

An Enumeration of the Flowering Plants Collected in NW Yunnan and E Tibet between 1999 and 2001—Polygonaceae, Ranunculaceae, Saxifragaceae and Rosaceae

Shinobu Akiyama¹, Hideaki Ohba², Hiroshi Ikeda³,
Futoshi Miyamoto⁴ and Su-Kung Wu⁵

¹Department of Botany, National Science Museum,
4–1–1 Amakubo, Tsukuba, Ibaraki 305–0005, Japan
E-mail: akiyama@kahaku.go.jp

²Department of Botany, University Museum, University of Tokyo,
7–3–1 Hongo, Bunkyo-ku, Tokyo 113–0033, Japan
E-mail: ohba@um.u-tokyo.ac.jp

³Faculty of Informatics, Okayama University of Science,
Rida-cho 1–1, Okayama 700–0005, Japan
E-mail: ikeda@big.ous.ac.jp

⁴Faculty of Agriculture, Tokyo University of Agriculture,
Funako 1737, Kanagawa 243–0034, Japan
E-mail: miya@nodai.ac.jp

⁵Herbarium, Kunming Institute of Botany, Academia Sinica,
Kunming, Yunnan 650204 China

Abstract NW Yunnan and E Tibet show a rich flora particularly in the alpine zone. We have collected 12 species in 7 genera of Polygonaceae, 32 species in 15 genera of Ranunculaceae, 33 species in 4 genera of Saxifragaceae (s. s.), and 69 species and 1 putative hybrid in 19 genera of Rosaceae during field research in 1999, 2000 and 2001. Taxonomic notes are given for remarkable taxa.

Key words: alpine flora, Sino-Himalaya, Tibet, Xizang, Yunnan.

Floristically NW Yunnan and E Tibet, which is classified in the Sino-Himalayan Floristic Region, exhibits a rich flora, particularly in the alpine zone. The flora varies in composition from place to place. We collected plants in various places in the region and this enumeration is the result of determinations of materials collected in NW Yunnan and E Tibet during the field research in 1999, 2000 and 2001. The Polygonaceae were determined by Miyamoto, the Ranunculaceae and the Rosaceae by Ikeda, and the Saxifragaceae by Akiyama and Ohba. All specimens collected by Wu *et al.* and Akiyama *et al.* are deposited in KUN and TI (duplicates in A and TNS), and those by Boufford *et al.* in A and KUN (duplicates in TI). The collections of the Polygonaceae in 1999 were enumerated in a pre-

vious paper (Akiyama *et al.*, 2000).

For the members and itineraries of the field research in 1999 see Akiyama *et al.* (2000) and Miyamoto (2000). The field research in 2000 and 2001 was as follows:

2000:

5 July

Yunnan. Dali Shi: Diancang Shan

8 and 9 July

Yunnan. Zhongdian Xian: Tianchi and Shudu Hu

12 to 14 July

Xizang (Tibet). Markam Xian: near Markam

15 July

Xizang (Tibet). Markam Xian to Zogang Xian

16 to 18 July

Xizang (Tibet). Zogang Xian: Dongdala Shan
19 July
Xizang (Tibet). Zogang Xian to Qamdo Xian
20 July
Xizang (Tibet). Qamdo Xian: Nianla Shan
21 July
Xizang (Tibet). Qamdo Xian to Baxoi Xian
22 to 24 July
Xizang (Tibet). Baxoi Xian: around Bamda
25 to 29 July
Xizang (Tibet). Baxoi Xian: around Rawu
30 July
Xizang (Tibet). Baxoi Xian to Bomi Xian
31 July to 2 August
Xizang (Tibet). Bomi Xian: around Bomi
3 to 5 August
Xizang (Tibet). Bomi Xian to Qamdo Xian
8 to 12 August
Xizang (Tibet). Qamdo Xian to Lhasa Shi
13 August
Xizang (Tibet). Lhasa Shi to Gongbo'gyamda
Xian
14 and 15 August
Xizang (Tibet). Gongbo'gyamda Xian: Basum
Lake
16 August
Xizang (Tibet). Gongbo'gyamda Xian to Ny-
ingchi Xian
17 and 18 August
Xizang (Tibet). Nyingchi Xian: Sezhaila Shan
Collectors: S. Akiyama, M. Wakabayashi, F.
Miyamoto, H. Ikeda, S. K. Wu, X. Chen, L. Gao,
J. Yue & Yang Zhen, and D. E. Boufford *et al.*
(for more details of the surveyed areas see
Miyamoto and Ikeda (2001)).

2001:

24 and 25 July
Yunnan. Zhongdian Xian: around Zhongdian
and Tianchi
26 and 27 July
Yunnan. Dêqên Xian: Baima Xueshan
28 July
Yunnan. Dêqên Xian: Mingyong Binchuan
5 to 7 August
Xizang (Tibet). Maizhokunggar Xian: Mt.

Milha Shan
8 to 11 August
Xizang (Tibet). Nagarze Xian: Yamzho Yumco
and Karo La
14 August
Xizang (Tibet). Lhazê Xian: Jia Tsuo La
16 to 22 August
Xizang (Tibet). Nyalam Xian: around Nyalam
and Zhangmu
Collectors: S. Akiyama, H. Ikeda, H. Tsukaya
and S. K. Wu (for more details of the surveyed
areas see Akiyama and Ikeda (2002)).

We thank the members of the field research for
their help in the field. This study was supported
by Grants-in-Aid for Scientific Research (A)
from the Japan Society for the Promotion of
Science, nos. 11691178 and 14255005 (to H.
Ohba).

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in northwest Yunnan and Tibet, 2001. *Newsletter of Hi-
malayan Botany*, no. 29: 8–13.
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2000. An enumeration of the flowering plants collected
in NW Yunnan and SW Sichuan, China between 1984
and 1999—*Aconogonon*, *Bistorta* and *Koenigia* (Polygo-
naceae), *Rhodiola* (Crassulaceae) and *Juncus* (Jun-
caceae). *Bull. Natl. Sci. Mus., Tokyo, B* **26**: 95–106.
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Hengduan Mountains, SW China in 1999. *Newsletter of
Himalayan Botany*, no. 26: 8–15.
Miyamoto, F. and H. Ikeda. 2001. Field research in the
Sino-Japanese-American expedition to southeast Tibet,
2000. *Newsletter of Himalayan Botany*, no. 28: 3–12.

Polygonaceae

- Aconogonon hookeri** (Meisn.) H. Hara in Fl.
E. Himal.: 631 (1966).
Polygonum hookeri Meisn. in Ann. Sci. Nat.,
Bot. Sér. 5, **6**: 352 (1866).
Xizang (Tibet). Markam: Lawu Shan, 4400 m
(Akiyama *et al.* 105022, 14 July 2000).
On wet places along streams in grazed grass-

land.

2. **Aconogonon molle** (D. Don) H. Hara var. **frondosum** (Meisn.) H. Hara in Fl. E. Himal.: 68 (1966).

Polygonum frondosum Meisn. in DC., Prodr. **14**: 137 (1856).

Xizang (Tibet). Nyingchi: Sezhaile Shan, 3500 m (Akiyama *et al.* 105218, 18 Aug. 2000).

On sandy slopes beside grazed grassland.

3. **Bistorta griffithii** (Hook. f.) Grierson in Notes Roy. Bot. Gard. Edinburgh **40**: 128 (1982).

Polygonum griffithii Hook. f., Fl. Brit. India **5**: 54 (1886).

Xizang (Tibet). Nyingchi: Sezhaile Shan, 4500 m (Akiyama *et al.* 105216, 17 Aug. 2000).

On rocky slopes.

[Note] This species is similar to *Bistorta calostachya* (Diels) Soják, but differs in having pendulous spikes and long pedicels.

4. **Bistorta macrophylla** (D. Don) Soják in Preslia **46**: 152 (1974).

Polygonum macrophyllum D. Don, Prodr. Fl. Nepal.: 70 (1825).

Xizang (Tibet). Zogang: Dongdala Shan, 5000 m (Akiyama *et al.* 105047, 17 July 2000).

On moist places in grazed grassland.

5. **Bistorta sherei** H. Ohba & S. Akiyama, Alp. Fl. Jaljale Himal: 11, f. 2 (1992).

Xizang (Tibet). Nyingchi: Sezhaile Shan, 4500 m (Akiyama *et al.* 105211, 17 Aug. 2000).

On grazed grassland slopes.

[Note] This species is a new record from Tibet. This species is characterized by having linear leaves and elongated stipules of leaves on flowering stems.

6. **Bistorta sinomontana** (Sam.) Miyam. in Bull. Natl. Sci. Mus., Tokyo, B **25**: 153 (1999).

Polygonum sinomotanum Sam. in Hand.-Mazz., Symb. Sin. **2**: 177 (1929).

Xizang (Tibet). Gongbo'gyamda: Gongbo'gyamda, 3660 m (Akiyama *et al.* 105194, 13 Aug. 2000). Nyingchi: Sezhaile Shan, 3500 m

(Akiyama *et al.* 105224, 18 Aug. 2000).

On sandy banks or on rocks.

[Note] This species is similar to *Bistorta amplexicaulis* (D. Don) Greene, but differs in having wings on the petiole of the leaves of the lower flowering stem and the basal leaves.

7. **Koenigia nepalensis** D. Don, Prodr. Fl. Nepal.: 74 (1825).

