

Primula bellidifolia, King, and its Allies.

BY

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With Plate LXI.

IN the woods and damp alpine meadows of the eastern flanks of Tibet and adjacent ranges occur a number of species of a very marked section of the Primulas, having close heads or spikes of small blue or purple flowers, borne on long, slender scapes which arise from a rosette of entire or crenulate leaves.

Their fragrance and the fine colour of their flowers have frequently brought them under the notice of horticultural collectors, and, as a result, several species are now in cultivation in Europe. Their flowering under cultivation has invariably been in May, though in their wild habitats, so far as is known, their flowers are always produced during the latter part of July and August.

When Pax and Knuth published their monograph of *Primulaceae* in 1905, three species only of this group had been distinguished—*P. bellidifolia*, King, *P. cernua*, Franch., and *P. Viali*, Franch.; one more was described in that work—*P. Giraladiana*, Pax; four have been published since—*P. deflexa*, Duthie, *P. Littoniana*, Forrest, *P. muscarioides*, Hemsl., and *P. penduliflora*, Petitm.; while two more, *P. Watsoni*, Dunn, and *P. gracilentia*, Dunn, are added in the present paper founded on material in the Herbarium of the Royal Botanic Garden, Kew. *P. Watsoni*, Dunn, is represented at Kew by a living plant, communicated by Professor Balfour from the Royal Botanic Garden, Edinburgh, and it was his inquiry concerning it which led to the investigation of the group resulting in the following notes.

The ten species which are enumerated below, though having the appearance of being easily distinguishable, and being, in such cases as can be judged, quite distinct horticulturally, yet present some difficulty when it is attempted to arrange them in a systematic series. It may be that in some cases sexual forms, corresponding with the different relative positions of stigma and stamens well known to occur in this genus, have been [Notes, R.B.G., Edin., No. XXIII., December 1911.]

mistaken for nearly allied species. A careful study of this should be made when these species are better known in cultivation, in order to throw light upon the subject.

KEY TO THE SPECIES.

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| Calyx teeth acute | 1. <i>Giraldiana</i> . |
| Calyx teeth obtuse | |
| Corolla lobes less than half the exerted part of the tube | |
| Corolla blue, lobes bilobed | 2. <i>deflexa</i> . |
| Corolla dark purple, lobes obtuse or retuse | |
| Whole plant nearly glabrous, efarinose | 3. <i>muscariaoides</i> . |
| Leaves hairy, scape and inflorescence farinose | |
| Leaves repand-dentate, contracted into petiole | 4. <i>bellidifolia</i> . |
| Leaves lobulate, sessile | 5. <i>Watsoni</i> . |
| Corolla lobes more than half as long as the exerted part of the tube | |
| Corolla lobes obcordate | 6. <i>penduliflora</i> . |
| Corolla segments ovate or oblong | |
| Leaves crenulate, spikes over 4 cm. long | |
| Spikes over 7 cm. long | 7. <i>Littoniana</i> . |
| Spikes under 6 cm. long | 8. <i>Viali</i> . |
| Leaves entire or coarsely lobulate, heads globose | |
| Leaves entire, broadly spatulate sessile | 9. <i>cernua</i> . |
| Leaves rather coarsely lobulate oblong, narrowed into petiole | 10. <i>gracilentia</i> . |

1. *Primula Giraldiana*, Pax, in Engl. Pflanzenreich, Primul. (1905), fig. 27a.

A blue-flowered species of northern Shensi; geographically an outlier of the group's range and morphologically distinct from the other species by reason of its acute calyx teeth. There is no specimen at Kew.

2. *Primula deflexa*, Duthie. *Primula Viali*, Pax, quoad fig. 27c., in Engl. Pflanzenreich, Primul. (1905), 93.
3. *Primula muscariaoides*, Hemsl., in Bot. Mag., t. 8168.

The flowers under cultivation are pale purplish-blue. The species is found in the portion of Yunnan lying north of the Yangtze Kiang. To Hemsley's original locality may be added Tsekou, Soulié, No. 1347, and Monberg.

4. *Primula bellidifolia*, King.

The plant, which has bluish-purple flowers and grows in Sikkim, seems never to have been cultivated.

5. *Primula Watsoni*, Dunn. Sp. nov. Plate lxi.

