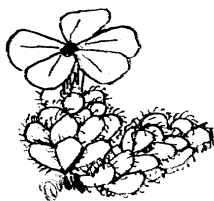


# *Wild Seeds*



*Gentiana urnula*

Vojtěch Holubec, Czech Republic  
2010/2011



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October, 2010

Dear rock-garden friends,

Welcome to the 17<sup>th</sup> seed list 2010. The seeds were collected mainly in Tibet, Sechuan, Yunnan, Xinjiang, Qinghai, Patagonia, Tien Shan, Pamir, Kamchatka, Caucasus, Alps and others. The most recent collections are from China, Caucasus and Patagonia. There is a lot of items that were regenerated in the garden. They are as valuable as the natural collections and can be collected exactly when become ripe. These species proved to be growable in rock gardens. Those items are clearly marked with ex. Some items come from other collectors: Pavel Křivka (PK), Jiří Papoušek (EH), Natalia Nepriakhina (NN).

The plants were determined according to Floras, in case of the recent collections Flora of China, Flora of Kazakhstan and Key to the vascular plants of Kamchatka. Some plants were not seen in flowers and therefore it is not possible to guarantee the determination. From previous expeditions there are still available many good items. All seeds are marked with a collecting year. Older ones were stored in the freezer (dried and under -18°C) and they keep a good germination ability (some of them germinate even better the second year). Several abbreviations were used in descriptions: pl-plant, lv, lvs-leaves, fl, fls-flowers, inflor-inflorescence.

Please, order by both numbers and names to avoid mistakes. Seeds from another locality will be sent when the ordered item is gone. Please, list more substitutes, some items (marked with \*) are in a very limited supply (less than 10 packets). It is possible to verify availability by e-mail. Minimum order is 25 EUR. I am sorry but there can be no refunds.

Price categories: A €2.00 B €2.50 C €3.00 D €3.50 E €4.00 F €4.50 G €5.00

Orders over € 100 take a 5 % discount. Postage, handling is € 4.00. All orders receive bonus seed.

Please send cheques preferably in EUR or equivalent amount in USD or other European convertible currency. Personal cheques are welcome, no postal cheques. Cash is welcome but risky. (Please, no Scottish bills). IBAN payment is possible, but only for large orders or add 12 € for commission.

### **Several notes on seed sowing**

Use clay or plastic pots with a good drainage hole, put a good drainage on the bottom followed by a layer of light sandy-peaty soil, smooth and press surface, sow seeds thinly, cover with 1-3 mm fine sandy soil, dress surface with 5 mm coarse sand or chippings of 1-2 mm grains, soak the pots and leave them outside, glass protection is recommended against heavy rains but not against snow.

Some seeds need to be sown immediately after maturity, most seeds require vernalization over winter and germinate early in spring. Add some snow on top of them (if you have some). For experts: dormant seeds can be treated with gibberelins: make 0.03 % solution of GA3 (in a bit - 3 ml of alcohol and add water), soak the seeds in little Petri dishes for 6 h and sow them. It is good for late sown seeds to replace vernalization and for some old ones. However, overwintering/vernalization is sufficient or even better. Keep the seed pots at least for two years, some germinate slowly, the second or third spring. For more info see also N.Deno instructions.

Drawings: by my daughter Klára.

### **The Caucasus and its Flowers** by Vojtěch Holubec and Pavel Křivka

The book was printed in December 2006. General chapters: history of botanical research, orography, geology, climate, flora and vegetation, touristic notes. The special part describes 509 species of the Caucasian origin. Format A4, hardcover, 910 high quality pictures, distribution maps, drawings. Price for seed customers 45 € plus 12 € postage, in total 57 €. Bulk order can get additional discount. It is a good Christmas gift. If you are interested, please order by e-mail.

## Ordering form

List more substitutes after your choice

[illegible]

Ordered by:

- 1 ***Acaena antarctica*** **Rosaceae**  
Chile: Torres del Paine, 1090 m, mountain grassland, dense cushions, hairy lvs, 5 cm long stems, 5-8 mm long leaflets, 2010, C
- 2 ***Acaena cf. magellanica*** **Rosaceae**  
Argentina: Menelik, Santa Cruz, 985 m, along stream, prostrate pl, 12-15 cm high, green ovate leaflets, purple fruits, 2010, B
- 3 ***Acaena cf. splendens*** **Rosaceae**  
Argentina: Bajo Caracoles, Santa Cruz, 635 m, antarctic steppe, low prostrate mats, 10 cm high, 3-5 grey tomentose leaflets, 3 denticles, 2010
- 4 ***Acaena macrocephala*** **Rosaceae**  
Argentina: Ea Angostura, Santa Cruz, 550 m, mountain steppe, compact cushions, hairy short lvs, large spiny fruits, 2010, C
- 5 ***Acaena magellanica*** **Rosaceae**  
Argentina: Cabo Virgenes, Santa Cruz, 100 m, antarctic steppe, prostrate pl, 12 cm high, grey tomentose lvs, large purple fruits, 2010, B
- 6 ***Acaena poeppingiana*** **Rosaceae**  
Argentina: El Calafate, Santa Cruz, 470 m, mountain steppe, prostrate pl, 10 cm high, 12 cm long stems, prostrate grey lvs, 2010, B
- 7 ***Acaena sericea*** **Rosaceae**  
Argentina: Cabo Virgenes, Santa Cruz, 150 m, antarctic steppe, prostrate mats, grey-green lvs, small fruit heads, 6 mm wide, 2010, C
- 8 ***Achillea aggeratifolia*** **Asteraceae**  
ex Greece: Kedax, 1800 m, limestone scree, prostrate white hairy pl, 10-15 cm high, linear finely serrate lvs, solitary white fls, 2009, A
- 9 ***Acis autumnalis v. oporanthum*** **Amaryllidaceae**  
ex cult: , m, , Leucojum, autumn flowering bulb pl, spathe 8-15 cm high, linear lvs, 2 mm wide, white drooping fls tinged with red, 2009, B
- 10 ***Aconitum cf. volubile*** **Ranunculaceae**  
China: Emei Shan, Tibet, 2400 m, creeping on shrubs, larger vine, 2 m long stems, tripartite lvs, 12 cm long, blue fls, 3 cm long, 2010, C
- 11 ***Aconitum tanguticum*** **Ranunculaceae**  
China: Zheduo Shan, Sechuan, 4300 m, fine silicate scree, small caespitose pl, 2009, D
- 12 ***Aethionema schistosum*** **Brassicaceae**  
ex Turkey: Yalniz Dag, m, , small prostrate pl, grey linear lvs, rose fls, 2010, C
- 13 ***Ajania tenuifolia*** **Asteraceae**  
China: Zheduo Shan, Sechuan, 4300 m, alpine grassland, aff. Tanacetum, 2009, C
- 14 ***Ajania tibetica*** **Asteraceae**  
China: Mi La, Tibet, 4900 m, fine slate scree, lax cushions like Achillea, 10-12 cm high, grey tomentose incised lvs, yellow fl heads in umbels, 2010, C
- 15 ***Ajuga lupulina*** **Lamiaceae**  
China: N of Rawu, Tibet, 4000 m, fine slate scree, caespitose pl, 8-15 cm high, white or reddish bracts, white fls, 2010, D
- 16 ***Alectris gracilis*** **Liliaceae**  
China: Galung La, Tibet, 4000 m, Cassiope shrubland, Tofieldia-like caespitose pl, 10-15 cm high, green orange opposite lvs, white fls in 10 cm spikes, 2010, C  
China: Mugecuo Lake, Sechuan, 3800 m, low alpine grassland, , 2009, C
- 18 ***Alectris pauciflora\**** **Liliaceae**  
China: Serkym La, Tibet, 4000 m, alpine grassland, dwarf caespitose pl 10 cm high, green orange lv rosette, fls in dense spikes 1-2 cm long, 2
- 19 ***Allium altaicum*** **Alliaceae**  
ex Russia: Altai, 2100 m, , direct ancestor of cultivated onion, 3 cm large very hot edible bulbs, tube lvs, white fls in rounded umbels, 2010, A
- 20 ***Allium giganteum*** **Alliaceae**  
ex Iran: Kopet Dag, m, , bulb pl, 80 cm high, small rose fls in dense umbels/balls, 10 cm wide, 2010, B
- 21 ***Allium insubricum*** **Alliaceae**  
ex Italy: Orobic Alps, m, , decorative bulb pl 15-20 cm, grey lvs, large purple nodding fls, 15 mm long stems, 2010, D
- 22 ***Allium sikkimense*** **Alliaceae**  
China: Min Shan, Huang, Sechuan, 4300 m, limestone scree, bulb pl, 10 - 15 cm high, 1 mm wide lvs, sky blue fls, 2009, D
- 23 ***Anaphalis nepalensis*** **Asteraceae**  
China: Serkym La, Tibet, 4400 m, granit scree, prostrate pl, grey tomentose triangular lvs, 3 - 5 capitules on 12 cm long stems, 2010, C

- China: Yulong Shan, Yunnan, 4000 m, limestone scree, , 2008, C
- 25 *Anaphalis triplinervis* Asteraceae**  
China: Hezuoshen, Gansu, 2900 m, mountain grassland, caespitose pl, 10-15 cm high, white tomentose lanceolate lvs, rich cymes of papyraceous white capitules, 2009, C
- 26 *Anarthrophyllum desideratum* Fabaceae**  
Chile: Laguna Amarga, Torres del Paine, 410 m, mountain steppe, large spiny cushions, 30-120 cm wide, grey-green lvs, prominent sessile scarlet fls, 2010, D
- 27 *Androsace adenocephala* Primulaceae**  
China: Serkym La, Tibet, 4500 m, alpine grassland, A.wardii group, more compact, prostrate mats, 10-20- cm wide, pale green lvs, 5-7 white pink fls, 2010, E
- 28 *Androsace bisulca* v. *aurata* Primulaceae**  
China: Litang, Sechuan, 4500 m, Kobresia grassland, compact small cushions, 2-4 cm wide, small and hairy rosettes like A. villosa, unique lemon-yellow fls on 2 cm stems, PK, 2010, F
- 29 *Androsace bisulca* v. *brahmaputrae* Primulaceae**  
China: Shungdor, Tibet, 3600 m, mountain grassland, unique pl, rounded cushions, 3-8 cm wide, 1-2 cm rosettes, large rose-red fls on 2-4 cm long stems, 2010, F  
China: Gyamda, Tibet, 3700 m, mountain grassland, , 2010, F  
China: Zhoka, Tibet, 3500 m, rock terraces, , 2010, F
- 32 *Androsace* cf. *delavayi*\* Primulaceae**  
China: Ngajuk La, Tibet, 4800 m, alpine grassland, , 2010, F
- 33 *Androsace* cf. *mairei*\* Primulaceae**  
China: Lhasa, Tibet, 3600 m, alpine grassland, , 2010, D
- 34 *Androsace* cf. *minor* Primulaceae**  
China: Zheduo Shan, Sechuan, 4400 m, fine silicate scree, small prostrate pl, 2-4 cm high, dimorphic small rosettes 5-8 mm wide, 3-5 white pinkish fls, 2009, D
- 35 *Androsace ciliata* Primulaceae**  
Spain: C. Pyrenees, 1600 m, limestone rocks, small flat cushions, pink fls, 2008, D
- 36 *Androsace graminifolia* Primulaceae**  
China: Jiaerduo, Tibet, 4000 m, alpine grassland, dwarf cushions, 2-4 cm high, linear lvs 10-15 mm long in compact rosettes, pink fls in umbells, 2010, E  
China: N of Mi La, Tibet, 3500 m, Kobresia grassland, , 2010, E  
China: Lhasa, Tibet, 3600 m, alpine grassland, , 2010, E
- 39 *Androsace helvetica* Primulaceae**  
Austria: Dachstein, 2600 m, limestone crevices, compact cushions, 3 - 10 cm wide, white fls, 2010, E  
France: Cottian Alps, 2500 m, limestone crevices, JP, 2009, E
- 41 *Androsace neuwirthii* Primulaceae**  
China: Bayan Har Shan, Qinghai, 4900 m, Carex wet scree, rounded cushions like Draba polytricha 2-7 cm wide, white hairy lv rosettes 8 mm, 3-6 white fls with yellow or red eye, 2007, E
- 42 *Androsace pubescens* Primulaceae**  
France: Cottian Alps, JP, 2600 m, silicate rocks, small cushions, 2 - 5 cm wide, large white fls, 2009, E
- 43 *Androsace pubescens* x *helvetica* Primulaceae**  
France: Cottian Alps, JP, 2600 m, , natural hybrid, 2009, E
- 44 *Androsace spinulifera* Primulaceae**  
China: Mugecuo Lake, Sechuan, 3800 m, alpine grassland, compact winter rosettes, larger lax leafy summer rosettes, stems 10-20 cm, rich umbells of prominent rose fls, 2009, C  
China: Litang, Sechuan, 4300 m, , , 2007, C
- 46 *Androsace tapete* Primulaceae**  
China: Zheduo Shan, Sechuan, 4400 m, silicate rock crevices, hard cushions, 5-30 cm wide. triangular hairy lvs in dense rosettes, single sessle white fls with red eye, 2009, E
- 47 *Androsace yargongensis* Primulaceae**  
China: Mi La, Tibet, 5000 m, fine slate scree, flat cushions, 10-30 cm wide, sparsely hairy rosettes, 3 - 5 white-rose fls in umbells on 1-2 cm stems, 2010, D  
China: Mi La, Tibet, 4800 m, fine slate scree, , 2010, D  
China: Beima Shan, Yunnan, 4800 m, gneiss scree, , 2008, D
- 50 *Androsace zayulensis* Primulaceae**

- China: Ngajuk La, Tibet, 4600 m, rock crevices, *A. wardii* group, prostrate pl, 3-5 cm high, open rosettes with linear lanceolate lvs, 3-5 pink-rose fls, 2010, E
- 51 *Anemone caucasica* Ranunculaceae**  
ex Turkey: Zigana, m, , tuberose pl, 10 cm high, white fls, bluish outside, 2010, D
- 52 *Anemone cf. demissa\** Ranunculaceae**  
China: Ngajuk La, Tibet, 4500 m, alpine grassland, caespitose pl, 40 cm high, ground prostrate lv rosettes, white fls in umbells, 2010, D
- 53 *Anemone petiolulosa f. almaatensis* Ranunculaceae**  
Kazakhstan: Almaty, 900 m, PK, 2010, E
- 54 *Anemone petiolulosa f. petiolulosa* Ranunculaceae**  
Kazakhstan: Dzhabagly, 1200 m, , small tuberose pl, 5-12 cm high, finely incised lvs, yellow solitary fls, 2 -3 cm wide, PK, 2010, E
- 55 *Anemone trullifolia* Ranunculaceae**  
ex China: Litang, 4300 m, kobresia grassland, caespitose pl 5-15 cm, ovate hairy lvs with 3 dents, yellow fls, 2010, D
- 56 *Arabis androsacea* Brassicaceae**  
ex Turkey: Ala Dag, 2200 m, limestone scree, small cushions, white hairy rosettes, white fls on 4 cm long stems, 2010, B
- 57 *Arenaria cf. baxoiensis* Caryophyllaceae**  
China: Dechen, Tibet, 4600 m, silicate scree, rounded hard cushions, 10-30cm wide, linear lvs, 5 mm long, white sessile fls, 2010, D
- 58 *Arenaria cf. serpens* Caryophyllaceae**  
Chile: Torres del Paine, 870 m, mountain steppe, compact cushions, 5-10 cm wide, linear-triangular lvs, 2 mm long, 2010, C
- 59 *Arenaria grandiflora* Caryophyllaceae**  
Czech R.: South Moravia, 400 m, limestone crevices, lax cushions, white fls on 5-10 cm long stems, 2010, C
- 60 *Arenaria kansuensis* Caryophyllaceae**  
China: Mi La, Tibet, 4800 m, fine silicate scree, hard cushions, 10-20 cm wide, white-greenish sessile fls, 2010, D
- 61 *Arenaria oreophila* Caryophyllaceae**  
China: Zheduo Shan, Sechuan, 4100 m, fine silicate scree, ball - like cushions, 10 - 30 cm in diameter, triangular spinulose lvs 1 cm long, sessile white fls 1 cm wide, 2009, D
- 62 *Arenaria pestalozzae* Brassicaceae**  
ex Turkey: Dedegol Dag, 2100 m, limestone scree, xeric pl, large rounded cushions, spiny triangular lvs, white greenish fls on 10 cm long stems, 2008, B
- 63 *Arenaria polytrichoides* Caryophyllaceae**  
China: Serkym La, Tibet, 4500 m, alpine grassland, hard cushions, 20-30 cm wide, white sessile fls, 2010, D
- 64 *Arenaria pseudacantholimon* Caryophyllaceae**  
ex Turkey: Palandoken, 2300 m, limestone scree, compact cushions like Acantholimon, 5-10 cm wide, spiny lvs, 8 mm long, white fls on thin 10-15 cm stems, 2010, B
- 65 *Arisaema cf. auriculatum* Araceae**  
China: Zhongdian, Yunnan, 3500 m, among shrubs, limestone, medium tuberose pl, 30-40 cm high, pedate lvs, 7 leaflet, dark brown-purple spathe, 20
- 66 *Arisaema consanguineum* Araceae**  
China: Lijiang, Yunnan, 2800 m, among shrubs, large tuberous woodland pl, 80 cm high, 20 cm wide lv of about 15 narrow leaflets, spathe creamy to brown, 2008, B
- 67 *Arisaema elephas* Araceae**  
China: Yulong Shan, Yunnan, 4000 m, among shrubs, limestone, large tuberose pl, 40-50 cm high, large trifoliate lvs, brown fls with light stripes, long elephant-like spathe, 2008, C  
China: Zhongdian, Yunnan, 3500 m, , , 2008, C
- 69 *Arisaema tortuosum* Araceae**  
China: Zhangduo, Tibet, 3600 m, northern rocky slope, tuberose pl, 50-70 cm high, pedate lvs, brown green fls, ZO, 2010, C
- 70 *Arum conophaloides* Araceae**  
ex Turkey: , m, , tuberose pl, 30-60 cm high, narrow pale green spathe, dark marginated, ZO, 2010, B
- 71 *Asphodeline taurica* Liliaceae**  
ex Turkey: Bolkar Dag, 2100 m, limestone scree, xeric monocarpic pl, 30-40 cm high, large rosettes of grey linear lvs, long spike of hundreds white fls, 2010, B