Xizang (Tibet). Nyingchi: Sezhaile Shan, 3500 m (Akiyama *et al.* 105223, 18 Aug. 2000).

On grazed grassland.

8. **Oxyria digyna** (L.) Hill, Hort. Kew.: 158 (1768).

Rumex digynus L., Sp. Pl.: 361 (1753).

Xizang (Tibet). Baxoi: Rawu-Baxoi, 4180 m (Akiyama *et al.* 105178, 4 Aug. 2000).

On sandy banks beside streams.

9. **Persicaria nepalensis** (Meisn.) H. Gross in Bot. Jahrb. Syst. **49**: 277, 1913.

Polygonum nepalensis Meisn., Monogr. Polygon.: 84, t. 7, f. 2 (1826).

Xizang (Tibet). Nyingchi: Sezhaile Shan, 3500 m (Akiyama *et al.* 105222, 18 Aug. 2000).

On grazed grassland.

10. **Rheum nobile** Hook. f. & Thomson, Ill. Himal. Pl.: t. 19 (1855).

Xizang (Tibet). Nyingchi: Sezhaile Shan, 4450 m (Akiyama *et al.* 108010, 17 Aug. 2000).

11. **Rheum palmatum** L., Syst. ed. 10: 1010 (1759).

Xizang (Tibet). Zogang: Dongdala Shan, 4280 m (Akiyama *et al.* 105052, 18 Jul. 2000).

On grazed grassland slopes.

12. **Rumex nepalensis** Spreng., Syst. Veg. **2**: 159 (1825).

Xizang (Tibet). Baxoi: Rawu-Baxoi, 3890 m (Akiyama *et al.* 105177, 4 Aug. 2000).

On moist bank beside barley fields.

Ranunculaceae

1. **Aconitum flavum** Hand.-Mazz. in Acta Horti Gothob. **13**: 86 (1939).

- Xizang (Tibet).** Biru–Nagqu: Xagquka–Nagqu, 4800 m (Akiyama *et al.* 105193, 11 Aug. 2000).
On sandy places in grazed grassland.
2. **Aconitum gymnandrum** Maxim. in Bull. Acad. Imp. Sci. Saint-Pétersbourg **23**: 308 (1877).
Xizang (Tibet). Zogang–Qamdo: Zogang–Bamda–Langla Shan–Nianla Shan–Qamdo, 3900 m (Akiyama *et al.* 105053, 19 July 2000).
Roadsides.
3. **Aconitum milinense** W. T. Wang in Acta Phytotax. Sin., Addit. **1**: 74 (1965).
Xizang (Tibet). Gongbo'gyamda: Gongbo'gyamda–Basum, 3410 m (Akiyama *et al.* 105195, 14 Aug. 2000).
On grazed grassland.
4. **Adonis brevistyla** Franch. in Bull. Soc. Bot. France **33**: 372 (1886).
Yunnan. Zhongdian: Tianchi (near Zhongdian), 3800 m (Akiyama *et al.* 659, 8 July 2000).
On moist slopes at edge of *Picea* forests.
5. **Anemone griffithii** Hook. f. & Thomson, Fl. Ind. **1**: 22 (1855).
Xizang (Tibet). Markam: Markam—a village ca. 10 km NW of Markam, 4000 m (Akiyama *et al.* 104613, 13 July 2000).
On grazed grassland slopes.
6. **Anemone trullifolia** (Hook. f. & Thomson) var. **linearis** (Brühl) Hand.-Mazz. in Acta Horti Gothob. **13**: 178 (1939).
Xizang (Tibet). Markam: Markam—a village ca. 10 km NW of Markam, 4000 m (Akiyama *et al.* 105010, 13 July 2000).
On grazed grassland slopes.
7. **Aquilegia moorcroftiana** Wall. ex Royle, Ill. Bot. Himal. Mts.: 55, f. 21 (1834).
Xizang (Tibet). Baxoi: around Rawu, 3900 m (Akiyama *et al.* 105108, 28 July 2000).
Among rocks in grazed grassland.
8. **Batrachium bungei** (Steud.) L. Liou in Fl. Republ. Popul. Sin. **28**: 341 (1980).
Yunnan. Zhongdian: Tianchi, 3790 m (Akiyama *et al.* 908, 25 July 2001).
In a pond beside Tianchi Pond.
9. **Beesia calthaeifolia** (Maxim.) Ulbr. in Notizbl. Bot. Gart. Berlin **10**: 872 (1929).
Yunnan. Zhongdian: Tianchi (near Zhongdian), 3600 m (Akiyama *et al.* 666, 8 July 2000).
On moist slopes beside young *Picea* forests.
10. **Caltha scaposa** Hook. f. & Thomson, Fl. Ind. **1**: 40 (1855).
Xizang (Tibet). Markam: Markam–Lawu Shan, 4400 m (Akiyama *et al.* 104622, 14 July 2000).
On wet places in grazed grassland.
11. **Clematis rehderiana** Craib. in Kew Bull. 1914: 150 (1914).
Xizang (Tibet). Qamdo–Zhag'yab: Qamdo–Nianla Shan, 3190 m (Akiyama *et al.* 104654, 20 July 2000).
On dry slopes.
12. **Clematis tangutica** (Maxim.) Karsh. in Bull. Acad. Imp. Sci. Saint-Pétersbourg **9**: 399 (1898).
Xizang (Tibet). Qamdo–Zhag'yab: Qamdo–Nianla Shan, 3280 m (Akiyama *et al.* 104658, 20 July 2000).
On dry slopes.
13. **Delphinium ceratophoroides** W. T. Wang in Acta Phytotax. Sin. **10**: 158 (1962).
Xizang (Tibet). Baxoi: Rawu–Baxoi, 3890 m (Akiyama *et al.* 105175, 4 Aug. 2000).
On moist banks beside barley fields.
14. **Delphinium kamaonense** Huth in Bull. Herb. Boissier **1**: 333 (1893).
Xizang (Tibet). Qamdo–Zhag'yab: Qamdo–Nianla Shan, 3280 m (Akiyama *et al.* 104660, 20 July 2000).
On dry slopes.
15. **Delphinium leiophyllum** (W. T. Wang) W. T. Wang in Bull. Bot. Lab. N. E. Forest Inst., Harbin 1980 (8): 23 (1980).
Xizang (Tibet). Nagarze: Nagarze–Karo La, 4530 m (Akiyama *et al.* 106245, 11 Aug. 2001).
On grazed grassland.
16. **Delphinium obcordatilimum** W. T. Wang in Fl. Reipubl. Popul. Sin. **27**: 616 (1979).
Xizang (Tibet). Nagarze: Nagarze–Karo La, 4450 m (Akiyama *et al.* 106246, 11 Aug. 2001).
On grazed grassland.

17. **Delphinium subspathulatum** W. T. Wang in Fl. Reipubl. Popul. Sin. **27**: 612 (1979).
Xizang (Tibet). Nyalam: Nyalam–Zhangmu, 3710 m (Akiyama *et al.* 106309, 21 Aug. 2001).
On grazed grassland.
18. **Delphinium wardii** Marq. & Airy Shaw in J. Linn. Soc. Bot. **48**: 157 (1929).
Xizang (Tibet). Nagarze: Karo La, 5020 m (Akiyama *et al.* 106237, 10 Aug. 2001).
On rocky slopes.
19. **Halerpestes tricuspis** (Maxim.) Hand.-Mazz. in Acta Horti Gothob. **13**: 135 (1939).
Xizang (Tibet). Baxoi: Rawu–Anjiu La, 4430 m (Akiyama *et al.* 104683, 27 July 2000). Markam: Markam–Hongla Shan, 4180 m (Akiyama *et al.* 104605, 12 July 2000). Nagarze: Karo La, 4720 m (Akiyama *et al.* 106239, 10 Aug. 2001).
In streams or wet places beside streams.
20. **Oxygraphis glacialis** (Fisch.) Bunge, Suppl. Fl. Alt.: 47 (1836).
Xizang (Tibet). Maizhokunggar: Mt. Milha Shan, 4980 m (Akiyama *et al.* 106205, 6 Aug. 2001).
On wet grounds in grazed grassland.
21. **Ranunculus diffusus** DC., Prodr. **1**: 38 (1824).
Yunnan. Dêqên: Mt. Baima Xueshan, 4310 m (Akiyama *et al.* 924, 27 July 2001).
On muddy slopes beside grazed grassland.
22. **Ranunculus dogregensis** Hand.-Mazz. in Acta Horti Gothob. **13**: 157 (1939).
Xizang (Tibet). Maizhokunggar: Mt. Milha Shan, 4980 m (Akiyama *et al.* 106203, 6 Aug. 2001).
On wet grounds in grazed grassland.
23. **Ranunculus hirtellus** Royle ex D. Don in Royle, Ill. Bot. Himal. Mts.: 53 (1834).
Yunnan. Dêqên: Mt. Baima Xueshan, 4200 m (Akiyama *et al.* 917, 26 July 2001).
On grassland slopes.
24. **Ranunculus longicaulis** C. A. Mey. var. **nephelogenes** (Edgew.) L. Liou in Fl. Reipubl. Popul. Sin. **28**: 269 (1980).
Xizang (Tibet). Markam–Zogang: Markam–Lawu Shan–Chuka–Dongdala Shan–Zogang, 5000 m (Akiyama *et al.* 104627, 15 July 2000).
On wet places in grazed grassland.
25. **Ranunculus natans** C. A. Mey. in Ledeb., Fl. Alt. **2**: 315 (1830).
Yunnan. Dêqên: Mt. Baima Xueshan, 4200 m (Akiyama *et al.* 920, 26 July 2001). **Xizang (Tibet)**. Markam: Markam—a village ca. 10 km NW of Markam, 4000 m (Akiyama *et al.* 104611, 13 July 2000).
On sandy places beside roads.
26. **Ranunculus pseudopygmaeus** Hand.-Mazz. in Acta Horti Gothob. **13**: 161 (1939).
Xizang (Tibet). Maizhokunggar: Mt. Milha Shan, 4980 m (Akiyama *et al.* 106204, 6 Aug. 2001).
On wet grounds in grazed grassland.
27. **Souliea vaginata** (Maxim.) Franch. in J. Bot. (Morot) **12**: 70 (1898).
Yunnan. Zhongdian: Tianchi (near Zhongdian), 3350–3800 m (Akiyama *et al.* 658, 8 July 2000).
On moist slopes at edge of *Picea* forests.
28. **Thalictrum alpinum** L., Sp. Pl.: 545 (1753).
Xizang (Tibet). Baxoi: Rawu–Anjiu La, 4670 m (Akiyama *et al.* 104682, 27 July 2000).
On grazed grassland slopes.
29. **Thalictrum elegans** Wall. ex Royle, Ill. Bot. Himal. Mts.: 51 (1834).
Xizang (Tibet). Markam: Markam—a village ca. 10 km NW of Markam, 4100 m (Akiyama *et al.* 105016, 13 July 2000).
On grazed grassland slopes.
30. **Thalictrum rutifolium** Hook. f. & Thomson, Fl. Ind.: 14 (1855).
Xizang (Tibet). Markam–Zogang: Markam–Lawu Shan–Chuka–Dongdala Shan–Zogang, 4300 m (Akiyama *et al.* 104628, 15 July 2000).
On grazed grassland.
31. **Thalictrum squamiferum** Lecoy. in Bull. Soc. Roy. Bot. Belgique **16**: 229 (1877).
Xizang (Tibet). Nagarze: Nagarze–Karo La, 4550 m (Akiyama *et al.* 106242, 11 Aug. 2001).
On rocky slopes.
32. **Trollius farreri** Stapf var. **major** W. T. Wang in Acta Phytotax. Sin. Additn. **1**: 52

