

Plantae Chinenses Forrestianae.

Plants discovered and collected by George Forrest during his first exploration of Yunnan and Eastern Tibet in the years 1904, 1905, and 1906.

New and Imperfectly known Species.

BY

PROFESSOR DR. L. DIELS,
Marburg.

DICOTYLEDONES.

ACANTHACEAE.

Hemigraphis drymophila, Diels. Sp. nov.

Planta 7.5-15 cm. alta. Caulis brevissimus, basi ramosus. Folia plurima basalia subsessilia vel breviter petiolata, membranacea, inprimis supra minute strigulosa, anguste obovata oblanceolata vel anguste elliptica, basin versus plerumque longe angustata, 5-15 cm. longa, 2-4 cm. lata. Rami floriferi adscendentes, scaposi nudi rarius foliis 2 oppositis minoribus praediti, 5-20 cm. longi, minutissime puberuli. Flores 2-4-ni capitati, scapos terminantes; bracteae foliaceae involucrantes, 1-1.5 cm. longae, praecipue ad marginem basalem longius strigoso-ciliatae; bracteolae calycem paulo superantes ciliatae. Calycis segmenta anguste lanceolata, strigosa, acuta, 6-7 mm. longa. Corolla lavandulaceo-coerulea, tubus circ. 8 mm. longus; limbus conspicuus; lobi 6-7 mm. longi et lati, obovati apice subtruncati. Stamina 4 subaequalia glabra, thecae obtriangulares, superiora 2 exserta. Stylus hirtus, apice in lobos 2 inaequales divisus, 12 mm. longus.

"Plant of 3-6 inches. Flowers lavender-blue. Dry, shady situations in woods at the base of the eastern flank of the Lichiang Range. Lat. 27° 10'. Alt. 8500-10,000 ft. Flow. August 1906." G. Forrest. No. 2774.

This little plant has the appearance of *H. repanda*, Lindau, a native of Java and New Guinea.

[Notes, R.B.G., Edin., No. XXV, June 1912.]

Strobilanthes cyphantha, Diels. Sp. nov.

Caulis suffrutescens, 0.45-0.6 m. altus, quadrangulus. Folia herbacea, 2-5 cm. longe petiolata, herbacea, in utraque facie paleaceo-pilosa, sicca luteo-iridita, ovata, basin versus in petiolum subdecurrentia, apice acuminata, crenato-serrata, circ. 10 cm. longa, 4-5 cm. lata. Inflorescentiae in axillis foliorum superiorum longe pedunculatae subcapitato-confertae, bracteae et bracteolae oblanceolatae vel lanceolatae, praesertim ad margines cum sepalis longe paleaceo-pilosae pilis patulis, sepala fere aequantes. Sepala aequalia linearia apice demum patentia. Corolla coerulea ampla 3-4 cm. longa extus puberula; tubus e basi cylindrica latissime ventricosus, limbum versus subrectangulo-curvedus; limbus brevis. Filamenta et stylus puberula. Ovarium apice barbatum.

"Half shrubby plant of 1½-2 ft. Flowers blue. Grassy situations amongst scrub on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 9-10,000 ft. Flow. June 1906." G. Forrest. No. 4549, partly.

Strobilanthes Forrestii, Diels. Sp. nov.

Suffruticosa vel herbacea. Caules 15-50 cm. alti, plus minusve glanduloso-pilosi. Folia herbacea, glanduloso-pilosa vel glabrescentia subsessilia, ovata, basi lata nonnunquam subcordata rarius cuneato-angustata, crenato-serrata, apice obtusiuscula, 2-5 cm. longa, 1.2-3 cm. lata. Inflorescentia simplex, spicata vel ramis ex axillis foliorum inferiorum additis sub-paniculata. Flores solitarii sessiles. Bracteae foliaceae, superiores integrae ovato-ellipticae; bracteolae anguste oblongae, sepalis saepe breviores. Sepala linearia, cum bracteis bracteolisque glanduloso-pubescentia, longitudine unum cetera superans, 1-2 cm. longa, 0.2-0.3 cm. lata. Corollae coeruleae vel purpurascens 3-3.5 cm. longae tubus e basi angusta ampliatus campanulato-cylindricus. Stylus apice paulum dilatatus; ovarium minute puberulum.

"Plant of 6-12 inches. All parts, with exception of corolla, glandular. Flowers pale blue. Open, grassy situations in side valleys on the eastern flank of the Lichiang Range. Lat. 27° 25'. Alt. 11,000 ft. Flow. June 1906." G. Forrest. No. 2456.

"Plant of 1-1½ ft. Flowers deep blue. Dry, open situations amongst boulders on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10,000 ft. Flow. August 1906." G. Forrest. No. 2760.

"Half-shrubby plant of 1-2 ft. Flowers purplish-blue. Mountain meadows on the eastern flank of the Tali Range. Lat. 27° 40' N. Alt. 9-10,000 ft. Flow. August 1906." G. Forrest. No. 4551.

" Plant of 6-8 inches. Flowers pale purple-blue. Open, dry situations in pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10-11,000 ft. Flow. July 1906." G. Forrest. No. 4553.

A species very variable according to habitat and elevation.

The nearest to it are *S. alatus*, Nees, and *S. Wallichii*, Nees; but the new form has sessile leaves, which are much more hairy. The upper leaves are bract-like.

Strobilanthes versicolor, Diels. Sp. nov.

Herbacea. Caules 0.18-1.2 m. alti parce pilosi demum glabrati. Folia 1-2.5 cm. longe petiolata, herbacea, supra et parcius subtus pilosa demum glabrata, ovata, in petiolum breviter angustata acuta vel caudato-acuminata argute serrata 3-5 cm. longa, 2-3.5 cm. lata. Inflorescentiae et terminales et ex axillis foliorum superiorum pedunculatae; bracteae plerumque foliaceae serratae, bracteolae sepalis aequales oblanceolato-lineares 1.2-1.5 cm. longae, 0.2 cm. latae, minute pilosulae et margine ciliatae, sepala similia sublinearia obtusiuscula aequalia. Corolla versicolor alba ad saturate coerulea dorso pubescens e basi tubulosa campanulato-cylindrica antrorsum subrectangulo curvata, circ. 4 cm. longa. Stylus et filamenta pilosula. Ovarium praeter apicem puberulam glabrum non barbatum.

" Plant of 1-4 ft. Flowers ranging from pure white to dark blue. Covering large tracts on the mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-11,000 ft. Flow. June 1906." G. Forrest. No. 2308.

The shape of the flower is like that of *S. inflatus*, T. Anders., of Sikkim, but both leaves and calyx are very different.

Strobilanthes xanthantha, Diels. Sp. nov.

Caules e caudice numerosi, simplices, 22-30 cm. longi, parce pilosuli. Folia breviter pedunculata, herbacea, in utraque facie praecipue ad nervos puberula, ovata, basin versus angustata, apice acuta, adpresse serrata, 3-4.5 cm. longa, 2-2.5 cm. lata. Flores spicati vel paniculati, sessiles. Sepala linearia, densius pilosa, obtusa, inaequalia, 9-14 mm. longa. Corolla flava, e basi tubulosa anguste campanulata, vix curvata, circ. 3.5 cm. longa, 1 cm. lata. Stylus pilosus apice filiformis. Ovarium glabrum.

" Plant of 9-12 inches. Flowers yellow. Dry ledges of cliffs in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-9000 ft. Flow. July-August 1906." G. Forrest. No. 4550.

Easily recognised from the other species of our region by its yellow flowers.

***Strobilanthes yunnanensis*, Diels. Sp. nov.**

Frutex patulo-ramosus 0.5-1.5 m. altus. Rami stricti, juniores molliter patentipilosi. Folia petiolata, membranaceo-herbacea, in utraque facie paleaceo-pilosa, ovata, in petiolum cuneatim angustata, apice acuminata, crenato-serrata, 3-8 cm. longa, 2-5 cm. lata. Inflorescentiae terminales et in axillis foliorum superiorum pedunculatae. Flores sessiles. Bracteae et bracteolae ovato-lanceolatae sepalis subaequales. Sepala lanceolata, longe acuminata apiceque saepe patula, basi pallidiora subhyalescentia, margine longe ciliata, 1.2-1.4 cm. longa, 0.15 cm. lata. Corolla pallide coerulea, 4 cm. longa, e basi anguste tubulosa subcylindrica minus ampliata; limbum versus leviter curvata. Filamenta et stylus pilosa. Ovarium barbatum.

"Moist, shady woods on pass between Chien Ho on the Yangtse and Chin Chuan valley. Alt. 8000 ft. Flow. October 1904." G. Forrest. No. 616. This form has larger leaves.

"Shrub of 2-5 ft. Flowers bright blue. Moist, open, shady situations in thickets on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 9-10,000 ft. Flow. June 1906." G. Forrest. No. 2361.

This species has a similar appearance to *S. radicans*, T. Anders., of China, but the leaves are more hairy and the corolla more curved.

***Rhinacanthus Beesianus*, Diels. Sp. nov.**

Caulis 0.9-1.5 m. altus, fere glaber. Folia (superiora sola adsunt) brevissime petiolata vel subsessilia, membranaceo-herbacea, anguste obovata vel oblanceolata, utrinque longe angustata, apice acuminata, margine obsolete repando-dentata vel subintegra, supra minutissime pilosula subtus glabra, 20-24 cm. longa, 6-8 cm. lata; nervi primarii circ. 8-10 utrinque a costa abeuntes vix prominentes. Panícula terminalis subconferta, 12-15 cm. longa, 8-9 cm. lata, puberula, 25-30-flora. Flores pedicellati. Sepala 5 aequalia, linearia, acuta, costata, pilosula, 1 cm. longa, 1.5 mm. lata. Corolla amplissima, alba, fragrans, extus glanduloso-puberula. Tubus 4 cm. longus. Labium superius brevissime bifidum, retortum, viridulum, 2 cm. longum, inferioris segmenta elliptica, 2-2.5 cm. longa. Stamina 1 cm. longa.

"Plant of 3-5 ft. Flowers white. Open, dry situations on western slopes of the Yung-ping-Hsien valley, on the Teng-Yueh-Talifu Road. Lat. 25° 25' N. Alt. 7-8000 ft. Flow. September 1903." G. Forrest. No. 1053.

This showy plant is related to *R. calcaratus*, Nees, of Khasia, Cachar, etc., but is easily recognised by its much larger flowers.

ACERACEAE.

Acer Forrestii, Diels. Sp. nov.

Arbor 7-12 m. alta. Foliorum petiolus (siccus purpureus) 2-2.5 cm. longus; lamina supra glabra, subtus pallidior glaucescens ad nervorum confluum barbata, ceterum glabra, nervulis minute reticulata, e basi cordato-excisa trilobata, lobis caudato-acuminatis, margine toto adpresse duplo-serrata, 7-8.5 cm. longa, 5-6.5 cm. lata. Racemi foliis coetanei, brevissime pedunculati, simplices, angusti, 6-7 cm. longi, 1.2-1.4 cm. lati, fere glabri. Sepala anguste obovata; petala anguste spathulata, circ. 3 mm. longa, sepalis longiora, fusco-viridia; discus glaberrimus.

"Tree of 25-35 ft. Flowers brownish-green. Shady side valleys on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10,000 ft. May 1906." G. Forrest. No. 2106.

Sect. *Spicata*, Pax. Allied to *Acer sinense*, Pax, a native of Hupeh and Szechuan, but differing by the trilobed leaves serrate all round, simple inflorescences and narrower sepals and petals.

APOCYNACEAE.

Alstonia yunnanensis, Diels. Sp. nov.

Frutex 1-1.6 m. altus, rami conspicue lenticellati, ramuli virides novelli puberuli. Folia 3-4 verticillata, inaequalia, breviter petiolata, herbacea, supra fere glabra subtus pallidiora puberula, utrinque longe angustata, oblonga vel oblanceolata, acuminata, 6-14 cm. longa, 2.5-3.5 cm. lata; nervi laterales numerosi sursum arcuati supra pallidi; glandulae interpetiolares subulatae. Cymae puberulae. Flores breviter pedicellati. Sepala e basi ovato-triangulari, subulato-acuminata, nigro-striolata, 3.5 mm. longa. Corollae roseae tubus 10 mm. longus, usque ad dimidium anguste (1.8-2 mm.) cylindricus, dein ad 3 mm. ampliatus, ibique intus lanuginosus; limbi veli subelliptici 5 mm. longi ciliolati. Fructus folliculi (an maturi?) sessiles divergentes subfalcati, anguste cylindrici, longius rostrati.

"Shrub of 3-5 ft. In woods on hills west of Yunnanfu. Alt. 7-8000 ft. Flowers pale pink. February 1905." G. Forrest. No. 592. (From about the same locality also Ducloux, 20th April 1904.)

Sect. *Blaberopus* (Hook. f. in Flor. Brit. Ind. iii (1882) 642). Allied to *A. neriifolia* Don, but differing in the more herbaceous leaves and apparently smaller follicles.

BEGONIACEAE.

Begonia Harrowiana, Diels. Sp. nov.

Bulbosa, acaulis, unifolia. Stipulae minutae. Petiolus purpureo-striatus, glaber, 5-30 cm. longus; lamina membranacea, supra parce setuloso-pilosa, subtus ad nervos eisdem pilis conspersa, ceterum glabra, basi cordata lobis basalibus margine sese tegentibus, ovata, $\pm$ inaequilateralia, antrorsum obsolete lobata, inaequaliter dentata dentibus $\pm$ mucronulatis, apice saepe acuminata acutissima, 10-25 cm. longa, 6-22 cm. lata; nervi utrinque 2 basales, paulo supra tertius, deinde magis distantes 1-2 superi a costa abeuntes. Pedunculus purpureo-striatus, 7-45 cm. longus folio plerumque brevior, supra medium saepe ramo auctus, apice flores 2-20 corymbosos gerens. Bractae bracteolaeque setulis purpureis fimbriatae. Pedicelli graciles. Tepala pallide rosea, extus parte infera $\pm$ eisdem setulis praedita, δ 2 exteriora oblonga 6 mm. longa, 1.2 mm. lata, 2 interiora elliptica 7 mm. longa, 5 mm. lata; η 4, 2 exteriora oblongo-lanceolata 3 mm. longa, 1.5 mm. lata, 2 interiora subrotunda 6-7 mm. longa, 6 mm. lata. Stamina longe connata, 2.5-3 mm. longa. Ovarium 3-loculare, loculo uno demum conspicue alato. Styli 2-3 mm. longi, longius connati.

"Plant of 3-6 inches. Flowers pink. On moss-covered boulders in moist, shady situations at the base of the eastern flank of the Lichiang Range. Lat. $27^{\circ} 10' N$. Alt. 8500-9000 ft. July 1906." G. Forrest. No. 2647.

