm, above Yawarzan, 1800 m, 1 vii 1969, *Hedge & Wendelbo, W.* 9380; Kash district, 3000 m, 9 viii 1937, *Koelz* 12998.

Koelz 12998 was recorded, with some doubt, as *Eremurus schiwanus* O. Fedtsch in Symbolae Afghanicae IV (Wendelbo 1958, 156). It was, however, later shown that the type specimen of *E. schiwanus* could not be distinguished from *E. kaufmannii* Regel (Wedelbo, Acta Univ. Berg. ser. Math. Nat. 1964, 5: 20–22). The new species, *E. bactrianus* (named after the ancient region of Bactria) is undoubtedly more closely related to *E. kaufmannii* than to any other species but it differs clearly in its broader, glossy green (not glaucous) leaves which are pubescent only in the lower part; in the longer pedicels (3–3·5 cm not 1–2 cm long), which are ± horizontal (not strongly arcuate) in the fruiting state, and also in the distinctly larger capsule (c. 20 mm in diameter not 10–12 mm).

At the type locality, *Eremurus bactrianus* was growing in a lush "meadow" of tall herbs together with *E. korschinskii*; *W.* 9380 was found on a grass covered slope with open stands of *Juniperus* sp. and *Acer pentapomicum* nearby.

E. comosus O. Fedtsch. in Bull. Herb. Boiss. 2 ser. 4: 772 (1904).
Baghlan: N side of Salang pass, 1600 m, *W.* 8586. Takhar: S of Rustak, Darreh-i Ransch, *W.* 9130; 30 km E of Taliqan very frequent, *W.* 9255. Badakhshan: Yawarzan, c. 30 km S of Qeshm, 1350 m, very frequent, *W.* 9482.

This species is obviously rather frequent in NE Afghanistan but has probably been overlooked due to its early flowering or because collectors have not been able to distinguish it from other species.

E. dolichomischus Vved. & Wendelbo in Acta Hort. Gotob. 28: 58, pl. 1 (1966).
Kapisa: 16 km W of Sarobi, 1140 m, *W.* 7593. Kabul: start of Khurd Kabul pass, 1800–2000 m, frequent, *W.* 7508.

This species was first confused with *E. comosus* by Wendelbo (Acta Univ. Berg. ser. Math. Nat. 1964, 5: 13, map. 14). Thus the two dots in the Kabul area of the cited map, and probably the one in Chitral, belong to *E. dolichomischus*.

E. furseorum Wendelbo in Acta Hort. Gotob. 28: 59, pl. 2 (1966).
Baghlan: N side of the Salang pass, 1400 m, 16 vi 1969, flowering, *W.* 8886; 22 vii 1969, fruiting, *W.* 9858.

The above occurrence must be close to the type locality but somewhat lower down the valley. The plant was found only in one place but here it grew in great quantity. It is undoubtedly one of the most characteristic species of the section *Henningia* due to the small flowers with long exserted filaments. The raceme is very dense. The subglobose capsule is about 5 mm in diameter, the smallest found in the genus, and the ascending fruiting pedicels are 8–12 mm long. The three-angled seeds are c. 5 mm long, grey, and have a narrow wing on two sides. The thin roots are also characteristic.

The habitat was a hot, stony slope with scattered *Juniperus* and species of *Artemisia*, *Cousinia* and *Phlomis*.

E. inderiensis (Stev.) Regel in Acta Hort. Petrop. 2: 427 (1873).
Badghis: near Bala Murghab, E of town, 900 m, *W.* 8244. Herat: N of Adraskan, 1500 m, *W.* 7724; N side of Mir Ali pass, S of Herat, 1580 m, *W.* 7751. Zabul: 10 km NE of Kalat, 1650 m, *W.* 7608.

The previously published map of Wendelbo (Acta Univ. Berg. ser. Math. Nat. 1964, 5: map 13) showed a very scattered distribution for this species with a very isolated locality in Baluchistan. With the new localities added to the map, there is a certain bridging of the Baluchistan station with the rest of the area. The species was very frequent in localities where we saw it.