- 72 *Aster cf. asterioides* Asteraceae**  
China: N of Rawu, Tibet, 4600 m, alpine grassland, dwarf caespitose pl, 3-8 cm high, lanceolate lvs in rosettes, 4-6 cm wide fl heads, lilac ray fls, 2010, D
- 73 *Aster souilei* Asteraceae**  
ex China: Beimashan, 4300 m, alpine grassland, caespitose pl, 5-10 cm high, spathulate lvs, 5-6 cm wide capituli, lilac ray fls, 2010, D
- 74 *Astragalus patagonicus* Fabaceae**  
Argentina: Paso Cordoba, Neuquen, 1250 m, silicate scree, caespitose pl, 10 cm high, linear leaflet, blue fls, marmorate inflated pods, 2 cm long, 2010, C  
Argentina: Col. Belgrano, nr. Perito Moreno, Santa Cruz, 1000 m, alpine grassland, , 2010, C
- 76 *Astragalus sp.* Fabaceae**  
China: Lhasa, Tibet, 3500 m, granit sand, prostrate pl, 5 cm high, 8-pinnate lvs, grey hairy, 2-5 lilac fls in congested heads, 2010, D
- 77 *Astragalus yunnanensis* Fabaceae**  
China: Zheduo Shan, Sechuan, 4300 m, silicate crevices, prostrate caespitose pl, 5-10 cm high, 10-pinnate lvs, prostrate stems with terminal racemes, yellow fls white margin, 2009, D  
China: Beima Shan, Yunnan, 4700 m, limestone scree, , 2008, D
- 79 *Azorella cf. trifurcata* Apiaceae**  
Chile: Laguna Amarga, Torres del Paine, 415 m, slate scree, dense mats, 30-60 cm wide, trifurcate lvs, yellow fls in sessile umbells, 2010, C
- 80 *Azorella madreponica* Apiaceae**  
Argentina: Primeros Pinos, Neuquen, 1850 m, fine slate scree on the riidge, hard cushions, 40 cm wide, rosettes 1 cm wide, hairy lvs, greenish-yellow sessile fls, angular fr, 2010, D
- 81 *Azorella monantha* Apiaceae**  
Chile: Laguna Amarga, Torres del Paine, 410 m, mountain steppe, dense mats, 30-50 cm wide, entire lvs, 1 cm long, white hairy stems, yellow solitary sessile fls, 2010, C
- 82 *Baccharis magellanica* Asteraceae**  
Argentina: El Bolson, Rio Negro, 805 m, mountain steppe, prostrate subshrub, 1-2 m wide, 5 cm high, green ovate lvs, 1 cm long, white fls in capituli, 8 mm wide, 2010, C  
Argentina: Cabo Virgines, Santa Cruz, 150 m, mountain steppe, , 2010
- 84 *Baccharis patagonica* Asteraceae**  
Argentina: Alerces, Esquel, Chubut, 645 m, mountain steppe, small shrub, 1 m high, green ovate lvs, 2 cm long, white fls in capituli, 8 mm wide 2010 C
- 85 *Baimashania pulvinaris* Brassicaceae**  
China: Beima Shan, Yunnan, 4600 m, limestone crevices, dwarf pulvinate cushions, 3-10 cm wide, 8 mm long lanceolate lvs, pink Petrocalis-like fls, 1 cm long sessile siliques, 2008, F
- 86 *Berberis empetrifolia* Berberidaceae**  
Argentina: Lanin, Neuquen, 1030 m, sandy steppe, small shrub, up to 1 m, spiny branches, lvs 15 x 5 mm, large yellow fls, blue fruits, 2010, D
- 87 *Besseyia cordifolia* Saxifragaceae**  
ex cult.: , m, , woodland caespitose pl, 15 - 25 cm high, leathery cordate lvs, minor white fls, 2010, D
- 88 *Betonica grandiflora* Lamiaceae**  
ex Russia: W Caucasus, 1900 m, limestone scree, a prominent caespitose meadow Lamiaceae, 20 cm high, extremely large rose infl, 2010, A
- 89 *Brachyclados caespitosa* Asteraceae**  
Argentina: Bajo Caracoles, Santa Cruz, 635 m, sandy steppe, compact cushions, 10-40 cm wide, grey linear lvs, 1 cm long, sessile capituli, 2 cm wide, yellow ray and tubular fls, 2010, D
- 90 *Calandrinia affinis* Portulacaceae**  
Argentina: Chapelco, San Martin, Rio Negro, 1675 m, mountain steppe, small caespitose pl, 3 cm high, linear fleshy lvs, 5 cm long, large pink to whitish fls with dark center, 15 mm wide, 2010, D
- 91 *Calandrinia colchaguensis* Portulacaceae**  
Argentina: Primeros Pinos, Neuquen, 1500 m, silicate scree, small caespitose pl, 3 cm high, linear fleshy lvs, 5 cm long, large deep rose fls with dark center, 15 mm wide, 2010, D
- 92 *Calceolaria cf. prichardii* Scrophulariaceae**  
Argentina: Paso Cordoba, Neuquen, 1295 m, volcanic ash, caespitose pl, 10 cm high, narrow lanceolate lvs, 1-2 yellow fls, curved-up, 2010, D
- 93 *Calceolaria polyrhiza* Scrophulariaceae**

Chile: Torres del Paine, 405 m, mountain grassland, caespitose pl, 10-15 cm high, lanceolate lvs in rosettes, 2-5 large yellow fls, curved-up 2010 C  
 Argentina: Col. Belgrano, nr. Perito Moreno, Santa Cruz, 1120 m, mountain grassland, 2010, C

**95 *Calceolaria uniflora* Scrophulariaceae**

Chile: Torres del Paine, 405 m, mountain steppe, small caespitose pl, lanceolate lvs in rosettes, yellow/brown/white solitary fls, 3 cm long, 2010, F

**96 *Callianthemum farrerii*\* Ranunculaceae**

ex China: Gongalen, 4000 m, limestone scree, , 2010, E

**97 *Callianthemum kernerianum* \* Ranunculaceae**

ex Italy: Monte Baldo, 2000 m, limestone scree, , 2010, E

**98 *Callianthemum pimpinelloides* \* Ranunculaceae**

ex China: Maquin Gangri, Qinhai, 4000 m, slate scree, , 2010, E

**99 *Caltha sagitata* Ranunculaceae**

Argentina: Primeros Pinos, Neuquen, 1780 m, boggy bank of stream, caespitose pl, 3 cm high, flat leaf rosettes, 3 - 6 cm wide, flashy sagitate lvs, sessile yellowish-white fls, 2010, D

Argentina: Menelik, Santa Cruz, 1030 m, along stream, , 2010, D

**101 *Caltha scaposa* Ranunculaceae**

China: Mugecuo Lake, Sechuan, 3800 m, mountain bogs, small caespitose pl, 5-15 cm high, ovate lvs, 3 cm long, large solitary yellow fls, 2009,

**102 *Caltha sinogracilis* Ranunculaceae**

China: Galung La, Tibet, 4400 m, alpine grassland, unique caespitose pl, 5-15 cm high, rounded crenulate lvs, superb solitary magenta- rose fls, 2010, G

China: Galung La, Tibet, 4200 m, alpine grassland, , 2010, G

**104 *Campanula alpestris* Campanulaceae**

France: Cottian Alps,, 2700 m, screes, small caespitose pl, 5 - 12 cm high, sky blue bells, 4 cm long, JP, 2009, D

**105 *Campanula autraniana* Campanulaceae**

Russia: West Caucasus,, 1700 m, limestone rocks, caespitose pl, 10 cm high, thin nodding stems, medium blue bells, PK, 2009, D

**106 *Campanula betulaefolia* Campanulaceae**

ex Turkey: Kavussahap, m, limestone crevices, hanging prostrate pl, 6- 12 cm high, dark green birch like lvs, large nodding white fls, 2010, B

**107 *Campanula biebersteiniana*\* Campanulaceae**

Russia: West Caucasus, 3000 m, alpine meadow, caespitose pl, 5-10 cm high, linear tridentate lvs, 4 cm long wide blue bells, PK, 2010, D

**108 *Campanula fenestrellata* Campanulaceae**

Croatia: Velebit, 800 m, limestone crevices, caespitose pl, 5-10 cm high, glabrous green dentate lvs, 1-2 cm long, blue bells, 15-20 mm long, PK, 2010, C

**109 *Campanula raineri* Campanulaceae**

Italy: Pressolana, m, limestone rocks, caespitose pl, 3 - 10 cm high, small ovate lvs, open blue bells, 2 - 3 cm long, PK, 2009, D

**110 *Campanula* sp. Campanulaceae**

China: Ngajuk La, Tibet, 4600 m, alpine grassland, small caespitose pl, 8-12 cm high, ground lv rosettes, 4 cm wide, solitary blue fls on thin stems, 2010, D

**111 *Campanula trogerae* Campanulaceae**

ex Turkey: , m, limestone crevices, overhangs, hanging caespitose pl, 10-15 cm high, grey hairy ovate lanceolate lvs, large white open flat bells, 2010, E

**112 *Campanula zoysii* Campanulaceae**

Slovenia: Julian Alps, 1800 m, limestone crevices, dwarf prostrate mats, 2-5 cm high, closed solitary bells, 2 cm long, 2010, E

**113 *Carex* sp. Cyperaceae**

China: Mi La, Tibet, 5100 m, alpine grassland, caespitose pl, 10-15 cm high, lvs 5-8 cm long, dark brown congested terminal spikes, 2 cm long, 2010, C

**114 *Ceratostigma minus* Plumbaginaceae**

China: Lhasa, Tibet, 3600 m, fine granit scree, excellent xeric cushions, 5-10 cm high, 5-30 cm wide, entire lanceolate lvs, 2-3 cm long, sky blue fls, 1 cm wide, 2010, D

**115 *Cheiranthus roseus* Brassicaceae**

China: Bayan Har Shan, Qinghai, 5000 m, fine gneiss scree, decorative dwarf monocarpic pl, 2-3 cm high, compact rosettes, linear lvs, many rose sessile fls, 1 cm wide, 2007, D



- 116 *Chiliotrichum rosmarinifolium* Asteraceae**  
Chile: Laguna Amarga, Torres del Paine, 1000 m, scree on the ridge, rounded cushion, up to 40 cm wide, linear lvs, 15 mm long, tomentose below, white ray fls in small capituli, 2010, C
- 117 *Chorispora elegans* Brassicaceae**  
Uzbekistan: Areshan, Chatkal Ridge, Tien Shan, 2400 m, granite fine scree, dwarf caespitose pl, 2-4- cm high, pinnate lvs in prostrate rosettes, white to pink fls in short racemes, 2007, C
- 118 *Chuquiraga aurea* Asteraceae**  
Argentina: Tres Lagos, Santa Cruz, 715 m, mountain steppe, large dome spiny shrub, 40-200 cm wide, 50-150 cm high, large yellow sessile capituli, ray and tubular fls, 2010, D
- 119 *Cirsium cf. eriophoroides* Asteraceae**  
China: Galung La, Tibet, 4300 m, rough silicate scree, decorative caespitose pl, 20-50 cm high, thorny lvs, 12 cm long, rounded white tomentose fl heads, 8-10 cm wide, 2010, D
- 120 *Clematis akebioides* Ranunculaceae**  
China: Shungdor, Tibet, 3800 m, rough scree, vine, 1-2 m high, yellow fls; , 2010, D
- 121 *Clematis sp.* Ranunculaceae**  
China: Emei Shan, Tibet, 2500 m, creeping on shrubs, larger vine, 3m long, large trifoliate lvs, 2010, C
- 122 *Clematis tibetana v. tibetana* Ranunculaceae**  
China: Lhasa, Tibet, 3800 m, dry open slope, small vine, 50-150 cm high, yellow-orange tetramerous fls, thick leathery tepals, 2010, D
- 123 *Clematis tibetana v. vernayi* Ranunculaceae**  
China: Zhangduo, Tibet, 3500 m, slate scree, black purple fls, 2010, D
- 124 *Codonopsis canescens* Campanulaceae**  
China: Mugecuo Lake, Sechuan, 3800 m, subalpine grassland, tuberose pl, 20 - 40 cm high, erect leafless stems, solitary light blue fls 3 cm long, bad smell, 2009, B
- 125 *Codonopsis cf. alpina* Campanulaceae**  
China: Serkym La, Tibet, 4400 m, alpine grassland, caespitose pl, 20-30 cm high, pale blue fls, 2010, D  
China: N of Mi La, Tibet, 4300 m, mountain grassland, , 2010, D
- 127 *Codonopsis forrestii* Camanulaceae**  
China: Zhongdian, Yunan, 3600 m, mountain shrubland, tuberose pl, small vine, large blue fls, 2009, D
- 128 *Codonopsis vinciflora* Campanulaceae**  
China: Rutok, Tibet, 3900 m, rocky slope, tubeose vine, 50 cm high. Campanula-like lvs, flat blue fls, 3 cm wide, 2010, D  
China: Jiaerduo, Tibet, 4000 m, on small shrubs, , 2010, D
- 130 *Colobanthus quitensis* Caryophyllaceae**  
Chile: Laguna Amarga, Torres del Paine, 315 m, stony lake bank, dwarf caespitose pl, 4 cm high, leaf rosettes, 2 cm wide, linear lvs, white fls on 2 cm long stems, 2010, C
- 131 *Corallodiscus kingianus* Gesneriaceae**  
China: Lhasa, Tibet, 3800 m, rock crevices, granit, Ramonda-like rosettes, 5-10 cm wide, lanceolate lvs, hairy below, blue fls in umbells on 5-10 long stems, 2010, D
- 132 *Corallodiscus lanuginosus* Gesneriaceae**  
China: Lhasa, Tibet, 3500 m, rock crevices, granit, Ramonda-like rosettes, 5-10 cm wide, broadly spatulate lvs, darker blue fls in umbells on 5-10 cm long stems, 2010, D  
China: Lijiang, Yunnan, 2600 m, wet open soil bank, , 2008, D
- 134 *Cortiella caespitosa* Apiaceae**  
China: Mi La, Tibet, 5100 m, fine sandy scree, prostrate pl, 3-5 cm high, palmatisect lvs, sessile umbells, white-redish fls and fruits, 2010, D
- 135 *Corydalis cf. smithiana* Fumariaceae**  
China: Dechen, Tibet, 4200 m, rock crevices, small saxatile pl, 5-15 cm high, lilac-rose fls, 2010, D
- 136 *Corydalis conorhiza* Fumariaceae**  
Russia: West Caucasus, PK, 2000 m, alpine grassland, small tuberose pl, 5 - 12 cm high, purple fls, 2 cm long, 2009, D
- 137 *Corydalis pseudohamata\** Fumariaceae**  
China: Tuer Shan, Sechuan, 4000 m, wet grassland, water streams, caespitose pl, 15-30 cm high, grey pinnatisect lvs, yellow fls with blue spurs in 4 cm long racemes, PK, 2010, E
- 138 *Cremanthodium campanulatum* Asteraceae**