(1965).

Yunnan. Dêqên: Mt. Baima Xueshan, 4200 m (Akiyama *et al.* 918, 26 July 2001).

On alpine grassland slopes.

Saxifragaceae (s. s.)

1. **Bergenia purpurascens** (Hook. f. & Thomson) Engl. in Verh. Zool. Bot. Ges. Wien **19**: 549 (1869).

Xizang (Tibet). Nyingchi: Sezhaila Shan, 4450 m (Akiyama *et al.* 108021); 4500 m (Akiyama *et al.* 106051).

Margins of *Rhododendron* scrub.

2. **Chrysosplenium carnosum** Hook. f. & Thomson in J. Linn. Soc. **2**: 73 (1858).

Xizang (Tibet). Nyingchi: Sezhaila Shan, 4450 m (Akiyama *et al.* 108016).

On mossy soil among rocks.

3. **Rodgersia aesculifolia** Batal. in Acta Hort. Petrop. **13**: 96 (1893).

Xizang (Tibet). Bomi: between Bomi and Tangmai, 2550 m (Akiyama *et al.* 105689).

Margins of forests.

4. **Saxifraga aristulata** Hook. f. & Thomson in J. Linn. Soc. **2**: 68 (1857).

Yunnan. Dêqên (Deqin): Baima Xueshan, 4220 m (Wu *et al.* 103517, 17 Aug. 1999); 4240 m (Akiyama *et al.* 813, 26 July 2001); Meili Xueshan, Suola, 4550 m (Wu *et al.* 103525, 2 Aug. 1999); 4630 m (Wu *et al.* 103703-2, 2 Aug. 1999). Zhongdian: Haba Xueshan, Haba Hai, 4020 m (Wu *et al.* 103467, 103468, 9 Aug. 1999); 4110 m (Wu *et al.* 103664, 9 Aug. 1999); Hong Shan, 4250 m (Wu *et al.* 103607, 103611, 31 July 1999); 4280 m (Wu *et al.* 103414, 1 Aug. 1999); 4300 m (Wu *et al.* 103408, 31 July 1999); 4310 m (Wu *et al.* 103428, 2 Aug. 1999). **Xizang (Tibet).** Nyalam: on the way to Tashigang from Nyalam, 4620 m (Akiyama *et al.* 105614, 19 Aug. 2001); Nyalam–Zhangmu, 3690 m (Akiyama *et al.* 106552, 22 Aug. 2001).

In alpine meadow, *Rhododendron* scrub.

5. **Saxifraga bergenioides** Marq. in J. Linn. Soc. Bot. **48**: 176 (1929).

Xizang (Tibet). Maizhokunggar: Mt. Mihla

Shan, 4920 m (Akiyama *et al.* 106407, 6 Aug. 2001). Nyingchi: Sezhaila Shan, 4500 m (Akiyama *et al.* 104533, 17 Aug. 2000).

On grassy slopes, in rock sheltered places.

6. **Saxifraga brunonis** Wall. ex Ser. in DC., Prodr. **4**: 45 (1840).

Xizang (Tibet). Nyalam: on the way to Tashigang from Nyalam, 4560 m (Akiyama *et al.* 106522, 20 Aug. 2001).

In stony places by streams.

7. **Saxifraga bulleyana** Engl. & Irmsch. in Notes Roy. Bot. Gard. Edinburgh **5**: 130 (1912).

Yunnan. Zhongdian: Haba Xueshan, Haba Hai, 4020 m (Wu *et al.* 103471, 9 Aug. 1999); 4100 m (Wu *et al.* 103663, 9 Aug. 1999).

8. **Saxifraga consanguinea** W. W. Sm. in Notes Roy. Bot. Gard. Edinburgh **8**: 132 (1913).

Yunnan. Zhongdian: Hong Shan, 4350 m (Wu *et al.* 103627, 1 Aug. 1999). **Xizang (Tibet).** Baxoi: Bamda–Yela Shan, 4600 m (Akiyama *et al.* 104301, 22 July 2000); 4700 m (Akiyama *et al.* 104305, 104312, 22 July 2000); Yela Shan, 4580 m (Akiyama *et al.* 105532, 105543, 22 July 2000); Demu La, 4700 m (Akiyama *et al.* 105582, 26 July 2000); Rawu–Anjiu La, 4500 m (Akiyama *et al.* 104359, 27 July 2000); Rawu–Baxoi, 4500 m (Akiyama *et al.* 105746, 4 Aug. 2000). Lhazê: Jia Tsuo La, 5050 m (Akiyama *et al.* 106484, 14 Aug. 2001). Maizhokunggar: Mt. Mihla Shan, 4920 m (Akiyama *et al.* 106409, 6 Aug. 2001).

On open grassy slopes, scree slopes, in alpine meadow.

9. **Saxifraga densifoliata** Engl. & Irmsch. in Bot. Jahrb. Syst. **48**: 570, f. 1 A-F (1912).

Yunnan. Dêqên (Deqin): Baima Xueshan, 4400 m (Wu *et al.* 103691, 15 Aug. 1999); Meili Xueshan, Suola, 4450 m (Wu *et al.* 103548, 2 Aug. 1999); 4600 m (Wu *et al.* 103728, 2 Aug. 1999). Zhongdian: Haba Xueshan, Haba Hai, 4020 m (Wu *et al.* 103466, 9 Aug. 1999); 4180 m (Wu *et al.* 103456, 8 Aug. 1999).

On rocks, in rock crevices.

10. **Saxifraga diapensia** H. Sm. in Acta Horti Gothob. **1**: 10, f. 3 (1924).

Yunnan. Dêqên (Deqin): Meili Xueshan, Suola, 4600 m (Wu *et al.* 103521, 2 Aug. 1999); 4720 m (Wu *et al.* 103705, 2 Aug. 1999). Zhongdian: Haba Xueshan, Haba Hai, 4400 m (Wu *et al.* 103671, 10 Aug. 1999).

11. *Saxifraga filicaulis* Wall. ex Ser. in DC., Prodr. 4: 46 (1830).

Yunnan. Dali: Diancan Shan, Zhonghe Temple–Ximatan (Wu *et al.* 103569, 5 Sept. 1999). Dêqên (Deqin): Meili Xueshan, Suola, 3800 m (Wu *et al.* 103543, 2 Aug. 1999). **Xizang (Tibet).** Nyalam: Nyalam–Zhangmu, 3620 m (Akiyama *et al.* 106539, 21 Aug. 2001).

On mossy rocks.

12. *Saxifraga finitima* W. W. Sm. in Notes Roy. Bot. Gard. Edinburgh 8: 133 (1913).

Yunnan. Dêqên (Deqin): Meili Xueshan, Suola, 4650 m (Wu *et al.* 103519, 2 Aug. 1999). Zhongdian: Hong Shan, 4560 m (Wu *et al.* 103828, 1 Aug. 1999); 4570 m (Wu *et al.* 103630, 1 Aug. 1999).

13. *Saxifraga gemmipara* Franch. in J. Bot (Morot) 10: 262 (1896).