As the main road between Kandahar and Herat, which we followed, goes through rather low and hot country at the margin of the desert, there is reason to think that *E. inderiensis* will be found in a belt closer to the mountains and that it has a rather continuous distribution.

E. sogdianus (Regel) Franch. in Ann. Sc. Nat. 6 ser. 18: 261 (1884).
Takhar: N of Farkhar, dry S-exposed slope with hard caked salty red soil without much other vegetation, *W.* 9513. Fariab: near Kawlyan, E of Belcheragh, 1200 m, soil slopes, buds of a pale yellowish colour, 26 v 1969, *W.* 8397.

This species has only been collected once before in Afghanistan—by Dr Volk at Bangi which is somewhat to the west of our Farkhar locality.

E. regelii Vved., Schedae Herb. Fl. As. Med. Fasc. 14 no. 331 (1928).
In previous treatments of the genus *Eremurus* of Afghanistan (Wendelbo, Symb. Afgh. IV: 157, 1958; Acta Univ. Bergensis ser. Math. Nat. 1964 no. 5: 9–10) the only species with transverse ribs on the ovaries and capsules was recorded under the name *E. spectabilis* M.B. During our travels in 1969 we saw this plant in flower in many different parts of the country. With its red, broadly white-margined tepals there is no doubt that it is *E. regelii* and not *E. spectabilis*, which has pale yellowish tepals. So far I have not been able to find any other distinguishing characters and it might be better to treat *E. regelii* as a subspecies of *E. spectabilis*. Possible differences in leaf shape and colour are difficult, if not impossible, to check on pressed material and only comparative studies on living material can give a solution to the problem.

Where to draw the line between the occurrences of *E. spectabilis* s. str. in the west and *E. regelii* in the east is impossible to tell from the available herbarium material. I am, however, inclined to think that only *E. regelii* occurs in Afghanistan.

As *E. regelii* is a rather common plant in Afghanistan I have not listed localities.

Fritillaria bucharica Regel in Acta Hort. Petrop. 8: 652 (1884).
Badakhshan: above Yawarzan, c. 40 km S of Qeshm, 1900 m, 1 vii 1969, fruiting *W.* 9351.

Furse (Lily Year Book 1966: 118) was the first to collect this species in Afghanistan.

Fritillaria imperialis L., Sp. Pl. 303 (1753).
Badakhshan: valley to the south of Qeshm, Khumbuk area, side valley to the SW of Robat, 3000 m, among rocks in the upper *Juniperus* belt, *W.* 9399; above Yawarzan, c. 30 km S of Qeshm, 1900 m, within Juniper zone on north side of hill among rocks, *W.* 9381.

F. imperialis is rather common in the Kabul area but does not seem to have been collected so far to the north-east before. These localities come rather close to the southernmost localities of the closely related *F. eduardii*

Regel. Most probably the latter plant is merely a geographical race of *F. imperialis*. The distinguishing characters that are given in the Soviet Floras are not convincing.

Ornithogalum arianum Lipsky ex Vved., Fl. Turkm. 1: 306, (1932). Descr. ross.
Herat: Sabzak pass N side, 2300 m, base of *Juniperus*, 16 v 1962, flowering, *W.* 8087.

This is the first record of *Ornithogalum* from Afghanistan. The genus has one of its centres in the Mediterranean and the Sabzak locality is the easternmost extension of this area. *O. arianum* was described from the Kopet Dagh area but has also been collected several times in the Khorassan area of Iran.

Polygonatum sewerzowii Regel in Bull. Soc. Nat. Mosc. 12, 2: 436 (1868).
Badakhshan: above Yawarzan, c. 30 km S of Qeshm, c. 1900 m, frequent within the *Juniperus* zone, *W.* 9375.