- China: Tianchi Lake, Yunnan, 3900 m, alpine grassland, small caespitose pl, 10-20 cm high, dark green/violet rounded lvs, solitary bell - like black-purple hairy fls 3 cm, PK, 2010, E  
China: Hong Shan, Yunnan, 4800 m, slate scree, , 2008, E
- 140 *Cremanthodium elisii* Asteraceae**  
China: Qinlian Shan, Qinghai, 3500 m, along stream, medium perennial pl, 20 cm high, triangular dentate thick lvs, 10 cm long, 2 - 3 large yellow fls, 3 cm wide, 2009, D
- 141 *Cremanthodium lineare* Asteraceae**  
China: Mugecuo Lake, Sechuan, 3800 m, wet alpine meadow, caespitose pl, 20 cm high, linear lanceolate lvs, yellow fls with undulated rays, 2009,
- 142 *Cremanthodium reniforme* Asteraceae**  
China: Yulong Shan, Yunnan, 4100 m, limestone scree, caespitose pl, 12 - 20 cm high, reniform dentate lvs 3 cm wide, yellow fls, 2008, C  
China: Hong Shan, Yunnan, 4500 m, alpine grassland, , 2008, C
- 144 *Cremanthodium rhodocephalum* Asteraceae**  
China: Galung La, Tibet, 4300 m, fine slate scree, caespitose pl, 10-15 cm high, rounded leatherly lvs, 2 cm wide, pink ray fls, 30 mm long, in long heads, 2010, E
- 145 *Cyananthus flavus* Campanulaceae**  
China: Zheduo Shan, Sechuan, 4200 m, alpine grassland, dwarf caespitose pl, 3 cm high, prostrate leafy stems with hairy lvs, inflated calyxes, yellow opened fls on 15 mm stems, 2009, D
- 146 *Cyananthus incanus* Campanulaceae**  
China: N of Mi La, Tibet, 4300 m, alpine grassland, prostrate pl, 2-4 cm high, small dentate hairy lvs, large blue fls, 2010, D  
China: Mi La, Tibet, 4800 m, Kobresia grassland, , 2010, D
- 148 *Cyananthus lobatus* Campanulaceae**  
China: Serkym La, Tibet, 4000 m, grassland along timberline, prostrate pl, 5-12- cm high, ascendent stems, small lobate lvs, large dark blue fls, 2-3 cm wide, 2010, D
- 149 *Cyananthus macrocalyx* Campanulaceae**  
China: Serkym La, Tibet, 4500 m, alpine grassland, prostrate pl, 2-4 cm high, lanceolate crenate lvs, large yellow fls, 2010, D
- 150 *Cynoglossum amabile* Boraginaceae**  
China: Maniganggo, Sechuan, 3600 m, sandy slope, caespitose pl up to 5 cm, lanceolate scabrous lvs 3-5 cm long, large sky-blue fls in sessile rich cymes, 2007, C
- 151 *Daphne kasanini* Thymeleaceae**  
ex Bulgaria: Pirin, m, , small shrub, like *D. oleoides*, 15-20 cm high, green spatulate lvs, creamy fls, orange fruits, 2010, D
- 152 *Daphne laureola* ssp. *philippi* Thymeleaceae**  
Spain: Pyrenees, 1800 m, , JP, 2010, B
- 153 *Daphne oleoides* Thymeleaceae**  
ex Bulgaria: Pirin Mts., m, , small shrub, 15-25 cm high, greish leathery lvs, white/creamy fls, 2010, C
- 154 *Daphne oleoides* Palermo Thymeleaceae**  
ex Italy: , m, , robust form of *D. oleoides*, , 2010, B
- 155 *Daphne petraea* Thymeleaceae**  
Italy: Tremalzo, 1600 m, limestone rocks, dwarf shrub, rose fls, JP 2009, D
- 156 *Degenia velebitica* Brassicaceae**  
ex cult.: , m, , prostrate pl, 3-5 cm high, white tomentose linear lvs, yellow fls, 2010, C
- 157 *Delphinium beesianum* Ranunculaceae**  
China: Min Shan, Huang, Sechuan, 4100 m, rough limestone scree, low caespitose pl, 8-20 cm high, hairy palmatilobe lvs, large bowle-like blue fls, 3 cm long, with long spur, 2009, D
- 158 *Delphinium chrysotrichum* v. Ranunculaceae**  
China: Mi La, Tibet, 5000 m, rough scree, small caespitose pl 5-12cm high, rounded lobate lvs, pale blue fls, 2010, E
- 159 *Delphinium pachycentrum* Ranunculaceae**  
China: Zheduo Shan, Sechuan, 4300 m, rough silicate scree, perennial pl, 20-30 cm high, palmatilobe lvs, dark blue fls in terminal racemes, 20
- 160 *Dianthus haematocalyx* var. *alpina* Caryophyllaceae**  
ex Greece: Mt. Olympus, 2000 m, limestone scree, compact good growing *Dianthus*, cushions 20 cm wide, very large rose fls on 12 cm stems, 20
- 161 *Dianthus haematocalyx* var. *pindicola* Caryophyllaceae**  
ex Greece: Vermion, m, limestone scree, very compact form of previous,

2009, B

- 162 *Dianthus pavonius*** **Caryophyllaceae**  
France: Cottian Alps, 2600 m, alpine grassland, small caespitose pl, 5 cm high, rose fls with dark spots, greenish outside, JP, 2009, C
- 163 *Dianthus sylvestris*** **Caryophyllaceae**  
Slovenia: Julian Alps, 2000 m, limestone crevices, small cushions, linear lvs, rose fls on 4-12 cm long stems, 2010, C
- 164 *Diapensia purpurea*** **Diapensiaceae**  
China: Hong Shan, Yunnan, 4500 m, alpine grassland, subshrub, prostrate mats, 10-40 cm wide, leatherly ovate reddish lvs 6 mm long, large rose solitary sessile fls, 2008, D  
China: Zheduo Shan, Sechuan, 4500 m, fine gneiss scree, , 2007, D
- 166 *Diplarche multiflora*** **Ericaceae**  
China: Galung La, Tibet, 4200 m, alpine grassland, prostrate Himalayan heather, 8-13 cm high, linear lvs, 1 cm long, rose fls in terminal spikes, 2010, D
- 167 *Discaria nana*** **Rhamnaceae**  
Argentina: Tres Lagos, Santa Cruz, 715 m, along stream, subshrub cushions, over 1 m, dark green linear lvs, small white fls, rounded fruits, submersed in cushions, 2010, D
- 168 *Draba bruniifolia*** **Brassicaceae**  
ex Turkey: Bolkar Dag, 2200 m, limestone scree, larger cushions up to 15 cm wide, yellow fls on 8 cm stems, 2010, B
- 169 *Draba sphaeroides*** **Brassicaceae**  
ex USA: , m, , cushions, 5 - 10 cm wide, green rosettes, yellow fls in umbells on 4 cm long stems, 2010, B
- 170 *Dracocephalum aff. grandiflorum*** **Lamiaceae**  
ex Russia: Saian Mts, m, alpine grassland, caespitose pl 12-15 cm high, hairy ovate dentate lvs, very large gentian blue fls, 2010, B
- 171 *Dracocephalum bullatum*** **Lamiaceae**  
China: Yulong Shan, Yunnan, 4000 m, limestone scree, , 2008, D
- 172 *Dracocephalum heterophyllum*** **Lamiaceae**  
China: N of Rawu, Tibet, 3900 m, slate scree, caespitose pl, 10-15 cm high, rounded dentate lvs, large white fls in terminal congested racemes, 2010, C  
China: Maqin Gangri, Qinghai, 4500 m, sandy slope, , 2007, C
- 174 *Dracocephalum poulsenii*** **Lamiaceae**  
Tajikistan: Koitezek Pass, Pamir, 4300 m, gneiss scree, prostrate mats, 10-30 cm wide, small corrugate lvs, purple blue fls in dense racemes 3 cm high, 2006, D
- 175 *Dracocephalum wallichii*** **Lamiaceae**  
China: Ngajuk La, Tibet, 4500 m, fine scree, caespitose pl, 10-15 cm high, dark green ovate lvs, 2-3 cm long, long blue fls in terminal dense racemes, 2010, D
- 176 *Edraianthus horwathi*** **Campanulaceae**  
ex Slovenia: , m, , like E. graminifolius, but only 5-10 cm high, 20
- 177 *Edraianthus serpyllifolius*** **Campanulaceae**  
ex Croatia: Biokovo, m, limestone crevices, very compact cushions, 2-8 cm wide, green linear lvs, large sessile blue bells, redish short stems, superb, 2009, D
- 178 *Empetrum rubrum*** **Empetraceae**  
Argentina: Cabo Virgines, Santa Cruz, 180 m, mountain steppe, creeping shrub, 5 cm high, 20-80 cm wide, linear lvs, 5 mm long, red fruits, 2
- 179 *Ephedra fedtschenkoana*** **Ephedraceae**  
ex Kyrgyzst: Talasski Ala Tau, m, granit crevices, dwarf rhizomatic creeping subshrub, 2-3 cm high, grey-green stems, 8 mm large bright red berries, 2009, B
- 180 *Ephedra monosperma*** **Ephedraceae**  
China: Tulai, Qinlian Shan, Qinghai, 3900 m, silicate crevices, dwarf subshrub, 5 cm high, green branched stems, prominent red berries, 200
- 181 *Eranthis longistipitata*** **Ranunculaceae**  
Uzbekistan: Zamin, Turkestan Ridge, Pamiroalai, 2500 m, short grass on limestones, tuberous pl, 4-8 cm high, green rounded palmatisect lvs, 3 cm wide, yellow fls above lvs, 2007, D
- 182 *Eremostachys laciniata*** **Lamiaceae**  
ex Armenia: , m, , perennial pl, 30-50 cm high, densely hairy palmatilobe lvs, large yellow fls, 2010, A
- 183 *Eremurus altaicus*** **Liliaceae**  
Kazakhstan: Foothills of Zailiski Ala Tau, 1400 m, mountain grassland, rhizomatic pl, 50-80 cm high, small yellow fls in 20 cm long racemes, 2009,

- 184 *Eremurus fuscus*** *Liliaceae*  
Kazakhstan: Zailiski Ala Tau, 2100 m, mountain grassland, rhizomatic pl, 60-100 cm high, small orange fls in 30 cm long racemes, 2009, A
- 185 *Eremurus robustus*** *Liliaceae*  
ex Uzbekist: Darvas Ridge, Ubagn, m, mountain steppe, large tuberose perennial, 1-1,5 m high, pink fls in long racemes, 2010, A
- 186 *Erigeron lineatus*** *Asteraceae*  
ex USA: Colorado, m, , caespitose pl, 8-15 cm high, linear lvs, yellow fls, 2010, A
- 187 *Eriophyton wallichii*\*** *Lamiaceae*  
China: N of Rawu, Tibet, 4600 m, moving granit scree, , 2010, E
- 188 *Eritrichium nanum* \*** *Boraginaceae*  
Slovenia: Julian Alps, 2000 m, limestone crevices, , 2010, E
- 189 *Eritrichium kamtschaticum* \*** *Boraginaceae*  
Russia: Kamchatka, Tolbachik, NN, 1500 m, alpine grassland, prostrate cushions, 10 - 15 cm wide, hairy rosettes, large blue fls on 5 - 10 cm long stems, 2009, F
- 190 *Eritrichium tianshanicum*** *Boraginaceae*  
Kazakhstan: Dzhungar Ala Tau, 2300 m, subalpine grassland, flat hairy cushion, 5-10 cm wide, 1 cm wide lv rosettes, 5-10 cm long stems, white fls in cymes, 2009, F
- 191 *Erysimum humillimum*** *Brassicaceae*  
Tajikistan: Koitezek Pass, Pamir, 4300 m, gneiss scree, small caespitose pl, 10-15 cm high, green linear lvs, 4 cm long, large yellow fls in rich racemes, 2006, A
- 192 *Erythronium dens-canis*** *Liliaceae*  
ex Italy: Mt. Alben, 1600 m, woodland, white-pinkish form, 2010, D
- 193 *Fritillaria collina*** *Liliaceae*  
Russia: West Caucasus, 1800 m, alpine grassland, bulb pl, 10 - 15 cm high, large yellow fls with rentangular pattern, PK, 2009, D
- 194 *Fritillaria delavayi*\*** *Liliaceae*  
China: N of Rawu, Tibet, 4800 m, moving slate scree, , 2010, E
- 195 *Fritillaria pallidiflora*** *Liliaceae*  
Kazakhstan: Dzhungar Ala Tau, 2400 m, subalpine grassland, bulb pl, 20 - 40 cm high, pale yellow fls, 3 - 5 cm long, 2010, C
- 196 *Fritillaria tenella*** *Liliaceae*  
Croatia: Velebit, Vaganac, 800 m, , bulb pl, 20-30 cm high, brown fls, 3 cm long, PK, 2010, C
- 197 *Fuchsia magellanica*** *Onagraceae*  
Argentina: Alerces, Esquel, Chubut, 525 m, Nothofagus forest, small shrub, 100-150 cm wide, slim carmine fls, 6 cm long, 2010, B
- 198 *Gaultheria trichophylla*** *Ericaceae*  
China: Galung La, Tibet, 4200 m, among small rhododendrons, dwarf prostrate shrub, 2 cm high, 10-60 cm wide, linear leathery lvs, 1 cm long, cyan blue berries, 1 cm, 2010, D
- 199 *Genista cf. depressa*** *Fabaceae*  
ex Slovenia: Velebit, 2000 m, limestone scree, prostrate shrub, 3-5 cm high, green branches, setiform lvs, 1-2 cm long, large yellow fls, 20
- 200 *Genista horrida*** *Fabaceae*  
ex Spain: , m, , xeric spiny cushion, 30-100 cm wide, yellow fls, 20
- 201 *Genista lydia*** *Fabaceae*  
ex Turkey: Abant, 2000 m, limestone crevices, prostrate shrub, 10 cm high, green branches, large yellow fls, 2010, D
- 202 *Gentiana aff. purdomii*** *Gentianaceae*  
China: Mi La, Tibet, 5000 m, Kobresia grassland, caespitose pl. 10 cm high, white fls with prominent blue stripes, 2010, D
- 203 *Gentiana aff. ampla*\*** *Gentianaceae*  
China: N of Mi La, Tibet, 4300 m, boggy grassland, , 2010, F
- 204 *Gentiana alpina*** *Gentianaceae*  
Spain: Pyrenees, 2400 m, alpine grassland, caespitose pl, 5 cm high, dark blue fls, green dots, JP, 2010, D
- 205 *Gentiana angulosa*** *Gentianaceae*  
Russia: Caucasus, Gombashi, 2200 m, alpine grassland, caespitose pl, 5-10 cm high, dark blue fls, PK, 2010, C
- 206 *Gentiana arethusae*** *Gentianaceae*  
China: Shen Shan, Sechuan, 3800 m, alpine meadow, sect. Kudoa, small caespitose pl, 10 cm high, linear spinulose lvs 6 in whorls, ligh blue bottle-like fls, 4 cm long, 2007, D