"Plant of 3-7 inches. Flowers pale pink. In shady pine forests on humus-covered boulders on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20' N$. Alt. 9500-10,500 ft. September 1906." G. Forrest. No. 3055.

"Plant of 4-12 inches. Flowers rose. Moist, shady situations by the sides of streams in the Tali valley. Lat. $25^{\circ} 40' N$. Alt. 6700 ft. June-July 1906." G. Forrest. No. 4388.

"Plant of 6-12 inches. Flowers pale rose. Rocky situations in side valleys on the eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 7-8000 ft. August 1906." G. Forrest. No. 4389.

"Plant of 6-8 inches. Flowers rose. Shady situations in mixed forests on the eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 9000 ft. September 1906." G. Forrest. No. 4390.

Also Delavay 3248, 3925, Henry 9677A.

A very variable plant in size; it is nearest to *B. ovatifolia*, A. DC., of the Eastern Himalaya and Khasia regions, but easily recognised by the purple bristles on the bracts, bractlets, and tepals.

BERBERIDACEAE.

***Berberis leptoclada*, Diels. Sp. nov.**

Frutex 1·2-1·5 m. altus, rami gracillimi, arcuati, purpurei glauco-pruinosi. Spinae patentes, in ramis floriferis 4-15 mm. longae. Folia parva, coriacea, glabra, (sicca) glaucescentia sub- $\pm$ rubicunda, nervis utrinque elevatis reticulata, obovata vel spathulata, apice obtusa vel saepius breviter spinescenti-apiculata nonnunquam apice recurvata, integra vel rarius dentibus spinosis paucis marginata, 1-2 cm. longa, 0·3-0·7 cm. lata. Racemi laxiflori pauciflori, floribus 1-2 singulis additis e ramulis obsoletis quasi axillares orti, suberecti, folium superantes, 2-4 cm. longi. Pedunculi pedicellique glauci. Bracteolae flori adjunctae paucae vel nullae. Tepala exteriora suborbicularia; interiora nectarifera, late obovata circ. 3-4 mm. longa. Stamina circ. 3 mm. longa. Ovarium ovoideum apice attenuatum, stigma disciforme.

"Shrub of 4-6 ft. Flowers yellow. Dry, rocky hillsides on the descent from the Chung-Tien plateau to the Yangtze, near Tang-Tui. Lat. 27° 45' N. Alt. 10,000 ft. September 1904." G. Forrest. No. 330.

Allied to *B. elegans*, C. K. Schneider (*B. sinensis*, Desf. var. *elegans*, Franch.), but differing by the very thin branches, broader leaves, the glaucous hue of the whole plant, longer upright racemes, and larger flowers.

***Berberis centiflora*, Diels. Sp. nov.**

Frutex 0·6-1·5 m. altus. Rami cortice cinereo demum lutescente obtecti. Spinae superne breves. Folia in ramulis perbrevis conferta, coriacea, supra viridia subtus lutescentia vel subcuprea, glabra, obovato-oblonga vel oblanceolato-oblonga, margine spinis erectis brevibus praedita, 3-4 cm. longa, 1-1·5 cm. lata. Flores multi (supra 20), solitarii et racemosi, fasciculati, longe pedicellati pedicellis 1·5-2·5 cm. longis. Bracteolae flori adjunctae acutae. Tepala lutea; exteriora basin versus extus glaucescentia, bracteoliformia, triangularia vel lanceolata acuta; interiora obovata vel late elliptica, concava circ. 5 mm. longa, 3-4 mm. lata. Stamina circ. 4 mm. longa. Ovarium angustum, stigma sessile.

"Shrub of 2-5 ft. Flowers yellow. Open situations in pine and rhododendron forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-11,000 ft. June-August 1906." G. Forrest. No. 4689.

Close to *B. laevis*, Franch., but differing by the shorter internodes, shorter and broader leaves, much shorter spines, and long-peduncled, larger flowers.

BORRAGINACEAE.

Paracaryum brachytubum, Diels. Sp. nov.

Caules complures 30–50 cm. alti, pilosi, basi rudimentis foliorum basaliū praediti, ceterum foliati. Folia caulina membranaceo-herbacea; inferiora longius cetera brevissime petiolata, summa sessilia, ovata, acuta, in utraque facie praecipue in nervis hispida, nervi laterales utrinque 2 a costa ima abeuntes eique subaequales. Folia media circ. 4–4.5 cm. longa, 2–2.5 cm. lata. Cincinni et terminales et ex axillis foliorum summorum pedunculati. Calycis hispidi tubus hemisphaericus vel hemiovoideus, 1.5 mm. longus, limbi segmenta anguste triangularia, 2 mm. longa. Corollae coerulae tubus brevis, 1–1.5 mm. longus, limbi lobi late elliptici vel suborbiculares, 4–5 mm. longi, 3.5–4 mm. lati; squamulae reniformes vel meniscoideae, dense pilosulae ad faucem insertae. Stamina circ. 1 mm. longa tubo inclusa.

"Plant of 12–18 inches. Flowers blue. Open situations on mountain meadows on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 9–11,000 ft. July–August 1906." G. Forrest. No. 4474.

As the fruit of this plant is unknown, the genus remains doubtful. The plant is very similar in habit to *Paracaryum glochidiatum*, Benth., but the tube of the corolla is much shorter, the scales of the throat stouter and kidney-shaped, the inflorescence more condensed.

Cynoglossum ? Dunnianum, Diels. Sp. nov.

Perennis; caulis 15–35 cm. longus, hispidus. Folia basalia conferta, anguste obovata vel oblanceolata, hispidissima, 7–11 cm. longa, 1.5–4 cm. lata; caulina minora, anguste oblonga vel sublanceolata. Inflorescentia e cymis bracteis parvis suffultis longe pedunculatis confertifloris subrectis composita; flores ipsi cernui. Sepala hispidissima, sublanceolata, ca. 3 mm. longa. Corolla rosea et coerula; tubus 6–7 mm. longus; limbi lobi suborbiculares 4 mm. diamet. Squamulae sub medio tubi insertae, tenerae, ciliatae. Stamina 4.5 mm. longa, tubo supra squamulas affixa, paulum ex fauce exserta. Stylus 4–5 mm. longus. Fructus non visus.

"Plant of 9–16 inches. Limb of corolla bright blue, tube pink. Dry, stony, open situations on hills at south end of the Lang-Kong valley, near the village of Kai-hi-dsi. Lat. 26° 25' N. Alt. 7500 ft. April 1906." G. Forrest. No. 2004.

"Plant of 6–14 inches. Flowers blue and pink. Dry, open, stony pastureland along the base of the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 7–8000 ft. April–June 1906." G. Forrest. No. 4476.

Also Mengtse (Hancock No. 22) and very similar Henry 10600, 10600A. In habit this is somewhat like *Cynoglossum petiolatum* DC.

Cynoglossum triste, Diels. Sp. nov.

Caulis robustus, 0.3–0.5 m. altus. Tota pilis deversis hirsuta. Foliorum basaliū petiolus 8–12 cm. longus; lamina herbacea, cordata, 6–8 cm. longa, 5–6.5 cm. lata, apice brevius longiusve acuminata, nervi primarii circ. 3–4, utrinque a costa arcuato-adscedentes. Folia caulina inferiora basalibus similia, superiora brevius petiolata, minus cordata, longiora, ovata vel elongato-ovata. Panicula e ramis 3–5 composita ebracteata. Flores initio breviter pedicellati, pedicelli demum elongati. Calyx alte partitus, segmenta lanceolato-oblonga, hirsuta, 5–6 mm. longa, 1.5–2 mm. lata, demum accrescentia. Corollae tubus brevis, latus, 2.5 mm. longus; limbi lobi atropurpurei, subovati, obtusi. Squamulae valde conspicuae, 1.5–2 mm. longae, papilloae. Antherae subinclusae. Nuculae valde complanatae, minute tuberculatae. Stylus 2–2.5 mm. longus.

"Plant of 12–18 inches. Flowers dark crimson, almost black. Moist, shady situations in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10–11,000 ft. June 1906." G. Forrest. No. 2235.

This seems to be related to *C. nervosum*, Benth., of the Western Himalaya, but is very different in the shape of its leaves and the black and crimson flowers. In habit it is not unlike *Paracaryum glochidiatum* (A. DC.), Benth.

Omphalodes Forrestii, Diels. Sp. nov.

Caulis debilis hirsutus 0.15–0.3 m. altus. Folia inferiora petiolo ad 4–5 cm. longo praedita, superiora sessilia, membranaceo-herbacea, hispida, subtus pallidiora, elliptica vel ovato-elliptica, 4–6 cm. longa, 2.5–3 cm. lata; nervi praeter costam vix prominuli. Cymae pedunculatae axillares bracteatae. Flores subsessiles. Sepala hirsutissima, lanceolata, 4 mm. longa, demum longiores. Corollae coeruleae tubus antrorsum constrictus, 4–5 mm. longus, limbi lobi breves, 2 mm. longi, suborbiculares. Squamulae parvae, longe pilosae, 2.5–3 mm. a basi tubo insertae. Stamina omnino inclusa. Nuculae 4, 2.5–3 mm. longae, tuberculatae, apice circ. 2 mm. latae, cyathō margine integro incrassato praeditae.

"Plant of 6–12 inches. Shady situations amongst grass at the base of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11,000 ft. August 1906." G. Forrest. No. 2669.

This is nearly related to *Omphalodes trichocarpa*, Maxim. (Tangut), but much stouter, with larger, much broader leaves.

CAMPANULACEAE.

Lobelia pleotricha, Diels. Sp. nov.

Herba subfrutescens, 1'2-1'8 m. alta. Caulis (siccus) atropurpureus, sparse pilosulus. Folia in petiolum brevem angustata, in utraque facie pilosa, oblongo-lanceolata, acuminata, acuta, margine repando-denticulata, denticulis purpurascensibus, 6-10 cm. longa, circ. 2 cm. lata, subtus pallidiora. Inflorescentia foliosa, racemosa (rarius subpaniculata?). Pedunculus 0'5-1'2 cm. longus, pilosus. Calycis tubus cinereo-pilosus, 0'5 mm. longus; segmenta linearia glanduloso-serrata et ciliato-pilosa, ad 1'2 cm. longa. Corolla coerulea, ad 2 cm. longa; segmenta et margine et ad nervum pilis albis ciliata, 2 superiora 3 inferiora paulo superantia.

"Half-shrubby plant of 4-6 ft. Flowers blue. Moist, shady situations in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-9000 ft. Flow. October 1906." G. Forrest. No. 3869.

The nearest ally of this seems to be *L. mishmica*, Clarke.

Lobelia taliensis, Diels. Sp. nov.

Caulis simplex, erectus, glaber, 30-120 cm. altus. Folia anguste obovata vel obovato-oblonga, subsessilia, herbacea, glabra, obsolete adpresse denticulata, 3-7 cm. longa 1-2 cm. lata. Inflorescentia foliata, racemosa vel subspicata. Pedunculus brevis, 4 mm. vel brevior. Calycis tubus ad nervos nonnunquam breviter pilosulus; segmenta linearia, denticulata, parce pilosula vel glabrata, 1-1'2 cm. longa, tubum fere triplo superantia. Corolla coerulea, 2'5-3 cm. longa, labiorum segmenta acuta, saepe apice recurva, inferiora et superiora fere aequalia.

"Erect plant of 2-4 ft. Flowers blue. Open, dry situations amongst scrub in side valleys on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 9-10,000 ft. September 1906." G. Forrest. No. 3000.

"Plant of 12-14 inches. Flowers blue. Open, moist situations on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9500 ft. October 1906." G. Forrest. No. 3868.

Allied to *Lobelia pyramidalis*, Wall. The chief characters of the new plant are the broad glabrous leaves and the nearly sessile flowers.

Codonopsis macrocalyx, Diels. Sp. nov.

Caules scandentes, 0'4-0'6 m. alti, glabri. Foliorum petiolus 2'5-5 cm. longus; lamina tenera, membranacea, in utraque facie parce pilosula, subtus pallida, ovata vel late triangulari-ovata, irregulariter crenato-serrata vel -dentata, 5-9 cm. longa, 4-7 cm. lata. Flores apicem caulis versus pauci, pedicellati.

Calycis tubus ca. 0.8-1 cm. longus, 2 cm. latus; dentes foliacei 2-2.5 cm. longi, 0.6-1.2 cm. lati. Corolla viridis, basi purpureofusca, 2.5-3 cm. longa, 1.2-1.5 cm. lata, dentes ovati acuminati. Stamina 1-1.2 cm. longa.

"Twining plant of 1½-2 ft. Flowers green, faintly tinged maroon at base. Shady situations amongst grass and scrub on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10-11,000 ft. September 1906." G. Forrest. No. 3008.

The calyx of this species is much larger than in the related *C. pilosa*, Chipp, the leaves larger, thinner, and broader, somewhat resembling those of *C. deltoidea*, Chipp, of Mount Omei.

Codonopsis Forrestii, Diels. Sp. nov.

Volubilis robusta, caulis glaberrimus. Folia petiolo 0.5-1 cm. longo praedita, herbacea, glabra, late lanceolata, antrorsum sensim angustata, obsolete et remote serrata vel subintegra, 6-9 cm. longa, 1.5-3 cm. lata. Flores axillares; pedunculus 6-8 cm. longus. Calycis tubus anguste infundibuliformis 1.2-2 cm. longus, sub dentibus 1-1.5 cm. latus; dentes ovati 1.5-2 cm. longi. Corolla ampla, intense coerulea, fere ad basin partita, segmenta oblongo-elliptica, 3.5-5 cm. longa, 1.5-2.3 cm. lata. Discus conspicue sericeo-pilosus. Stamina filamenta brevissima. Ovarium inferum, stigma amplum 4 mm. longum, 3 mm. latum.

"Common in most places on the banks of Yangtse, Yunnan. Alt. 5-7000 ft. September 1904." G. Forrest. No. 48.

Allied to *C. convolvulacea*, Kurz, but a much stouter and larger plant, differing by the broader leaves with longer petioles, and the flowers being two to three times as large.

Codonopsis Bulleyana, G. Forrest ms. in schedis. Sp. nov.