Herba perennis. Folia sessilia rosulata, oblanceolata, obtusa, basi longe attenuata, 7-15 cm. longa, praeter basin crebre regulariter lobulato-crenata, membranacea, in venis dense cetero sparse hirsuta, efarinosa. Scapus strictus, 10-30 cm. altus, glaber, apice farinosus, capitulum globosum vel spicam ovatam gerens. Flores sessiles, 8-12 mm. longi, bracteis lanceolatis 4 mm. longis. Calyx late campanulatus basi farinosus 2-3 mm. longus; dentes 5 paullo irregulares tubum aequantes, late ovati, margine ciliati. Corolla glabra atropurpurea; tubus cylindricus, 7-10 mm. longus, 1.5 mm. latus; limbus cupularis, 3-4 mm. latus; lobi 5, 2 mm. longi et lati, truncati vel retusi. Capsula ovalis, 4 mm. longa.

Probably all from the elevated woodlands among the high mountains round Ta-tsien-lu in W. Szechuen, Pratt, 252 (part), Soulié, 152, Wilson, 4036.

The species which has recently been introduced into cultivation has its deep purple flowers relieved by the bright yellow powdery coating of its scapes and inflorescence.

[The seeds were sent in 1908 to the Royal Botanic Garden, Edinburgh, by Mr. C. Watson, Solicitor, Annan, Dumfriesshire. They were collected by his son, Mr. Charles Marson Watson, after whom the species is named, at Ta-tsien-lu, at an elevation of 10,000 ft. The plant flowered at Edinburgh in summer of the year 1911, as did also *Primula deflexa*, Duthie, raised from seed received from the same source and at the same time.]

6. *Primula penduliflora*, Petitm., in *Le Monde des Plantes*, x (1908), 6.

Delavay, 3826. Not yet in cultivation, but in consequence of its large (for the group) deep purple flowers, probably one of the finest of the capitate *Primulas*.

7. *Primula Littoniana*, Forrest. *Bot. Mag.*, t. 8341.

Forrest, 2655. Few new discoveries have received such immediate or such well-merited recognition. It is not five years since Forrest first saw it growing in moist alpine meadows in N.-W. Yunnan, and he not only secured excellent photographs of it upon the spot, but brought home dried specimens and seeds,

through which it is already well represented in many herbaria and gardens.

8. *Primula Viali*, Franch.

Yunnan. Delavay, 3604. *P. Littoniana*, Forrest, which appears to differ from the present species chiefly in robustness, may be a variety.

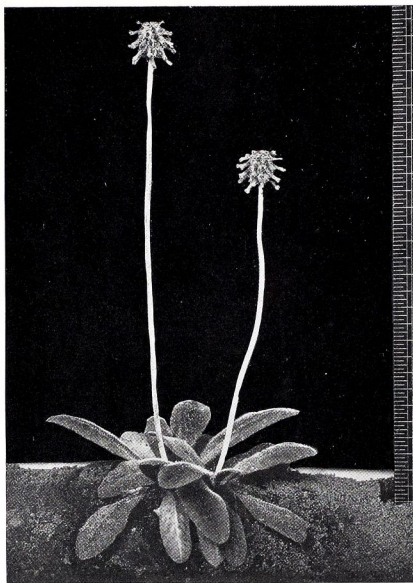
9. *Primula cernua*, Franch.

Yunnan. Delavay. Like the last, it is not at present in cultivation. It has only been found in one locality, and even there it is very rare.

10. *Primula gracilentia*, Dunn. Sp. nov.

Herba perennis, efarinosa. Folia petiolata, rosulata, oblonga, obtusa, basi in petiolis dimidio brevioribus angustata, 5-7 cm. longa, irregulariter dentata, membranacea, praecipue in venis laxe hirsuta. Scapus gracilis, 15-20 cm. altus, glaber, capitulum globosum gerens. Flores sessiles, 7-8 mm. longi, bracteis lanceolatis. Calyx late campanulatus, 2 mm. longus, dentes 5, tubum aequantes, ovati, margine sparse sed longe ciliati. Corolla purpurea; tubus cylindricus, 7-9 mm. longus, 1.5 mm. latus; lobi 5, oblongi, 2 mm. longi, quam 1 mm. angustiores, apice rotundati.

"W. Szechuen and Tibetan Frontier at 9000 to 13,500 ft." Pratt, 252 (part).



Primula Watsoni, Dunn.