- 207 *Gentiana atuntsiensis* Gentianaceae  
China: Zheduo Shan, Sechuan, 4100 m, mountain grassland, caespitose pl, 20 cm high, 3-5 blue fls in terminal racemes, 2009, C
- 208 *Gentiana brachyphylla ssp. brachyphylla* Gentianaceae  
France: Cottian Alps, 2600 m, alpine grassland, small caespitose pl, wide calyx wings, dark blue fls, JP, 2009, D
- 209 *Gentiana cf. algida\** Gentianaceae  
China: Ngajuk La, Tibet, 4800 m, alpine grassland, small caespitose pl 10 cm high, white fls with dark dots and stripes, 2010, D
- 210 *Gentiana cf. waltonii\** Gentianaceae  
China: Mi La, Tibet, 4900 m, Kobresia grassland, probably dwarf or high altitude form, 2010, D
- 211 *Gentiana clusii var. clusii* Gentianaceae  
Austria: Dachstein, 1800 m, limestone crevices, caespitose pl, 5-12 cm high, dark green lanceolate lvs, dark blue fls, 5 cm long, 2010, C
- 212 *Gentiana clusii var. rochelii* Gentianaceae  
ex Slovakia: Mala Fatra, 2000 m, limestone crevices, a Carpathian form with narrow grey green leathery lvs, large dark blue fls with green dots in throat, 2010, C
- 213 *Gentiana dahurica* Gentianaceae  
China: Karlik Shan, Xinjiang, 2300 m, mountain steppe, perennial pl, 15 cm high, large ground rosettes, large blue fls in 2 whorls, 2009, C
- 214 *Gentiana georgei* Gentianaceae  
China: Min Shan, Huang, Sechuan, 4300 m, alpine grassland, sect. Kudoa, cross-like rosettes, leather-like lvs 3-4 cm long, purple fls broadly funnelform 5 cm long, 3 cm wide, 2009, E
- 215 *Gentiana hexaphylla* Gentianaceae  
China: Min Shan, Huang, Sechuan, 3900 m, alpine grassland, sect. Kudoa, ascendent leafy stems, 10 cm high, 1 cm long lvs, 1 mm wide in whorls of 6, funnelform sky blue fls, 2009, D
- 216 *Gentiana occidentalis* Gentianaceae  
ex Spain: Aragon, Pyrenees, m, , prostrate pl, 10 cm high, large dark blue fls with green dots, 2009, C
- 217 *Gentiana oschtenica* Gentianaceae  
Russia: West Caucasus, PK, 2000 m, limestone pockets, *Gentiana verna* - like pl, with yellow fls, 2009, E
- 218 *Gentiana paradoxa* Gentianaceae  
ex cult.: Caucasus, m, , a good form, 15 cm high, narrowly linear leaves, single to 3 terminal fls, 2008, C
- 219 *Gentiana phyllocalyx* Gentianaceae  
China: Galung La, Tibet, 4400 m, fine slate scree, caespitose pl, 3-12 cm high, rounded ovate lvs, compact rosettes, erect stems, 1-3 blue fls, 3 cm long, 2010, D
- 220 *Gentiana purdomii* Gentianaceae  
China: Serkym La, Tibet, 4400 m, alpine grassland, sect. Frigida, caespitose pl 15 cm high, ground rosette, lanceolate lvs, 3-5 terminal white fls with blue stripes, 2010, D  
China: Min Shan, Huang, Sechuan, 4100 m, alpine grassland, , 2009, D
- 222 *Gentiana sp.* Gentianaceae  
China: Emei Shan, Tibet, 2500 m, forest rocks, caespitose pl, 5 cm high, lanceolate lvs, 2-3 cm long, 1-4 lilac fls, 2-3 cm long,, 2010, E
- 223 *Gentiana straminea* Gentianaceae  
China: Nonkes, Qinghai, 4100 m, , sect. Cruciata, caespitose pl, 20 cm high, lanceolate lvs, 10 cm long, ascendent stems, several white fls 2007 C
- 224 *Gentiana striata* Gentianaceae  
China: Min Shan, Huang, Sechuan, 4000 m, alpine grassland, Megagentiana, sect. Stenogyne, larger ascendent stems, 10-15 cm high, opposite lanceolate lvs 2-4 cm long, large yellow fl, 2009, D
- 225 *Gentiana urnula* Gentianaceae  
China: Mi La, Tibet, 4800 m, fine slate scree, unique *Gentiana*, 2-4 cm high, square lv rosettes, 1 cm wide, large sessile yellowish-blue fls with stripes, 2010, F  
China: Mi La, Tibet, 5100 m, 2010, F
- 227 *Gentiana veitchiorum* Gentianaceae  
China: Ngajuk La, Tibet, 4700 m, Kobresia grassland, sect. Kudoa, smaller sinoornata, basal rosettes present, triangular lvs, very dark blue fls with prominent stripes, 2010, D  
China: Min Shan, Huang, Sechuan, 4200 m, Kobresia alpine grassland, 2009, D
- 229 *Gentiana venusta* Gentianaceae

China: Serkym La, Tibet, 4500 m, alpine grassland, aff. *G. phyllocalyx*, caespitose pl, 5 cm high, spatulate lvs, 2-3 cm long, 5 blue fls, 2-3 cm long, on ascendent stems, 2010, D

**230 *Gentiana waltonii* Gentianaceae**

China: N of Mi La, Tibet, 4300 m, rock crevices, caespitose pl, 10-15 cm high, 30 cm wide, lanceolate lvs, 8 cm long, 1-4 dark blue fls, 4-5 cm long, 2010, D

**231 *Glandularia aurantiaca* Verbenaceae**

Argentina: Cabo Virgines, Santa Cruz, 150 m, mountain steppe, flat lax cushions, green trifurcate lvs, very large white-yellowish or pinkish fls in short racemes, 2010, D

Argentina: Rio Belgrano, Santa Cruz, 605 m, antarctic dry steppe, soft cushion, 2010, D

**233 *Goniolimon cf. speciosum* Plumbaginaceae**

China: Karlik Shan, Xinjiang, 2500 m, mountain steppe, caespitose perennial, 10-15 cm, ground lv rosette, ink fls in cymose flat infl 2009, C

**234 *Grossheimia macrocephala* Asteraceae**

ex Georgia: Trialet Ridge, 2000 m, alpine grassland, large Centaurea, 60-80 cm high, lanceolate lvs, 30 cm long, yellow fls in 8 cm wide receptacles, 2010, A

**235 *Gypsophila tenuifolia* Caryophyllaceae**

ex Russia: Caucasus, 2100 m, compact green cushions, 15 cm wide, linear juicy lvs, white or pinkish fls on ascendent stems, 2010, B

**236 *Haplopappus glutinosus* Asteraceae**

Argentina: Lago Moquehue, Neuquen, 1300 m, volcanic ash in Araucaria forest, prostrate mats, 15 cm wide, leaf rosette 3 cm wide, linear serrate lvs, 2 cm long, large yellow capituli, 4 cm wide, 2010, D

Argentina: Tres Lagos, Santa Cruz, 715 m, mountain steppe, , 2010, D

**238 *Helleborus multifidus* Ranunculaceae**

Herzegovina: Svrshnica, 1200 m, caespitose pl, 20-40 cm high, palmatisect lvs, 1 cm wide serrate lobes, purple fls, PK, 2010, C

**239 *Hypericum bellum* Hypericaceae**

China: Yulong Shan, Yunnan, 3500 m, subalpine shrubs, low subshrub, 50 cm high, 5 cm long ovate alternate lvs, 6 cm wide yellow fls, 2008, A

**240 *Incarvillea compacta* Bignoniaceae**

China: Beima Shan, Yunnan, 4600 m, limestone scree, rhizomatic pl, 5-10 cm high, obovate-lyrate lvs, 5-8 cm long, very large rose fls, sessile erect capsules, 2008, C

China: Maqin Gangri, Qinghai, 4300 m, sandy slope, , 2007, C

**242 *Iris aff. magnifica* Iridaceae**

Uzbekistan: Chimgan, Chatkal Ridge, Tien Shan, 1800 m, dry steppe, Juno, bulb pl, 30-40 cm high, 4-6 lvs in 1 plain, 10-15 cm long, large fls at nodes of upper lvs, 2009, D

**243 *Iris albertii* Iridaceae**

Kazakhstan: Foothills of Zailiski Ala Tau, 1400 m, mountain grassland, rhizomatic pl, 30-50 cm high, grey - green lvs, 2 cm wide, large purple fls with yellow brushes, 2009, C

**244 *Iris arenaria* Iridaceae**

ex Moravia: , m, , rhizomatic pl, 8-12 cm high, 5 mm wide lvs, yellow fls, 5 cm long, 2010, D

**245 *Iris bicapitata***

ex Italy: Gargano, rhizomatic pl. 20-40 cm 2 cm wide grey lvs, large blue fls 2010, B

**246 *Iris bloudovii* Iridaceae**

Kazakhstan: Dzhungar Ala Tau, 2300 m, subalpine grassland, rhizomatic pl, 15-20 cm high, green lvs, 1 cm high, large 7 cm long yellow fls with dark veins, 2010, D

**247 *Iris bulleyana* Iridaceae**

China: Zheduo Shan, Sechuan, 4000 m, mountain grassland, scree, larger rhizomatic perennial, 60 cm high, bright green lvs, prominent dark blue fls with golden - yellow anthers, 2009, B

**248 *Iris bungei* Iridaceae**

ex Mongolia: , m, , rhizomatic pl, densely caespitose, 20 - 30 cm high, 6 mm wide lvs, pale blue fls with dark veins, 2009, A

**249 *Iris cf. clarkei* Iridaceae**

China: Lunang, Tibet, 3400 m, mountain wet meadow, caespitose pl up to 50 cm high, very large triangular capsules, 2010, D

**250 *Iris cf. farreri* Iridaceae**

China: Hezuoshen, Gansu, 2900 m, subalpine grassland, densely caespitose

- pl, 20 - 30 cm high, 5 mm tough lvs, 1-3 large blue fls on 15 cm long stems, 2009, C
- 251 *Iris cf. goniocarpa* Iridaceae**  
China: Lhasa, Tibet, 3500 m, granit scree, rhizomatic pl, solitary shoots, 15-20 cm high, linear lvs, 5 m wide, large blue fls with yellow marks, 2010, D  
China: Jiaerduo, Tibet, 4000 m, sandy granit scree, , 2010, D
- 253 *Iris cf. schachtii* Iridaceae**  
ex Turkey: Kupe Dag, m, , rhizomatic pl, 10-20 cm high, pale yellow fls with bluish hue, 2010, C
- 254 *Iris cf. willmontiana* Iridaceae**  
Kazakhstan: Dzhabagly, 1500 m, , PK, 2010, D
- 255 *Iris chamaeiris* Iridaceae**  
ex Italy: Gargano, m, , rhizomatic pl 10-15 cm, grayish lvs 15 mm wide, pale yellow fls, orange anthers, 2010, C
- 256 *Iris imbricata* Iridaceae**  
ex Azerbaij: Cajkent, m, limestone scree, rhizomatic pl, 30-50 cm high, very large pale yellow fls, 2010, B
- 257 *Iris kuschakewichii f. almaatensis* Iridaceae**  
Kazakhstan: Zhetyzhol, 1200 m, sect. Juno, 10-15 cm high, pale green fls, 5 cm wide, PK, 2010, E
- 258 *Iris kuschakewichii f. kuschakewichii* Iridaceae**  
Kazakhstan: Chu-Ili Mts., 1000 m, dry scree, sect. Juno, 10-15 cm high, pale blue fls, 5-6 cm wide, PK, 2010, E
- 259 *Iris lineolata* Iridaceae**  
ex Azerb.: , m, , sect. Onco, 15-20 cm high,, 2010, F
- 260 *Iris loczyi* Iridaceae**  
China: Karlik Shan, Xinjiang, 2400 m, mountain steppe, densely caespitose pl, 20 cm high, 5 cm long tough sheaths, 4 mm tough lvs, pale blue fls, dark veins, 2009, E
- 261 *Iris magnifica* Iridaceae**  
ex Uzbek.: , m, , sect. Juno, 30-50 cm high, white fls in upper lv nodes, 2010, C
- 262 *Iris orchiioides* Iridaceae**  
Kazakhstan: Dzhabagly, 1600 m, sect. Juno, 12-20 cm high, 15 mm wide lvs, white-yellow fls, 5 cm wide, PK, 2010, E
- 263 *Iris pumila* Iridaceae**  
ex Moravia: rhizomatic pl 10-15 cm, variable fl - blue, yellow, brownish, white and intermediates, 2010, C
- 264 *Iris reichenbachii* Iridaceae**  
ex Serbia: Suva Planina, m, , rhizomatic pl 15-20 cm, grayish lvs 15 mm wide, golden yellow fls with orange brushes, 2010, D
- 265 *Iris ruthenica var. nana* Iridaceae**  
ex China: Zhongdian, 3500 m, alpine grassland, densely rhizomatic pl, 10-15 cm high, 5-8 mm wide linear lvs, light blue fls among leaves, 2010, C
- 266 *Iris sintenisii* Iridaceae**  
ex Turkey: Abant, m, , rhizomatic pl. 15-20 cm, narrow linear lvs, blue fls above lvs, capsules with wide double wings, 2009, C
- 267 *Iris sogdiana* Iridaceae**  
Kazakhstan: Dzhabagly, 1800 m, , rhizomatic pl, 30-40 cm high, lvs 1 cm wide, pale yellow fls, 6 cm wide, PK, 2010, C
- 268 *Iris taochia* Iridaceae**  
ex Turkey: Tortum, m, limestone scree, Pumila sect. rhizomatic pl, 15-20 cm, 15 mm wide lvs, brownish fls, 2010, C
- 269 *Iris taurica* Iridaceae**  
ex Russia: Caucasus, Balkaria, 1400 m, , Pumila sect., rhizomatic pl, 10-15 cm high, blue/yellow fls, 2010, C
- 270 *Iris variegata* Iridaceae**  
ex Moravia: , m, , rhizomatic pl, 20-30 cm high, 2 cm wide lvs, bicolored yellow/blue fls, 2009, B
- 271 *Iris vicaria* Iridaceae**  
exTajikista: Gushari, Hissar Range, 1700 m, granite scree, Juno, medium bulb pl, leaf rosette 15-30 cm high, bluish or white fls, 2010, C  
exTajikista: Romit, m, , , 2010, C
- 273 *Iris warlsind* Iridaceae**  
ex cult.: , m, , Juno, blue fls, 2010, D
- 274 *Irix xiphioides* Iridaceae**  
Spain: C. Pyrenees, 1500 m, subalpine shrubland, bulb pl, 40-50 cm high, 10-15 mm wide lvs, large blue terminal fls, 2008, B

