



Checklist of Ericaceae of Talle Wildlife Sanctuary in Lower Subansiri District of Arunachal Pradesh, India

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Talle Wildlife Sanctuary (TWS) lies approximately between 27°30'–27°39'N and 93°15'–94°2'E with an area of about 55 km² and altitudes ranging from 1600–2732 m in Lower Subansiri District of Arunachal Pradesh. According to the Apatanese, 'Talle' means an endemic onion not found beyond this valley. Therefore, the name 'Talle' was proposed for this valley by the Apatanese from time immemorial.

There are collections of Cox & Hutchinson, Kingdon-Ward at CAL & K and Rankin & Pretzlik at BM from Lower Subansiri District ("Subansiri Frontier Division" which presently includes three districts viz., Upper and Lower Subansiri and Papumpare). Subsequently, Lower Subansiri District was explored

by Panigrahi & Naik (1961), Panigrahi & Joseph (1966), Sastry & Katakai (1967) and Sahni (1969).

The flora of TWS was partly explored after 1009s to 2002 by K. Haridasan, B.M. Loder, M. Lohlen and D. Banik.

While revising the Indian Ericaceae Juss. under "Flora of India Project" during 1999–2004, an attempt was made to survey the Ericaceae of Talle WS, particularly the inaccessible trek route through dense forest by a very narrow path from Lebbya-Penggo Pass to Talle valley proper. A team comprising five members including the author under Botanical Survey of India, Arunachal Field Station, Itanagar explored the sanctuary in December 2002. It took two days trekking to reach Talle Valley proper from Ziro (district head quarter) and another two days to come back to Ziro. Most of the taxa of Ericaceae were found to occur between Pange (1800m) and Lebbya-Penggo Pass (2732m) (Fig. 1) under this wildlife sanctuary.

The family Ericaceae Juss. comprises c. 117 genera and 3850 species, cosmopolitan except deserts, usually montane in tropics (Mabberley 2008); 13 genera and c. 200 species in India (Panda 2008), and nine genera and 130 species in Arunachal Pradesh (Chowdhery et al. 2008). In this paper, the currently accepted names, habit, available field data, distribution, relative abundance and specimens examined of 25 taxa belonging to Ericaceae recorded from Talle Wildlife Sanctuary are given.

Enumeration

1. *Agapetes atosanguinea* Airy Shaw: Epiphytic. Corolla dark bright red, c. 20mm long.

Specimens examined: 01.i.2003, near Pange, 1800m, S. Panda 30876 (CAL); 02.v.2002, Manipolyang to Pange, 1800m, D. Banik 27973 (CAL).

Field status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009). Endemic to Arunachal Pradesh.

2. *A. buxifolia* Nutt. ex Hook. f.: Epiphytic. Corolla bright red, c. 30mm long.

Specimens examined: 02.v.2002, Manipolyang to Pange, 1700–1800 m, D. Banik 27970 (CAL). (Image 1d).