In Afghanistan, this species has probably not been gathered before outside the Kabul area. This new find links the Kabul localities with its distribution in Tadjikistan. As the species also occurs in Turkmenistan there is every reason to expect that it will be found in other localities in Afghanistan.

PLUMBAGINACEAE

Acantholimon longiscapum Bokhari, **sp. nov.**

Affinis *A. polystachyo* Boiss. sed scapis foliis 8-plo longioribus, multisquamatis, spiculis parvis, terminalibus (nec fasciculis axillaribus confertis) differt.

Fruticulus laxe pulvinatus, valde glaucus. *Folia* heteromorpha; folia vernalia carnosula aestivalibus breviora diffringentia et evanida; folia aestivalia lineari-subulata, 25–40 × 1 mm, rigida, margine ± laevia, persistentia, glabra. *Scapi* simplices, foliis 8-plo longiores, squamis 10–11-provisi, glabri. *Spiculae* parvae (2–3) terminales, 7–8 mm longae, 3–4-florae, 6–7-bracteatae. *Bracteae* glabrae; bractea exterior oblonga-ovata, 4 mm longa, anguste scariosa-marginata, acuta, breviter cuspidata; bracteae interiores primae et secundae similes exteriore duplo longiores, oblongo-lanceolatae, scarioso-marginatae, carinatae, cuspidatae; ceterae minores, carinatae, cuspidatae. *Calyx* infundibuliformis, 7–8 mm longus; tubus limbo duplo longior; limbus indistincte 10-lobus; nervi 5, ad medium limbum parce pilosi, non excurrentes.
W Pakistan. Baluchistan: Isplingi, 40 miles SW of Quetta, *A. H. Khan* 27 (holo. E); Isplingi, *A. H. Khan* 61; Nari, c. 50 miles SE of Quetta, 18 vii 1957, *E. Nasir*.

Acantholimon salangense Bokhari, **sp. nov.** fig. 4.

Fruticulus laxe pulvinatus. *Folia* linearia, 12–15 × 1 mm, dense setulosa, viridia. *Scapi* simplices foliis sesqui vel duplo longiores, squamis 1–2 provisi, dense setulosi. *Spicae* terminales, dense distichae, 15–18 mm longae, flabelliformes. *Spiculae* 5–7, 2-florae, 4–5-bracteatae. *Bracteae* glabrae; bractea