- 275 *Ixiolirion tataricum* Liliaceae  
Kazakhstan: Arkhapycharay Hills, 1000 m, dry rocky slopes, bulb pl, 20 cm high, linear lvs, large blue fls, 4 cm long, 2009, C
- 276 *Junellia tridactylites* Verbenaceae  
Argentina: Col. Belgrano, nr. Perito Moreno, Santa Cruz, 880 m, mountain steppe, prostrate mat, 2-4 cm high, pink-rose fls in short racemes, 2010, F  
Argentina: Menelik, Santa Cruz, 1025 m, sandy steppe, , 2010, F
- 278 *Korolkowia sewertzowii* Liliaceae  
ex Uzbekist: , m, , bulb pl, 30- 40 cm high, grey-green lanceolate lvs, terminal racemes, 4 - 8 dark purple/greenish fls, 3 - 4 cm long, 2010
- 279 *Lagotis cf. crassifolia* Scrophulariaceae  
China: Ngajuk La, Tibet, 4600 m, fine slate scree, caespitose pl, 10-15 cm high, juicy ovate crenulate lvs, ascendent stems, blue fls in spikes 2010 D
- 280 *Lagotis glauca* Scrophulariaceae  
Russia: Bakining volcano, Kamchatka, 1000 m, volcanic ash, caespitose pl, 15-20 cm high, grey waxy ovate succulent lvs, blue fls in dense terminal racemes, 2007, C
- 281 *Lamiophlomis rotata* Lamiaceae  
China: Mi La, Tibet, 4800 m, Kobresia grassland, flat caespitose pl, 12 - 15 cm wide, 5 cm high, prostrate reticulate lv rosettes, sessile racemes of rose fls, 2010, D  
China: Jiuzhi, Qinghai, 4000 m, alpine grassland, , 2007, D
- 283 *Lancea tibetica* Scrophulariaceae  
China: Shungdor, Tibet, 3600 m, mountain grassland, small caespitose pl, 3-5 cm high, lanceolate lvs in rosettes, rose fls in low racemes, black sessile berries, 2010, D  
China: Litang, Sechuan, 4200 m, eroded open soil, , 2007, D
- 285 *Leontice ewersmanii* Berberidaceae  
Kazakhstan: Foothills of Zailiski Ala Tau, 1400 m, mountain grassland, large tuber, 10 cm wide, branched stems, 40-50 cm high, rich panicles of yellow fls, decorative, 2009, C
- 286 *Leontopodium aff. stracheyi* Asteraceae  
China: Galung La, Tibet, 3700 m, mountain grassland, caespitose pl, 20 cm high, linear lvs, green above tomentose below, 2010, D
- 287 *Leontopodium caespitosum* Asteraceae  
China: Zoige-Songpan, Sechuan, 3600 m, silicate rocks, caespitose pl, 20 cm high, narrow grey lvs, very narrow white tomentose bracts in star-like infl, 4 cm wide, 2009, C
- 288 *Leontopodium cf. pusillum* Asteraceae  
China: Ngajuk La, Tibet, 4700 m, alpine grassland, prostrate pl, 5-10 cm high,, 2010, D
- 289 *Leontopodium cf. sinense* Asteraceae  
China: Kanding, Sechuan, 2700 m, limestone rocks, large perennial pl, 50 cm high, 6 cm long grey lvs, large nbranched inf, 10 cm wide, 2009, C
- 290 *Leontopodium jacotianum* Asteraceae  
China: Qinlian Shan, Qinghai, 3400 m, alpine grassland, caespitose l, 20 cm high, star-like tomentose infl, 2009, D
- 291 *Leontopodium leontopodium* Asteraceae  
China: Karlik Shan, Xinjiang, 2400 m, mountain steppe, prostrate pl, 10 cm high, narrow white lvs, 2-3 cm long, 25 cm wide tomentose infl, 2009,
- 292 *Leontopodium nanum* Asteraceae  
China: Mi La, Tibet, 4900 m, alpine grassland, small caespitose pl, 3-8 cm high, densely tomentose, 2010, E
- 293 *Leontopodium pusillum* Asteraceae  
China: Tulai, Qinlian Shan, Qinghai, 3900 m, rocky alpine grassland, dwarf caespitose pl, 3 cm high, 2 cm long grey lvs, 2 cm wide tomentose infl, 2009, E
- 294 *Leontopodium souilei* Asteraceae  
China: N of Mi La, Tibet, 4300 m, alpine grassland, prostrate mats, 8-12 cm high, grey/green lvs, narrow tomentose bracts, 2010, D
- 295 *Leucanophora chubutensis* Malvaceae  
Argentina: Rio Mayo, Chubut, 555 m, scree, prostrate pl, 5 cm high, 30 cm wide, large prominent rose fls, 2-3 cm wide, 2010, C
- 296 *Lilium carniolicum v. bosniacum* Liliaceae  
Herzegovina: Dugo Polje, 1200 m, mountain grassland, bulb pl, 30-50 cm high, linear lvs, 10 cm long, 1-3 erect orange fls, 6 cm long, PK, 2
- 297 *Lilium kesselringianum* Liliaceae  
Russia: West Caucasus, 1800 m, subalpine grassland, bulb pl, 80 - 100 cm high, large yellow fls w/ brown dots, PK, 2009, D



- 298 *Lilium lophophorum* Liliaceae  
China: Mugecuo Lake, Sechuan, 3800 m, rocky open grassland, dwarf lily, 10 - 20 cm high, ground lf rosettes, light green entire lvs, 10 x 2 cm, solitary yellow fls on thick stems, 2009, E
- 299 *Lilium martagon* Liliaceae  
ex Italy: Passo Maniva, m, , bulb pl, 60-100 cm high, redish orange fls, 2010, B
- 300 *Lilium martagon v. cattaniae* Liliaceae  
ex Bosnia: , 1000 m, open forest, bulb pl, 60-100 cm high, very dark purple fls, 2010, C
- 301 *Lilium nanum\** Liliaceae  
China: Galung La, Tibet, 4300 m, in rhododendrons, small bulb pl, 12-18 cm high, linear lvs, 5-8 cm long, purple black fls, 2010, E  
China: Serkym La, Tibet, 4700 m, in rhododendrons, , 2010, E  
China: Xintucau, Sechuan, 4400 m, , PK, 2010, E
- 304 *Lilium saccatum\** Liliaceae  
China: Galung La, Tibet, 4000 m, alpine grassland, , 2010, E
- 305 *Loasa bergii* Loazaceae  
Argentina: El Bolson, Rio Negro, 350 m, sandy steppe, slender vine, 30-100 cm high, large prominent yellow fls, 2 cm wide, 2010, D
- 306 *Lobelia sessilifolia* Lobeliaceae  
Russia: Kamchatka, NN, m, , caespitose pl, 15 cm high, large blue fls, 2009, C
- 307 *Maihuenia patagonica* Cactaceae  
Argentina: Primeros Pinos, Neuquen, 1575 m, dry rocky steppe, spiny cushion, 10-30 cm wide, large orange fls, 2010, E
- 308 *Meconopsis aff. prainiana* Papaveraceae  
China: Serkym La, Tibet, 4500 m, granit scree, erect pl 40 cm high, lanceolate lvs 8-12 cm long, pale blue fls in racemes, 2010, D
- 309 *Meconopsis cf. integrifolia* Papaveraceae  
China: Serkym La, Tibet, 4500 m, rough granit scree, perennial pl, 50-70 cm high, entire hairy lvs, erect stems with 7 mm long bristles, large fls in panicles, 2010, C
- 310 *Meconopsis cf. simplicifolia* Papaveraceae  
China: Serkym La, Tibet, 4600 m, alpine grassland, caespitose pl, 15-20 cm high, lanceolate lvs, soliraty blue fls, 4 cm long glabrous capsules, 5 mm wide, 2010, E
- 311 *Meconopsis cf. sinuata* Papaveraceae  
China: Shika Shan, Yunnan, 4000 m, limestone scree, caespitose pl, 20-30 cm high, rusty hairy, undulate sinuate lvs, sky blue fls, 2008, C
- 312 *Meconopsis henricii* Papaveraceae  
China: Zheduo Shan, Sechuan, 4300 m, fine silicate scree, small caespitose pl, 5 - 15 cm high, lanceolate hairy lvs, purple fls, 3 cm wide, 2009
- 313 *Meconopsis horioidula* Papaveraceae  
China: Ngajuk La, Tibet, 4700 m, alpine grassland, caespitose prickly pl, 10-15 cm high branched stems, 8 cm long lvs, large sky blue fls, 2010
- 314 *Meconopsis horridula* Papaveraceae  
China: Mi La, Tibet, 5000 m, fine slate scree, , 2010, D  
China: Min Shan, Huang, Sechuan, 4000 m, rough limestone scree, , 2009, D  
China: Zheduo Shan, Sechuan, 4400 m, rough silicate scree, , 2009, D  
China: Bayan Har Shan, Qinghai, 4900 m, , , 2007, D
- 318 *Meconopsis integrifolia* Papaveraceae  
China: Serkym La, Tibet, 4400 m, rough granit scree, large caespitose pl. 30-70 cm high, densely hairy lanceolate lvs, large yellow terminal fls, 2010, C  
China: Min Shan, Huang, Sechuan, 4000 m, mountain grassland, , 2009, C  
China: Dari, Qinghai, 4300 m, , , 2007, C
- 321 *Meconopsis prattii* Papaveraceae  
China: Zhongdian, Yunnan, 3400 m, limestone scree, prickled poppy, 15 - 40 cm high, the whole pl roughly spiny, 12 cm long lvs, blue fls on thick branched stems, 2008, C
- 322 *Meconopsis pseudointegrifolia* Papaveraceae  
China: Serkym La, Tibet, 4400 m, rough granit scree, large pl, 40-70 cm high, rusty hairy lvs and stems, large drooping pale yellow fls, glabrous capsules, 2010, C
- 323 *Meconopsis punicea* Papaveraceae  
China: Min Shan, Huang, Sechuan, 4100 m, alpine grassland, larger caespitose pl, 30-50 cm high, hairy lvs 12 -15 cm long, large red drooping fls 10 cm long, 2009, D

- 324 *Meconopsis rudis*** **Papaveraceae**  
China: Beima Shan, Yunnan, 4800 m, gneiss scree, spectacular poppy, 20 - 50 cm high, many solitary stems, rusty hairs, lanceolate lobbed lvs, large dark blue fls, 2008, D
- 325 *Meconopsis simplicifolia*** **Papaveraceae**  
China: Serkym La, Tibet, 4600 m, granit scree, caespitose pl, 15-20 cm high, lanceolate lvs, solitary blue fls, 4 cm long hairy capsules, 5 mm wide, 2010, D
- 326 *Meconopsis sp.*** **Papaveraceae**  
China: Yulong Shan, Yunnan, 4000 m, limestone scree, similar to large *M. prattii*, 50 cm high, lvs with prickles originating in black tubercles, 2008, B
- 327 *Meconopsis speciosa*** **Papaveraceae**  
China: Galung La, Tibet, 4300 m, slate scree, perennial pl, 20-50 cm high, lyrate lvs, sky blue fls, narrow ovate capsules, 2010, D
- 328 *Megacodon sp.*** **Gentianaceae**  
China: Galung La, Tibet, 4300 m, alpine grassland, large perennial 50-80 cm high, erect egg-form solitary terminal capsules, 2010, E
- 329 *Megacodon stylophorus*** **Gentianaceae**  
China: Tianchi Lake, Yunnan, 3900 m, rhododendron forest, large perennial 1 m high pl, entire broadly ovate lvs 15 cm long, large yellow campanulate fls 6 cm long, 2008, D
- 330 *Microula tibetica ssp. pratensis*** **Boraginaceae**  
China: Dari, Qinghai, 4300 m, fine slate scree, dwarf caespitose pl, up to 3 cm high, prostrate rosettes of scabrous lvs, numerous small blue fls, congested, 2007, B
- 331 *Moltkea aurea*** **Boraginaceae**  
ex M Negro: , m, , caespitose pl, 20 cm high, linear lvs, white fls in long cymes, 2010, C
- 332 *Mulinum albobaginatatum*** **Apiaceae**  
Argentina: Primeros Pinos, Neuquen, 1585 m, mountain steppe, prostrate mats, 2-4 cm high, 2010, D
- 333 *Mulinum cf. spinosum*** **Apiaceae**  
Argentina: Paso Cordoba, Neuquen, 1295 m, mountain steppe, low spiny cushions, 2010, C
- 334 *Mulinum hallei*** **Apiaceae**  
Argentina: Bajo Caracoles, Santa Cruz, 800 m, lava rocks, flat cushion, trifurcate spiny lvs, 2010, D  
Argentina: Cerro Cathedral, Rio Negro, 1700 m, mountain steppe, , 201
- 336 *Mulinum spinosum*** **Apiaceae**  
Chile: Laguna Amarga, Torres del Paine, 315 m, mountain steppe, spiny subshrub, cushions, 40-80 cm wide, yellow fls in umbels, reddish winged fruits, 2010, D
- 337 *Mutisia spinosa*** **Asteraceae**  
Argentina: El Bolson, Rio Negro, 645 m, sandy steppe, herbaceous vine, 1-2 m high, ovate lvs with supporting appendages, violet ray fls, yellow tubular fls in capituli, 5 cm, 2010, D
- 338 *Narcissus asturiensis*** **Amaryllidaceae**  
Portugal: Serra da Estrela, 1800 m, alpine grassland, bulb pl, 10-15 cm high, lvs 5 mm wide, yellow fls. 3 cm long, inflated tube in the middle, 2010, E
- 339 *Narcissus nivalis*** **Amaryllidaceae**  
Portugal: Serra da Estrela, 1800 m, alpine grassland, bulb pl, 5.10 cm high, 2mm wide lvs, yellow fls, 3-4 cm long, tube narrowly funnelform, 2010, E
- 340 *Narcissus obesus*** **Amaryllidaceae**  
Portugal: Arabida, 400 m, limestone scree, bulb pl, 5-18 cm high, 2-4- mm wide lvs, yellow fls, 3 cm long, tube broadly funnelform, 2010, D  
Portugal: Arabida, 300 m, wet grassland on limestone, , 2010, D
- 342 *Narcissus romieuxii var. mesatlantica*** **Amaryllidaceae**  
2010, D
- 343 *Narcissus sp.*** **Amaryllidaceae**  
Portugal: Setubal, 30 m, grassland, bulb pl, 50 cm high, 8 mm wide lvs, 2010, C
- 344 *Nardophyllum bryoides*** **Asteraceae**  
Argentina: Cabo Virgenes, Santa Cruz, 175 m, mountain steppe, large mats, 30-150 cm wide, 2 cm high, rosettes 5 mm, green lvs, yellow sessile ray and tubular fls, 2010, D
- 345 *Nassauvia abbreviata*** **Asteraceae**

