Discovering primulas of subsection Agleniana

GOOD PLANT TAXONOMY practises the art of communication. When faced with a large genus such as *Primula* it can be useful to subdivide it into bite-sized chunks, known as sections. Each section should incorporate groups of species most closely related to one another. However, in *Primula*, even some of the sections have so many species that they become unwieldy.

Section *Crystallophlomis*, the so-called nivalid primulas, is the largest in the genus, encompassing about 45 species. Among these are three distinctive subgroups which have been described as subsections. Species classified in subsection *Maximowiczii* have narrow reflexed petals which are often reddish or blackish (although some are yellow). Subsection *Calliantha* involves species with a swollen base which develops from an egg-shaped resting bud. The few flowers are large, pink or lilac and slightly zygomorphic (two-lipped).

The third subsection, *Agleniana*, is the subject of this article. The great Himalayan explorer Frank Kingdon Ward was the first to draw attention to the distinctive nature of these plants which he encountered in Burma (now Myanmar) and the Indian state of Arunachal Pradesh (then known as Assam). These plants resemble those of subsection *Calliantha* in many ways, but the large flowers are bell-shaped, hang.
KEY TO THE SPECIES OF PRIMULA SECTION AGLENIANA

| 1a Plant (apart from corolla) lacking meal. Flowers yellow, usually solitary | 2 |
| 1b Leaves mealy, at least beneath. Flowers 1-6 on a scape, various colours | 3 |
| 2a Leaves narrowly linear; Doshong La | P. falcifolia |
| 2b Leaf-blade oval with a long narrow petiole; Tsari district | P. elizabethiae |
| 3a Leaves finely serrate, narrowing to a petiole; sepals acute; flowers flat-faced, oblique to tube; Nepal to west Bhutan | P. obliqua |
| 3b Leaves serrate to lacerate, scarcely narrowing at base; sepals obtuse, flowers bell-shaped | 4 |
| 4a Plant to 15cm; leaves <8mm wide; flowers plum-red, calyx concolorous | P. thearosa |
| 4b Plant usually exceeding 20cm; leaves >10mm wide; flowers yellow, white or pink, calyx green to brown | P. agleniana |

**Primula agleniana**

This magnificent species is centred around the upper reaches of the Nu Jiang (Salween) river where the northern tip of Myanmar meets northernmost Yunnan, Xizang (Tibet) and easternmost Arunachal Pradesh (India). Passes near the road west from Markam in the direction of Lhasa pass strong populations of this gregarious species, so that it has become well-known in the present millennium.

It is noticeably polymorphic in flower colour, but most populations seem to be relatively invariable. A notable characteristic is for the deep lacerations of the leaf margin to be very irregular in outline. There may a tendency for Chinese populations to be pink- or white-flowered (var. alba Forrest), but those from Arunachal Pradesh are mostly yellow (var. atrocrocea Kingdon Ward).

**Primula thearosa (Kingdon Ward) A.J. Richards stat. nov.**


*Primula thearosa* was described by Kingdon Ward (collection no. 6820) as a variety from the Upper Seinghku valley in Myanmar, and was differentiated from *P. agleniana* by ‘the dwarfer habit, fewer flowers and bright rose-pink corolla’. This valley leads up to the Arunachal Pradesh border at the Diphu La (4,325m),
and Kingdon Ward probably collected it close to the frontier. In 2009, Pete Boardman and his wife Pam found plants in Arunachal Pradesh that match Kingdon Ward’s specimens well, about 150km northwest of his type locality. Close examination of the extensive photos taken by Boardman on this occasion shows that \textit{P. thearosa} is much more than just a different coloured variety of \textit{P. agleniana}, and deserves to be treated at specific rank. It differs by the dwarfer habit, not exceeding 15cm in height, much narrower, more shallowly and regularly toothed leaves, plum-coloured flowers with a calyx of a similar colour, and the more narrowly bell-shaped flower. Despite Kingdon Ward’s description, the flower number seems to be similar to that of \textit{P. agleniana}.

\textbf{Primula falcifolia}

This is another \textit{Primula} that was first discovered by Kingdon Ward (no. 5839), this time on his 1924 expedition with the Earl of Cawdor to southeast Xizang. It is only known from the Doshong La, which crosses the main range to the south of the Tsango river, just west of its remarkable bend. It was rediscovered there by Ludlow and Sherriff in 1938, but has never been in cultivation.

With its small stature and numerous, very narrow leaves, \textit{P. falcifolia} probably comes closest to \textit{P. thearosa}, but the luminous yellow flowers are distinctive, resulting in Kingdon Ward calling it the daffodil primula.

\textbf{Primula elizabethae}

The second of the smaller, yellow-flowered relatives of \textit{P. agleniana}, \textit{P. elizabethae} escaped the attention of Kingdon Ward, and was discovered by Ludlow and Sherriff (no. 1886) in 1936. All told, those explorers discovered it on four passes on the main range south of Tsari, close to the border with Arunachal Pradesh. This area lies to the west of the Siang river, perhaps 100km west of where Boardman discovered \textit{P. thearosa}. The Chinese have closed these frontier passes to India, but in recent years they have been approached from the south.