Field status: Vulnerable (VU: IUCN Red List

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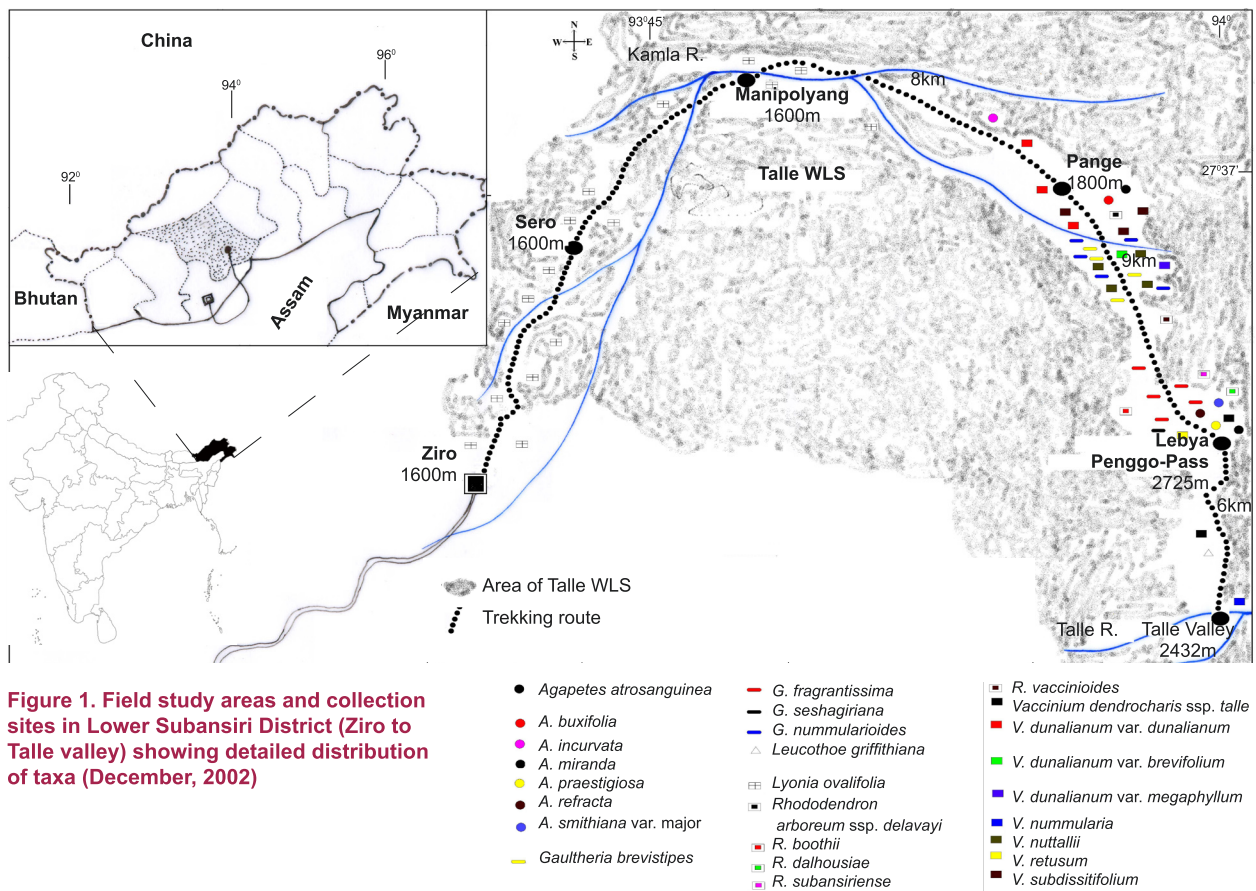


Figure 1. Field study areas and collection sites in Lower Subansiri District (Ziro to Talle valley) showing detailed distribution of taxa (December, 2002)

categories, Vie et al. 2009) in its natural habitat.

Distribution: India (Arunachal Pradesh) and China (Xizang).

3. *A. incurvata* (Griff.) Sleumer: Epiphytic. Corolla c. 20mm long.

Specimens examined: 03.v.2002, Pange to Lebya-Penggo Pass, c. 1900m, S. Panda 30852 (CAL).

Field status: Common (not assessed IUCN Red List categories, Vie et al. 2009)

Distribution: India (eastern Himalayas: Sikkim, Arunachal Pradesh; northeastern India: Meghalaya), Nepal, Bhutan, Bangladesh and China (SE Xizang).

4. *A. miranda* Airy Shaw: Epiphytic. Corolla greenish-white.

Field status: Endangered (EN: IUCN Red List categories, Vie et al. 2009) in its natural habitat, only one population survived by four individuals.

Distribution: India (Arunachal Pradesh) and China (Xizang). The species was recollected from India after collections of Kingdon-Ward made in 1938 (Panda 2007).

Specimens examined: 31.xii.2002, Lebya-Penggo

Pass, 2725m, S. Panda 30843 (CAL) (Image 1a).

5. *A. praestigiosa* Airy Shaw: Epiphytic.

Field status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009) in its natural habitat.

Distribution: India (Arunachal Pradesh) and China (Xizang).

Specimens examined: 03.v.2002, Pange to Talle Valley (actually Pange to Lebya-Penggo Pass), 1900–2000 m, D. Banik 27987 (CAL) (Image 1c).

6. *A. refracta* Airy Shaw: Epiphytic.