- Argentina: Menelik, Santa Cruz, 1000 m, rocky slope, small lax cushion, 10-30 cm wide, greyish lanceolate lvs, 3 cm long, white fls, 2010, D
- 346 *Nassauvia fuegiana* Asteraceae**  
 Argentina: Cabo Virgines, Santa Cruz, 160 m, antarctic steppe, flat cushion, 10-30 cm wide, linear spiny lvs, white sessile fls, small involucl 2x7 mm, 2010, E  
 Argentina: Esperanza - Tapi Aike, Santa Cruz, 545 m, mountain steppe, , 2010, E
- 348 *Nassauvia glomerulosa* Asteraceae**  
 Argentina: Menelik, Santa Cruz, 980 m, mountain steppe, prostrate hard mats, white sessile fls, 2010, E
- 349 *Nassauvia planifolia* Asteraceae**  
 Argentina: Menelik, Santa Cruz, 1000 m, along stream, larger prostrate pl, 10-15 cm high, dark green rosettes, 3 cm wide, serate spiny lvs, white fls in compact heads, 3 cm, 2010, D
- 350 *Notholirion bulbilliferum* Liliaceae**  
 China: Mugecuo Lake, Sechuan, 3800 m, mountain shrubland, large bulb pl, 80 - 120 cm high, leafy thick stem, lvs 5 - 12 cm long, 4 - 8 white fls in terminal racemes, 2009, A
- 351 *Oenothera stricta* Onagradaceae**  
 Chile: Torres del Paine, 410 m, mountain steppe, caespitose pl, 10-15 cm high, linear lvs, 5 cm long, ascendent branched stems, large yellow fls, 3-4 cm wide, 2010, B
- 352 *Olsynium biflorum* Iridaceae**  
 Argentina: Menelik, Santa Cruz, 1175 m, mountain grassland, caespitose pl, 20-30 cm high, linear lvs, funnel form fls, 4 cm long, pale yellow with brown vein, 2010, C
- 353 *Olsynium junceum* Iridaceae**  
 Argentina: Menelik, Santa Cruz, 1060 m, mountain steppe, caespitose pl, 15-30 cm high, linear lvs, large rose or white fls in terminal umbells, 2 cm wide, 2010, C
- 354 *Onosma caucasicum* Boraginaceae**  
 ex Russia: Caucasus, V. Balkaria, 1400 m, limestone scree, larger perennial pl, 20-30 cm high, densely hairy linear lvs, yellow bottle-like fls 4 cm long, 2009, A
- 355 *Onosma waddellii* Boraginaceae**  
 China: Lhasa, Tibet, 3500 m, dry steppe, caespitose pl, 10-15 cm high, lanceolate lvs, 3 -4 cm long, sky blue fls, 8 mm wide, 2010, D
- 356 *Origanum amanum* Lamiaceae**  
 ex cult.: Near East, m, , caespitose pl, 15 cm high, pink fls in terminal racemes, 2010, D
- 357 *Oxygraphis glacialis* Ranunculaceae**  
 China: Min Shan, Huang, Sechuan, 4200 m, snowfields, dwarf caespitose pl, 3 - 6 cm high, dark green juicy entire lvs, 3 cm wide yellow solitary fls, for cold conditions 2009, D
- 358 *Oxytropis kansuensis* Fabaceae**  
 China: Qinlian Shan, Qinghai, 3400 m, alpine grassland, prostrate pl, 15 cm high, ascendent stems, pale yellow fls in short terminal racemes, 200
- 359 *Oxytropis sp.* Fabaceae**  
 China: Dechen, Tibet, 3800 m, dry steppe, caespitose pl, 15-20 m high, white tomentose, large purple fls in racemes, 7 cm long, 2010, D
- 360 *Oxytropis yunnanensis* Fabaceae**  
 China: Zheduo Shan, Sechuan, 4400 m, fine silicate scree, caespitose pl, 10 cm high, grey pinnate lvs, purple fls, large inflated marbled pods, 2-3 cm long, 2009, C  
 China: Shika Shan, Yunnan, 4300 m, limestone scree, , 2008, C
- 362 *Paederota bonarota* Scrophulariaceae**  
 Slovenia: Julian Alps, 1800 m, limestone crevices, caespitose pl, 5-15 cm high, ovate lvs, blue fls in terminal condensed racemes, 2010, C
- 363 *Paeonia mlokosewitsii hybr.* Paeoniaceae**  
 ex cult.: , m, , rhizomatic pl, 50 - 70 cm high, large yellow fls with pink base, 2010, B
- 364 *Paeonia peregrina* Ranunculaceae**  
 ex Russia: Caucasus, 2010, C
- 365 *Paeonia rockii* \* Ranunculaceae**  
 ex China: 2010, E
- 366 *Paeonia tenuifolia* Paeoniaceae**  
 ex Georgia: Igeoti, Causasus, 1500 m, dry steppe, rhizomatic pl, 40 cm high, finely incised lvs to linear lobes, 6-8 cm large red fls, 2010

- 367 *Paracaryum racemosum* **Boraginaceae**  
ex Turkey: , m, , caespitose pl, 30 cm high, linear lvs, 5 cm long, long blue tubular fls, very decorative, 2010, D
- 368 *Paraquilegia grandiflora* **Ranunculaceae**  
China: Beima Shan, Yunnan, 4700 m, limestone crevices, small caespitose pl, 5 - 15 cm high, trifoliate lvs, large blue open fls on thin stems, excellent for crevices, 2008, E
- 369 *Paraquilegia microphylla* **Ranunculaceae**  
China: Dechen, Tibet, 4500 m, gneiss rocks, small caespitose pl, 5 - 15 cm high, trifoliate lvs, large rose open fls on thin stems, excellent for crevices, 2010, E  
China: Shika Shan, Yunnan, 4300 m, , , 2008, E
- 371 *Parrya nudicaulis* **Brassicaceae**  
Russia: Kopskiy volc. Kamchatka, NN, 900 m, volcanic scree, caespitose pl, 8 - 15 cm high, linear lvs, pink fls, 2009, D
- 372 *Pedicularis albertii* **Scrophulariaceae**  
Kazakhstan: Zailiyskiy Alatau, 1600 m, , caespitose pl 20 cm high, red fls, PK, 2010, D
- 373 *Pedicularis brachyodonta* **Scrophulariaceae**  
Herzegovina: Blidinje, 1200 m, , caespitose pl, 20 cm high, yellow fls, PK, 2010, D
- 374 *Pedicularis cf. pseudoingens* **Scrophulariaceae**  
China: Napahai, Yunnan, 3400 m, , large perennial pl, 80-150 cm high, yellow fls, PK, 2010, D
- 375 *Pedicularis condensata* **Scrophulariaceae**  
Russia: Oshten, Caucasus, 1800 m, , caespitose pl, 25-90 cm high, yellow fls, PK, 2009, D
- 376 *Pedicularis densispica* **Scrophulariaceae**  
China: Zhongdian, Yunnan, 3300 m, , caespitose pl, 25 cm high, yellow-rose fls, PK, 2010, D
- 377 *Pedicularis lasiophrys* **Scrophulariaceae**  
China: Qilian, Quinhai, 3800 m, , caespitose pl, 20-50 cm high, yellow fls, PK, 2009, D
- 378 *Pedicularis longiflora* **Scrophulariaceae**  
China: Tianshi Lake, Yunnan, 3900 m, , caespitose pl, 15 cm high, yellow fls, long tube, PK, 2010, D
- 379 *Pedicularis rex* **Scrophulariaceae**  
China: Zhongdian, Yunnan, 3300 m, , large perennial pl, 40-80 cm high, orange fls, PK, 2010, D
- 380 *Pedicularis rhodotricha* **Scrophulariaceae**  
China: Tuer Shan, Sechuan, 4500 m, , caespitose pl, 25 cm high, deep purple fls, PK, 2010, D
- 381 *Pedicularis tricolor* **Scrophulariaceae**  
China: Napahai, Yunnan, 3400 m, , caespitose pl, 10 cm high, yellow-rose fls, PK, 2010, D
- 382 *Penstemon crandallii* **Scrophulariaceae**  
ex USA: , m, , prostrate pl, 10 cm high, needle-like lvs, blue fls with red throat in short racemes, 2008, D
- 383 *Perezia lanigera* **Asteraceae**  
Argentina: Rio Mayo, Chubut, 580 m, mountain steppe, dense cushions, 15-50 cm wide, 10 cm high, green linear lvs, 1 cm long, white fls in sessile capituli, 2 cm wide, 2010, D
- 384 *Pernetia mucronata* **Ericaceae**  
Chile: Torres del Paine, 600 m, mountain scree, low shrub, 10-30 cm high, leathery spiny lvs, 1-2 cm long, white fls in whorls, white or lilac berries, 2010, C
- 385 *Phlomis sp.* **Lamiaceae**  
China: Serkym La, Tibet, 4400 m, alpine grassland, caespitose pl, 15-20 cm high, hairy cordate lanceolate lvs, lilac fls in whorls, 2010, D
- 386 *Phyllophyton complanatum* **Lamiaceae**  
China: Beima Shan, Yunnan, 4500 m, limestone scree, beautiful hairy Lamium, 5-12 cm high, imbricate reddish green lvs, long blue axillary fls, 200
- 387 *Phyllophyton decolorans\** **Lamiaceae**  
China: N of Rawu, Tibet, 4500 m, moving scree, prostrate ascendent pl, 10-15 cm high, dentate lanceolate lvs, lilac fls in whorls, 2010, D
- 388 *Physoplexis comosa* **Campanulaceae**  
Italy: Maniva, PK, 2000 m, limestone rocks, small caespitose pl, 10 cm high, lilac blue fls in terminal heads, 2009, E
- 389 *Potentilla clusiana* **Rosaceae**

- Slovenia: Julian Alps, 1700 m, limestone crevices, prostrate pl, 5-10 cm high, grey tomentose 5-parted lvs, white creamy fls, 2010, C
- 390 *Potentilla nitida* Rosaceae**  
Slovenia: Julian Alps, 1900 m, limestone crevices and scree, , 2010,
- 391 *Potentilla pulvinaris* Rosaceae**  
ex Turkey: Bolkar Dag, 2500 m, limestone scree, small cushions, 5 cm high, grey tomentose lvs, yellow fls, 2010, D
- 392 *Potentilla tsarongensis* Rosaceae**  
China: Mi La, Tibet, 5000 m, fine sandy scree, very hard flat cushions, stiff ternate lvs with linear leaflets, sessile yellow fls 15 mm wide, 2010, D  
China: Zheduo Shan, Sechuan, 4200 m, granite rocks, , 2009, D
- 394 *Primula aff. alpicola* Primulaceae**  
China: Serkym La, Tibet, 4300 m, wet meadow, perennial pl 30 cm high, cordate lanceolate lvs, yellow fls, 2010, D
- 395 *Primula aff. chionantha* Primulaceae**  
China: Serkym La, Tibet, 4600 m, rough granit scree, perennial pl. 30 cm high, linear lanceolate farinose lvs, lilac fls., 2010, D
- 396 *Primula aff. jaffreyana* Primulaceae**  
China: N of Rawu, Tibet, 4600 m, fine slate scree, poor farinose rosettes, spatulate lvs, 3 cm long, 10-15 cm long stems, 3-5 rose fls in umbells, 2010, D
- 397 *Primula aff. sikkimensis* Primulaceae**  
China: N of Mi La, Tibet, 4300 m, granit scree, perennial pl 30-50 cm high, ovate dentate lvs, longer capsules than *P. sikkimensis*, 2010, D
- 398 *Primula aff. sinopurpurea* Primulaceae**  
China: Serkym La, Tibet, 4400 m, rough granit scree, , 2010, D
- 399 *Primula agleniana* Primulaceae**  
China: Galung La, Tibet, 4400 m, alpine grassland, excellent caespitose pl, 15-30 cm high, linear dentate farinose lvs, 15 cm long, bowl-like pink fls, 2 cm wide, 2010, E
- 400 *Primula algida* Primulaceae**  
Kazakhstan: Dzhungar Ala Tau, 2300 m, subalpine grassland, small caespitose pl, 5-12 cm high, ground lv rosettes, farinose lvs, rich umbells of rose fls, 2009, C
- 401 *Primula amethystina* var. *brevifolia* Primulaceae**  
China: Shika Shan, Yunnan, 4300 m, wet alpine meadow, dwarf pl, 10 cm high, flat ground rosettes, distantly dentate lvs, dark purple nodding fls 2008 E  
China: Hong Shan, Yunnan, 4500 m, , , 2008, E
- 403 *Primula amoena* Primulaceae**  
Russia: West Caucasus, 1800 m, alpine grassland, small caespitose pl, 6 - 10 cm high, prominently reticulate lvs, pink, rose, white or blue fls, PK, 2010, D
- 404 *Primula blinii* Primulaceae**  
China: Mugecuo Lake, Sechuan, 3800 m, open grassless banks, dwarf caespitose pl, 5-10 cm high, deeply sinuate lvs, 3 cm long, rose fls in umbells, 2009, E
- 405 *Primula carniolica* Primulaceae**  
Slovenia: Carniolia, Idria, 700 m, shady limestone rocks, small caespitose pl, green glossy lvs, rose fls on 10 cm long stems, PK, 2010, D
- 406 *Primula chungensis* Primulaceae**  
China: Galung La, Tibet, 3500 m, along rives, caespitose pl, 20-40 cm high, large dentate lvs, orange fls in 3-4 levels, 2010, C
- 407 *Primula deflexa* Primulaceae**  
China: Hong Shan, Yunnan, 4600 m, alpine meadow, small caespitose pl, 15 cm high, small hairy rosettes, short dense spikes, 2-3 cm long, bright rose nodding fls, 2008, E
- 408 *Primula dryadifolia* Primulaceae**  
China: Shika Shan, Yunnan, 4300 m, cold limestone scree, small caespitose pl, 8 - 15 cm high, ovate triangular *Dryas* - like lvs, purple large fls with bracts in umbells, 2008, E
- 409 *Primula fasciculata* Primulaceae**  
China: Zhangduo, Tibet, 3600 m, boggy grassland along stream, caespitose pl with bulbiform base, 3-12 cm high, rounded spatulate lvs, 6-10 mm wide, large rose fls in rich umbells, 2010, D  
China: Tulai, Qinlian Shan, Qinghai, 3300 m, mountain bogs, , 2009, D
- 411 *Primula gemmifera* v. *monantha* Primulaceae**  
China: Beima Shan, Yunnan, 4300 m, wet alpine meadow, dwarf caespitose pl, 3-5 cm high, thick juicy triangular lvs, 1(-3) rose fls, 2008, D

- 412 *Primula gemmifera* v. *zambalensis*** *Primulaceae*  
China: Beima Shan, Yunnan, 4400 m, wet alpine meadow, small caespitose pl, 10-15 cm high, small prostrate rosettes, rich umbells of rose fls on longer stems, 2008, D
- 413 *Primula handeliana*** *Primulaceae*  
China: Serkym La, Tibet, 4000 m, boggy grassland, prostrate rosettes, lanceolate crenate lvs, 8-13 cm long, brown reddish calyxes, pale yellow fls in 2 levels, 2010, D
- 414 *Primula littledalei*\*** *Primulaceae*  
China: Dechen, Tibet, 4500 m, gneiss rocks, , 2010, F
- 415 *Primula macrophylla*** *Primulaceae*  
Tajikistan: Yazgulem Range, Pamir, 3800 m, wet gneiss scree, sect. Nivales, caespitose pl, 15-20 cm high, dentate oblong lvs, large rose fls in hemisphaerical umbells, 2006, D
- 416 *Primula muscarioides*** *Primulaceae*  
China: Galung La, Tibet, 4100 m, alpine grassland, solitary rosettes, 4 cm wide, light green lanceolate dentate lvs, 10-15 cm stems, dark purple fls in compact umbells, 2010, E
- 417 *Primula nanobella*** *Primulaceae*  
China: Hong Shan, Yunnan, 4500 m, wet alpine meadow, one of the smallest *Primula*, 2 - 5 cm high, small serrate lvs in ground rosettes 2 cm wide, large purple fls, 2008, E  
China: Shika Shan, Yunnan, 4300 m, , , 2008, E
- 419 *Primula olgae*** *Primulaceae*  
Tajikistan: Darwas Range, Pamir, 3200 m, snow field, caespitose pl, 10-18 cm high, short finely dentate green-purplish lvs, bright rose fls in dense umbells, 2006, C
- 420 *Primula poissonii*** *Primulaceae*  
China: Zhongdian, Yunnan, 3200 m, boggy grassland, prominent boggy pl, 30-40 cm high, flat lv rosettes, anilin purple-red fls in umbells, arranged in 3-5 levels,, 2008, B
- 421 *Primula prenantha*** *Primulaceae*  
China: Galung La, Tibet, 4000 m, alpine grassland, caespitose pl, 15 cm high, lanceolate dentate lvs, 10 cm long, 4-6 yellow fls in umbells 2010 D
- 422 *Primula pseudosikkimensis*** *Primulaceae*  
China: Hong Shan, Yunnan, 4600 m, wet alpine meadow, dwarf *P. sikkimensis*, 15-20 cm high, 1-3 large yellow fls, 2008, D
- 423 *Primula pulchella*** *Primulaceae*  
China: Zhongdian, Yunnan, 3400 m, wet limestone slope, caespitose pl, 5-14 cm high, farinose lvs, bright rose fls in umbells, 2008, D
- 424 *Primula ruprechtii*** *Primulaceae*  
Russia: West Caucasus, PK, 1800 m, alpine grassland, small caespitose pl, 8 - 15 cm high, reticulate lvs, yellow fls, 2009, D
- 425 *Primula secundiflora*** *Primulaceae*  
China: Tianchi Lake, Yunnan, 3800 m, alpine grassland, larger *Primula*, 30 cm high, linear lanceolate lvs 12 cm long, purple nodding fls in rich umbells, 2008, B  
China: Shen Shan, Sechuan, 3600 m, boggy meadow, , 2007, B
- 427 *Primula sikkimensis*** *Primulaceae*  
China: Lunang, Tibet, 3300 m, boggy grassland, larger *Primula*, 30 - 40 cm high, lanceolate lvs up to 15 cm long, large yellow fls nodding in umbells, 2010, C  
China: Zheduo Shan, Sechuan, 3700 m, , , 2007, C
- 429 *Primula sinoplantaginea/graminifolia*** *Primulaceae*  
China: Ngajuk La, Tibet, 4600 m, fine slate scree, low caespitose pl, 10-15 cm high, linear lanceolate lvs, red petioles and stems, rose/lilac fls in umbells, 2010, D  
China: Hong Shan, Yunnan, 4600 m, fine slate scree, , 2008, D
- 431 *Primula sinopurpurea*** *Primulaceae*  
China: Mugecuo Lake, Sechuan, 3800 m, wet mountain grassland, medium caespitose pl, 15 - 22 cm high, linear lanceolate lvs, farinose bellow, purple - violet fls in rich umbells, 2009, C  
China: Shika Shan, Yunnan, 4300 m, , , 2008, C  
China: Tianchi Lake, Yunnan, 3800 m, , , 2008, C  
China: Hong Shan, Yunnan, 4600 m, , , 2008, C
- 435 *Primula stenocalyx*** *Primulaceae*  
ex China: Min Shan, Huang, Sechuan, 4000 m, hot limestone rocks, dwarf caespitose pl, 2-5 cm high, 3 cm wide leaf rosettes, farinose lvs, 2 - 4 pink fls, 2010, E