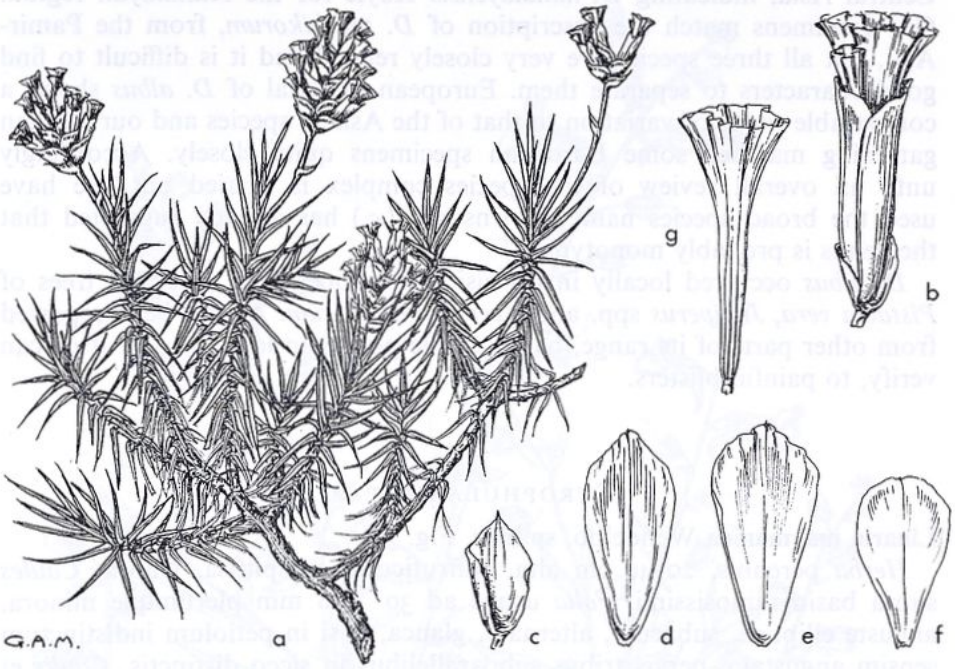

FIG. 4. *Acantholimon salangense* Bokhari: a, habit x $\frac{2}{3}$; b, spikelet; c, outer bract; d, e, inner bracts, f, innermost bract; g, calyx; b–g x $3\frac{2}{3}$.

exterior ovato-triangularis, 5–6 mm longa, acuta, breviter cuspidata, herbacea anguste scarioso-marginata; bracteae interiores primae et secundae similes exteriore duplo longiores, obovatae, praeter nervos membranaceae, distincte retuso-mucronatae, purpurascentes; ceterae paulo minores et omnino hyalinae. *Calyx* anguste infundibuliformis, 10–11 mm longus; tubus limbo sesquilongior, viridulus; limbus ± truncatus, crenulatus, purpurascens; nervi 5, parce pilosi ad marginem dilatati, non excurrentes. *Petala* rosea.
Afghanistan. Baghlan: N side of Salang pass, 3200 m, *Wendelbo & Ekberg*, *W.* 9849 (holo. E; iso. GB).

This is a striking, distinct species probably distantly related to *A. ecae* Aitch. & Hemsl. but differing in the shorter scape, the 2-flowered spikelets and the outer bract ovate-triangular, acute and herbaceous as opposed to obcordate, truncate and subcoriaceous.

RUTACEAE

Dictamnus albus L., Sp. Pl. 548 (1753).
Badakhshan: c. 30 km S of Qeshm above Yawarzan, 1600–2000 m, *W.* 9293. Also noted nearby at Robat in the Khumbuk area at c. 2500 m.

The genus *Dictamnus* is not recorded from Afghanistan by Townsend (Rech., Fl. Iranica 36: 1, 1966) and its nearest station to the west is in Persian Azerbaidjan. Vvedensky (Fl. URSS 14: 227–230, 1949) records *D. tadshikorum* Vved. and *D. angustifolius* G. Don ex Sweet for Soviet

Central Asia, indicating *D. himalayensis* Royle for the Himalayan region. Our specimens match the description of *D. tadshikorum*, from the Pamir-Alai, but all three species are very closely related and it is difficult to find good characters to separate them. European material of *D. albus* shows a comparable range of variation to that of the Asiatic species and our Afghan gathering matched some European specimens quite closely. Accordingly until an overall review of the species complex is carried out, we have used the broad species name; Townsend (*l.c.*) has already suggested that the genus is probably monotypic.

D. albus occurred locally in profusion on slopes with scattered trees of *Pistacia vera*, *Juniperus* spp. and *Acer pentapomicum*. As has been reported from other parts of its range, handling the plant can lead, as one of us can verify, to painful blisters.

Scrophulariaceae

Linaria maymanica Wendelbo, **sp. nov.** Fig. 5.