Planta foetidissima. Caulis adscendens, 22-40 cm. longus, setulosus, basi ramulos foliatis 6-10 cm. longos emittens, superne subnudus vel folio unico praeditus. Folia breviter petiolata, herbacea, utrinque dense setuloso-pilosa, cordata, 10-16 cm. longa, 10-12 cm. lata. Flos terminalis, solitarius, nutans. Calyx semisuperus, glaucus; tubus subpatelliformis, circ. 4 mm. longus, 9-10 mm. latus, glabrescens; lobi ovati, integri, margine revoluti, setulosi, 10 mm. longi, 5 mm. lati. Corolla extus hinc inde setulosa, pallida, fere hyalina, coeruleo-reticulata, basin versus intensius colorata; tubus circ. 10 mm. longus; lobi patentes 10-15 mm. longi, 10 mm. lati, ovato-triangulares. Stamina glabra ca. 8 mm. longa. Stylus perbrevis; stigma amplum obcordatum, stamina subaequans.

"Plant of 9-15 inches. Root fleshy. Flowers pale watery turquoise blue netted minutely a deeper shade. Open, grassy

slopes on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 15'$ N. Alt. 11-12,000 ft. Flow. July 1906." G. Forrest. No. 2731.

This species is close to *C. foetens*, Hook. f. et Thoms., which has a much shorter tube and nearly globose corolla.

Codonopsis meleagris, Diels. Sp. nov.

Caulis erectus, vix nisi basi ima foliatus, 30-45 cm. altus. Folia brevissime petiolata, supra parce setulosa, subtus glauca densius setulosa, oblonga, obtusa, margine repando-dentata, 5-8 cm. longa, 1.5-3 cm. lata. Flos terminalis, solitarius, pendulus. Calyx superus, glaucus, glaberrimus; tubus hemisphaericus 6-10 mm. longus, 8-10 mm. latus; lobi lanceolato-triangularis, obtusi, denticulati, nervosi. Corolla viridulo-lutea, livido-purpureo-maculata et-venosa, campanulata, 3-3.5 cm. longa, apice 3.5-4 cm. lata; lobi erecti, subaequilateraliter-triangularis, 10-12 mm. longi. Stamina ca. 12 mm. longa, filamenta basin versus dilatata, stylum aequantia.

"Plant of 1-1.5 ft. Flowers greenish-yellow, veined and marked livid purplish-lake, pendulous. Grassy openings in pine forests and on rocky slopes on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20'$ N. Alt. 11-12,000 ft. Flow. August 1906." G. Forrest. No. 2674.

This beautiful species is related to *C. subscaposa*, Kom., but distinct in the sessile leaves and much larger flower.

Cyananthus formosus, Diels. Sp. nov.

Perennis. Radix apice saepius pluriceps ibique rosulas hypophyllorum integrorum pallidorum subscariosorum 3-4 mm. longorum confertas gignentes. Caules complures, procumbentes vel adscendentes, flaccidi, 10-15 cm. longi; inferne glabri hypophyllis minutis remotis praediti, superne pilosi, foliati ramulosque perbreves laterales axillares confertos gignentes. Folia parva, crassiuscula, supra puberula subtus glauco-vel niveo-tomentosa, margine revoluta, obovata, rhombea vel subreniformia, integra vel alte dentata, cum petiolo cuneato 2-6 mm. longa et lata. Flores terminales ampli. Calyx campanulatus, albido-hispidus; tubus 5-6 mm. longus, 6-9 mm. latus, dentes anguste triangulares, 5-6 mm. longi. Corolla intense coerulea, tubus 15-20 mm. longus, 7-8 mm. latus, limbi lobi ovati, brevissime apiculati, 10-12 mm. longi, 5-6 mm. lati.

"Spreading plant of 4-6 inches. Flowers deep rich blue. Open situations on limestone drift on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20'$ N. Alt. 11-12,000 ft. August 1906." G. Forrest. No. 2726.

Allied to *C. Delavayi*, Franch., but distinguished by the

rosulate scales at the top of the caudex, the broader leaves, and much larger flowers.

Cyananthus Forrestii, Diels. Sp. nov.

Annua? e basi pluricaulis; caules adscendentes iterum ramosi, fere a basi ramulos apice florigeros gignentes, 15-30 cm. longi, parcius pilosi. Folia sparsa, parva, breviter petiolata vel subsessilia, pilosa, obovata, pauci-serrata vel subintegra. Calyx pilosus, breviter campanulatus vix inflatus, tubus 4 mm. longus, 5-6 mm. latus, dentes triangulares 3 mm. longi, 1·8 mm. lati. Corolla cylindrica 15-20 mm. longa, 5 mm. lata, pallide coerulea; segmenta anguste ovata vel oblonga, erecta, 6-7 mm. longa, circ. 2-5 mm. lata. Stamina 4-6 mm. longa. Stylus superne pubescens, 3 mm. longus.

"Plant of 6-12 inches. Flowers pale blue. Open, grassy situations on lava beds in the Ming Kwang valley, north of Ma chang. Lat. 25° 15' N. Alt. 6-7000 ft. October 1903." G. Forrest. No. 955.

Allied to *C. inflatus*, Hook. et Arn., but more glabrous, and the corolla much longer.

Adenophora coelestis, Diels. Sp. nov.

Rhizoma suberosum hypophyllis pallide brunneis vel eorum vestigiis dense obtectum. Caules simplices, 20-45 cm. longi, parce pilosi vel glabrati. Folia alterna, sessilia, in utraque facie hirta vel glabrata, inferiora minora saepe angustiora, superiora lanceolata vel ovata, margine nonnunquam subrevoluta ± serrata, 3-4 cm. longa, 0·25-1·2 cm. lata. Racemi simplices, pauci- ad uniflori. Flores pedunculati cernui, pedunculi 0·5-2 cm. longi bracteolati. Receptaculum 6-8 mm. longum; sepala lanceolata, serrata, 6-10 mm. longa. Corolla coerulea, late campanulata, 2-3 cm. longa, 2·5-3·3 cm. lata, limbi lobi semiovati conspicue acuminati, nonnunquam callosulo-mucronulati quam tubus 3-4-plo breviores, basi 8-12 mm. lati. Discus 3-4 mm. longus. Stamina basi dilatata lanuginosa. Stylus inclusus, basi glaber superne pubescens, 1·5-1·7 cm. longus.

"Plant of 1-1½ ft. Flowers bright blue. Crevices and ledges of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 2718.

"Plant of 9-12 inches. Flowers light blue. Open, barren mountain pastureland on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10,500-11,000 ft. August 1906." G. Forrest. No. 2810.

This much Campanula-like species is recognised by the

simple, few-flowered stems, broad corolla, and the leaves being restricted to the lower half of the stem.

Adenophora Forrestii, Diels. Sp. nov.

Caulis adscendens, simplex, ad 50 cm. altus, minute pubescens, basi hypophyllis parvis remotis praeditus, longe quasi subnudus, medium versus dense foliatus, apice iterum defoliatus. Folia supra demum glabrata, subtus pubescentia, 5-7 cm. longa, 0.5-0.7 cm. lata, lanceolato-linearia, margine subintegra vel obsolete denticulata. Flores pedicellati vel subsessiles nutantes. Calycis lobi lanceolato-triangulares 5 mm. longi tubum subaequantes. Corolla coerulea, late infundibuliformis, lobi tubum 0.8-1 cm. longum aequantes vel eum subsuperantes, triangulares, acuti. Stamina e basi dilatata barbato-ciliata attenuata, anthera filamento paulo longior. Discus perbrevis, vix 1 mm. Stylus superne pubescens, demum apice trifidus, quam corolla paulo brevior.

"Hoching and Lichiang valleys. Alt. 7-8000 ft. Flow. September 1904." G. Forrest. No. 394.

This species is recognised by simple stems nearly leafless, except in the middle part, the very narrow leaves, the deeply cleft corolla, and the extremely short disc.

Adenophora ornata, Diels. Sp. nov.

Caules 0.3-1.2 m. alti, puberuli vel glabri. Folia sessilia, elongato-obovata vel obovata, argute serrata, pubescentia vel glabra, 3-6 cm. longa, 2-2.5 cm. lata. Inflorescentia saepe paniculata, remotiflora. Flores breviter pedunculati, bracteolati. Receptaculum 2-4 mm. longum, dentes anguste-lanceolati, paucidenticulati, apice subulati, patuli, 6-10 mm. longi. Corolla infundibuliformis, intense coerulea, 2-2.5 cm. longa, ore 2.5-3 cm. lata, limbi lobi late triangulares, apiculati. Discus 2-3 mm. longus, pilosulus vel glaber. Stylus inclusus, superne pubescens, 1.5-2 cm. longus.

"Plant of 1½-2½ ft. Flowers bright blue. Crevices and ledges of shady cliffs in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 11-12,000 ft. August 1906." G. Forrest. No. 2801.

"Plant of 1-2 ft. Flowers bright blue. Dry, open, rocky pastureland on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. August-September 1906." G. Forrest. No. 3862.

"Plant of 2-4 ft. Flowers bright blue. Shady, moist situations on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 3861.

This plant is related to *A. aurita*, Franch., of the Tachienlu region, but the leaves are more angustate at the base and the whole plant more glabrous.

***Adenophora leptosepala*, Diels. Sp. nov.**

Caulis subglaber, 45-90 cm. altus. Folia breviter petiolata vel subsessilia, pilosula vel glabrata, subtus pallida, lanceolato-ovata vel ovata, apice plerumque caudato-acuminata, 5-7 cm. longa, 2-2.5 cm. lata. Paniculae amplae rami patentes. Flores graciliter pedunculati, cernui; pedunculi 1.5 ad 5 cm. longi. Receptaculum 3-4 mm. longum, dentes calycini graciles, angustissimi, patuli, 6-8 mm. longi. Corolla pallide coerulea, anguste campanulata infra os subconstricta, circ. 15 mm. longa, 6-8 mm. lata, limbi lobi vix 3-4 mm. longi. Discus anguste cylindricus, 3.5-4 mm. longus. Stylus puberulus, longe exsertus, 2-2.5 cm. longus.

"Plant of 1½-2 ft. Flowers pale blue. Open, grassy situations in and on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-11,000 ft. September 1906." G. Forrest. Nos. 3857, 3858.

This is similar to *A. capillaris*, Hemsl., in the inflorescence, but the leaves are broader and the corolla much wider.

***Adenophora Bulleyana*, Diels. Sp. nov.**

Caulis elatus, puberulus, ad 1.2 m. altus. Folia alterna, firma herbacea, infima decrescentia, media oblongo-ovata vel lanceolata, in utraque facie hispidula, serrata, acuminata, 5-7 cm. longa, 1.5-2 cm. lata. Paniculae amplae rami adscendentes, basi longe nudi, apice floriferi; flores saepe terni conferti. Receptaculum 3-4 mm. longum, dentes calycini anguste lanceolati, calloso-serrulati, 8-10 mm. longi. Corolla pallide coerulea, anguste infundibuliformis, 10-12 mm. longa, ore 10-12 mm. lata, limbi lobi triangulares. Discus vix 1 mm. longus. Stylus demum longe exsertus ad 2.5 cm. longus.

"Plant of 2-4 ft. Flowers pale blue. Damp, open situations in scrub on banks of streams, on low hills forming eastern boundary of the Lichiang valley. Lat. 27° 12' N. Alt. 9-10,000 ft. August 1906." G. Forrest. No. 2653.

In habit this is somewhat similar to *A. Potanini*, Korsh., from Northern Szechuan. It is recognised by the flowers being crowded towards the top of the branches and often ternate at the rhachis of the main stem.

***Adenophora megalantha*, Diels. Sp. nov.**

Caulis 45-60 cm. altus, basi sulcatus, glaber. Folia basi petioliformi-angustata, obovata vel obovato-elliptica, supra

pilosula subtus ad nervos setulosa, grosse-serrata serraturis subobtusis, 7-10 cm. longa, 2.5-3.5 cm. lata, nervi subtus prominentes pallidi. Flores racemosi, pedicelli 1-2 cm. longi glabrati. Calycis tubus 1-1.2 cm. longus, segmenta 1.5-2.5 cm. longa recurva, serrulata. Corolla intense et saturate coerulea ampla, ad 4.5 cm. longa; lobi apice mucronulati. Stamina fere 2 cm. longa, e basi elliptica ciliata, subito filiformi-attenuata; anthera angusta quam filamentum paulo brevior. Discus vix 5 mm. longus, margine supero breviter ciliolatus. Stylus inclusus vix 2 cm. longus.

"Plant of 1½-2 ft. Flowers deep rich blue. Crevices and ledges of cliffs in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-11,000 ft. Flow. August 1906." G. Forrest. No. 2661.

This is a species remarkable by the leaves being puberulous on the upper surface, and by the very large flowers.

Adenophora pachyrhiza, Diels. Sp. nov.

Rhizoma "crasse tuberosum." Caulis 30-40 cm. altus, patenti-hispidulus, simplex. Folia sessilia, in utraque facie subtus in nervis hispidula, subtus pallidiora, lanceolata, vel oblongo-ovata, levissime brevissimeque serrata margine revoluta, apice nonnunquam acuminata, 3-5.5 cm. longa, 0.6-1 cm. lata. Racemus simplex, flores remoti, breviter pedunculati, patuli vel cernui. Receptaculum 3-4 mm. longum, sepala 6-7 mm. longa, lanceolata, calloso-serrulata, corolla intense coerulea, late infundibuliformis, 2 cm. longa, apice 1.5-2.3 cm. lata. Discus 1.2-1.5 mm. longus. Stylus basi glaber, antrorsum pubescens, inclusus, 1.5-1.7 cm. longus.

"Plant of 12-16 inches. Flowers bright blue. Thick tuber root. Dry, shady situations on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 11,000 ft. September 1906." G. Forrest. No. 3860.

A. prenanthoides, Prain, from Lhasa, is different by its smaller, conspicuously pedunculated flowers. *A. Forrestii* is more glabrous, the leaves are softer, longer, and narrower, the disc much shorter.

Adenophora diplodonta, Diels. Sp. nov.

Caulis ad 1 m. altus pubescens. Folia herbacea, subtus hispidula, inferiora sparsa subpetiolata, basin versus sensim cuneato-angustata deinde ovata, duplicato-serrata, acuta, 7-8 cm. longa, 2.5-4 cm. lata. Inflorescentia racemosa (vel paniculata ad 40 cm. longa); flores breviter pedunculati nonnunquam bini; pedunculi puberuli. Receptaculum puberulum, semi-ovoideum, vix 2 mm. longum; dentes calycis angustissime

lanceolati, patentes, superne saepe filiformes, basi utrinque paucifimbriati. Corolla anguste infundibuliformis, 2 cm. longa, 1.7 cm. lata; limbi lobi triangulari-ovati, acuti. Discus perbrevis plerumque quam 1 mm. brevior. Stylus longe exsertus, 2-2.3 cm. longus.

"Mekong and Yangtse valleys, dry hillsides. 5-9000 ft. Yunnan. September 1904." G. Forrest. No. 396, partly.