Field status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009) in its natural habitat. Endemic to Arunachal Pradesh.

Specimens examined: 31.xii.2002, near Lebya-Penggo Pass, 2732m, S. Panda 30854 (CAL) (Image 1b).

7. *A. smithiana* Sleumer var. *major* Airy Shaw: Epiphytic. Corolla yellow.

Field status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009) in its natural habitat. Distribution: India (Sikkim & Arunachal Pradesh) and Bhutan.



Image 1. a - *Agapetes miranda*; b - *A. refracta*; c - *A. praestigiosa*; d - *A. buxifolia*; e - *Rhododendron arboreum* subsp. *delavayi*; f - *R. dalhousiae*

Specimens examined: 03.v.2002, 2725m, Pange to Talle Valley (actually at Lebbya-Penggo Pass), D. Banik 27992 (CAL).

8. *Gaultheria brevistipes* (C.Y. Wu & T.Z. Hsu) R.C. Fang: Pendent dwarf shrub, often hanging down from rock crevices. Corolla campanulate, light green with pinkish spots. Growing in rocky slope.

Field status: Common (not assessed IUCN Red List categories, Vie et al. 2009).

Distribution: India (eastern Himalaya: Arunachal Pradesh) and southwestern China (Xizang). This species was a new record to India from Talle Valley (Panda 2006).

Specimens examined: 30.xii.2002, Pange to Talle Valley, 2200–2800 m, S. Panda 30841 (CAL) (Image 2a).

9. *G. fragrantissima* Wall.: Erect shrub to treelet. Corolla urceolate, white. Growing in rocky slope.

Field status: Common (not assessed IUCN Red List categories, Vie et al. 2009).

Distribution: India (Sikkim, West Bengal, Arunachal Pradesh, Meghalaya, Nagaland Manipur and Hill-tops of southwestern Ghats: Tamil Nadu, Kerala and Karnataka), Nepal, Bhutan, western China,

northern Myanmar and Sri Lanka.

Specimens examined: 31.xii.2002, Pange to Talle Valley, 2500–2800 m, S. Panda 30847 (CAL) (Image 2b).

10. *G. seshagiriana* Subba Rao & Kumari: Pendent dwarf shrub, often hanging down from rock crevices. Corolla campanulate, greenish-white. Growing in rocky slope.

Field status: Common (not assessed IUCN Red List categories, Vie et al. 2009).

Distribution: Endemic to Arunachal Pradesh (west Kameng, Lower Subansiri and Siang districts).

Specimens examined: 30.xii.2002, Pange to Talle Valley, 2000 – 2100 m, S. Panda 30846 (CAL) (Image 2c).

11. *G. nummularioides* D. Don: Procumbent dwarf shrub, often forming mat on hilly slope. Corolla campanulate, pinkish. Forming a mat on rocky slope.

Field status: Common (not assessed IUCN Red List categories, Vie et al. 2009).

Distribution: India: Himalayas and northeastern India (Meghalaya, Nagaland and Manipur), Pakistan, Nepal, Bhutan, western China, northern Myanmar, Sri Lanka and Malesia.

Specimens examined: 31.xii.2002, Pange to Talle Valley, 2100m, S. Panda 30877 (CAL) (Image 2d).

12. *Leucothoe griffithiana* C.B. Clarke: Stout, erect and pendent shrub. Corolla not seen. Growing in rocky slope.

Field status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009).

Distribution: India (Arunachal Pradesh), Bhutan, western China and northern Myanmar.

Specimens examined: 30.xii.2002, Pange to Talle Valley, 2400–2800 m, S. Panda 30844 (CAL) (Image 2e).

13. *Lyonia ovalifolia* (Wall.) Drude: Stout, erect shrub, treelet to median-sized tree up to 10m high. Corolla tubular. Growing in rocky slope.

Field status: Common (not assessed IUCN Red List categories, Vie et al. 2009).

Distribution: India (Himalayas and northeastern India excl. Tripura, Pakistan, Nepal, Bhutan, Bangladesh, western China, Taiwan, northern Myanmar, Thailand, Malesia and Japan).

Specimens examined: 29.xii.2002, manypoliang to Pange, 1500m, S. Panda 30819 (CAL). (Image 2f).