Yunnan. Dali: Diancan Shan, Zhonghe Temple–Ximatan (Wu *et al.* 103565, 5 Sept. 1999).

14. *Saxifraga giraldiana* Engl. ex Diels in Bot. Jahrb. Syst. 29: 365

Yunnan. Zhongdian: Haba Xueshan, Haba Hai, 4180 m (Wu *et al.* 103453, 8 Aug. 1999); 4280 m (Wu *et al.* 103656, 8 Aug. 1999); 4300 m (Wu *et al.* 103675, 1 10 Aug. 1999); 4400 m (Wu *et al.* 103910, 8 Aug. 1999).

15. *Saxifraga granulifera* H. Sm. in Bull. Brit. Mus. (Nat. Hist.), Bot. 2(9): 259, t. 21 B (1960).

Xizang (Tibet). Zogang: Zogang–Dongdala Shan–Zogang, 4600 m (Akiyama *et al.* 105854, 18 July 2000).

In rock crevices.

16. *Saxifraga hispidula* D. Don in Trans. Linn. Soc. London 13: 380 (1821).

Yunnan. Dali: Diancan Shan, Zhonghe Peak, 3450 m (Wu *et al.* 103574, 6 Sept. 1999); Diancan Shan, Zhonghe Temple–Ximatan, 3500 m (Wu *et al.* 103142, 5 Sept. 1999). Dêqên (Deqin): Meili Xueshan, Suola, 4120 m (Wu *et al.*

103721, 2 Aug. 1999). Lijiang: Laojun Shan, Longqun Lodge–Jiushijiu Longtan, 390 m (Wu *et al.* 103576, 8 Sept. 1999). Zhongdian: Haba Xueshan, Haba Hai, 4020 m (Wu *et al.* 103469, 9 Aug. 1999); Hong Shan, 4300 m (Wu *et al.* 103409, 31 July 1999); 4300 m (Wu *et al.* 103635, 103636, 2 Aug. 1999).

On rocks.

17. *Saxifraga hypericoides* Franch. in J. Bot. (Morot) 10: 261 (1896).

Yunnan. Dêqên (Deqin): Meili Xueshan, Suola, 3800 m (Wu *et al.* 103541, 2 Aug. 1999); 4650 m (Wu *et al.* 103727, 2 Aug. 1999). Zhongdian: Hong Shan, 3720 m (Wu *et al.* 103443, 3 Aug. 1999); 3800 m (Wu *et al.* 103647, 3 Aug. 1999).

On grassy slopes.

18. *Saxifraga lhasana* H. Sm. in Bull. Brit. Mus. (Nat. Hist.), Bot. 2(9): 225 (1960).

Xizang (Tibet). Zogang: Chuka–Dongdaloa Shan, 4170 m (Akiyama *et al.* 104231, 15 July 2000); 4190 m (Akiyama *et al.* 105450, 15 July 2000); Zogang–Dongdala Shan–Zogang, 4400 m (Akiyama *et al.* 105841, 18 July 2000).

In rocky and sandy places by streams, in rock crevices on slopes.

19. *Saxifraga melanocentra* Franch. in J. Bot. (Morot) 10: 263 (1896).

Yunnan. Dêqên (Deqin): Baima Xueshan, 4330 m (Akiyama *et al.* 821, 27 July 2001); Meili Xueshan, Suola, 4600 m (Wu *et al.* 103522, 2 Aug. 1999). Zhongdian: Haba Xueshan, Haba Hai, 4050 m (Wu *et al.* 103489, 11 Aug. 1999); Hong Shan, 4190 m (Wu *et al.* 103437, 2 Aug. 1999); 4300 m (Wu *et al.* 103407, 31 July 1999); 4400 m (Wu *et al.* 103818, 31 July 1999). **Xizang (Tibet).** Zogang: Zogang–Dongdala Shan, 5000 m (Akiyama *et al.* 105477, 17 Aug. 2000). Baxoi: Rawu–Demu La, 4700 m (Akiyama *et al.* 105581, 26 July 2000); around Rawu, 4900 m (Akiyama *et al.* 105639, 29 July 2000); 5000 m (Akiyama *et al.* 105946, 29 July 2000). Maizhokunggar: Mt. Mihla Shan, 4920 m (Akiyama *et al.* 106408, 6 Aug. 2001). Nyingchi: Sezhaile Shan, 4450 m (Akiyama *et al.* 108017, 17 Aug. 2000).

On sandy slopes, stony slopes, in alpine meadow.

20. *Saxifraga nigroglandulifera* Bakar. in J. Bombay Nat. Hist. Soc. **67**: 59 (1970).

Yunnan. Zhongdian: Haba Xueshan, Haba Hai, 4020 m (Wu *et al.* 103476, 9 Aug. 1999).

Xizang (Tibet). Nyalam: Nyalam–Zhangmu, 3690 m (Akiyama *et al.* 106553, 22 Aug. 2001). Zogang: Zogang–Dongdala Shan, 4650 m (Akiyama *et al.* 105852, 18 July 2000).

In scrub, on soil slopes in alpine meadow.

21. *Saxifraga pallida* Wall. ex Ser. in DC., Prodr. **4**: 38 (1830).

Yunnan. Dêqên (Deqin): Baima Xueshan, 4200 m (Wu *et al.* 103505, 15 Aug. 1999); 4330 m (Akiyama *et al.* 822, 27 July 2001); Meili Xueshan, Suola, 3800 m (Wu *et al.* 103542, 2 Aug. 1999).

In alpine meadow.

22. *Saxifraga pulchra* Engl. & Irmsch in Notes Roy. Bot. Gard. Edinburgh **5**(24): 146, t. 102 (1912).

Yunnan. Zhongdian: Hong Shan, 4200 m (Wu *et al.* 103441, 2 Aug. 1999).

23. *Saxifraga punctulata* Engl. in Bot. Jahrb. Syst. **48**: 601 (1912).

Xizang (Tibet). Maizhokunggar: Mt. Mihla Shan, 4840 m (Akiyama *et al.* 106401, 5 Aug. 2001).

On soil by screes.

24. *Saxifraga rufescens* Balf. f. in Trans. Bot. Soc. Edinburgh **27**: 74 (1916).

Yunnan. Zhongdian: Haba Xueshan, Haba Hai, 4020 m (Wu *et al.* 103470, 9 Aug. 1999); 4100 m (Wu *et al.* 103680, 11 Aug. 1999); near Zhongdian, 3540 m (Akiyama *et al.* 806, 24 July 2001).

By streams.

25. *Saxifraga sediformis* Engl. & Irmsch. in Notes Roy. Bot. Gard. Edinburgh **5**(24): 144 (1912).

Yunnan. Dêqên (Deqin): Meili Xueshan, Meilishi-Suola, 3600 m (Wu *et al.* 103699, 1 Aug. 1999); Meili Xueshan, Suola, 3800 m (Wu *et al.* 103540, 2 Aug. 1999).

On mossy rocks.

26. *Saxifraga sinomontana* J. T. Pan & Gornall in Novon **10**: 377 (2000).

Saxifraga montana H. Sm.: Akiyama *et al.* in Bull. Natl. Sci. Mus., Tokyo, B, **24**: 66 (1998); **25**: 169 (1999).

Yunnan. Dêqên (Deqin): Baima Xueshan, 4200 m (Wu *et al.* 103502, 15 Aug. 1999); 4300 m (Wu *et al.* 103631, 1 15 Aug. 1999); Meili Xueshan, Suola, 4670 m (Wu *et al.* 103711, 2 Aug. 1999).

27. *Saxifraga stenophylla* Royle, Ill. Bot. Himal. Mts.: 227, t. 50, f. 1 (1835).

Xizang (Tibet). Baxoi: Demu La, 4600 m (Akiyama *et al.* 105583, 26 July 2000); Rawu–Anjiu La, 4600 m (Akiyama *et al.* 104356, 27 July 2000); around Rawu, 4800 m (Akiyama *et al.* 105638, 29 July 2000).

On stony slopes, scree slopes.

28. *Saxifraga strigosa* Wall. ex Ser. in DC., Prodr. **4**: 41 (1830).

Yunnan. Binchuan: Jizu Shan, Jinding Temple–Zhusheng Temple, 3000 m (Wu *et al.* 104221, 25 Sept. 1999). Dali: Diancan Shan, Zhonghe Peak, 3400 m (Wu *et al.* 103575, 6 Sept. 1999); Diancan Shan, Zhonghe Temple–Ximatan, 3100 m (Wu *et al.* 103562, 5 Sept. 1999). Lushui: Pianma–Pianma Pass–Lushui, 3040 m (Wu *et al.* 104202, 13 Sept. 1999). Yunlong: Ziben Shan, 3140 m (Wu *et al.* 103591, 11 Sept. 1999). **Xizang (Tibet).** Nyalam: Nyalam–Zhangmu, 3620 m (Akiyama *et al.* 106541, 21 Aug. 2001).

On mossy rocks.

29. *Saxifraga substrigosa* J. T. Pan in C. Y. Wu, Fl. Xizang. **2**: 463 (1985).

Xizang (Tibet). Nyingchi: Bayizhen–Sezhaila Shan, 3450 m (Akiyama *et al.* 108026, 18 Aug. 2000); 3530 m (Akiyama *et al.* 104551, 18 Aug. 2000).

On open slopes.