A much reduced specimen with a simple spike belongs apparently to this species. "Plant of 1-1.5 ft. Flowers bright blue. Dry, open, grassy situations, Mekong valley, near Fu-mo-Ti, Mekong-Salwin divide. Lat. 27° N. Alt. 7000 ft. November 1905." G. Forrest. No. 1066.

Another low specimen has white flowers. "Plant of 16 inches, with thick napiform tuber-root. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-11,000 ft. September 1906." G. Forrest. No. 2986.

This species is recognised by the broad doubly or rather unequally serrate leaves. Of the long-styled species, it has the shortest disc. Otherwise the flower is not unlike that of *A. rupicola*, Hemsl., the leaves of which are much narrower.

CAPRIFOLIACEAE.

Lonicera xerocalyx, Diels. Sp. nov.

Frutex. Rami hornotini fertiles e perulis intus sericeo-pilosis nati, subrectangulo-patentes. Folia 0.5-0.7 cm. longe petiolata, herbacea, supra parce pilosula subtus glaucescentia uberius pilosa, anguste lanceolata, basi obtusa vel fere truncata, apice longe acuminata acuta, margine obsolete undulato-repanda, 6-10 cm. longa 1.8-2.2 cm. lata; nervi subtus pallidi, nervuli supra immersi. Flores plerumque in axillis bini, breviter pedunculati; pedunculus pilosus, circ. 3 mm. longus. Bractee fuscae e basi lanceolata setaceae, pilosae, circ. 4 mm. longae, deciduae; bracteolae amplae, ovarium superantes, connatae cupulam latere interiore apertam truncatam vel obsolete bilobam 3-4 mm. longam formantes. Calyx scariosus, fuscus, amplus circ. 4 mm. longus, cupuliformis, glaber, ad basin in partes 2 obsolete brevidentatas vel subintegras irregulariter fissus. Corolla flava, extus dense pubescens; tubus 4-5 mm. longus et latus, gibbus, intus pilosus, in gibbo dense glandulosus; limbi lobi anguste oblongi, 10 mm. longi circ. 2.5 mm. lati, intus fere glabri. Stamina basi pilosa, ceterum glabra, 5-6 mm. longa. Stylus basi pilosus, 5-7 mm. longus, stigmate crasso coronatus. Ovarium glabrum.

"Shrub of 10-15 ft. Flowers yellow, non-fragrant. Fruit dull orange-yellow. Margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10,500 ft. June 1906." G. Forrest. No. 2386.

This species belongs to sub-Sect. 17 *Ochranthae* of Rehder's Synopsis (14 Ann. Rep. Missouri Botan. Gard., 1903, p. 133). It is somewhat related to *L. deflexicalyx*, Batal., and *L. trichosantha*, but easily recognised by the extraordinary development of the brown scarious calyx, whose parts look exactly like bud-scales.

***Linnaea Forrestii*, Diels. Sp. nov.**

Frutex 1.2-1.8 m. altus. Ramuli divaricato-patentes, breves densius foliati et antrorsum floriferi, pubescentes. Folia brevissime petiolata vel subsessilia, crassa, hinc inde minutissime puberula, subtus glauca pallida, margine integra anguste recurva, ovata, basi rotundata, apice apiculata, parva, 0.8-1.2 cm. longa, 0.5-0.8 cm. lata, nervi praeter costam obsoleti. Flores in axillis solitariis, ampli, pedunculum perbreve bisi bracteis lanceolatis minutis 1-1.5 mm. longis et apice bracteolis 3-4 connatis minutissimis praeditum terminantes. Receptaculum cylindricum, pilosulum, 5 mm. longum. Sepala 5 oblonga vel oblanceolata-oblonga, trinervia, glabrata, nonnunquam purpurascens-suffusa. Corollae roseae puberulae tubus longissimus, 30-35 mm. longus, antrorsum sensim ad 8 mm. dilatatus; limbi lobi 5, breviter obovati vel rotundati, 4.5-5 mm. longa et lata. Stamina 12 mm. longa, antherae lineares.

"Spreading shrub of 4-6 ft. Flowers rose-pink. Dry, scrubby hillsides, Salwin valley, between Shihchi-Ti and Hsia-Ku-Ti, Salwin-Irrawadi divide. Lat. 26° 15' N. Alt. 6-7000 ft. November 1905." G. Forrest. No. 867.

This species is similar to *Linnaea parvifolia* (Hemsl.), Graebner (*Abelia parvifolia*, Hemsl.), in habit, but differs by its five sepals (instead of two) and the much longer tube of the showy corolla.

***Linnaea brachystemon*, Diels. Sp. nov.**

Frutex gracilis ramosus, rami saepe dichotomi, basi rudimentis perularum minutarum pallidarum subnodosi. Ramuli hornotini floriferi breves, basi perulis oppositis scariosis, tum hypophyllis pallidis lineari-lanceolatis, deinde foliis 2 oppositis evolutis floribus subcoetaneis instructi. Folia (tempore florendi) petiolo 0.3-0.5 cm. longo praedita; lamina herbacea, supra ad costam pilosa, ceterum glabra, subtus glauca venis obscurioribus reticulato-venosa, anguste ovata vel lanceolata acuminata integra apice subfalcata, 4 cm. longa, 1-1.2 cm. lata,

Flores breviter pedunculati bini, singuli perbreviter pedicellati. Receptaculum anguste conico-lineare, circ. 7 mm. longum glabrum. Sepala 4 oblanceolata, subtus glauca, glabra, 10 mm. longa, 0.15 mm. lata. Corollae tubus cylindricus extus glaber, intus pilosus, circ. 10 mm. longus, faucem versus vix ampliatus; limbi lobi 4, breves, circ. 2.5 mm. diamet. Antherae subsessiles, breves, ellipsoideo-rotundatae. Stylus glaber 10 mm. longus.

"Shrub of 10-15 ft. Exterior of corolla pink or rose, interior yellowish-white, sweetly fragrant. Rocky, open situations amongst scrub in side valleys, eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 9000 ft. May 1906." G. Forrest. No. 2155.

This species is nearly related to *L. Zanderi*, Graebner. It differs from it by its more glabrous leaves, narrower sepals, and relatively longer corolla.

It was collected also by Delavay (e.g. No. 4305), and distributed as *Abelia biflora*, Turcz.

Viburnum atrocyaneum, C. B. Clarke, in Flor. Brit. Ind. iii, p. 7 (1882). Descript. ampl.

Frutex 1.8-2.5 m. altus. Rami cinereo-corticati, novelli pallidiores. Folia petiolo 0.5-1 cm. longo praedita, coriacea, utrinque glaberrima, lanceolato-oblonga, integra vel basin versus hinc inde obsolete callosa-serrulata, 4.5-6 cm. longa, 1.5-2 cm. lata; nervi nervulique supra subinsculpti, subtus praeter costam pallidam (siccam) luteolam vix conspicui. Corymbi breviter pedunculati parvi, glabri, radii 1-1.5 mm. longi; flores pedicellati; pedicelli stricti circ. 1.5-3 mm. longi; bracteolae mox deciduae. Calycis tubus 0.75 mm. longus, dentes breves triangulari-ovati. Corollae expansae 5-6 mm. diamet. tubus circ. 1 mm. longus, latus, limbi lobi circ. 1 mm. longi. Stamina 1.5-1.8 mm. longa. Drupa subglobosa 5-6 mm. diamet.; exocarpium coeruleo-atrum laeve, endocarpium purpureum. Semen 4-5 mm. diamet. facie ventrali alte sulcatum, testa purpurea, albumen ruminatum.

"Spreading shrub of 4-8 ft. Flowers greenish-yellow, fragrant. On exposed cliffs, side valleys on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10-11,000 ft. May 1906." G. Forrest. No. 2139.

"Shrub of 6-8 ft. Dry, shrubby hillside on descent from Sung Kwei pass to Lang Kung valley. Alt. 9-10,000 ft. Growing on chalky clay. North of Tali. December 1904, fruit." G. Forrest. No. 443.

This has not been recorded previously from China; it was described first from the Mishmi Mountains.

CARYOPHYLLACEAE.

Silene Stewartiana, Diels. Sp. nov.

Rhizoma breve, pluricaule. Caules adscendentes, basi ramos nonnullos steriles superne floriferos edentes, 20-35 cm. longi, basi glabri, superne pilosuli. Folia sessilia, (sicca) punctulata, glabra, lanceolata basi subamplectentia apice acuta, media circa 6-8 cm. longa, 1.2-1.5 cm. lata, superiora decrescentia. Flores pauci, longiuscule pedicellati. Calyx ovato-campaniformis, subturgidus, pallidus, nervis 10 glanduloso-pilosulis viridibus striatus, dentibus triangularibus ciliatis praeditus, 2-2.5 cm. longus, 1-1.5 cm. latus. Petala "pallide lavandulacea," parte infera obcuneata circ. 12 mm. longa, supera 10-11 mm. longa, 4-5 mm. lata, 4-fida, segmentis lateralibus quam 2 mediana brevioribus. Gynophorum circ. 4 mm. longum, ovarium 6 mm. longum, styli 3 brevi.

"Plant of 9-16 inches. Flowers pale lavender. Open, grassy slopes on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10,500-12,000 ft. August 1906." G. Forrest. No. 2672.

In habit not unlike some forms of *S. tenuis*, Willd.; but the calyx is larger, the petals with four lobes, two larger and two (lateral) smaller. I have not seen any scales on the petals; but the material being scanty, the species wants further observation.

Silene cryptantha, Diels. Sp. nov.

Rhizoma crassum napiforme. Caules subprocumbentes, divaricato-ramosi, pubescentes, 30-50 cm. longi. Folia breviter petiolata, ad costam pilosula, ceterum glabra, ovata, marginata, 1.5-1.8 cm. longa, 0.8-1 cm. lata. Panicula ampla divaricato-ramosa. Flores pedicellati pedicellis 3-5 mm. longis sub calyce bibracteolatis. Calyx ambitu subclavatus, glanduloso-pubescent, saepe purpurascens, 5-6 mm. longus, dentes anguste ovati obtusiusculi, breves. Petala rosea, anguste spathulata, integra, 6-7 mm. longa, sub apice 1 mm. lata; squamulis nullis. Stamina 4-5 mm. longa. Ovarium clavato-cylindricum, 3.5 mm. longum, styli 3 circ. 3 mm. longi.

"Procumbent plant of 12-18 inches. Flowers bright rose. Dry, stony slopes on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10-11,000 ft. July 1906." G. Forrest. No. 2783.

A similar plant has been collected near Yunnan-fu (Ducloux. No. 453).

Allied to *S. pachyrrhiza*, Franch., from which it differs by the much smaller flowers with very narrow entire petals. In *S. pachyrrhiza* they are bifid, have two lateral auricles and two inner scales.

Silene atrocastanea, Diels. Sp. nov.

Rhizoma crassum, radices longas emittens. Caules plures vel solitarii, dense pilosi, 10–20 cm. longi. Folia fere omnia ad basin caulis conferta; infima parva, spatulato-obovata lata, media longiora, in petiolum 1–1.5 cm. longum angustata, lanceolato-oblonga, acuta, in utraque facie ± pilosa, 8–10 cm. longa, 2.5–3 cm. lata, nervi praeter costam vix prominuli. Folia superiora iterum valde reducta. Flores saepe cernui, solitarii, bini vel ad 6 racemum laxiflorum formantes; pedicelli 1–1.5 cm. longi. Calyx amplissimus, turgidus, albidus nervis 10 atropurpureis striatus, pilosus, late campaniformis, ca. 1.8–2 cm. longus, 1.4–1.6 cm. latus; tubus quam dentes triangulares fere duplo longior. Petala saturate castanea, pars infera obovata circ. 10 mm. longa, pars supera 8 mm. longa in dentes 4 subaequales anguste sublanceolatos acutos fissa, intus squamulis 2 circ. 1.5–2 mm. diamet. praedita. Gynophorum circ. 12–15 mm. longum. Ovarium 5–8 mm. longum in parte verticali coriaceum; styli 3 circ. 6–8 mm. longi.

"Plant of 4–9 inches. Flowers deep maroon. Ledges and crevices of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11–12,000 ft. September 1906." G. Forrest. No. 3043.

Allied to *S. scopulorum*, Franch. (Plant. Delavay., p. 85, Plate xxii.), but the stems are shorter, the cauline leaves much fewer, the calyx longer and much broader, the gynophore longer. The petals are very similar in both species and of nearly the same size.

Arenaria Forrestii, Diels. Sp. nov.

Caules basi squamis pallidis brunneis obtecti superne foliati, 5–10 cm. longi uno latere pubescentes. Folia superne conferta, glabra, crassiuscula, margine atque apice indurata, ovata, apice mucrone brunneo vel pallide fusco saepe incurvo subspinescenti-acutissimo ornata, 5–8 mm. longa, 2–3 mm. lata; nervi praeter costam obsoleti. Flores subsessiles terminales solitarii. Sepala foliis similia, anguste hyalino-marginata, basin versus parce ciliata, 7–8 mm. longa, 2.5–3 mm. lata. Petala obovata apice obtusa, 8–10 mm. longa, 5 mm. lata. Stamina 10, episepala, extus basi squamula praedita, 6 mm. longa, antherae violaceae. Ovarium 2.5 mm. longum, circ. 6-ovulatum; styli 3 apice extrorsum curvati, 3–3.5 mm. longi. Fructus adhuc ignotus.

"Plant of 2–4 inches. Flowers white, anthers violet. In crevices of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 11–12,000 ft. September 1906." G. Forrest. No. 2915.

This very distinct species looks very much like some *Cerastium* of the European Alps.

Arenaria napuligera, Franch., in Bull. Soc. Bot. France, xxxiii, 429. Plant. Delavay., p. 92, Plate xxiva.

Species vix annua. Flores nonnunquam albi, antherae violaceae. Styli 3.

"Plant of 3-6 inches. Flowers white, anthers violet. Ledges and crevices of cliffs in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 11-12,000 ft. August 1906." G. Forrest. No. 1881.

"Tufted plant of 3-5 inches. Ledges and crevices of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25'. Alt. 11-12,000 ft. July 1906." G. Forrest. No. 2622.

Arenaria ionandra, Diels. Sp. nov.

Caules e basi ramosissimi purpurascens, 7-10 cm. alti, in uno latere dense glanduloso-hirti. Folia crassiuscula, remota, spathulata, recurva, 3-5 mm. longa, glabra. Flores pedunculati. Sepala glabra oblonga, late hyalino-marginata, basi paulum saccata ibique atropurpurea, 4-4.5 mm. longa, 2 mm. lata. Petala late obovato-elliptica apice conspicue emarginata, 5 mm. longa, 5-6 mm. lata, alba. Stamina 4 mm. longa, antherae violaceae. Ovarium subglobosum 1.5 mm. diamet., styli 2, breves, 1 mm. longi.