- 436 *Primula tanneri* ssp. *tsariensis* Primulaceae  
China: Galung La, Tibet, 4400 m, fine slate scree, alpine grassland, caespitose pl, 12-20 cm high, lanceolate serrate lvs, 10-12 cm high, purple-red fls, 15 mm wide in umbells, 2010, E
- 437 *Primula wulfeniana* Primulaceae  
Slovenia: Kamnik Alps, 1900 m, , JP, 2010, D
- 438 *Przewalskya tangutica* Solanaceae  
China: Maqin Gangri, Qinghai, 4500 m, fine gneiss scree, caespitose pl, 5 cm high, 10-15 cm wide, large rosettes of green undulate lvs, inflated fruits- vesicule, 3-5 cm long, 2007, D
- 439 *Pterocephallus pinnardii* Asteraceae  
ex Turkey: Ala Dag, m, limestone scree, tight flat mats with woody base, 20 x 3 cm, hairy foliage, lilac fls on heads on 3 cm stems, late-flowering, excellent, 2010, C
- 440 *Pterocephalus hookerii* Dipsacaceae  
China: Lhasa, Tibet, 3500 m, dry rocky slope, caespitose pl, 15-25 cm high, white/pink fls, 2010, C
- 441 *Pulsatilla albana* Ranunculaceae  
ex Russia: Caucasus, 2000 m, alpine grassland, caespitose pl, 15-20 cm high, white/creamy fls, bluish base, 2010, C
- 442 *Pulsatilla alpina* ssp. *apiifolia* Ranunculaceae  
Slovenia: Julian Alps, 2000 m, alpine grassland, perennial pl, 30-40 cm high, double pinnatisect lvs, yellow fls, 5 cm long, 2010, C
- 443 *Pulsatilla aurea* Ranunculaceae  
Russia: Caucasus, Dombai, m, alpine meadows, perennial pl, 30-50 cm high, double pinnatisect lvs, yellow fls, 5-6 cm wide, PK, 2010, E
- 444 *Pulsatilla bungeana* Ranunculaceae  
ex Mongolia: , m, , , 2010, D
- 445 *Pulsatilla campanella* Ranunculaceae  
Kazakhstan: Dzhungar Ala Tau, 2000 m, subalpine grassland, caespitose pl, 12-20 cm high, finely bipinnate lvs, grey blue nodding hairy fls, 4 cm long, 2009, C  
Kazakhstan: Zailiski Ala Tau, 2300 m, , , 2009, C
- 447 *Pulsatilla flavescens* Ranunculaceae  
ex Russia: Sayan Mts., m, , caespitose pl, 20 cm high, large palmately pinnate lvs, very large yellow fls, 2010, D
- 448 *Pulsatilla slavica+subslavica* Ranunculaceae  
ex Slovakia: Muran, 800 m, mountain meadow, caespitose pl, 15-25 cm high, pinnatisect lvs, large leaflets, prominent blue-purple fls 7 cm long 2010 B
- 449 *Pulsatilla turczaninovii* Ranunculaceae  
ex Russia: Saian Mts., m, mountain meadow, caespitose pl, 15 cm high, glossy bipinnate lvs, medium blue hairy fls, 2010, C
- 450 *Pyrethrum karelinii* Asteraceae  
China: Karlik Shan, Xinjiang, 2500 m, mountain steppe, small white hairy prostrate pl, 15 cm high, bipinnate lanceolate lvs, large white daisies, 2009, C
- 451 *Pyrethrum tatsiense* Asteraceae  
China: Serkym La, Tibet, 4500 m, alpine grassland, prostrate mats, 40 cm high, finely incised green foliage, large red - orange fls on 15 - 20 cm long stems, 2010, C  
China: Zheduo Shan, Sechuan, 4400 m, , , 2009, C
- 453 *Quinchamalium chilense* Santalaceae  
Argentina: Paso Cordoba, Neuquen, 1290 m, silicate scree, caespitose pl, 5-15 cm high, ascendent stems, linear lvs, 2-3 cm long, numerous orange fls in terminal heads, 2010, D
- 454 *Ranunculus parnassifolius* Ranunculaceae  
Spain: Pyrenees, 2400 m, , JP, 2010, D
- 455 *Ranunculus semiverticillatus* Ranunculaceae  
Argentina: Cerro Cathedral, Rio Negro, 2000 m, moving granite scree, caespitose pl, 10-20 cm high, finely incised grey lvs, flat white fls, 4-5 cm wide, 2010, E  
Argentina: Chapelco, San Martin, Rio Negro, 1935 m, granite scree, 2010 E  
Argentina: La Hoya, Esquel, Chubut, 1600 m, granite scree, , 2010, E
- 458 *Rhamnus microcarpa* Rhamnaceae  
ex Russia: Caucasus, Mt. Fisht, m, , dwarf shrub, appressed to rocks, 10 cm high, broadly ovate lvs, 4-6 cm long, black berries, 4 mm wide, 20
- 459 *Rheum alexandre* Polygonaceae  
China: Tianchi Lake, Yunnan, 3500 m, boggy lake bank, perennial pl, 60-100 cm high, thick rhizomes, ovate lvs 10-30 cm, stems with decorative white

- bracts, redish fruits, 2008, C  
China: Mugecuo Lake, Sechuan, 3800 m, mountain bogs, , 2009, C
- 461 *Rheum delavayi* Polygonaceae**  
China: Beima Shan, Yunnan, 4800 m, slate scree, dwarf rhubarb 10 - 30 high, entire undulate lvs, red petioles, racemes of reddish fls, red winged seeds, 2008, D
- 462 *Rheum nobile* Polygonaceae**  
China: Serkym La, Tibet, 4600 m, rough granit scree, tall perennial rhubarb, 150-200 cm high, ovate cordate lvs, 20-30 cm long, stems with white bracts, red fruits, 2010, E
- 463 *Rhinopetalum bucharicum* Liliaceae**  
ex Tajikist: Darwas Ridge, Pamirs, 2500 m, limestone scree, bulb pl, 10-20 cm high, white fls, 2 cm long, in racemes, 2010, D
- 464 *Rhinopetalum karelinii* Liliaceae**  
Kazakhstan: Kapchagai Dam, PK, 500 m, semidesert, fine sand, bulb pl, 15 cm high, lanceolate lvs, rose fls in lax racemes, 2010, E
- 465 *Rhinopetalum stenanthum* Liliaceae**  
Uzbekistan: Sukok, Chatkal Ridge, Tien Shan, 1700 m, , bulb pl, 10- 20 cm high, green lanceolate lvs, 8 cm long, pink fls in terminal racemes, 2007, E
- 466 *Rhodiola atuntsiensis* Crassulaceae**  
China: Serkym La, Tibet, 4400 m, granit scree, juicy rhizomatic pl, 5-10 cm high, linear succulent lvs, rose fls in terminal infl, 2010, C  
China: Zheduo Shan, Sechuan, 4300 m, rought silicate scree, , 2009, C  
China: Hong Shan, Yunnan, 4500 m, slate scree, , 2008, C
- 469 *Rhodiola* cf. *humilis* Crassullaceae**  
China: Min Shan, Huang, Sechuan, 4000 m, limestone crevices, small caespitose pl, 5 - 10 cm high, prostrate densely leafy stems, 3-5 terminal fls, 2009, E
- 470 *Rhodiola crenulata*\* Crassulaceae**  
China: N of Rawu, Tibet, 4600 m, granit scree, , 2010, D
- 471 *Rhodiola heterodonta* Crassulaceae**  
Tajikistan: Yazgulem Range, Pamir, 3700 m, gneiss scree, caespitose rhizomatic pl, 15-25 cm high, bluish obovate dentate succulent lvs, yellow fls in short cymes, 2006, A
- 472 *Rhododendron campylogynum* v. Ericaceae**  
China: Galung La, Tibet, 4300 m, rock terraces, small shrub, 10-15 cm high, ovate leatherly lvs, 10-15 mm long, purple campanulate fls, 15 mm long, 2010, D
- 473 *Rhododendron* cf. *proteoides* Ericaceae**  
China: Shika Shan, Yunnan, 4300 m, rhododendron shrubs, low shrub, 50 cm high, densely branched, linear lvs, 4-5 cm long, 8 mm wide, pink fls 2008 D
- 474 *Rhododendron chrysanthum* Ericaceae**  
Russia: Bakining, Kamchatka, 1000 m, subalpine shrubland, low shrub, 15-50 cm high, pale yellow fls, 2007, D
- 475 *Rhododendron forrestii* Ericaceae**  
China: Galung La, Tibet, 4400 m, northern alpine slopes, prostrate shrub, 5-12 cm high, ovate lvs, 5-7 cm long, bright red funnel form fls, 3-4 cm long, 2010, D
- 476 *Rhododendron racemosum* Ericaceae**  
China: Zhongdian, Yunnan, 3200 m, northern mountain slope, low evergreen shrub, 40 - 60 cm high, ovate leather - like lvs, rose fls with prominent anthers, 2008, C
- 477 *Rhododendron tapetiforme*\* Ericaceae**  
China: Ngajuk La, Tibet, 4600 m, alpine grassland, dwarf shrub, small ovate lvs, lilac fls, 2010, D
- 478 *Rhodotamnus chamaecistus* Ericaceae**  
Slovenia: Julian Alps, 1700 m, limestone scree, dwarf shrub, 10-20 cm high, prominent pink fls, 2010, D
- 479 *Roscoea tibetica* Zingiberaceae**  
China: Zhongdian, Yunnan, 3500 m, alpine grassland, small rhizomatic pl, 5 - 10 cm high, prostrate lvs, sessile purple red fls, 2008, D
- 480 *Salvia aethiops* Lamiaceae**  
ex Moravia: perennial pl, 80 cm high, densely white wooly ground rosettes, white fls in broad panicles, 2010, A
- 481 *Saponaria pulvinaris* Caryophyllaceae**  
ex Turkey: Bolkar Dag, 2800 m, limestone scree, large mats like *Silene acaulis*, 20 x 3 cm, 1-5 pink or red fls on 2 cm shorts stems, difficult, wonderful, 2010, D
- 482 *Saussurea* aff. *gnaphalodes* Asteraceae**



- China: Ngajuk La, Tibet, 5000 m, fine slate scree, , 2010, E
- 483 *Saussurea cf. depsangensis* Asteraceae**  
 China: Shika Shan, Yunnan, 4300 m, limestone scree, caespitose pl, 5 cm high, green-grey lanceolate entire lvs, 3-8 purple fls in open heads 2008 E
- 484 *Saussurea cf. nimborum* Asteraceae**  
 China: Ngajuk La, Tibet, 4800 m, granit scree, larger cushions, 8-15 cm high, dark green linear serrate lvs, purple fls in umbells of receptacules, 2010, C  
 China: Mi La, Tibet, 5000 m, granit scree, , 2010, C
- 486 *Saussurea cf. quercifolia* Asteraceae**  
 China: Beima Shan, Yunnan, 4500 m, limestone scree, caespitose pl 15 cm high, red green lvs in rosettes, protrude with wooly cylinders of lobate foliage, blue fls on top, 2008, D
- 487 *Saussurea hieraciifolia* Asteraceae**  
 China: N of Mi La, Tibet, 4300 m, fine slate scree, caespitose pl, 10-15 cm high, terminal capituli, blue fls, 2010, D
- 488 *Saussurea leontodontoides* Asteraceae**  
 China: Ngajuk La, Tibet, 4500 m, alpine grassland, prostrate pl, 8 cm high, linear sinuate lvs, reddish green above, white tomentose bellow, sessile lilac fls, 2010, D  
 China: Min Shan, Huang, Sechuan, 4000 m, limestone scree, , 2009, D  
 China: Shen Shan, Sechuan, 3800 m, , , 2007, D
- 491 *Saussurea medusa* Asteraceae**  
 China: N of Rawu, Tibet, 4800 m, granit scree, magnificent caespitose pl 20 cm high, white green rhomboid lvs, rosettes protrude with white cylinders, blue fls on top, 2010, E  
 China: Beima Shan, Yunnan, 4600 m, limestone scree, , 2008, E  
 China: Bayan Har Shan, Qinghai, 5100 m, fine granite scree, , 2007, E
- 494 *Saussurea nidularis* Asteraceae**  
 China: Serkym La, Tibet, 4500 m, rough granit scree, caespitose pl, 15-20 cm high, light green lanceolate lvs on numerous stems, pink bracts cover rounded infl, 2010, D  
 China: Qinlian Shan, Qinghai, 3400 m, mountain grassland, , 2009, D  
 China: Shen Shan, Sechuan, 4000 m, granite scree, , 2007, D
- 497 *Saussurea obvallata* Asteraceae**  
 China: Serkym La, Tibet, 4600 m, rough granit scree, , 2010, D
- 498 *Saussurea pygmaea* Asteraceae**  
 Slovenia: Julian Alps, 2000 m, , caespitose pl, 10 cm high, linear lvs, 1 mm wide, terminal capituli, blue fls, 2010, C
- 499 *Saussurea tridactyla* Asteraceae**  
 China: Beima Shan, Yunnan, 4700 m, limestone scree, caespitose pl, 10-15 cm wide green rosettes, finely irregularly pinnate lvs, white wooly in flowering, 2008, E
- 500 *Saussurea werneroides* Asteraceae**  
 China: Serkym La, Tibet, 4400 m, alpine grassland, prostrate pl, purple fls, 2010, E
- 501 *Saxifraga albertii* Saxifragaceae**  
 Uzbekistan: Chimgan, Chatkal Ridge, Tien Shan, 2600 m, limestone rocks, overhangs, sect. Porophyllum, compact cushions, 4-12 cm wide, lanceolate green lvs, white fls in terminal racemes, stems 4-8 cm, 2007, D  
 Tajikistan: Yazgulem Range, Pamir, 3200 m, , , 2006, D
- 503 *Saxifraga atunsiensis* Saxifragaceae**  
 China: Mi La, Tibet, 5000 m, fine sandy scree, sect. Ciliatae, flat cushions, 8-12 cm wide, ovate lvs in dense soft rosettes, yellow fls on 3-5 cm long stems, 2010, D
- 504 *Saxifraga candelabrum* Saxifragaceae**  
 China: Zhongdian, Yunnan, 3200 m, limestone rocks, sect. Ciliatae, small lv rosettel-2 cm wide, branched stems 10-15 cm, yellow fls, 2008, B
- 505 *Saxifraga chionophila* Saxifragaceae**  
 China: Shika Shan, Yunnan, 4300 m, limestone crevices, sect. Porophyllum, rounded compact cushions, lanceolate lvs, small pink-red fls in sessile racemes narrow petals, 2008, C
- 506 *Saxifraga crustata* Saxifragaceae**  
 Slovenia: Julian Alps, 1700 m, limestone scree, dwarf form, 2010, C
- 507 *Saxifraga diversifolia* Saxifragaceae**  
 China: Mugecuo Lake, Sechuan, 3800 m, woodlan, shrubland, sect. Ciliate, caespitose pl, 20 cm high, spatulate lvs, yellow fls on branched stems, 2009, D