Herba perennis, 20–40 cm alta, suffruticosa, caespitosa, glabra. *Caules* supra basin ramosissimi. *Folia* usque ad 30 × 8 mm plerumque minora, anguste elliptica, subacuta, alternata, glauca, basi in petiolum indistinctum sensim angustata, nervis tribus subparallelibus in sicco distinctis. *Caulis* et rami in racemo laxo terminans, interdum ramis secundariis brevibus, florentibus; bracteae foliaceae, sursum sensim decrescentes, supremae vix 2 mm longae; pedicelli 3–8 mm longi. *Calyx* 5–6 mm longus, usque ad basin fissus; laciniae inaequales, 1–1·4 mm latae, anguste elliptico-oblanceolatae, subacutae. *Corolla* (cum calcare) 17–21 mm longa, atro-coeruleo-violacea; labium superius inferiore longius, c. 4·5 mm latum, bilobatum, lobis 1·5–3 mm longis et 1·5 mm latis, late ellipticis; labium inferius trilobatum, lobis 2·5 × c. 1·5 mm, rotundatis; palatum dense cinereo-coeruleo-hirtum; calcar 5–7 mm longum, tenue, sensim attenuatum, acutum, curvatum. *Filamenta* 4; duo inferiora c. 7 mm longa basi incrassata papillosa; duo superiora c. 6 mm longa, intra paulo supra basin papillis duabus instructa; antherae 1–1·5 mm longae, luteae. *Stylus* 5·5 mm longus, tenuis, glandulis capitatis, minutis, sparsim provisus. *Capsula* c. 6 mm diam., globosa, calyce aliquantum accrescenti cincta. *Semina* c. 3 mm lata, reniformia, complanata, in centro incrassata, cineracea.

Afghanistan. Fariab: between Kata Qala and Zarshoy, c. 15 km NW of Belcheragh, rocky slopes, 900 m, 23 v 1969, *Hedge, Wendelbo & Ekberg, W.* 8307 (holo. GB; iso. E); Darrah Belcheragh, stony slopes, 30 v 1962, *Hedge & Wendelbo, W.* 3765 (BG, E).

Only a few specimens of the new species were found on stony slopes at each of the two localities. It is very characteristic with its small, much-branched, greyish blue-green tufts with dark blue-violet flowers. Although it has not been possible to match the species with any described from the surrounding areas, it seems to fall into Sect. *Grandes* (Benth.) Wettst. subsect. *Laeves* Kuprian, as treated in Fl. URSS vol. 22. It is distinguished by the combination of alternate, comparatively broad leaves, and the blue-violet corolla with curved spur.

FIG. 5. *Linaria maymanica* Wendelbo: a, habit x $\frac{2}{3}$; b , corolla x 2; c, seed x 20.

Pedicularis olgae Regel in Mem. Soc. Nat. Mosc. 34, 2: 61 (1882).
Badakhshan: above Yawarzan, c. 30 km S of Qeshm, 1600 m, 30 vi 1969, fruiting, *W.* 9300; Khumbuk area, side valley to the SW of Robat, 2900 m, meadows on N slopes, 3 vii 1969, just past flowering, flower remains yellow, *W.* 9406. Parvan: S side of Salang pass, 2400 m, streamside, *W.* 9834.

P. olgae was not reported from Afghanistan by Wendelbo (Nytt Mag. Bot. 12: 123–134, 1965) in his review of the *Pedicularis* species. The plants attain a height of about 30 cm and have a dense flowering spike which may be as much as 13 cm long. Characteristic of the species are the coarse, verticillate leaves in one verticil near the base of the stem, one above the middle and a third one of rather small leaves just below the spike.

P. semenovii Regel in Bull. Soc. Nat. Mosc. 41, 1: 108 (1868).
Badakhshan: valley to the S of Qeshm, Khumbuk-area, side valley to the SW of Robat, 3000 m, near snow patches, 3 vii 1969, flowers deep brownish-purple with whitish lip, *W.* 9441.

This species was also not recorded from Afghanistan by Wendelbo (*l.c.*). It has often been treated as a variety or subspecies of *P. pycnantha*, a rather common species in Afghanistan, but after having seen both of them in the field I do not doubt that *P. semenovii* is a good species.

ACKNOWLEDGMENTS

We are grateful to Dr M. Bokhari, now at Schiraz, SW Iran, for allowing us to include the two new *Acantholimon* descriptions; our sincere thanks are also due to Drs H. Freitag and S.-W. Breckle, previously at Kabul University and now at Göttingen and Bonn University respectively, for their kindness and hospitality during our stay in Afghanistan.