30. *Saxifraga tangutica* Engl. in Bull. Acad. Imp. Sci. Saint-Petersbourg **29**: 114 (1883).

Xizang (Tibet). Dêngqên–Baqên–Sog: Qamdo–Dêngqên–Pongda–Baqên–Xagquka, 4400 m (Akiyama *et al.* 105770, 10 Aug. 2000); 4500 m (Akiyama *et al.* 104491, 10 Aug. 2000). Lhazê:

Jia Tsuo La, 5050 m (Akiyama *et al.* 106483, 14 Aug. 2001). Maizhokunggar: Mt. Mihla Shan, 4920 m (Akiyama *et al.* 106404, 6 Aug. 2001).

On grassy slopes, in alpine meadow.

31. **Saxifraga tibetica** Losinsk. in *Izv. Glavn. Bot. Sada SSSR* **27**: 597 (1928).

Xizang (Tibet). Markam–Zogang: Chuka-Dongdala Shan–Zogang, 5000 m (Akiyama *et al.* 104232, 15 July 2000). Zogang: Zognag–Dongdala Shan, 5000 m (Akiyama *et al.* 104236, 16 July 2000); 5200 m (Akiyama *et al.* 104247, 17 July 2000).

32. **Saxifraga wallichiana** Sternb., *Rev. Saxifr. Suppl.* **2**: 21, t. 22 (1831).

Yunnan. Dêqên (Deqin): Meili Xueshan, Suola (Wu *et al.* 103534, 2 Aug. 1999); 4120 m (Wu *et al.* 103722, 2 Aug. 1999); 4360 m (Wu *et al.* 103715, 2 Aug. 1999). Zhongdian: Hong Shan (Wu *et al.* 103440, 2 Aug. 1999); 3800 m (Wu *et al.* 103646, 3 Aug. 1999). **Xizang (Tibet)**. Nyalam: on the way to Tashigang from Nyalam, 4560 m (Akiyama *et al.* 106526, 20 Aug. 2001); Nyalam–Zhangmu, 3690 m (Akiyama *et al.* 106551, 22 Aug. 2001).

In stony places by streams, margins of *Rhododendron* scrub.

33. **Saxifraga wardii** W. W. Sm. in *Notes Roy. Bot. Gard. Edinburgh* **8**: 134 (1913).

Yunnan. Dêqên (Deqin): Meili Xueshan, Suola (Wu *et al.* 103526, 2 Aug. 1999); 4500 m (Wu *et al.* 103697, 2 Aug. 1999). **Xizang (Tibet)**. Nyingchi: Sezhaile Shan, 4450 m (Akiyama *et al.* 108011, 17 Aug. 2000).

Margins of *Rhododendron* scrub.

Rosaceae

1. **Agrimonia pilosa** Ledeb. in *Index Sem. Hort. Dorta. Suppl.*: 1 (1823).

Yunnan. Dêqên: Mingyong Glacier, 3000 m (Akiyama *et al.* 933, 28 July 2001). **Xizang (Tibet)**. Bomi: between Bomi and Tangmai, 2550 m (Akiyama *et al.* 104707, 31 July 2000); (Wu *et al.* 105667, 31 July 2000); (Boufford *et al.* 29818, 31 July 2000).

Forestry roadsides under *Quercus* aff. *seme-*

carpifolia forests.

2. **Aruncus dioicus** (Walter) Fernald in *Rhodora* **41**: 423 (1939).

Yunnan. Zhongdian: Tianchi (near Zhongdian), 3850 m (Akiyama *et al.* 656 & 657, 8 July 2000).

On sunny rocky slopes.

3. **Coluria longifolia** Maxim. in *Bull. Acad. Imp. Sci. Saint-Petersbourg* **27**: 466 (1882).

Xizang (Tibet). Zogang: Zogang–Dongdala Shan, 5000 m (Akiyama *et al.* 104630, 16 July 2000); (Boufford *et al.* 29457, 16 July 2000).

In moist places beside a pond.

4. **Cotoneaster acuminatus** Lindl. in *Trans. Linn. Soc.* **13**: 101, t. 9 (1822).

Xizang (Tibet). Nyalam: Zhangmu, 2600 m (Wu *et al.* 106725, 16 Aug. 2001).

5. **Cotoneaster dielsianus** Pritz. in *Bot. Jahrb. Syst.* **29**: 385 (1900).

Yunnan. Dali: Diancang Shan, 2720 m (Akiyama *et al.* 643, 5 July 2000). **Xizang (Tibet)**. Gongbo'gyamda: Basum–Basum Lake, 3550 m (Akiyama *et al.* 104742, 15 Aug. 2000).

Roadside slopes.

6. **Cotoneaster divaricatus** Rehd. & Wils. in *Sarg., Pl. Wils.* **1**: 157 (1912).

Xizang (Tibet). Baxoi: around Rawu, 3900 m (Akiyama *et al.* 104691, 28 July 2000).

On grazed grassland slopes.

7. **Cotoneaster microphyllus** Wall. ex Lindl. in *Bot. Reg.* **13**: t. 1114 (1827).

Xizang (Tibet). Nyalam: Nyalam–Zhangmu, 3710 m (Akiyama *et al.* 106308, 21 Aug. 2001).

On rocks.

8. **Cotoneaster subadpressus** T. T. Yü in *Acta Bot. Sin.* **8**: 219 (1963).

Yunnan. Dali: Diancang Shan, 3380 m (Akiyama *et al.* 652, 5 July 2000).

On rocky slopes at edge of *Abies* forests.

9. **Duchesnea indica** (Andr.) Focke in *Engl. & Prantl, Nat. Pflanzenfam.* **3**(3): 33 (1888).

Yunnan. Dêqên: Mingyong Glacier, 3000 m (Akiyama *et al.* 932, 28 July 2001). **Xizang (Tibet)**. Bomi: between Bomi and Tangmai, 2550 m (Akiyama *et al.* 104708, 31 July 2000).

Forestry roadsides.

10. **Fragaria daltoniana** J. Gay in Ann. Sci. Nat., Bot. Sér. 4, **8**: 204 (1857).
Xizang (Tibet). Nyalam: Nyalam–Zhangmu, 3400 m (Wu *et al.* 106945, 21 Aug. 2001); 3470 m (Akiyama *et al.* 106296, 21 Aug. 2001).
 On wet grassy slopes beside a road.
11. **Fragaria moupinensis** (Franch.) Card. in Notul. Syst. (Paris) **3**: 329 (1914).
Xizang (Tibet). Bomi: between Bomi and Tangmai, 2750 m (Akiyama *et al.* 104714, 1 Aug. 2000).
 Muddy roadside at edge of *Pinus yunnanensis* forests.
12. **Fragaria nilgerrensis** Schlecht. ex J. Gay in Ann. Sci. Nat., Bot. Sér. 4, **8**: 206 (1857).
Yunnan. Zhongdian: near Zhongdian, 3490 m (Akiyama *et al.* 904, 24 July 2001). **Xizang (Tibet)**. Markam: Markam–Hongla Shan, 4100 m (Akiyama *et al.* 104602, 12 July 2000).
 On sunny or moist slopes.
13. **Fragaria nubicola** Lindl. ex Lacaita in J. Linn. Soc. Bot. **43**: 476 (1916).
Xizang (Tibet). Nyalam: Nyalam–Zhangmu, 3470 m (Akiyama *et al.* 106297, 21 Aug. 2001).
 On wet grassy slopes beside a road.
14. **Geum aleppicum** Jacq., Icon. Pl. Rar. **1**: 10, t. 93 (1781).
Xizang (Tibet). Nyingchi: Bayizhen–Sezhaila Shan, 3500 m (Akiyama *et al.* 104752, 18 Aug. 2000). Gongbo'gyamda: Basum–Basum Lake (Boufford *et al.* 30086, 15 Aug. 2000).
 In grazed grassland.
15. **Neillia rubiflora** D. Don, Prodr. Fl. Nepal.: 229 (1825).
Xizang (Tibet). Nyalam: Zhangmu, 2600 m (Wu *et al.* 106780, 17 Aug. 2001).
16. **Potentilla anserina** L., Sp. Pl: 495 (1753).
Xizang (Tibet). Baxoi: around Rawu (Boufford *et al.* 29784, 28 July 2000); (Boufford *et al.* 29790, 29 July 2000); Rawu–Anjiu La (Wu *et al.* 105597, 27 July 2000). Maizhokunggar: Mt. Milha Shan, 3980 m (Akiyama *et al.* 106217, 7 Aug. 2001). Markam: Markam–Hongla Shan, 4150 m (Akiyama *et al.* 104609, 12 July 2000).
 On muddy sandy slopes.
17. **Potentilla argyrophylla** Wall. ex Lehm., Nov. Stirp. Pug. **3**: 36 (1831).
Xizang (Tibet). Baxoi: Rawu–Demu La (a pass to Zayu), 4700 m (Akiyama *et al.* 104679, 26 July 2000).
 On grazed grassland slopes.
18. **Potentilla articulata** Franch., Pl. Delav. **3**: 210 (1890).
Yunnan. Dêqên (Deqin): Meili Xueshan, Suola, 4800 m (Wu *et al.* 103990, 20 Aug. 1999). Zhongdian: Haba Xueshan, Haba Hai, 4650 m (Wu *et al.* 103070, 8 Aug. 1999). **Xizang (Tibet)**. Maizhokunggar: Mt. Milha Shan, 4980 m (Akiyama *et al.* 106206, 6 Aug. 2001); 4900 m (Wu *et al.* 106090, 6 Aug. 2001). Nyalam: on the way to Tashigang from Nyalam, 4700–4900 m (Wu *et al.* 106916, 20 Aug. 2001).
 On grazed grassland slopes.
19. **Potentilla bifurca** L., Sp. Pl.: 497 (1753).
Xizang (Tibet). Baxoi: around Rawu (Boufford *et al.* 29796, 29 July 2000); Bamda–Yela Shan (Wu *et al.* 105561, 23 July 2000). Markam: Markam–Hongla Shan, 4150 m (Akiyama *et al.* 104610, 12 July 2000). Nagarze: Nagarze–Karo La, 4450 m (Akiyama *et al.* 106247, 11 Aug. 2001).
 On dry grounds in grazed grassland.
20. **Potentilla conferta** Bunge in Ledeb., Fl. Altaica. **2**: 240 (1830).
Yunnan. Dêqên (Deqin): Meili Xueshan, Meilishi–Suola, 3300 m (Wu *et al.* 103098b, 19 Aug. 1999).
21. **Potentilla cuneata** Wall. ex Lehm., Nov. Stirp. Pug. **3**: 34 (1831).
Xizang (Tibet). Baxoi: around Rawu, 3900 m (Akiyama *et al.* 104697, 28 July 2000); (Wu *et al.* 105612, 28 July 2000); (Boufford *et al.* 29763, 28 July 2000).
 On sandy slopes beside streams.
22. **Potentilla dumosa** (Franch.) Hand.-Mazz., Symb. Sin. **7**: 515 (1933).
Yunnan. Zhongdian: Hong Shan, 4325 m (Wu *et al.* 103011, 31 July 1999). **Xizang (Tibet)**. Nyingchi: Bayizhen–Sezhaila Shan, 4500 m (Akiyama *et al.* 104750, 17 Aug. 2000); (Boufford *et al.* 30142, 17 Aug. 2000).
 On grazed grassland.