\textbf{Primula obliqua}

There is no difficulty in attributing four of the species to this subsection,
but *P. obliqua* is more problematic. It occurs further west than the other species, and shares some features with subsection *Calliantha*, notably the slightly zygomorphic flat-faced flowers. However, the other members of subsection *Calliantha* are Chinese, and have purple to blue flowers. The variably cream to pale pink flowers, abundant meal (not least on the flower face), short capsule, seeds of short viability and the huge resting bud are all very much characteristics of subsection *Aglenia*. Also, it occurs in similar habitats to the other *Aglenia*; steep, herb-rich alpine banks in very wet zones. The *Calliantha* are more plants of drier sites in scrub or woodland edge.

This affinity had been noted by Smith and Fletcher (1942) who wrote ‘...in many respects [*P. obliqua*] is more allied to *P. agleniana* from which it deviates...in the shape of the corolla...it could with some justification be put in subsection *Aglenia*.’

Growing in relatively accessible parts of the Himalayas, *P. obliqua* has been introduced into cultivation as seed on many occasions since...
about 1935, but with relatively little success. If the seed is refrigerated before sowing and is subjected to low temperatures after sowing, it often germinates freely and young plants grow on well in cool humid conditions. The plant dies back to its characteristic egg-shaped resting bud, but in the absence of many months continuous snow cover, most growers fail to overwinter it successfully. Most success was experienced at Inshriach Nursery near Aviemore, Scotland, in the 1950s, although plants have been flowered more recently by John Mattingley at Cluny House Gardens in Perthshire and by Alan Furness in Northumberland. Rarely, if ever, have plants survived for much more than a year, or have set seed in cultivation. Similar problems are likely to face any attempts to cultivate other members of the subsection.

Possibly, most success might attend growers from areas with a reliable winter snow cover, for instance in many parts of North America, but here hot dry summers and the absence of a monsoon would prove problematic. Perhaps the Botanic Garden at Tromsø in Norway would prove to be a suitable location.

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**REFERENCE**


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**Primula falcifolia in ‘fairyland’**

After years of waiting, 3 June 1995 was a memorable day, the day that we finally crossed the Doshong La into Pemakö, the promised land of Tibetan prophecy. At just over 4,000m the pass is not high by Himalayan standards but it is one of the wettest. It receives prodigious snowfall, especially on the steeper southern side. The day before, on the north side, we had seen islands of vegetation emerging from the snow. This was indeed Kingdon Ward’s ‘rhododendron fairyland’, with a few primulas for good measure.

For the crossing the weather was kinder than we might have expected, with overcast skies and little wind, but the view down into Pemakö was forbidding. Through the gloom we could see that the snow extended far into the valley. For several hours we slipped and slithered down the steep snow until, at about 3,500m, only isolated patches remained. By this time the light was failing and rain threatened; the hillsides poured melt-water but, in spite of that or more likely because of it, two *Primula* species were in bloom. *Primula falcifolia* and *P. dickieana* grew in close proximity: the former was instantly recognisable with its very narrow, finely-toothed, dark green leaves arching from the crown of the plant. This was Kingdon Ward’s lovely ‘daffodil primula’, though his epithet did not seem particularly appropriate. The corollas varied in colour – most were a clear yellow, others tended to cream, and a few had peach tones, all with a white paste eye. The flowers were carried on thin, olive-green stems with orange shading in the calyces.

At first glance, several other species appeared to be growing among the *P. falcifolia* but these were just variations of *P. dickieana* – mauve, white and yellow combined to make rather startling hybrids. *Primula dickieana* is common in boggy Himalayan meadows and is amenable to cultivation, whereas *P. falcifolia* is not amenable and its distribution is very limited. We were tired and wet, but grateful to have seen such a rarity.

Anne Chambers

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**Primula elizabethae amid the bamboo**

I decided to go to Arunachal Pradesh in the autumn of 2002 because this province of northeast India bordering Bhutan and Tibet has been little explored by botanists. With a small group of fellow enthusiasts we were to cross the ranges between two rivers flowing south from Tibet, the Subansiri and the Sivom. It was a gruelling seven-day trek on a little-used trail whose difficulty was compounded by heavy rain, swollen streams and the all-pervasive understorey of bamboo.

On the sixth day, as we neared the upper limit of the *Abies* forest, I hoped that we would leave the bamboo behind. Instead, it gave way to a dwarf species, equally pervasive, stretching as far as the eye could see on the misty hillsides. The *Rhododendron* enthusiasts were pleased with their finds. However, I was close to despair as I remembered the description in *A Quest of Flowers* where Ludlow had explored south from the Lo La, crossing the border into Arunachal and on to the Nyug La, only to find it covered in bamboo to the summit and had turned back. But a few hundred metres higher we reached a shallow ravine which bamboo had failed to colonise, and found the autumn leaves of two *Primula* species, unmistakable in their identities. One was *P. elizabethae* and the other was our familiar friend, *P. dickieana*. Ludlow found *P. elizabethae* on the Lo La in 1938 and was so taken by its beauty that he named it after his mother. The long strap-like leaves were serrated like *P. falcifolia*, though much broader. But most striking were its already-formed bright red, resting buds, possibly the most attractive of any *Primula*. The yellow flowers are larger than those of *P. falcifolia* and the corolla less flat, but with the same pale paste eye.

We were not to see the flowers of course, but a member of the expedition returned to the area in June 2009 and found good colonies of the plant, often growing under *Rhododendron* scrub. Unfortunately, like *P. falcifolia*, it does not appear to be amenable to cultivation.

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