"Plant of 3-4 inches. Flowers white, base of petals yellowish, anthers violet. On limestone drift in pine forests at base of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 2902A.

In habit this species is very similar to *A. napuligera*, but differs by the glabrous calyx and having two styles only. A very similar form was collected near Yen-tze-hay by Delavay, No. 4322, in Herb. Paris.

Arenaria longistyla, Franch. var. ***pleurogynoides***, Diels.
Var. nov.

Typo omnibus partibus major; pedunculi 5-6 cm. longi. Folia 1.2-2 cm. longa. Sepala 6-7 mm., petala ad 10 mm. longa, 7-8 mm. lata. Styli speciminis Forrestiani 3 mm. longi.

"Plant of 3-4 inches. Flowers white, anthers violet. On limestone drift at base of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 12,000 ft. September 1906." G. Forrest. No. 2902.

This variety looks extremely like *Pleurogyne carinthiaca*. *A. longistyla* differs from *A. ionandra* in its long-pedunculated flowers, the longer and narrower leaves, and the rounded, not

emarginate, petals. The length of the style is a variable character of the species. It may be a case of heterostylic condition. In fact, this assumption is strengthened by d'Apraval's plate (Plant. Delavay., Plate xxiv.), which figures two forms of ovary in *d* and *e*: a long-styled and a short-styled one. Therefore, Franchet's section *Macrogyne* is invalid, his *A. longistyla* being, indeed, closely related to his *A. napuligera*. Our *A. ionandra* is an intermediate form between those two species.

COMPOSITAE.

Pluchea Bulleyana, J. F. Jeffrey. Sp. nov.

Planta biennis viscosa 30-80 cm. alta, basi ramosa, dense glanduloso-villosa. Folia caulina obovato-spathulata vel oblanceolata, apice mucronata, basi in caulem interrupte alatum late decurrentia, 5-8 cm. longa, 1-1.5 cm. lata, integerrima; folia juvenilia basalia perlate ovata vel elliptica, circ. 7 cm. longa, circ. 5 cm. lata, in petiolum circ. 2 cm. longum subabrupte attenuata. Inflorescentia terminalis, folioso-corymbosa; capitula plurima 7 mm. longa, 4 mm. diamet., heterogama disciformia, alba; flores exteriores multiseriati, styli ramulis patentibus filiformibus; flores interiores, styli ramulis truncatis non patentibus, apice papillois, antheris flavidis caudatis, connectivo apice producto. Pedunculi bracteati, molliter pubescentes. Involucri bractee pauciseriatae, exteriores latae obtusae hyalinae pallido-brunneae, interiores angustiores, acutae. Achaenia minuta subteretia minus quam 1 mm. longa, minute muriculata. Pappi setae uniseriatae, numerosae, molles, liberae.

"Plant of 1-2½ ft. Flowers bright yellow. Dry, rocky situations on the descent from the Lu-po pass to the Salwin, Mekong-Salwin divide. Lat. about 27° N. Alt. 8-9000 ft. N.W. Yunnan. November 1905." G. Forrest. No. 1073. Yunnan-sen, E. E. Maire. Nos. 18, 707, 2288.

A much-branched, viscid, leafy plant, densely clothed, especially the stem and inflorescence, with villous hairs, the capitula almost cottony. Flowers bright yellow. The whole plant of a yellow hue, and aromatic when dry, suggestive of some species of *Helichrysum*. Mr. Forrest says:—"Strongly aromatic when fresh. Smell almost similar to that of curry powder." Stem conspicuously winged by reason of the decurrent leaf bases, woody at base only with a fibrous tap root.

A very distinct species, the nearest ally that I have seen being *P. ? pteropoda*, Hemsl. Following Mr. Hemsley's suggestion I place this in *Pluchea*, to which it is most nearly allied by the broad, blunt, subscarious involucre bracts, bifid styles of

sterile flowers, caudate anthers, and corymbose inflorescence, although the foliage rather recalls *Lagerera*.

[It was collected also in silvis pr. Kichan, 30th December 1889. (Delavay. No. 4621, in Herb. Paris, "*Lagerera*.")—Diels.]

Aster Harrowianus, Diels. Sp. nov.

Caulis superne pubescens, praeter inflorescentiam atque ramulos axillares breves foliatis subsimplex. Folia herbacea, minute glandulosa atque supra brevissime stellato-puberula, subtus glaucescenti-villosa, demum magis glabrescentia, subsessilia vel brevissime petiolata, lanceolata acuta, leviter repandodentata dentibus mucronulatis, 10–12 cm. longa, 2.3–2.5 cm. lata; nervi a costa prominente ca. 12–14 abeuntes, subtus prominuli infra marginem conjuncti. Inflorescentia corymbosa multiflora. Flores pedicellati, pedicellis gracilibus. Involucri phylla extus villosula, exteriora 2.5 mm. longa, interiora 4 mm. longa, lineari-lanceolata apice ciliolato purpurea. Ovarium anguste obovatum, pilosum, 2 mm. longum. Flores radiati: corollae tubus tenuis ca. 3 mm. longus, lamina alba, patula, 4–5 mm. longa. Flores disci: pappi pili albidii vel rubicundi corollam aequantes; corollae pars infera angusta 1.5 mm. longa, supra anguste campanulata, 2.5 mm. longa.

"Shrub of 3–5 ft. Ray florets pale purplish-blue, disc florets orange-yellow. Moist, rocky situations in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10–11,000 ft. September 1906." G. Forrest. No. 4004.

var. **glabratus**, Diels. Var. nov.

Folia magis glabrata. Inflorescentia minor, flores paulo majores.

"Shrub of 3–5 ft. Flowers purplish-blue. Shady, rocky situations in side valleys on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 9500–11,000 ft. July 1906." G. Forrest. No. 2508.

Allied to *A. Cavaleriei*, Léveillé, of Kuei chou, but the leaves are more dentate, the nerves more spreading, the corymbs larger, heads smaller, and the pappus is less reddish than in the species of the French author.

Aster Bulleyanus, J. F. Jeffrey. Sp. nov.

Affinis *A. Bietii*, Franch., *A. Vilmorini*, Franch., *A. Delavayi*, Franch., et *A. yunnanensi*, Franch., sed pappi longitudine et coloratione differt.

Caulis simplex circ. 30 cm. altus, inferne bene foliatus, monocephalus, sulcatus, pilis albo-villosis plus minusve vestitus. Rhizoma repens, sat crassum. Folia 6–9 cm. longa, usque ad 2.5 cm. lata, ovato-lanceolata acuta vel subacuta trinervia,

basalia in petiolum circ. 5 cm. longum late alatum sensim angustata, caulina amplexicaulia, omnia remote apiculato-dentata, utrinque sparse albo-villosa, densius infra in nervis. Capitulum 7-8 cm. diam.; phylla biseriata lanceolata acuminata dense albo-villosa; flores radii anguste lineares circ. 3.75 cm. longi; achaenia 3 mm. longa, obovata, compressa, pilosa, margine et faciebus valide uninervia; pappus inaequalis fusco-rufus, uniseriatus, achaenio vel flosculo brevior.

"Moist, shady places on western slopes of Kari pass, on descent to Shu-pa valley from Pung-tzu-la to Shi-zo. Elevation 13,000 ft. Flowers deep blue. Yunnan, September 1904." G. Forrest. No. 661.

I have described the plant from a single specimen of Mr. Forrest's. There is also a specimen in the Kew Herbarium, coll. Hosie, without number, which is in my opinion the same.

Aster Jeffreyanus, Diels. Sp. nov.

Rhizoma unicaule. Caulis strictus, pilosus, 15-25 cm. longus. Folia basalia petiolata petiolo 1-1.5 cm. longo; lamina ovata vel oblanceolata, apice acuta, subtus ad nervos pilosa, integra, 3-5 cm. longa, 1-1.7 cm. lata. Folia caulina mox parva, erecta, sessilia, 1-1.5 cm. longa. Capitulum cum ligulis 4-5 cm. diamet. Involucri phylla pauciseriata, basi parce pilosa, ceterum glabra, firma, anguste ovata, 7-8 mm. longa, 3-3.5 mm. lata. Ligulae lavandulaceo-coeruleae, anguste lineares, 15-18 mm. longae, 1.5 mm. latae; florum disci corolla 2.5-3 mm. longa. Achaenium valde compressum, obovatum vel fere obcordatum, 2.5 mm. longum, glabrum. Pappi pili setiformes, rufi, breves, inaequales, quam achaenium multo breviores.

"Marshy hillsides, base of Lichiang peak, Lichiang valley. Alt. 10,000 ft. Ray florets deep lavender, disc florets rich orange. September 1904." G. Forrest. No. 669.

Close to *Aster Souliei*, Franchet, from the region of Tongolo, but differing by the acute leaves, the longer involucre bracts, and glabrous achenes.

Erigeron patentisquama, J. F. Jeffrey. Sp. nov.

Affinis *E. unifloro*, Linn, sed foliis caulinis majoribus, pedunculo apice incrassato, involucre dense albo-tomentoso, phyllariis exterioribus patentibus atque reflexis differt.

Planta perennis, undique villosa, radice sat crassa fibrosa; scapi plures robusti satis foliosi. Folia basalia numerosa rosulatum conferta, spatulata, 4-5 cm. longa, 1-2 cm. lata, in petiolum 2-3 cm. longum sensim attenuata, margine integra, sparse villosa, supra nitide viridia, nervis paucis vix ad apicem adscendentibus, folia caulina anguste lanceolata, subacuta vel

acuta vel acuminata, saepe mucronata, basi lata, 2-3.5 cm. longa. Capitula solitaria 12-14 mm. diam.; ligulae pallido-roseae vix phyllaria superantes; disci flores sordide flavo-purpurei. Phyllaria villosissima, exteriora patentia atque reflexa, 1-1.5 cm. longa. Receptaculum planum, 8 mm. latum. Achaenia obovoidea, compressa 2-3 mm. longa, 1 mm. lata, pubescentia, pappo albido 1-1.5 cm. longo.

"Dry grassland on summit of Kari pass, Yangtse-Mekong divide, between Shih Pa and Yeh Chih, Yunnan. Flowers rose-pink. Alt. 14,000 ft. Lat. 27° 50' N. September 1904." G. Forrest. No. 43.

This species differs from all the forms of *E. alpinus*, Linn. (see Fl. Brit. Ind. iii, pp. 255-256), by its stouter habit much branched from the base, with the outer phyllaries spreading and reflexed, leafy stems and villous involucre. From *E. multi-radiatus*, Benth., the more villous involucre readily distinguishes it. In Forrest's plant the phyllaries lengthen in fruit and are sharply acuminate. The spreading villous hairs of the stem are very characteristic.

De Candolle's description of *Heterochaeta erigeroides* (DC. Prod. v, 282) strongly suggests the present plant, but the outer pappus in *E. patentisquama* can hardly be said to be developed, and De Candolle's is described as having the stems leafy only at the base and only 3 to 4 inches high.

I have taken up Mr. Clarke's MS. name in the Kew Herbarium on the sheet of his No. 30713 from Tilail, 12,000 ft., Kashmir. Sir J. D. Hooker has noted on this sheet that Clarke's plant was "not seen when F.B.I. was done." Jaeschke 256, Lahul, Thibet, has also been identified by Sir J. D. Hooker in Herb. Kew as var. *patentisquama*. Cf. also Duthie 11654, from Dras valley, Baltistan, 11-12,000 ft., and Lace 1672, from above Tindi, Chamba State, 12,000 ft.

Artemisia codonocephala, Diels. Sp. nov.

Caulis strictus, erectus, 0.8-1 m. altus, adpresse pilosus ramis adscendentibus auctus. Folia inferiora breviter petiolata vel subsessilia, 10-12 cm. longa, pinnatisecta, supra parce villosa vel glabrata 2-4, late linearia (ad 6 mm. lata) acuta, simplicia vel alte bifida, margine integra; nervi praeter costam occulti. Folia ramorum et caulis superi multo breviora, simpliciora, trifida vel summa demum integra. Inflorescentia paniculata. Rami floriferi spicam secundam basi foliatam apice saepe decurvam nutantem gerentes. Capitula subsessilia, inferiora spicae 1-3 fasciculata, superiora solitaria, bractea brevi suffulta, omnia deversa pendula, involucri phyllis apice extrorsum patulis ambitu fere campaniformia, 6-7 mm. longa. Involucri phylla

exteriora breviora, interiora mediano viridia ceterum scarioso-hyalina, arachnoideo-pilosa. Flores ♀ circ. 6-8, ♂ 10-16; corolla ♂ 3-3.5 mm. longa, extus glandulosa.

"Dry, barren grassland. Head of Chien Chuan valley. Alt. 8000 ft., 1904." G. Forrest. No. 637.

It was collected also by Delavay (No. 2943, in Herb. Paris, named "*A. vulgaris*, L." by Franchet).

This remarkable form of the *vulgaris*-affinity is recognised by the entire leaf-segments, nodding spikes, and bell-shaped heads. The inflorescence is similar to that of *A. Argyi*, Lév. et Vaniot, but this has quite different lower leaves.

***Artemisia yunnanensis*, J. F. Jeffrey. Sp. nov.**

Affinis *A. vulgaris* sed habitu folisque maxime differt.

Caulis gracilis striatus albo-sericeus, basi suffrutescens, ramulis multis gracillimis foliosis. Folia infima non visa; mediana 5-7 cm. longa, 1-pinnatifida, circumscriptione ovato-vel obovato-cuneata, superiora trilobata lobis integris rotundis apiculatis, suprema ovato-lanceolata integra, fere omnia basi auriculata, supra pubescentia, infra dense canescenti-villosa. Capitula 2 mm. diam., pauca, solitaria, rarius 2-3 approximata ramos laterales terminantia vel in apice inflorescentiam spiciformem elongatam laxissimam gracillimam formantia.

"Hoching and Lichiang valleys, Yunnan; dry ground base of hills. September 1904." G. Forrest. No. 674.

[A similar plant is Delavay, No. 612. ("Che cho tse au-dessus de Tapintze"), but it has the flowers much more numerous. Franchet named it "*Artemisia vulgaris*, L., forma *indica*," in Herb. Paris—Diels.]

Although at first sight very distinct from any of the forms of *A. vulgaris*, Linn., this plant, after further observation with fuller material from the Indo-Chinese region, may have to be placed under that protean species. Indeed there is a specimen from China in the Kew Herbarium (Henry 64) closely approaching the present plant which has been named provisionally by Prof. D. Oliver *A. vulgaris*, var. ? This differs from Forrest's chiefly in the fewer and larger capitula.