23. **Potentilla eriocarpa** Wall. ex Lehm., Nov. Stip. Pug. 3: 35 (1831).
var. **eriocarpa**
Yunnan. Zhongdian: Hong Shan, 4390 m (Wu *et al.* 103037, 2 Aug. 1999). **Xizang (Tibet).** Baxoi: Bamda–Yela Shan, 4600 m (Akiyama *et al.* 104669, 22 July 2000). Lhazê: Jia Tsuo La, 4260 m (Akiyama *et al.* 106252, 14 Aug. 2001). Nagarze: Karo La, 4720 m (Akiyama *et al.* 106240, 10 Aug. 2001). Nyalam: on the way to Tashigang from Nyalam, 4830 m (Akiyama *et al.* 106286, 20 Aug. 2001).
Among rocks.
var. **tsarongensis** W. E. Evans in Notes Roy. Bot. Gard. Edinburgh 13: 178 (1921).
Yunnan. Dêqên (Deqin): Meili Xueshan, Suola, 4650 m (Wu *et al.* 103111, 21 Aug. 1999); Mt. Baima Xueshan, 4250 m (Akiyama *et al.* 927, 27 July 2001). Zhongdian: Hong Shan, 4355 m (Wu *et al.* 103009, 31 July 1999). **Xizang (Tibet).** Baxoi: Bamda–Yela Shan (Boufford *et al.* 29607, 22 July 2000).
In rock crevices.
24. **Potentilla fallens** Card. in Notul. Syst. (Paris) 3: 232 (1914).
Yunnan. Zhongdian: Hong Shan, 3800 m (Wu *et al.* 103050, 3 Aug. 1999).
On grassland slopes.
25. **Potentilla festiva** Soják in Candollea 43: 166 (1988).
Yunnan. Zhongdian: near Zhongdian, 3490 m (Akiyama *et al.* 905, 24 July 2001). **Xizang (Tibet).** Gongbo'gyamda: Gongbo'gyamda–Basum, 3410 m (Akiyama *et al.* 104733, 14 Aug. 2000).
On grazed grassland.
26. **Potentilla fruticosa** L., Sp. Pl.: 495 (1753).
var. **fruticosa**
Yunnan. Zhongdian: Hong Shan, 4250 m (Wu *et al.* 103001, 31 July 1999); Tianchi (near Zhongdian), 3900 m (Akiyama *et al.* 665, 8 July 2000). **Xizang (Tibet).** Baxoi: Bamda–Yela Shan, 4550 m (Akiyama *et al.* 104662, 22 July 2000). Maizhokunggar: Mt. Milha Shan, 4700 m (Akiyama *et al.* 106212, 7 Aug. 2001).
On rocky slopes or moist places.
var. **albicans** Rehd. & Wils. in Sarg., Pl. Wils. 2: 302 (1916).
Xizang (Tibet). Markam: Markam—a village ca. 10 km NW of Markam, 4100 m (Akiyama *et al.* 104616, 13 July 2000).
var. **pumila** Hook. f., Fl. Brit. India 2: 348 (1878).
Xizang (Tibet). Baxoi: Rawu–Demu La (a pass to Zayu), 4700 m (Akiyama *et al.* 104677, 26 July 2000). Lhazê: Jia Tsuo La, 5340 m (Akiyama *et al.* 106249, 14 Aug. 2001). Nyalam: Thong La (south of Lalung La), 5160 m (Akiyama *et al.* 106273, 18 Aug. 2001); 400 m (Wu *et al.* 106833, 18 Aug. 2001).
On grounds in grazed grassland or among rocks.
27. **Potentilla glabra** Lodd., Bot. Cab. 10: t. 914 (1824).
Yunnan. Zhongdian: Hong Shan, 4270 m (Wu *et al.* 103003, 31 July 1999); Tianchi (near Zhongdian), 3900 m (Akiyama *et al.* 664, 8 July 2000). **Xizang (Tibet).** Baxoi: Bamda–Yela Shan, 4550 m (Akiyama *et al.* 104664, 22 July 2000).
On moist places beside a lake.
28. **Potentilla griffithii** Hook. f., Fl. Brit. India 2: 351 (1878).
Yunnan. Dêqên (Deqin): Meili Xueshan, Meilishi–Suola, 3300 m (Wu *et al.* 103099, 19 Aug. 1999); Mingyong Glacier, 3200 m (Akiyama *et al.* 930, 28 July 2001). Zhongdian: near Zhongdian, 3490 m (Akiyama *et al.* 906, 24 July 2001). **Xizang (Tibet).** Gongbo'gyamda: Gongbo'gyamda–Basum, 3410 m (Akiyama *et al.* 104734, 14 Aug. 2000).
On grazed grassland or roadsides.
29. **Potentilla leuconota** D. Don, Prodr. Fl. Nepal.: 230 (1825).
var. **leuconota**
Yunnan. Dali: Diancang Shan, 3800 m (Akiyama *et al.* 646, 5 July 2000). Zhongdian: Hong Shan, 4200 m (Wu *et al.* 103046, 2 Aug. 1999); near Zhongdian, 3490 m (Akiyama *et al.* 907, 24 July 2001). **Xizang (Tibet).** Nyalam: Nyalam–Zhangmu, 3470 m (Akiyama *et al.* 106295, 21 Aug. 2001). Nyingchi: Bayizhen–

