Hunting for Possibly the World’s Rarest Alpine Plant

John and Hilary Birks
On behalf of the 2009 Bergen–Tibet Expedition
Who Else Was Involved?

La Duo
Lhag Chong

John-Arvid Grytnes
Johannes Grytnes

Margaret Thorne
David Thorne
What Were We Hunting For?

*Meconopsis torquata*

Pan Huapeng
One of 79 species of *Meconopsis* (Papaveraceae), **restricted** to the Himalaya and western China including the Tibetan Plateau.

- Polycarpic perennials or monocarpic
- Grow mainly at mid-elevations 2500–4200 m (5300 m)
- Spectacular plants, most unlikely morphologically to be alpines!
Distribution of genus *Meconopsis*
Sub-genus Discogyyne

• 7 species
• Nepal, Bhutan, Tibet
• High elevation 3500–4900 (5300) m
• Rocky places, screes, moraines

Wonderful plants with soft barbed bristles, flattened toothed or lobed disc on top of capsule, monocarpic herbaceous leafy rosettes. Very distinct sub-genus
Distribution of sub-genus Discogyne
All bar one of the seven species seen recently

- *M. simkotensis* 1952
- *M. pinnatifida* 1979
- *M. discigera* 1995
- *M. bhutanica* 2002
- *M. tibetica* 2005
- *M. manasluensis* 2011

What about *M. torquata*?
**Meconopsis torquata**

Described and listed by David Prain from a single specimen collected by Herbert Wilson near Lhasa during the 1904 Frank Younghusband Tibet Expedition.

Despite much searching, not seen again until 1942 by Frank Ludlow and in 1943 by George Sherriff. At least three different sites near Lhasa at 4400–4900 m were found. Sherriff’s notes preserved in Edinburgh Herbarium.

![Frank Ludlow](frank_ludlow.jpg)

![George Sherriff](george_sherriff.jpg)

![Sherriff's 1943 photograph](sherriff_photo.jpg)
Does *M. torquata* Still Grow in the Wild? Last Seen 1943

Obvious question to start our 2009 Bergen–Tibet expedition!

Ludlow and Sherriff – three collection areas
- west of Lhasa beyond Tricum
- north of Lhasa towards Sera Monastery
- Nangtse, 32 km west of Lhasa

Places names have changed much since 1959. Sera Monastery not accessible, could not locate Tricum, so concentrated on Nangtse
La Duo and Lhag Chong showed Sherriff’s photograph to the village elder. Immediately recognised it and told us it grew far from the village at high elevation. Would take at least six hours to reach it.

We were not acclimatised to 3800 m so early in the trip – only two days in Tibet. Elder agreed to go with his son to look for the plant next day if we paid him two days wages (140 yuan = 177 kr) and a bonus of 70 yuan (88 kr) if they found it. We exchanged mobile phone numbers, left, and hoped to hear from them on the next day (but did not expect to hear anything).
Late next day they phoned to say that they had found it and collected seven (!!) plants of *M. torquata*. Went to see it, drank yak-butter tea (ugh!), and they showed us the plants. None in their first old locality, had to go even further. Gave him 250 yuan (317 kr), thanked the family, and photographed the plants. Not in flower but in seed (6 August 2009).

Photos: Margaret Thorne
Why Is It So Rare?

Used in pharmaceutical industry to treat pneumonia, hepatitis, oedema, and dropsy. Factories built in 1994 and 1998 – used *M. torquata* and *M. horridula* as well as other *Meconopsis* species.

*M. torquata* very special – had been prescribed to the Buddha to relieve indigestion! Valuable plant to collect and sell. Failed to find it on sale in Chinese medicine shops in Chinatown in London. Have had it but cannot get it now (2016).
Not clear if it is still cultivated today. No evidence. But Xie et al. (2014, PLoS ONE 9: e99177) on Himalayan-Tibetan Plateau uplift and divergence of *Meconopsis* using DNA say *M. torquata* material was “donated from harvests made by Tibetan Traditional Medicine Pharmaceutical Factory, Lhasa”. Lhag Chong contacted them – not cultivated today or since their factory was built in 1994. Mystery remains.
Established growing in the wild in 2009 but clearly very rare due to its collection for Tibetan medical establishments and factories. Difficulty farmer and son had in finding it in 2009 suggested it was very rare.

Lhag Chong determined to find it for himself but was doing his PhD in Shanghai.

Inspired his masters students to look for it, including Sheng-Ping Ming.
Minoru Tomiyama, a Japanese organiser of *Meconopsis* tours (!) asked the Thornes about where Nangtse Jakhang was. His Chinese agent in Lhasa, Pan Huapeng, visited the area of our 2009 visit and found it there on 2 August 2016.
Independently, Lhag Chong and Sheng-Ping Ming found it in a **brand new** locality in July 2016 at over 5000 m.

Photos: Sheng-Ping Ming
In 2017, the Japanese tour guide returned to Nangtse with Pan Huapeng. Sadly no *M. torquata* found. Locals said that nomadic yak-herding family had been in the upper part of Nangtse Jakhang in 2016 and 2017 and collected all the *M. torquata* to sell for medicinal purposes.

It is still in Lhag Chong and Sheng-Ping Ming’s locality in 2017. Very wisely, not divulging where it is – only seven plants but at high elevation.
Conclusions

On the basis of current knowledge (and a lot of searching) only seven plants of *M. torquata* known to be growing wild – probably the world’s rarest alpine plant

How can it be conserved? Unfortunately, it is easily spotted, is easily collected from horseback, and sells for a good price.

Possible *ex-situ* conservation, but earlier cultivation attempts not successful in RGBE or elsewhere in Scotland.

Lhag Chong is going to collect seed in 2018 and send it to Tromsø Botanical Gardens where they grow other *Meconopsis* species well. Hopefully it might grow and survive. Arve Elvebakk is keen to try.
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