The habit is more slender and graceful than that of *A. vulgaris*, Linn.

***Tanacetum adenanthum*, Diels. Sp. nov.**

E basi pluricaulis atque stolones breves foliatos holosericeos emittens. Caules superne ramosi, circ. 30 cm. alti, pilosi. Folia sessilia 1-2-plo pinnatipartita, 1-1.5 cm. longa; segmenta utrinque 1-3 saepe subfalcata, integra vel trisecta, angustissime linearia acuta, glabrata saturate viridia subtus albo-tomentosa.

Corymbi laxiflori. Capitula pedunculata, 3-4.5 mm. longa, 4-5 mm. lata. Involucry phylla mediano (sicca) fusca, ceterum pallida scariosa, parce pilosa, elliptica vel obovata nonnunquam margine lacera, circ. 4 mm. longa, 1.5 mm. lata. Receptaculum conicum. Corolla extus glandulis amplis praedita.

"Plant of 6-12 inches. Flowers bright orange; whole plant strongly aromatic. Dry, open, rocky situations on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 10-11,000 ft. October 1906." G. Forrest. No. 3070.

This species is not far from *T. tibeticum*, Hook. f. et Thoms., but the stems are longer, the leaves have longer and more acute segments, the heads are smaller, the involucre bracts narrower.

Tanacetum yunnanense, Jeffrey. Sp. nov.

Affine *T. longifolium*, Wall., sed foliis caulinis latioribus, et capitulis floribusque minoribus differt.

Caulis erectus, 40-50 cm. altus, sulcatus, supra subaraneoso-villosus, infra glabrescens purpurascens. Folia radicalia desunt; caulina 5-8 cm. longa, petiolo 2-3 cm. longo praedita, circumscriptione late oblongo-ovata, tripinnatifida segmentis ultimis linearibus, laxe villosa. Capitula dense corymboso-conferta, dense albo-lanato-villosa; phyllaria exteriora ovato-vel obovato-lanceolata, obtusa vel acuta, interiora oblongo-obovata marginibus scariosis irregulariter serratis, nigro-rufis. Capitula 6-7 mm. diam., 20-30-flora; corolla circ. 2 mm. longa, minute glanduloso-pubescent; achenia oblonga curvata 4-angulata, corollae aequilonga; pappus nullus.

"Base of cliffs on summit of Kari pass, Mekong-Yangtse divide. Elevation, 15,000 ft. Height of plant, 18 inches. Flowers yellow. Yunnan, September 1904." G. Forrest. No. 53.

Its nearest ally, *T. longifolium*, Wall., from which it may readily be distinguished by the smaller capitula and broader cauline leaves, is known only from Western Himalaya. A plant from Leetee, Edgeworth 96, in the Kew Herb. from Herb. Benth., with pencil note "sp. distincta," may possibly be this species, but it is in bad condition and I have not dissected the capitula.

Anaphalis chlamydophylla, Diels. Sp. nov.

Planta dense caespitosa, stolonifera. Folia pristina sicca persistentia, annua basalia (praecipue caulium sterilium) rosulata, patentia, latissime ovata, brevia, 4-8 mm. longa, 3-4 mm. lata, lanuginoso-tomentosa; folia caulina (praecipue caulium florentium) magis remota, erecta vel cauli adpressa, basalibus longiora, oblonga, 1.5-2.5 cm. longa, circ. 0.5 cm. lata, pilis lanuginosis dense cohaerentibus quasi pallio albo lucido circumcirca involucreta, enervia. Capitula e foliis summis cingentibus demum

exserta, subsessilia, conferta, ca. 6-8 mm. diamet. Involucri phylla late lanceolata, parte infera brunnea, parte supera radiante acuta, alba, lucida, 5-6 mm. longa.

"Plant of 1-5 inches. Flowers pale yellowish-white. Forming dense cushions on the faces and ledges of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-12,000 ft. June 1906." G. Forrest. Nos. 2354, 2354A.

This interesting plant has been collected before by Delavay, and in ms. named "*Gnaphalium nubigenum*, Wall., var. *likiangense*, Franch.," by Franchet, in Herb. Paris. It is quite a different plant from *G. likiangense*, Franch., as published in Journ. de Bot. x (1896), p. 410. *A. chlamydophylla*, Diels, is easily recognised by the two different modes of indumentum; the rosulate leaves of the sterile stolons being clothed with a rather woolly tomentum, the cauline leaves provided with a shining skin-like cover of densely woven hairs.

Anaphalis Franchetiana, Diels. Sp. nov.

Caulis 15-30 cm. altus, strictus, albo-tomentosus, ramosus. Rami subhorizontaliter patentes, albo-tomentelli, foliati. Folia patentia, supra glaberrima subtus albo-tomentosa, basi semiamplectentia, lineari-oblanccolata vel -oblonga, trinervia, margine anguste revoluta, apice mucronulo saepe curvato praedita, 1.3-1.8 cm. longa, 0.2-0.25 cm. lata; costa supra insculpta. Capitula in apice ramorum terminalia, numerosa, sessilia, dense conferta, basi lanuginoso-tomentella, parva. Involucri phylla scariosa acuta, parte supera extrorsum subcurvata sed vix radiantia, exteriora ovato-lanceolata roseo-purpurascencia, interiora angustiora alba. Flores adhuc immaturi.

"Plant of 6-12 inches. Flowers white, involuclral bracts rose-red. Crevices and ledges of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 12-13,000 ft. September 1906." G. Forrest. No. 2996.

Also Delavay, No. 6661, in Herb. Paris!

From the structure of the leaves this may be placed near the very variable *A. contorta* (Don) Hook. f. of the Himalayan and Khasia Hills. More material is wanted for an exact delimitation of the two species.

Leontopodium caespitosum, Diels. Sp. nov.

Stoloniferum, multiceps, inferne suffrutescens; caules flori-feri 8-10 cm. longi, foliati. Folia pristina deflexa, annua basalia conferta, superiora magis remota, insigne discoloria, supra fere glabra, subtus albo-tomentosa, plana, anguste oblanceolata, apice minute mucronulata, 1-1.5 cm. longa, 2-2.5 mm. lata. Folia radiantia in utraque facie albo-tomentosa, 1.2-1.6 cm.

longa. Capitula heterogama, flores ♂ cum ♀ subaequiter mixti. Involucri phylla oblanceolata, in parte mediana subcoriacea incrassata, ceterum scariosa, dorso pilosa, apice acuta lacera ibique plerumque fuscescentia. Flores ♂: achaenium (sterile) sublaeve; corolla e basi tubulosa sensim dilatata 5-loba, circ. 3 mm. longa. Flores ♀: achaenium (immaturum) papilloso-scabrum, corolla filiformi-tubulosa, circ. 3 mm. longa.

"Tufted plant of 4-6 inches. Flowers yellowish-brown. Dry, stony pastureland on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 11-12,000 ft. August-September 1906." G. Forrest. No. 4070.

In habit not unlike some forms of *L. Stracheyi*, Clarke, this species is easily distinguished from the Himalayan ally by its heterogamous flowers. It should be placed in the group *Heterogama perfecta* of Beauverd's classification (Bull. Soc. Bot. Genève, 1910, p. 245).

***Cremanthodium rhodocephalum*, Diels. Sp. nov.**

Caulis simplex, 7-25 cm. longus, basin versus glabratus, superne purpureo-pubescent. Folia parti inferae caulis inserta, petiolo 3-8 cm. longo anguste vaginante praedita, crasse papyracea, supra glabra, margine et subtus parce pilis paleaceis instructa, subtus et margine purpurea, e basi cordata vel excisa reniformia vel orbicularia, circumcirca late dentata vel crenatodentata, dentibus 7-15 mucronulatis; nervi flabellati. Folia superiora spathulata vel subovata, acuminata. Capitulum seminutans. Involucri phylla exteriora anguste lanceolata, pubescentia, purpurea, 3 cm. longa, 3 mm. lata; interiora similia, sed margine lato pallido glabro aucta, multo (ad 7 mm.) latiora. Florum ligulorum 8-10 ligulae late oblanceolatae, apice latissimae tridentatae, 2-2.5 cm. longae, 0.8-0.9 cm. latae, cinereo-roseae, nervis purpureis ornatae; pappus albus circ. 1 cm. longus. Florum disci corolla rosea; tubi pars infera filiformis brevis, 2.5-3 mm. longa, supra cylindrica 8-9 mm. longa, limbi lobi breves; antherae purpureae; pappus albus circ. 1 cm. longus.

"Plant of 3-9 inches. Ray florets grey-pink, veined a darker shade, disc florets deep crimson-rose, faintly fragrant. In moist crevices of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11-12,000 ft. August 1906." G. Forrest. No. 2665.

This fine species is remarkably similar to the eligulate *C. campanulatum* (Franch.) Diels.; in fact, there is a sort of mimicry between these two species, the involucral bracts of *C. campanulatum* being extremely similar in texture, shape, and colour to the ligules of *C. rhodocephalum*. The nearest species to our new

one is *C. palmatum*, Benth., of the Sikkim Himalaya, which has much deeper cut leaves (cf. Hooker Icones plant., Plate 1142), and shorter involucre bracts. In the shape of leaves, *C. rhodocephalum* is more like the yellow-flowering *C. reniforme* (DC.) Benth.

Cremanthodium Forrestii, J. F. Jeffrey. Sp. nov.

Scaposum gracile fere glabrum 20–30 cm. altum, radicibus multis fibrosis, basi reliquiis foliorum delapsorum vestitum. Folia omnia radicalia, petiolo 6–8 cm. longo praedita, sagittata lobis latis divergentibus, circ. 3 cm. longa, basi circ. 3 cm. lata, apice acuta, remote irregulariterque callosodenticulata, palmatinervia. Scapus solitarius capitulo singulari nutante 4–5 cm. diam. terminatus. Involucri bracteae 8–12, uniseriatae, oblongolanceolatae, acutae, 1–1.5 cm. longae margine membranaceae fuscae. Radii flores circ. 10; corolla (flava?) fere 3 cm. longa, 5–8 mm. lata, apice lobatula. Achaenia (matura non visa) glabra pappo fulvido praedita.

Tibet, Mekong-Salwin divide, north-west of Tsekou. 1904. Altitude not stated. G. Forrest. Nos. 638 and 660. Also Monbeig, without number, in Herb. Kew.

A very distinct species approaching *Senecio* (*Cremanthodium*) *Prattii*, Hemsl., in its fulvous pappus, but it is much smaller in all its parts, and at once distinguished from all other *Cremanthodia* known to me by its sagittate leaves.

Senecio pleopterus, Diels. Sp. nov.

Caulis striatus, glaber vel superne parce pilosulus, apice ramosus. Folia breviter petiolata, tenuiter herbacea vel submembranacea, superne et (paulo densius) subtus pilosula, alte pinnatifida vel pinnatipartita, pinnis utrinque 5–6, lanceolatis, conspicue serratis, apice longe acuminatis, infimis paulo brevioribus, mediis longissimis, supremis demum lobiformibus, folia (media) tota (cum petiolo) 20–25 longa, 17–18 cm. lata, nervi primarii subtus subelevati, ceteri haud prominentes. Corymbi ramos terminantes inflorescentiam amplam formantes. Capitula plerumque graciliter pedunculata, angustissima, ca. 1.5 mm. lata, bracteolis 2–3 subulatis 2.5–4 mm. longis suffulta. Involucri phylla ca. 5, linearia, apicem versus subpatula, 7–8 mm. longa. Flores ♂ tubulosi ca. 3, corollae tubi pars infera fistulosa ca. 3 mm. longa, supera anguste et sensim infundibuliformi-obconica, limbo 5-dentato terminata, 4–4.5 mm. longa; pappus albus, tubi partem inferam subaequans. Flores ♀ ca. 2–3 filiformes, corolla omnino reducta, pappo brevior praediti.

"Plant of 2–4 ft. Flowers orange-yellow. Open, grassy situations on the margins of pine forests on the eastern flank of

the Lichiang Range. Lat. $27^{\circ} 15' N$. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 2829.

Allied to *S. Mortoni*, Clarke, and *S. tanguticus*, Max., but different from both by the pinnate leaves and the structure of the very narrow heads.

Senecio Jeffreyanus, Diels. Sp. nov.

Folia basalia longe petiolata, petiolo superne anguste alato ad 20 cm. longo, lamina papyracea utrinque fere glabra, e basi truncata vel leviter excisa, triangulari-ovata, crenato-dentata, dentibus parvis subcartilagineis, apice breviter acuminata, 15-30 cm. longa, 12-25 cm. lata, vel major; nervi pinnati subtus prominentes. Caulis (an semper?) foliis nonnisi bracteiformibus late sessilibus, subintegris, acuminatis obtectus, apicem versus subarachnoideus. Racemus angustus, dense bracteatus, apice subcomosus. Bracteae flores cingentes eosque saepe superantes. Flores inferi ad 2.5 cm. longe pedunculati, pedunculi albo-arachnoidei; bracteolae capitulo appropinquatae angustae involucri saepe superantes. Involucri phylla circ. 8, marginibus imbricantia, late oblonga, subobtusa, praeter apicem puberulam glabrescentia. Ligulae circ. 8 angustae, circ. 18-20 mm. longae. Florum disci corolla 7-8 mm. longa, quam pappus pallide rufidulus paulo longior.

"Sides of streams and marshy places in Hocking and Lichiang valleys. Alt. 7-8000 ft. September 1904." G. Forrest. No. 54.

This is near *S. platyglossus*, Franch., but the leaves have smaller teeth, the bracts are larger, the heads smaller.

Senecio cymatocrepis, Diels. Sp. nov.

Caulis 0.3-1 m. altus, superne pilosulus inferne glabrescens. Folia (summis exceptis) in petiolum longum breviter decurrentia, membranaceo-herbacea, supra parce strigulosa, subtus glauca glabra, ovato-oblonga vel sub lanceolata, margine leviter undulato-repanda, in sinibus mucronulata, apice acuta; media basi obtusa, summa (sessilia) acuta; media circa 20 cm. longa, 8 mm. lata. Inflorescentia paniculata, rami paniculae inferiores compositi, ultimi thyrsoidei. Capitula subsessilia vel breviter pedunculata bracteolis nonnullis brevibus suffulta. Involucri tubuloso-cylindrici 5-6 mm. longi phylla 4 viridia sublinearia apice subpatula extus paleaceo-puberula. Flores ligulati 0, tubulosi circ. 4 aurantiaco-flavi, 7-8 mm. longi; pappus albus fragilis.