14. *Rhododendron arboreum* Sm. subsp. *delavayi*



Image 2. a - *Gaultheria brevistipes*; b - *G. fragrantissima*; c - *G. seshagiriana*; d - *G. nummularioides*; e - *Leucothoe griffithiana*; f - *Lyonia ovalifolia*

(Franchet) D.F. Chamb.: Treelet to median-sized tree up to 5m high. Corolla carmine. Growing on rocky slope.

Field status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009).

Distribution: India (Arunachal Pradesh, Meghalaya, Nagaland, Manipur and Mizoram), China (Yunnan, Guizhou), northern Myanmar and northern Thailand.

Specimens examined: 31.xii.2002, Pange to Lebya-Penggo Pass, c. 2000m, S. Panda 30841 (CAL: as associated plant of *G. brevistipes*) (Image 1e).

15. *R. boothii* Nutt.: Treelet up to 3m high. Corolla campanulate, bright yellow. Growing in rocky slope.

Field status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009).

Distribution: India (Arunachal Pradesh) and China (SE Xizang).

Specimens examined: May 2002, Tale Valley, D. Banik s.n. (CAL).

16. *R. dalhousiae* Hook. f.: Dwarf shrub on rocky slope. Corolla funnel-campanulate, white with pinkish

tinge. Growing in rocky slope.

Field status: Common (not assessed IUCN Red List categories, Vie et al. 2009)

Distribution: India (Darjeeling in West Bengal, Sikkim & Arunachal Pradesh), Nepal; Bhutan and China (SE Xizang).

Specimens examined: 18.iv.1980, Tale Valley, G.D. Pal 77714 (ARUN) (Plate 1F).

17. *R. vaccinioides* Hook. f.: Epiphytic. Corolla rotate-campanulate, pinkish-white.

Field Status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009).

Distribution: India (eastern Himalaya: Arunachal Pradesh, Sikkim, Darjeeling of West Bengal and northeastern India: Nagaland), Nepal, Bhutan, China and northern Myanmar.

Specimens examined: 31.xii.2002, Talle Valley, 2432m, S. Panda 30853 (CAL).

18. *Vaccinium dendrocharis* Hand.-Mazz. subsp. *talle* Panda & Sanjappa: Stout, erect epiphytic shrub, rarely on rocky slopes, 1–1.5 m high. Corolla urceolate, pinkish. Growing on rocky slope.

Field status: Endangered (EN IUCN Red List categories, Vie et al. 2009). Endemic to Arunachal Pradesh (Lower Subansiri and West Kameng districts). This subspecies was recently described from Talle Valley (Panda & Sanjappa 2006).

Specimens examined: May 2002, Talle Valley, near Lebya-Penggo Pass, 2725m, D. Banik & M. Lohlen 27995 (holotype: CAL!) & 31.xii.2002, 2725m, S. Panda 30849 (paratype: CAL!) (Image 3f).

19. *V. dunalianum* Wight var. *dunalianum*: Stout, erect shrub to treelet up to 1m high, often on rocky slope. Growing in rocky slope.

Field status: Common (not assessed IUCN Red List categories, Vie et al. 2009).

Distribution: India (eastern Himalaya and northeastern India excl. Tripura and Mizoram), Nepal, Bhutan, western China, Taiwan, northern Myanmar and Vietnam.

Specimens examined: 31.xii.2002, Pange to Talle Valley, 1700–2200 m, S. Panda 30850 (CAL) (Image 3e).

20. *V. dunalianum* Wight var. *brevifolium* Sleumer: Epiphytic.

Field Status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009).