- Sezhaila Shan, 4500 m (Akiyama *et al.* 104747, 17 Aug. 2000).
 On grassy places beside roads.
 var. **brachyphyllaria** Card. in Notul. Syst. (Paris) **3**: 241 (1916).
Xizang (Tibet). Nyingchi: Bayizhen–Sezhaila Shan, 4500 m (Akiyama *et al.* 104748, 17 Aug. 2000).
 On rocky slopes in grazed grassland.
30. **Potentilla lineata** Trev., Index. Sem. Bratislav.: 1822 (1822).
Xizang (Tibet). Nyalam: Zhangmu, 2600 m (Wu *et al.* 106807, 17 Aug. 2001).
31. **Potentilla microphylla** D. Don, Prodr. Fl. Nepal.: 231 (1825).
 var. **microphylla**
Xizang (Tibet). Baxoi: Rawu–Anjiu La, 4670 m (Akiyama *et al.* 104688, 27 July 2000). Maizhokunggar: Mt. Milha Shan, 4980 m (Akiyama *et al.* 106207, 6 Aug. 2001).
 On moist grounds in grazed grassland.
32. **Potentilla multifida** L., Sp. Pl.: 496 (1753).
Yunnan. Dêqên (Deqin): Meili Xueshan, Meilishi–Suola, 3300 m (Wu *et al.* 103098a, 19 Aug. 1999). **Xizang (Tibet)**. Baxoi: Bamda–Yela Shan, 4550 m (Akiyama *et al.* 104665, 22 July 2000). Markam: Markam–Hongla Shan, 4150 m (Akiyama *et al.* 104608, 12 July 2000).
 On grazed grassland.
33. **Potentilla peduncularis** D. Don, Prodr. Fl. Nepal.: 230 (1825).
 var. **peduncularis**
Xizang (Tibet). Nyalam: Nyalam–Zhangmu, 4060 m (Akiyama *et al.* 106316, 22 Aug. 2001); 4000–4100 m (Wu *et al.* 107033, 22 Aug. 2001).
 On grazed grassland.
 var. **curta** (Soják) H. Ikeda & H. Ohba in H. Ohba (ed.), Himal. Pl. **3**: 68 (1999).
Xizang (Tibet). Baxoi: Rawu–Demu La (a pass to Zayu), 4700 m (Akiyama *et al.* 104678, 26 July 2000).
 On grazed grassland slopes.
34. **Potentilla polyphylla** Wall. ex Lehm., Nov. Stirp. Pug. **3**: 13 (1831).
 var. **polyphylla**
Yunnan. Lushui: Pianma–Pianma Pass–Lushui, 3200 m (Wu *et al.* 103172, 13 Sep. 1999).
Xizang (Tibet). Nyalam: Nyalam–Zhangmu, 3470 m (Akiyama *et al.* 106294, 21 Aug. 2001).
 On grassy slopes beside roads.
35. **Potentilla saundersiana** Royle, Ill. Bot. Himal. Mts.: 207, t. 41 (1835).
 var. **saundersiana**
Yunnan. Dêqên: Mt. Baima Xueshan, 4310 m (Akiyama *et al.* 925, 27 July 2001). **Xizang (Tibet)**. Maizhokunggar: Mt. Milha Shan, 4120 m (Akiyama *et al.* 106215, 7 Aug. 2001); 4800 m (Wu *et al.* 106103, 6 Aug. 2001). Markam: Markam—a village ca. 10 km NW of Markam, 4100 m (Akiyama *et al.* 104620, 13 July 2000). Markam–Zogang: Markam–Lawu Shan–Chuka–Dongdala Shan–Zogang (Akiyama *et al.* 104626, 15 July 2000). Zogang: Zogang–Dongdala Shan, 5050 m (Akiyama *et al.* 104639, 17 July 2000).
 On grazed grassland.
 var. **caespitosa** (Lehm.) Th. Wolf in Bibl. Bot. **71**: 243 (1908).
Xizang (Tibet). Lhazê: Jia Tsuo La, 5300 m (Wu *et al.* 106697, 14 Aug. 2001).
36. **Potentilla stenophylla** (Franch.) Diels in Notes Roy. Bot. Gard. Edinburgh **7**: 271 (1912).
 var. **stenophylla**
Yunnan. Zhongdian: Hong Shan, 4350 m (Wu *et al.* 103006, 31 July 1999); Tianchi (near Zhongdian), 3900 m (Akiyama *et al.* 663, 8 July 2000).
 On moist grassland beside a lake.
 var. **emergens** Card. in Notul. Syst. (Paris) **31**: 241 (1914).
Xizang (Tibet). Markam: Markam—a village ca. 10 km NW of Markam, 4100 m (Akiyama *et al.* 104617, 13 July 2000); (Boufford *et al.* 29427 & 29413, 13 July 2000); (Wu *et al.* 105416, 13 July 2000).
 On grazed grassland slopes.
37. **Potentilla fruticosa** L. × **P. glabra** Lodd.
 Shrub, 0.4–0.8 m tall. Leaves green above, pale green beneath; pedicel pale dark purple; calyx tube light green; epicalyx light purple with light green a part; calyx lobes light green with light purple a part; petals pale creamy white; an-

thers pale dark yellow (without pollen?); filaments creamy white; ovaries hairy, pale green; style pale yellow; stigma slightly inflated, pale dark yellow to pale brown.

Yunnan. Zhongdian: Hong Shan, 4250 m (Wu *et al.* 103002, 31 July 1999). **Xizang (Tibet).** Baxoi: Bamda–Yela Shan, 4550 m (Akiyama *et al.* 104663, 22 July 2000). Markam: Markam–Hongla Shan, 4180 m (Akiyama *et al.* 104606, 12 July 2000).

On grazed grassland.

38. **Prunus buergeriana** Miq. in Ann. Mus. Bot. Lugd.-Bat. **2**: 92 (1865).

Padus buergeriana (Miq.) T. T. Yü & T. C. Ku in Fl. Reipubl. Popul. Sin. **38**: 91 (1986).

Xizang (Tibet). Nyalam: Zhangmu, 2400–2600 m (Wu *et al.* 106778, 17 Aug. 2001).

39. **Prunus pseudocerasus** Lindl. in Trans. Hort. Soc. London **6**: 90 (1826).

Cerasus pseudocerasus (Lindl.) G. Don in Loudon, Hort. Brit.: 200 (1830).

Xizang (Tibet). Gongbo'gyamda: Basum–Basum Lake, 3550 m (Akiyama *et al.* 104739, 15 Aug. 2000).

Roadside beside a lake.

40. **Rosa omeiensis** Rolfe in Bot. Mag. **138**: t. 8471 (1912).

Xizang (Tibet). Baxoi: around Rawu (Wu *et al.* 105611, 28 July 2000); (Boufford *et al.* 29772, 28 July 2000). Bomi: Bomi–Sumzom (Wu *et al.* 105717, 2 Aug. 2000); (Boufford *et al.* 29911, 2 Aug. 2000).

41. **Rosa sericea** Lindl., *Ros.* Monogr.: 105, Pl. 12 (1820).

Yunnan. Dali: Diancang Shan, 3500 m (Akiyama *et al.* 655, 5 July 2000). **Xizang (Tibet).** Nyalam: Nyalam–Zhangmu, 3710 m (Akiyama *et al.* 106307, 21 Aug. 2001). Ny-yingchi: Bayizhen–Sezhaila Shan (Boufford *et al.* 30171, 18 Aug. 2000). Qamdo–Zhag'yab: Qamdo–Nianla Shan (Boufford *et al.* 29581, 20 July 2000).

On moist slopes beside *Abies* forests.

42. **Rosa soulieana** Crép. in Bull. Soc. Roy. Bot. Belgique **35**: 21 (1896).

Xizang (Tibet). Qamdo–Zhag'yab: Qamdo–

Nianla Shan, 3280 m (Akiyama *et al.* 104655, 20 July 2000).

On dry slopes.

43. **Rosa sweginzowii** Koehne in Fedde, Repert. Spec. Nov. Reghi Veg. **8**: 22 (1910).

Xizang (Tibet). Bomi–Baxoi: Bomi–Rawu, 3400 m (Akiyama *et al.* 104728, 3 Aug. 2000). Gongbo'gyamda: Basum–Basum Lake (Wu *et al.* 105786, 15 Aug. 2000); (Boufford *et al.* 30110, 15 Aug. 2000).

At edge of *Betula platyphylla* shrubby forests.

44. **Rosa tibetica** T. T. Yü & T. C. Ku in Acta Phytotax. Sin. **18**: 500 (1980).

Xizang (Tibet). Baxoi: around Rawu (Wu *et al.* 105613, 28 July 2000); (Boufford *et al.* 29757, 28 July 2000).

45. **Rosa aff. tibetica** T. T. Yü & T. C. Ku

Xizang (Tibet). Markam: Markam–Hongla Shan, 4100 m (Akiyama *et al.* 104603, 12 July 2000).

On moist slopes beside *Abies-Picea* mixed forests.

[Note] This is similar to *Rosa tibetica* in having free styles, persistent calyx lobes, and doubly serrated leaflets, but differs in having more leaflets (7–11 while 5–7 in *R. tibetica*), and pink petals (white in *R. tibetica*).

46. **Rubus mesogaeus** Focke in Bot. Jahrb. Syst. **29**: 399 (1900).

Yunnan. Dali: Diancang Shan, 3150 m (Akiyama *et al.* 647, 5 July 2000).

On sunny roadside.

47. **Rubus multisetosus** T. T. Yü & L. T. Lu, in Fl. Reipubl. Popul. Sin. **38**: 201 (1985).

Yunnan. Dali: Diancang Shan, 3100 m (Akiyama *et al.* 644, 5 July 2000).

On forestry roadside.

48. **Rubus niveus** Thunb., *Rubo*: 9, f. 3 (1813).

Xizang (Tibet). Bomi: between Bomi and Tangmai, 2750 m (Akiyama *et al.* 104719, 1 Aug. 2000).

Roadside at edge of *Pinus yunnanensis* forests.

49. **Rubus paniculatus** Sm. in Rees, Cycl. **30**: *Rubus* no. 41 (1819).

Xizang (Tibet). Nyalam: Zhangmu, 2450 m (Akiyama *et al.* 106262, 17 Aug. 2001); 2400–

2600 m (Wu *et al.* 106772, 17 Aug. 2001).

At edge of forests.

50. **Sanguisorba diandra** (Hook. f.) Nordborg in Opera Bot. (Lund) **11**: 60 (1966).

Xizang (Tibet). Nyalam: Nyalam–Zhangmu, 3710 m (Akiyama *et al.* 106303, 21 Aug. 2001); 4000 m (Wu *et al.* 106930, 21 Aug. 2001).

At edge of grazed grassland.

51. **Sanguisorba filiformis** (Hook. f.) Hand.-Mazz., Symb. Sin. **7**: 524 (1933).

Yunnan. Zhongdian: Tianchi, 3790 m (Akiyama *et al.* 910, 25 July 2001); 3900 m (Akiyama *et al.* 662, 8 July 2000). **Xizang (Tibet)**. Markam: Markam—a village ca. 10 km NW of Markam (Boufford *et al.* 29428, 13 July 2000); Markam–Lawu Shan, 4400 m (Akiyama *et al.* 104621, 14 July 2000).

On wet grassland beside ponds.

52. **Sibbaldia cuneata** Hornem. ex Kuntze in Linnaea **20**: 59 (1847).