"Plant of 1-3 ft. Flowers orange-yellow. Open, moist situations in pine woods near summit of Pien-ma pass, Irrawadi-

Salwin divide. Lat. 26° N. Alt. 10-11,000 ft. Upper Burmah. October 1903." G. Forrest. No. 848. This may be allied to *S. tetranthus* DC., of the Eastern Himalayas, but it has narrower leaves, a puberulous involucre, and no ligules.

Senecio saluenensis, Diels. Sp. nov.

Frutex divaricatus gracilis 1.2-2.8 m. altus. Rami glabri, graciles. Folia breviter (0.6-1 cm.) petiolata; lamina papyracea, glaberrima, anguste elliptica vel oblongo-lanceolata, basi obtusa, apice acuminata, margine adpresse serrata serraturis apice mucronulatis, 10-12 cm. longa, 4.5-5 cm. lata; nervi subtus prominuli. Corymbi axillares et terminales, graciliter pedunculati, multiflori. Capitula subsessilia parva, bracteolis compluribus minutis suffulta. Involucri phylla circ. 5, lineari-lanceolata apice acuta, 3-4 mm. longa, anguste pallide-marginata. Flores ligulati 0, tubulosi circ. 3-4, viridi-lutei, 6-7 mm. longi, pappus albidus corollae tubum subaequans.

"Spreading shrub of 4-9 ft. Flowers greenish-yellow. Shady, moist side valleys of the Salwin, Salwin-Irrawadi divide, north of Lu-chang. Lat. 26° to 27° N. Alt. 4-5000 ft. N.W. Yunnan. November 1903." G. Forrest. No. 855.

Differing from *S. triligulatus*, Ham., in the bracteolate heads, fewer involucral bracts, and the absence of ligules.

Senecio scytophyllus, Diels. Sp. nov.

Caulis 30-40 cm. altus robustus, superne hinc inde arachnoideus, inferne glabrescens, basi fibris rigidis erectis ad collum radicalem cinctus. Folium basale longe (circ. 10 cm.) petiolatum, coriaceum, glabrum, lamina e basi cuneato-angustata late ovata, margine repando-dentata dentibus incrassatis, circ. 15 cm. longa, 8 cm. lata. Folia caulina minora, superiora sessilia; nervi subtus prominentes. Flores pauci, nutantes? Involucri phylla (8-10), late lanceolata vel ovata, marginem versus tenuiora quam in parte mediana, apice paulum producta, margine superiore dense albo-ciliata, ceterum glabra, 12-14 mm. longa, 4-6 mm. lata; ligulae involucri phyllis subduplo longiores flavae; pappus albus.

"Plant of 9-12 inches. Ray florets orange, disc florets greenish-orange. Shady, grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 2964.

In habit, this approaches *Senecio arnicoides*, Wall., of the Western and Central Himalayas, but the flower is different, the involucral bracts and ligules being less numerous.

Senecio caloxanthus, Diels. Sp. nov.

Caulis inferne subflexuosus, striatus, glabrescens, ca. 0.5 m. altus. Folia (basalia non visa), caulina inferiora papyracea petiolo lato basi $\pm$ amplexante, 6-7 cm. longo praedita, in utraque facie glabra, reniformi-deltoidea, dentata, circ. 6 cm. longa, 9 cm. lata; nervi primarii palmati. Folia superiora sessilia, dentibus demum angustissimis elongatis instructa, in bracteis insignes involucria cingentes eodem modo dentato-fimbriatas transeuntia. Racemus angustus simplex, circ. 20-30 cm. longus circ. 12-florus. Capitula subremota, breviter pedunculata, erecta. Involucri phylla pauca biseriata, exteriora oblongo-linearita, interiora latiora, apice contracta puberula, ceterum glabrata, circ. 10 mm. longa. Flores radiantes. Ligulae circ. 8, late oblanceolatae, apice tridentatae, 15-17 mm. longae, 5-6 mm. latae, intense flavae. Flores tubulosi; tubi pars infera 5-6 mm. longa, superam campaniformem subaequans; limbi dentes recurvi 1-1.5 mm. longi. Pappi rufi pili rigidiusculi partem inferam tubi corollini vix attingentes, 5-6 mm. longi.

"Plant of 1-3 ft. Flowers rich yellow. Moist, open situations by sides of streams and ditches at base of the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 8500-9000 ft. July 1906." G. Forrest. No. 2546.

Sect. *Ligularia*. The species is recognised by the broadly deltoid lower cauline-leaves, the large bracts with fimbriate toothed, and the broad ligules.

Senecio oryzetorum, Diels. Sp. nov.

Annua. Caulis $\pm$ ramosus, 7-25 cm. longus, hinc inde parce villosulus, glabrescens. Folia herbacea, glabrescentia, lineari-oblanceolata, repando-serrata vel pinnatifida, 4-6 cm. longa, (ambitu) 0.5-2 cm. lata. Flores axillares terminalesque pedunculati pauci, breviter pedicellati, omnes tubulosi. Involucrum bracteolis minutis paucis suffultum glabrescens, subcampanulatum; phylla ad $\frac{1}{3}$ - $\frac{1}{2}$ connata, lanceolato-oblonga, superne hyalino-marginata, 5-6 mm. longa, 1.5 mm. lata. Pappi pili basi coaliti nivei, nitentes, simplices, scabridi, florem aequantes. Ovarium cylindricum, 3.5 mm. longum corollam aequans. Corolla e basi dilatata anguste tubulosa, deinde in limbum 5-dentatum ampliata, lutea. Achaenium striatum brevissimum pilosulum.

"Plant of 3-9 inches. Flowers yellow. Moist, open situations, bunds of padi fields, &c., in the Tali valley. Lat. 25° 40' N. Alt. 6700-8000 ft. June-July 1906." G. Forrest. No. 4038.

Tali, Delavay, No. 812, indetermin., in Herb. Paris!

Senecio Bulleyanus, Diels. Sp. nov.

Caulis adscendens (subsimpler ?) 0.3-0.6 m. altus, basi hypophyllis parce praeditus, superius densius foliatus, glaber. Folia membranaceo-herbacea, supra parvissime puberula, subtus pallidiora, hinc inde obsolete arachnoideo-villosula, sessilia, anguste lanceolata vel lanceolato-oblonga, basin versus sensim angustata, apice acuta, margine leviter repando-dentata dentibus molliter callosis. Inflorescentia corymbosa. Flores pedicello 2-5 mm. longo instructi, omnes tubulosi. Involucrum bracteolis linearibus apice recurvatis compluribus suffultum; phylla 6-7 subcoriacea, margine subcartilaginea antrorsum brevissime ciliolata, lineari-oblonga, apice intensius colorato acuta, 4-5 mm. longa, circ. 1.5 mm. lata. Pappi pili simplices scabridi ca. 5 mm. longi. Corolla flava; tubi pars infera 2.5 mm. longa, supera elongato-campanulata, 4.5 mm. longa; limbi lobi reflexi. Ovarium 1.5 mm. longum, scabrum, breviter cylindricum.

"Plant of 1-2 ft. Flowers orange-yellow. Grassy openings in pine forests amongst scrub on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10-11,000 ft. August-September 1906." G. Forrest. No. 4053.

The heads are very similar to those of *Gynura*, but the style is *Senecio*-like.

Senecio yakoensis, J. F. Jeffrey. Sp. nov.

Caulis suffruticosus erectus 90-180 cm. altus, rufescens, dense araneoso-lanato-villosus. Folia oblongo-lanceolata, 7-13 cm. longa, 4-5 cm. lata, petiolo circ. 1 cm. longo praedita, acuminata, basi subrotundata vel cuneata, setaceo-serrulata, supra pubescenti-setulosa, subtus dense albido-floccoso-tomentosa et in nervis rufo-villosa. Inflorescentiae dense corymbosae, axillares et ramulos terminantes, albido-tomentosae. Capitula 1 cm. longa vel ultra, 6-7 mm. diamet., bracteis bracteolisque multis lanceolatis vel linearibus praedita. Phyllaria 9-13 oblonga, acutiuscula, albido-tomentoso-villosa, apice rufo-purpurea. Flores in capitulo 4-5 ligulati, vix involucri longiores, tubulosi 7-9; antherae breviter caudatae. Achaenia (matura non visa) 2-3 mm. longa striata, glabra, pappo albido praedita.

"Erect plant of 3-6 ft. Flowers orange, fragrant. Damp, shady situations of the Salwin, Salwin-Irrawadi divide, only in one place on Yāko ridge, near the village of Yāko. Lat. 26° 30' N. Alt. 7-8000 ft. N.W. Yunnan, November 1905." G. Forrest. No. 959.

This handsome species is very closely allied to *S. Bhot*, Clarke, from which it differs in not having the markedly angular stems and in its dense indumentum. The phyllaries on the whole

are more carinate, less margined, and distinctly villous, while the capitula contain less than half as many florets.

Cnicus taliensis, J. F. Jeffrey. Sp. nov.

Caulis 60–100 cm. altus, striato-sulcatus, dense setulosus. Folia supra strigillosa subtus villosa-setulosa, lanceolata, pinatifida, basi attenuata, dentibus lobisque spinescentibus praedita, caulina superiora semi-amplexantia, 5–6 cm. longa, inferiora sub-petiolata 15 cm. longa. Capitula solitaria vel 2–3 racemose ad apicem ramulorum disposita, sub-cernua, subrotunda, 4–5 cm. lata. Phyllaria araneoso-albido-villosa linearia, omnia aequalia, circ. 2 cm. longa exteriora et media spinulis simplicibus pectinato-spinulosa; phyllaria intima mollia mutica. Flores atropurpureae; corolla 2–2.5 cm. longa; pappus sordide albidus, pilis plumosis apice paullo clavellatis compositus; achaenia 3 mm. longa, compressa, ellipsoidea, glabra, brunnea.

"Common round Tali and the valleys north of Tali Lake. Elevation from 6700–9000 ft. Plant of 2–3½ ft. Flowers deep purple, almost maroon. Yunnan, October 1904." G. Forrest. No. 10. Also Yunnansen, Maire, No. 1289.

This species approaches *C. Henryi*, Franch., in the pectinate phyllaries, but the florets of *C. taliensis* are twice as long, and the leaves scabrid and much more spinous.

Cnicus Forrestii, Diels. Sp. nov.

Caulis 15–30 cm. altus, superne brunneo-arachnoideus, simplex, dense foliatus. Folia subamplexantia, media 12–14 cm. longa, supra pilosula, subtus praeter nervos pilosos glabra, nervis apice longissime pallidis spinescentibus horridis atque margine spinis parvis praedita, ambitu ovata, alte pinnatisecta, segmentis utrinque 5–8 subtriangularibus, basi lata saepe lobis 1–2 triangularibus auctis. Capitula 3–8, apice caulis conferta, sessilia, circ. 2 cm. diamet. Involucri phylla circ. 5-seriata; exteriora lanceolata, margine et apice spinosa, interiora mollia, vix pungentia, linearia, acuta, apice haud dilatata purpurascens. Pappi pili brunnei, circ. 12 mm. longi; corolla kermesino-purpurea, tubi pars infera angustissima, 5–6 mm. longa, pars supera cylindrica, circ. 5 mm. longa, limbi lobi angusti 3–4 mm. longi. Antherae albae.

"Plant of 6–12 inches. Flowers corollas crimson-purple, anthers white, giving the head a ruddy grey appearance. Very boggy ground on the plain at the north end of the Lichiang valley. Lat. 27° 10' N. Alt. 10,000 ft. June 1906." G. Forrest. No. 2373.

Apparently allied to *C. argyracanthus* DC., but differing in the foliage and the soft inner involucre leaves.

Another allied species is *C. Cerberus*, Vaniot (of Kwei chou), but this has the leaves less widened at the base, with less pungent, much shorter teeth, and the upper part of the stem nearly free from leaves.

Saussurea gossypiphora, Don. Prodr. Nep., p. 168, non Franchet, in Journ. de Bot. ii (1888), 359.

"Plant of 6-12 inches. Flowers dark crimson. Sheltered situations amongst boulders on barren, wind-swept ridges on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 15' N$. Alt. 16,500-17,000 ft. August 1906." G. Forrest. No. 3006.

"This was the extreme limit of vegetation, and was situated higher than No. 3005, which again was higher than any other species. Close to limit of perpetual snow."

It was apparently not collected by Delavay, no Yunnan specimen being present in the Paris Herbarium. The plant named so by Franchet is the following *S. leucoma*, Diels.

This plant is very similar to some Sikkim forms in its entire leaves, but the teeth of the leaves are more obtuse. The hairs of the inner involucre bracts and the pappus are blackish.

The outer involucre bracts are soft, densely clothed with white wool, about 2.5 cm. long, 0.2 cm. broad, the inner ones smaller, but also very narrow, coriaceous, about 1.3 cm. long, 0.15 cm. broad, with long linear tips. The corolla tube has a slender lower part of 0.25 cm., the upper part is cylindrical, 0.6 cm. long, the segments of the limb 0.15 mm. long. The pappus is uniseriate.

Saussurea leucoma, Diels. Sp. nov.

S. gossypiphora, Franch., in Journ. de Bot. ii (1888), 359 non Don.

Caudex crassus, saepe repens vel procumbens. Caulis 7-15 cm. longus, densissime foliatus. Folia basi arachnoideo-lanuginosa, antrorsum glabrata, patentia vel superiora deflexa, alte pinnatifida, segmentis falcatis late linearibus obtusis, inferiora 5-6 cm. longa, 1.5-1.8 cm. lata, superiora reducta, summa fere integra. Capitula numerosa e foliis exserta. Involucri phylla extima linearia, acuta, dense lanuginosa, circ. 1.5 cm. longa, 0.2 cm. lata, interiora praeter partem mediam subcoriaceam hyalino-scariosa, non nisi apice ipso pilis albis lanuginosis praedicta, circ. 0.9-1.1 cm. longa, 0.4 cm. lata. Corolla saturate coeruleo-purpurascens; tubi pars infera angusta 0.5-0.6 cm. longa, supera 0.35 cm. longa; limbi segmenta 0.25 cm. longa.

"Plant of 3-6 inches. Flowers deep bluish-crimson. Sheltered situations amongst boulders on barren wind-swept ridges on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 15' N$. Alt. 16-16,500 ft. August 1906." G. Forrest. No. 3005.

It was collected before in the Lichiang Range, "in limestone rocks not far below the limit of perpetual snow, in alt. 16,000 ft.," by Delavay (No. 2452, in herb. Paris).

This form of the *Eriocoryne*-Section is different from any of the Himalayan ones which I have seen in the Kew Herbarium. It is easily distinguished from the *S. gossypiphora*, growing in the same range, by its habit, as well as the numerous differences in the structure of the involucre bracts and corollas.