Distribution: India (Arunachal Pradesh) and

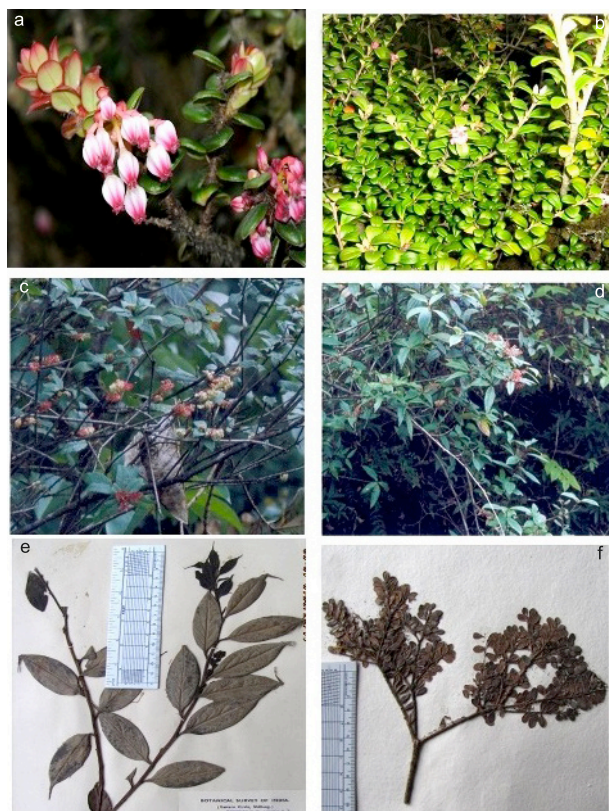


Image 3. a - *A. Vaccinium nummularia*; b - *V. retusum*; c - *V. subdissitifolium*; d - *V. nuttallii*; e - *V. dunalianum* var. *dunalianum*; f - *V. dendrocharis* subsp. *talle*

northern Myanmar. This variety was recorded for the first time from Arunachal Pradesh (Panda 2006).

Specimens examined: 30.xii.2002, Talle Valley, Lower Subansiri District, 2000m, S. Panda s.n. (CAL).

21. *V. dunalianum* Wight var. *megaphyllum* Sleumer: Epiphytic. Corolla campanulate, light pink.

Field status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009).

Distribution: India (Arunachal Pradesh), southwestern China and northern Myanmar. This variety was recorded for the first time from Arunachal Pradesh (Panda 2006).

Specimens examined: May 2002, Talle Valley, Lower Subansiri District, M. Lohlen 28000 (ARUN: Arunachal Field Station, Botanical Survey of India, Itanagar).

22. *V. nummularia* Hook. f. & Thomson: Stout, erect, pendent, dwarf epiphytic shrub as well as growing in rock crevices. Corolla urceolate, pinkish. Growing in rock crevices.

Field status: Common (not assessed IUCN Red

List categories, Vie et al. 2009).

Distribution: India (Sikkim, West Bengal and Arunachal Pradesh and Nagaland), Nepal, Bhutan, southwestern China, and northern Myanmar.

Specimens examined: 31.xii.2002, Talle Valley proper, 2400m, S. Panda s.n. (CAL) (Image 3a).

23. *V. nuttallii* (C.B. Clarke) Sleumer: Stout, erect shrub, sometimes epiphytic. Corolla urceolate, light green. Growing in rocky slope.

Field status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009).

Distribution: India (Arunachal Pradesh), Bhutan and northern Myanmar.

Specimens examined: 30.xii.2002, Pange to Tale Valley, 2200–2500 m, S. Panda 30845A & B (CAL) (Image 3d).

24. *V. retusum* (Griff.) Hook. f. ex C.B. Clarke: Stout, erect, epiphytic shrub, 0.5–4 m high, often grown in moist rock crevices, rarely on rocky slopes. Corolla urceolate, pink. Growing in rocky slope.

Field status: Common (not assessed IUCN Red List categories, Vie et al. 2009).

Distribution: India (eastern Himalaya and northeastern India: Nagaland and Manipur), Nepal, Bhutan, southwestern China and northern Myanmar.

Specimens examined: 31.xii.2002, near Lebya-Penggo Pass, Tale Valley, 2700 m, S. Panda 30851 (CAL) (Image 3b).

25. *V. subdissitifolium* P. F. Stevens: Stout, erect shrub, often epiphytic on old tree trunks to rarely on rock crevices. Corolla urceolate, light green. Growing in rocky slope.

Field Status: Vulnerable (VU: IUCN Red List categories, Vie et al. 2009).

Distribution: India (eastern Himalaya), Bhutan and southwestern China.

Specimens examined: 30.xii.2002, Pange to Talle Valley, 1600–2800 m, S. Panda 30842 (CAL) (Image 3c).

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