Xizang (Tibet). Baxoi: Bamda–Yela Shan, 4550 m (Akiyama *et al.* 104666, 22 July 2000). Zogang: Zogang–Dongdala Shan (Boufford *et al.* 29489, 17 July 2000).

On moist places in grazed grassland.

53. **Sibbaldia macropetala** Murav. in Trudy Bot. Inst. Akad. Nauk SSSR, Ser. 1, Fl. Syst. Vyss Rast. **2**: 235, f. 6 (1936).

Sibbaldia purpurea Royle var. *macropetala* (Murav.) T. T. Yü & C. L. Li in Fl. Reipubl. Popul. Sin. **37**: 340 (1985).

Yunnan. Dêqên: Mt. Baima Xueshan, 4250 m (Akiyama *et al.* 929, 27 July 2001). Zhongdian: Hong Shan, 4300 m (Wu *et al.* 103866, 2 Aug. 1999).

On sandy slopes beside rocks.

54. **Sibbaldia** aff. **micropetala** (D. Don) Hand.-Mazz.

Rhizomes stout; radical leaves imparipinnate; leaflets dark green above, silvery white hairy beneath, auricles of stipules divided into two lobes; epicalyx and calyx light green on both sides; petals lanceolate, orange to pale orange; anthers orange yellow before dehiscence, pale brown at anthesis; filaments white lower, pale brown upper; ovaries glabrous, pale green; style pale

green; stigma slightly inflated, pale brown.

Xizang (Tibet). Zogang: Zogang–Dongdala Shan, 4280 m (Akiyama *et al.* 104644, 18 July 2000).

On grazed grassland.

[Note] This is similar to *Sibbaldia micropetala* in having pinnate leaves, leaflets with sericeous beneath, and small flowers, but differs in having orange ovate petals (yellow narrowly elliptic petals in *S. micropetala*), ovaries with glandular hairs (glabrous in *S. micropetala*), and relatively longer styles than that of *S. micropetala*.

55. **Sibbaldia pentaphylla** J. Krause in Repert. Spec. Nov. Regni Veg. Beih. **7**: 410 (1922).

Xizang (Tibet). Zogang: Zogang–Dongdala Shan, 5100 m (Akiyama *et al.* 104637 & 104638, 17 July 2000); (Boufford *et al.* 29488, 17 July 2000).

On rocky slopes in grazed grassland.

56. **Sibbaldia tetrandra** Bunge, Enum. Pl. Altaica: 17 (1835).

Xizang (Tibet). Maizhokunggar: Mt. Milha Shan, 4940 m (Akiyama *et al.* 106208, 6 Aug. 2001).

Among rocks on rocky slopes.

57. **Sibiraea angustata** (Rehd.) Hand.-Mazz., Symb. Sin. **7**: 454 (1933).

Xizang (Tibet). Baxoi: Bamda–Yela Shan, 4260 m (Akiyama *et al.* 104673, 23 July 2000); (Boufford *et al.* 29651, 23 July 2000); (Boufford *et al.* 29595, 22 July 2000); (Wu *et al.* 105531, 22 July 2000).

On grazed grassland.

58. **Sorbaria arborea** Schneid., Ill. Handb. Laubh. **1**: 490 (1905).

Xizang (Tibet). Bomi: between Bomi and Tangmai, 2750 m (Akiyama *et al.* 104718, 1 Aug. 2000). Bomi–Baxoi: Bomi–Rawu (Boufford *et al.* 29929, 3 Aug. 2000). Gongbo'gyamda: Gongbo'gyamda–Basum (Boufford *et al.* 30054, 14 Aug. 2000). Nyingchi: Bayizhen–Sezhaila Shan (Wu *et al.* 108032, 18 Aug. 2000).

Roadsides at edge of *Pinus yunnanensis* forests.

[Note] Indumentum of leaves is variable and it is difficult to distinguish any infraspecific taxon.

59. **Sorbus prattii** Koehne in Sarg., Pl. Wils. **1**: 468 (1913).
Yunnan. Dêqên: Mingyong Glacier, 3000 m (Akiyama *et al.* 931, 28 July 2001). **Xizang (Tibet).** Gongbo'gyamda: Basum–Basum Lake (Boufford *et al.* 30085, 15 Aug. 2000); (Wu *et al.* 105785, 15 Aug. 2000).
 In conifer forests.
60. **Sorbus rehderiana** Koehne in Sarg., Pl. Wils. **1**: 464 (1913).
 var. **rehderiana**
Xizang (Tibet). Baxoi: around Rawu, 3900 m (Akiyama *et al.* 104693, 28 July 2000). Gongbo'gyamda: Basum–Basum Lake (Boufford *et al.* 30090, 15 Aug. 2000).
 On grassland slopes.
 var. **cupreonitens** Hand.-Mazz. in Anzeig. Akad. Wiss. Wien. Math.-Naturw. Kl. **62**: 223 (1925).
Xizang (Tibet). Baxoi: around Rawu (Wu *et al.* 105932, 29 July 2000); Rawu–Anjiu La, 4540 m (Akiyama *et al.* 104687, 27 July 2000); (Boufford *et al.* 29734, 27 July 2000). Markam: Markam–Hongla Shan (Wu *et al.* 105401, 12 July 2000).
 On shrubby slopes.
61. **Spenceria ramalana** Trimen in J. Bot. (Hooker) **17**: 97, t. 201 (1879).
 var. **ramalana**
Yunnan. Zhongdian: Tianchi (near Zhongdian), 3350 m (Akiyama *et al.* 661, 8 July 2000). **Xizang (Tibet).** Markam: Markam—a village ca. 10 km NW of Markam (Boufford *et al.* 29412, 13 July 2000); Markam: Markam–Hongla Shan, 3850 m (Akiyama *et al.* 104601, 12 July 2000). Zogang: Zogang–Dongdala Shan (Boufford *et al.* 29518, 18 July 2000).
 On sunny grassland.
 var. **parviflora** (Stapf) Kitam. in Acta Phytotax. Geobot. **15**: 172 (1954).
Xizang (Tibet). Gongbo'gyamda: Gongbo'gyamda–Basum, 3420 m (Akiyama *et al.* 104736, 14 Aug. 2000). Maizhokunggar: Mt. Milha Shan, 4120 m (Akiyama *et al.* 106216, 7 Aug. 2001).
 On grazed grassland.
62. **Spiraea alpina** Pall., Fl. Ross. **1**: 35, Pl. 20 (1784).
Xizang (Tibet). Baxoi: around Rawu (Wu *et al.* 105656, 29 July 2000); Bamda–Yela Shan (Boufford *et al.* 29602, 22 July 2000). Zogang: Zogang–Dongdala Shan, 4400 m (Akiyama *et al.* 104643, 18 July 2000).
 On grazed grassland.
63. **Spiraea arcuata** Hook. f., Fl. Brit. India **2**: 325 (1878).
Xizang (Tibet). Nyalam: Nyalam–Zhangmu, 4020 m (Akiyama *et al.* 106314, 22 Aug. 2001).
 At edge of grazed grassland.
64. **Spiraea bella** Sims in Bot. Mag. **50**: t. 2426 (1823).
Yunnan. Zhongdian: Tianchi (near Zhongdian), 3800 m (Akiyama *et al.* 660, 8 July 2000). **Xizang (Tibet).** Nyalam: Nyalam–Zhangmu, 3710 m (Akiyama *et al.* 106312, 21 Aug. 2001).
 On moist slopes at edge of *Picea* forests.
65. **Spiraea canescens** D. Don, Prodr. Fl. Nepal.: 227 (1825).
Yunnan. Zhongdian: Shudu Hu (a lake near Zhongdian), 3800 m (Akiyama *et al.* 667, 9 July 2000). **Xizang (Tibet).** Maizhokunggar: Mt. Milha Shan, 4120 m (Akiyama *et al.* 106218, 7 Aug. 2001).
 On grazed grassland or roadsides.
66. **Spiraea japonica** L. f., Suppl. Pl.: 262 (1781).
Yunnan. Dali: Diancang Shan, 2720 m (Akiyama *et al.* 645, 5 July 2000).
 On forestry roadside.
67. **Spiraea lobulata** T. T. Yü & L. T. Lu in Acta Phytotax. Sin. **18**: 490 (1980).
Xizang (Tibet). Bomi: between Bomi and Tangmai, 2700 m (Akiyama *et al.* 104702, 31 July 2000); (Wu *et al.* 105973, 31 July 2000); (Boufford *et al.* 29894, 1 Aug. 2000).
 Roadside at edge of *Pinus* forests.
68. **Spiraea myrtilloides** Rehd. in Sarg., Pl. Wils. **1**: 440 (1913).
Xizang (Tibet). Qamdo–Zhag'yab: Qamdo–Nianla Shan (Boufford *et al.* 29553, 20 July 2000).
69. **Spiraea ovalis** Rehd. in Sarg., Pl. Wils. **1**: 446 (1913).

Xizang (Tibet). Markam: Markam–Hongla Shan, 4100 m (Akiyama *et al.* 104604, 12 July 2000).

On moist slopes beside *Abies-Picea* mixed forests.

70. **Spiraea schneideriana** Rehd. in Sarg., Pl. Wils. **1**: 449 (1913).

Yunnan. Dali: Diancang Shan, 3400 m (Akiyama *et al.* 648, 5 July 2000).

On rocky slopes beside *Abies* forests.