- 508 *Saxifraga longifolia* Saxifragaceae  
Spain: Pyrenees, 1400 m, JP, 2010, D
- 509 *Saxifraga ludlowii*\* Saxifragaceae  
China: N of Rawu, Tibet, 4600 m, limestone scree and crevices, , 2010
- 510 *Saxifraga magellanica* Saxifragaceae  
Argentina: Col. Belgrano, nr. Perito Moreno, Santa Cruz, 1175 m, silicate scree, small cushions, 4-8 cm high, trifurcate lvs in small rosettes, white pinkish fls in terminal racemes, 2010, D
- 511 *Saxifraga spruneri* var. *deorum* Saxifragaceae  
ex Greece: Olympus, Kedax, 2700 m, limestone crevices, sect. Porophyllum, cushions 5-15 cm wide, large hairy rosettes, white fls in terminal racemes on 10 cm stems, 2010, C
- 512 *Saxifraga spruneri* var. *spruneri* Saxifragaceae  
Bulgaria: Orelek, m, , sect. Porophyllum, cushions 5-15 cm wide, small hairy rosettes, white fls in terminal racemes on 10 cm stems, 2009, C
- 513 *Saxifraga squarrosa* Saxifragaceae  
Slovenia: Julian Alps, 1700 m, limestone crevices, sect. Porphyron, hard cushions, dwarf rosettes, creamy fls on 5 cm stems, 2010, C
- 514 *Saxifraga stella-aurea*\* Saxifragaceae  
China: Ngajuk La, Tibet, 4800 m, fine slate scree, compact rounded cushions 5-8 cm wide, ovate lvs in 6 mm rosettes, yellow fls on 2-4 cm stems, 2010, D
- 515 *Saxifraga stribrnyi* Saxifragaceae  
ex Bulgaria: Rhodops, m, , sect. Porophyllum, cushions, 3 - 8 cm wide, large grey rosettes, light wine fls on 10 cm long stems, 2010, C
- 516 *Saxifraga tangutica* Saxifragaceae  
China: Mi La, Tibet, 5000 m, Kobresia grassland, sect. Hirculoides, rounded hard cushions 5-15 cm wide, lanceolate lvs 1 cm long, yellow fls in congested panicles, 2010, C  
China: Maqin Gangri, Qinghai, 4300 m, alpine grassland, , 2007, C
- 518 *Saxifraga umbellulata* v. *pectinata* Saxifragaceae  
China: Jiaerduo, Tibet, 4000 m, rock crevices, sect. Ciliatae, flat tiny rosettes, 1-3 cm wide, linear glandulose lvs, 1 cm long, yellow fls in panicles, 10-12 cm, 2010, D  
China: Shungdor, Tibet, 3600 m, shady rocks, , 2010, D
- 520 *Saxifraga unifoveolata* Saxifragaceae  
ex Russia: Caucasus, Fisht, 2000 m, limestone crevices, sect. Porophyllum, the smallest of Juniperifolia subsect., 2010, D
- 521 *Saxifraga wallichiana*\* Saxifragaceae  
China: N of Mi La, Tibet, 4300 m, alpine grassland, crevices, sect. Ciliatae, leafy stems 5-12 cm, triangular leathery lvs 7-12 mm with buds in nodi, yellow fls, 2010, D
- 522 *Saxifraga wardii*\* Saxifragaceae  
China: Serkym La, Tibet, 4400 m, fine slate scree, sect. Ciliatae, leafy stems 3-5 cm, triangular leathery lvs 6-8 mm, solitary yellow fls, red calyxes, 2010, D
- 523 *Scilla litardierii* Liliaceae  
Herzegovina: Dugo Polje, 900 m, , bulb pl, PK, 2010, D
- 524 *Senecio* aff. *argyreus* Asteraceae  
Argentina: Paso Cordoba, Neuquen, 1295 m, dry rocky slope, cushions, 20-30 cm wide, 15 cm high, grey tomentose lvs, linear dentate, yellow tubular fls in capituli, 1 cm wide, 2010, D
- 525 *Senecio carniolicus* Asteraceae  
Slovenia: Julian Alps, 1700 m, limestone scree, prostrate pl, 15-20 cm high, green incised lvs in ground rosettes, 3-7 yellow capituli, 20
- 526 *Senecio chrysocomoides* Asteraceae  
Argentina: Esperanza - Tapi Aike, Santa Cruz, 545 m, antarctic steppe, large cushions, 30 cm high, green lvs, simple stems, yellow tubular fls in capituli, 10 mm wide, 2010, C
- 527 *Senecio leucophyllus* Asteraceae  
Spain: E. Pyrenees, 2700 m, rough gneiss scree, superb prostrate cushions, white wooly lyrate lvs, yellow fls 3-5 capituli on 10 cm stems, for cold scree only, 2008, D
- 528 *Senecio patagonicus* Asteraceae  
Argentina: Cabo Virgines, Santa Cruz, 150 m, antarctic steppe, rounded cushions, 30-50 cm high, grey lvs, branched stems, yellow tubular fls in capituli, 12 mm wide, 2010, C
- 529 *Senecio sericeonitens* Asteraceae  
Argentina: El Bolson, Rio Negro, 900 m, mountain grassland, flat cushions, 15-30 cm wide, grey tomentose lvs in compact rosettes, yellow tubular and

ray fls in capituli 25 mm wide, 2010, D

- 530 *Senecio triodon* Asteraceae**  
Argentina: Alerces, Esquel, Chubut, 645 m, mountain steppe, flat cushions, 10-20 cm wide, green lvs with 3 dents in rosettes, 3 cm wide, yellow tubular fls in capituli, 15 mm wide, 2010, D
- 531 *Sideritis romana* Lamiaceae**  
Spain: E. Pyrenees, 2300 m, gneiss rocks, dwarf subshrub 5-10 cm high, prostrate leafy stems, yellow fls in terminal compact racemes, 2008,
- 532 *Silene davidii* Caryophyllaceae**  
China: Zheduo Shan, Sechuan, 4100 m, alpine grassland, superb compact cushions, 5-20 cm wide, green ovate lvs 1 cm long, 2 cm large rose fls, bifide petals, 2009, D
- 533 *Silene falcata* Caryophyllaceae**  
ex Turkey: Ulu Dag, 2000 m, limestone scree, prostrate mats, 5 - 15 cm wide, falcate linear green lvs 2 cm long, solitary white fls on 6 - 12 cm stems, black capsules, 2010, C
- 534 *Silene nigrescens* Caryophyllaceae**  
China: Ngajuk La, Tibet, 4900 m, fine slate scree, caespitose pl, 8 cm high, glandular hairy green lvs, purple solitary fls, inflated calyxes with black veins, 2010, C  
China: Beima Shan, Yunnan, 4600 m, gneiss scree, , 2008, C
- 536 *Sinopodophyllum emodii* Liliaceae**  
China: Zhongdian, Yunnan, 3300 m, , magnificent caespitose pl 20 cm high, white green rhomboid lvs, rosettes protrude with white cylinders, blue fls on top, 2009, A
- 537 *Soldanella montana* Primulaceae**  
ex Czech R.: , m, woodland, caespitose pl, 15 cm high, rounded lvs, blue incised bells, 2 cm long, 2010, C
- 538 *Solmslaubachia cf. pulcherrima* Brassicaceae**  
China: Mi La, Tibet, 4800 m, slate scree, small caespitose pl, 5 cm high, solitary rosettes, linear lvs, rose fls on short peduncles, large siliques, 2010, E
- 539 *Soroseris gillii* Asteraceae**  
China: Zheduo Shan, Sechuan, 3800 m, fine silicate scree, caespitose pl, 3 - 5 cm high, large 5 - 15 cm wide rosettes, yellow fls in sessile infl, 2009, D
- 540 *Soroseris glomerata* Asteraceae**  
China: Ngajuk La, Tibet, 4800 m, slate scree, small caespitose pl, 5 cm high, brown spatulate lvs, yellow fls, 2010, D
- 541 *Soroseris rosularis* Asteraceae**  
China: Serkym La, Tibet, 4400 m, slate scree, small caespitose pl, 5 cm high, flat lv rosette of linear-lobate lvs, rounded dense infl of yellow fls, 2010, D  
China: Ngajuk La, Tibet, 4600 m, slate scree, , 2010, D  
China: Beima Shan, Yunnan, 4800 m, limestone scree, , 2008, D
- 544 *Soroseris umbrella* Asteraceae**  
China: Hong Shan, Yunnan, 4600 m, slate scree, very flat large lv rosettes, 20 cm wide, reddish brown foliage, creamy fls in flat sessile infl in the middle of rosette, 2008, C
- 545 *Spenceria ramalana ssp. ramalana* Rosaceae**  
China: Litang, Sechuan, 4400 m, mountain grassland, Potentilla -like, caespitose pl, 15-20 cm high, pinnate lvs, 5-7 cm long, large yellow fls in rich racemes, 2007, C
- 546 *Stachys inflata* Lamiaceae**  
ex Iran: Elborz, Baladeh, 1600 m, mountain steppe, caespitose pl, 20 cm high, white hairy ovate lvs 10-20 mm, pink fls in terminal racemes, 2
- 547 *Stachys lavandulifolia* Lamiaceae**  
ex Turkey: , m, , caespitose pl, 5 - 15 cm high, lanceolate hairy lvs, dark rose fls in 10 cm long racemes, 2010, C
- 548 *Stellera chamaejasme ssp.* Thymeleaceae**  
China: Litang, Sechuan, 4200 m, alpine grassland, subshrub 20-30 cm, stems with narrow lanceolate lvs, white fls with red tube in terminal heads, PK, 2010, E
- 549 *Swertia cf. perennis\** Gentianaceae**  
China: N of Mi La, Tibet, 4300 m, wet meadow, , 2010, D
- 550 *Swertia marginata* Gentianaceae**  
Tajikistan: Yazgulem Range, Pamir, 3700 m, gneiss scree, caespitose pl, 15-20 cm high, spatulate lvs, 10 cm long, white fls with bluish with margins in umbells, 2006, C

- 551 *Swertia perennis* **Gentianaceae**  
China: Min Shan, Huang, Sechuan, 4200 m, limestone fine scree, caespitose perennial pl, 15 cm high, dark blue fls in lax racemes, 2009, C
- 552 *Syncalathium roseum* **Asteraceae**  
China: Dechen, Tibet, 4500 m, stony river deposits, caespitose monocarpic pl, 3 cm high, prostrate rosettes, 3-8 cm wide, brown spatulate lvs, rose fls in sessile heads, 2010, D
- 553 *Syncalathium souilei* **Asteraceae**  
China: N of Rawu, Tibet, 4000 m, silicate scree, caespitose monocarpic pl, 3 cm high, prostrate rosettes, 5-10 cm wide, green linear lanc lvs, blue fls in sessile heads, 2010, D  
China: Hong Shan, Yunnan, 4600 m, slate scree, , 2008, D
- 555 *Thalictrum delavayi* **Ranunculaceae**  
China: Mugecuo Lake, Sechuan, 3800 m, rough silicate scree, larger perennial 70 cm high, leaflets to 8 mm, large rose fls, 2009, D
- 556 *Thermopsis lanceolata* **Fabaceae**  
China: Tulai, Qinlian Shan, Qinghai, 2800 m, alpine grassland, caespitose pl., 20 cm high, trifoliate lvs, narrow lanceolate leaflets, very large yellow fls, 2009, D
- 557 *Thermopsis smithiana* **Fabaceae**  
China: Zheduo Shan, Sechuan, 4300 m, alpine grassland, caespitose pl, 10-20 cm high, pinnate hairy lvs, 5 cm long, wider pods, yellow fls, PK, 20
- 558 *Thlaspi bellidifolium* **Brassicaceae**  
ex Bulgaria: Pirin Mts., 2000 m, limestone scree, caespitose pl, 3-7 cm high, spatulate lvs, 15 mm long, pink fls in umbells, 2010, C
- 559 *Thlaspi rotundifolium* **Brassicaceae**  
Austria: Dachstein, 2600 m, limestone scree, caespitose pl, 3-5 cm high, spatulate succulent lvs, 10 mm long, rose lfs in umbells, 2010, C
- 560 *Thylacospermum caespitosum* **Caryophyllaceae**  
China: Tulai, Qinlian Shan, Qinghai, 4200 m, rough silicate scree, hard cushions, 10 - 120 cm wide, white greenish sessile fls, plounged rounded capsules, 2009, E
- 561 *Thymelea dioica* **Thymeleaceae**  
Spain: Pyrenees, 1900 m, small caespitose shrub, 5-10 cm high, linear lvs, small yellowish fls, JP, 2010, D
- 562 *Trollius patulus* **Ranunculaceae**  
Russia: Caucasus, Dombai, 3000 m, perennial pl, 20-40 cm high, pinnatisect lvs, solitary simple yellow fls, 3 cm wide, PK, 2010, C
- 563 *Tulipa albertii* **Liliaceae**  
Kazakhstan: Bank of Balkhash Lake, m, semidesert, bulb pl, 10-20 cm high, undulate lvs, large solitary red fls, 2009, C
- 564 *Tulipa behmiana* **Liliaceae**  
Kazakhstan: Kapchagai Dam, 500 m, sand dunes, semidesert, bulb pl, 15-30 cm high, undulate lvs, large solitary yellow fls, 2010, D
- 565 *Tulipa bifloriformis* **Liliaceae**  
Uzbekistan: Chimgan, Chatkal Ridge, Tien Shan, 1700 m, granite river deposits, bulb pl, 5 - 15 cm high, lanceolate lvs, 10 cm long, 1 - 2 white fls with yellow centre, 2007, B
- 566 *Tulipa brachystemon* **Liliaceae**  
Kazakhstan: Arkhapcharay Hills, 1000m, rocky sloppes among shrubs, bulb pl, 20-40 cm high, narrow lvs, large open solitary yellow fls, 2009, C
- 567 *Tulipa buhseana* **Liliaceae**  
Kazakhstan: Kapchagai Dam, 500 m, sandy semidesert, bulb pl, 15-30 cm high, several fl stems, medium white fls with yellow base, pinkish outside 2009 C
- 568 *Tulipa dasystemon* **Liliaceae**  
Uzbekistan: Zamin, Turkestan Ridge, Pamiroalai, 2500 m, short grass on limestones, bulb pl, 5 - 15 cm high, linear lvs, 1 x 10 cm, yellow fls, 2007, B
- 569 *Tulipa kolpakowskiana* **Liliaceae**  
Kazakhstan: Kapchagai Dam, 500 m, sandy semidesert, bulb pl, 15-30 cm high, undulate narrow lvs, medium - large solatiry yellow fls, 2009, C
- 570 *Tulipa linifolia* **Liliaceae**  
Tajikistan: Darwas Range, Pamir, 2600 m, limestone scree, bulb pl, 15 cm high, 2-4 linear lvs, red solitary fls, ovate capsules, 2006, C
- 571 *Tulipa ostrowskiana* **Liliaceae**  
Kazakhstan: Foothills of Zailiski Ala Tau, 1400 m, mountain grassland, bulb pl, 30-40 cm high, narrow erect undulate lvs, long solitary red fls 2009 D
- 572 *Tulipa regelii* \* **Liliaceae**  
Kazakhstan: Chu-Ili Mts., 1000m, dry scree, bulb pl, 10 cm high, ribbed lvs,

12 cm long, yellow fls, PK, 2010, G

**573 *Tulipa tschimganica***

***Liliaceae***

ex Uzbekist: Chimgan, Tian Shan, bulb pl, 15 - 20 cm long, grey lanceolate lvs, yellow fls with red stripes and dark markings, 2009,

**574 *Veronica piroliformis***

***Scrophulariaceae***

China: Yulong Shan, Yunnan, 4000 m, limestone scree, caespitose pl, 10-20 cm high, dark green hairy ovate lvs, rose fls in racemes, 2008, C

**575 *Viola maculata***

***Violaceae***

Argentina: Cabo Virgines, SantaCruz, 160m, mountain steppe, small caespitose pl, 3-6 cm high, cordate hairy lvs, large yellow fls, brown veins, 2010, C

**576 *Primula clusiana***

***Primulaceae***

Austria: Dachstein, 2500 m, 2010, D