Saussurea euodonta, Diels. Sp. nov.

Caulis 0.3-0.6 m. altus, superne pubescens, basin versus glabratus, costatus. Folia infima tempore florendi evanida, media haud decurrentia, petiolo 2-3 cm. longo $\pm$ piloso praedita; lamina tenuiter herbacea ad nervos parce pilosa vel omnino glabra, subtus pallidior, e basi truncata vel cuneato-acuta late ovata, dentata dentibus mucronatis, apice longe acuminata, 7-10 cm. longa, 5-6.5 cm. lata. Capitula pauca (circ. 3) in axillis foliorum summorum solitaria et terminalia; pedunculus sub capitulo incrassatus; involucri phylla basi subcoriacea, ceterum foliacea, saepe purpurascens, apice acuta nonnunquam patula vel reflexa, infima ovata, intima angustiora, extus $\pm$ pilosula. Flores purpurei. Corollae limbi segmenta angusta, ovarium glabrum. Pappi series exterior rudimentaria setis perbrevibus; seriei interioris pili basi coaliti plumosi circ. 11 mm. longi, corollae tubum latum aequantes.

"Plant of 1-2 ft. Flowers deep purplish crimson. Dry, shady situations in and on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 25° 40' N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 4023.

"Plant of 1-2 ft. Flowers reddish-purple. Grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 2823.

In habit, this species is similar to *S. oligantha*, Franch., of North-east Szechuan, the leaves of which are ovato-cordate, with the basal lobes being produced, and which has the outer row of the pappus nearly half as long as the inner one.

A closely allied species is *S. Cavaleriei*, Lév. et Van. (of Kuei chow), but the leaves of that species are less cuneate towards the base, the teeth are more numerous and smaller, the heads more numerous, and the outer pappus completely wanting.

Saussurea Forrestii, Diels. Sp. nov.

Caulis elatus, 50-60 cm. altus, rufus, apicem versus pubescens, superne ramosus. Folia brevissime petiolata vel sessilia, inferiora nonnunquam subamplectentia, herbacea, supra glabra

subtus pallide cinereo-pannosa, lanceolata, minute repandodenticulata denticulis mucronulatis, apice acuta (inferiora et media), 15-18 cm. longa, 4.5-5.5 cm. lata; nervi subtus rufiduli, nervuli supra paulum insculpti. Folia summa capitulo appropinquata patentia. Capitula ad apicem ramorum solitaria. Involucri phylla laxius imbricata, subcoriacea, lutescentia, margine foliacea herbacea ibique sublacera, exteriora late ovata circ. 0.6 cm. longa, interiora spathulato-linearia ad 1.5 cm. longa. Corolla purpureo-rosea; tubi circ. 1.2 cm. longi pars supera (4 mm. longa) anguste patelliformis, limbi lobi angusti, circ. 2.5 mm. longi; ovarium glabrum. Pappi pili plumosi subaequales uniseriati.

"Plant of 20-24 inches. Flowers purplish-rose. Shady, grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10-11,000 ft. September 1904." G. Forrest. No. 2940.

This species is not very like any of the Yunnan *Saussureae* known to me; it is easily recognised by its foliage and involucre.

Jurinea edulis, Franch., f. *caulescens*, Franch., in Journ. de Bot. vii (1894), 22. *Saussurea edulis*, Franch., in Journ. de Bot. ii (1888), 337 pro parte.

Caulis ad 30 cm. altus apicem versus foliosus, glabratus. Folia breviter petiolata, ambitu late ovata, herbacea, ad 12 cm. longa, profunde inciso-lobata subpinnatifida lobis dentatis; saepe tenuiora, pallidiora, capitulum amplum obvallantia, suprema in involucris phylla (exteriora 3 cm. longa, 1.2 cm. lata), purpurascens apice ciliata mucronulata transeuntia. Capitulum solitarium, 5 cm. longum, 6 cm. latum, flores saturate purpureo-kermesini.

"Plant of 9-18 inches. Flowers deep purple-crimson. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 3002.

Jurinea berardioidea, Franch. (sub tit. var.). *Jurinea edulis* β *berardioidea*, Franch., in Journ. de Bot. viii (1894), 22. *Saussurea edulis*, Franch., in Journ. de Bot. ii (1888), 337 pro parte.

Caulis brevis, 3-8 cm. altus, foliatus, pubescens. Folia longius petiolata, lamina crassius herbaceo-papyracea, magis pilosa, late-elliptica vel fere suborbiculata, leviter crenata vel repandolobata, suprema demum fere sessilia. Capitulum solitarium 5 cm. longum, 4.5 cm. latum. Involucris phylla crassa, vix purpurascens, latissime ovata, exteriora 2.5 cm. longa, 1.8 cm. lata.

"Plant of 1 inch. Flowers pale purple. Open, barren

situations on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10,500 ft. June 1906. N.W. Yunnan." G. Forrest. No. 2481.

Jurinea Forrestii, Diels. Sp. nov.

Caulis 2.5-5 cm. longus. Folia rosulata, humifusa; inferiorum petiolus 4-6 cm. longus fusco-pilosus, lamina firme herbacea, utrinque strigillosa-pilosa, basi truncata vel retusa, latissime ovata vel elliptica, dentato-lobata, lobis nonnunquam iterum dentatis, 8-10 cm. longa, 8-9 cm. lata, nervi utrinque circ. 8-10 adscendentes. Folia superiora mox reducta, glabrescentia, pallida inflorescentiam obvallantia. Capitula subsessilia, pluria, ovata, 3.5-4 cm. longa, 2-2.5 cm. lata. Involucri phylla extima ovata, interiora lanceolata, glabra, purpureo-suffusa et marginata, haud pungentia. Flores purpurei, eis priorum similes.

"Plant of 1-2 inches. Flowers reddish-purple. Grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11-12,000 ft. August 1906." G. Forrest. No. 2806.

This species is similar in foliage to *J. berardioidea*, but differing from it by the pale inner leaves surrounding the inflorescence. It differs from both *J. edulis* and *J. berardioidea* by having several (e.g. 3) heads. From *J. Souliei*, Franch., of Tongolo, it is distinguished by the broader leaves and soft involucreous phylla.

Pertya phylicoides, J. F. Jeffrey. Sp. nov.

Species ramis virgatis, foliis minutis, habituque ipso distinguitur.

Frutex rigidus, 90 cm. alt. Ramuli rigidi virgati rufo-pubescentes. Folia 3-4 mm. longa, fasciculata, ovata, apiculata, revoluta, sessilia, supra glabra subtus albo-sericea, pulvinis sericeis inserta. Capitula 4-5-flora solitaria in axillis foliiferis, sessilia, 1.5 cm. longa. Phyllaria circ. 1 cm. longa, glabrata, membranacea marginibus pilosis, exteriora minora ovata acuta, interiora oblongo-lanceolata acuta. Corolla alte 5-fida, segmenta angusta acuminata. Antherae basi longe caudatae. Achaenia circ. 5 mm. longa, utrinque leviter angustata, compressiuscula, longitudinaliter costata, pilis albescentibus erectis sericea. Pappi setae simplices, rigidiusculae fulvae achaeniis longiores.

"Dry limestone country on the descent from Chung Tien plateau to Yangtse, near Chiao Tou. Elevation, 10,000 ft. Yunnan, September 1904." G. Forrest. No. 112.

This is very distinct from any species in Herb. Kew (or Paris—Diels), and I am indebted to J. F. Duthie, Esq., for the deter-

mination of the genus. The minute fascicled leaves inserted on silky pulvini remind one of some species of *Phyllica*.

[Its closest ally is *P. Bodinieri*, Beauverd, collected near Yunnanfu by both Ducloux and Bodinier (in herb. Paris).—Diels.]

Lactuca Beesiana, Diels. Sp. nov.

Caulis circ. 75 cm. altus, inferne glaber, superne puberulus, subsimplex. Folia inferiora tempore florendi evanida, media petiolo 2-3 cm. longo haud alato praedita, supra strigilloso-pilosula, subtus glabriora, alte pinnatipartita (cum petiolo), 9-10 cm. longa, 5-6 cm. lata; segmenta utrinque 2-3 obscure rhombeo-elliptica, levissime repanda denticulisque minutis mucronulatis ornata. Folia superiora mox integra, lineari-lanceolata; summa bracteiformia. Flores inferi cymam paucifloram axillarem formantes, superiores solitarii, pedunculati. Involucri phylla pauciseriata, herbacea, purpurascentia, parce strigoso-pilosa; exteriora lanceolata, interioribus 1-1.2 cm. longis linearibus subdimidio breviora. Achaenia complanata, apice rostrata, circ. 6 mm. longa; pappus albus fragillimus.

"Plant of 1½ to 2 ft. Flowers pale blue. Grassy ledges of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 10-11,000 ft. October 1906. N.W. Yunnan." G. Forrest. No. 3081.

Allied to *L. Henryi*, Dunn (Henry No. 13494, of Southern Yunnan); but the leaf-blade of *L. Beesiana* is not decurrent into the petiole, the leaves are smaller and not scabrous, the segments not obtuse triangular but of a more rhombical form.

Crepis rosularis, Diels. Sp. nov.

Caulis 2-6 cm. longus, inferne glabratus squamis membranaceis anguste lanceolatis linearibusve, superne foliis inflorescentiam rosulato-cingentibus obtectus. Folia longe petiolata vel suprema demum subsessilia; lamina tenuiter membranacea praecipue ad marginem floccoso-pilosa pilis brunneis, obovata vel subspathulata, obtusa, integra, uninervis, 1.2-2 cm. longa, 1-1.3 cm. lata. Capitula breviter pedunculata vel subsessilia arcte conferta; bracteolae lineares ciliato-pilosae; involucri phylla circ. 5 subaequalia, lineari-oblonga, viridia, fere glabra, vix marginata subobtusa. Flores intense lutei, fragrant; ligulae alte dentatae. Achaenia (perfecta non visa) immatura compressa, pappus rufescens, fragilis, involucrium superans.

"Plant of 1-2 inches. Flowers bright canary yellow, fragrant. Open situations on limestone drift at base of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11-12,000 ft. July 1906." G. Forrest. No. 2776.

Belongs to the *Glomeratae*, Hook. f., and seems to be nearest

to *C. glomerata* (Decne.) Hook. f. (Kashmir), but the leaves are obovate, the involucre bracts have not a white edge and are nearly glabrous. The ripe achenia are unknown, but, in the young state, they seem different from those of *C. glomerata*. For the whole affinity compare Franchet, in Journ. de Bot. ix (1895), 255.

***Crepis rigescens*, Diels. Sp. nov.**

Caulis saepe plures, superne ramis virgatis praediti, 20–40 cm. longi, stricti, glabri, subangulati, subrigidi. Folia pauca, basalia petiolata, caulina subsessilia, anguste lineari-lanceolata, utrinque sensim angustata, 5–8 cm. longa, 2–8 mm. lata, glabra, margine $\pm$ revoluta. Corymbi rami subcurvati, rigidiusculi, bracteolis minutis subulatis praediti. Involucrum phyllis bracteoliformibus paucis auctum; phylla 8–12, lineari-lanceolata, basin versus parce et minute lanuginosa, marginibus pallidiora, ca. 8 mm. longa, 1 mm. lata. Flores aurantiaco-flavi, 1.3–1.5 cm. longa. Pappi pili nivei 5–6 mm. longi. Ovarium glabrum ambitu ovato-oblongum apice attenuatum.

"Plant of 9–18 inches. Flowers orange-yellow. Open, dry situations amongst oak and pine scrub on plain at north end of Lichiang valley. Lat. 27° 10' N. Alt. 9000 ft. May 1906." G. Forrest. No. 2192.

"Plant of 10–16 inches. Flowers yellow. Dry, open situations in pine scrub on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8–10,000 ft. July–August 1906. W. Yunnan." G. Forrest. No. 4050.

Allied to *C. chloroclada*, Coll. et Hemsl., of the Shan hills, but differing in the more glabrous involucre and more numerous flowers of the heads. I have not seen the ripe achenes. Possibly our species is only a form of the Shan plant.

***Crepis paleacea*, Diels. Sp. nov.**

Perennis. Caulis glabratus, basi simplex, 50–60 cm. longus. Folia basalia petiolo lato subalato 4–5 cm. longo praedita, lamina herbacea, subtus pilis paleiformibus pallide rufis subfloccosa, ambitu late oblanceolata, uncinato-pinnatifida lobis patentibus triangularibus, 6–8 cm. longa, 3–3.5 cm. lata. Folia caulina mox subintegra, lanceolato-lineariter. Inflorescentiae rami apice pauciflori; pedunculi pedicellique sub capitulis parce lanuginosi. Involucra phylla basalia minuta, ovata vel lanceolata, brevia, interiora ca. 12 mm. longa, viridia, lineariter. Pappi pili albi, 6 mm. longi, simplices. Stamina 10–12 mm. longa. Corolla flava 12–14 cm. longa, apice 5-dentata.

"Plant of 1–2 ft. Flowers orange. Open, grassy situations on the margins of pine forests on the eastern flank of the Lichiang

Range. Lat. $27^{\circ} 20'$ N. Alt. 9–11,000 ft. August 1906. N.W. Yunnan." G. Forrest. No. 2708.

The foliage is very like that of *C. fuscipappa*, Benth., but our plant is perennial, the inflorescence is quite glabrous and the pappus white.

Prenanthes yakoensis, J. F. Jeffrey. Sp. nov.

Species affinis *P. scandenti*, Hook. f. et Thoms. sed laminis foliorum basi profunde excavatis, capitulis majoribus et paucioribus distinguenda.

Caulis semi-scandens glabratus, ramulis crebris flexuosis. Folia cordato-ovata vel ovato-sagittata, acuminata, obsolete crenata, denticulis setaceis remotis praedita; lamina basi profunde in sinum subrotundatum excavata, 5–15 cm. longa, 2–6 cm. lata, supra sparse puberula, infra paulo densius praesertim in nervis, infra glaucescentia et venulis pulchre reticulatis conspicua; petiolus pubescens vel in maturitate glaber, 3–5 cm. longus, infra glaucescens. Capitula 6–7 aggregata in paniculis laxis axillaribus terminalibusque circ. 1 cm. longa, 5 mm. lata, 10–12-flora. Pedunculi circ. 1 cm. longi, fere rectangulo patentes, bracteis minutis subulatis praediti. Phyllaria interiora 6–8 lanceolata obtusiuscula, exteriora parva hirsuta. Corolla externe ad medium pilosa. Achaenium 4 mm. longum, compressum, striatum. Pappus subuniserialis, albidus.

"Half-scandent plant of 8–12 ft. Flowers crimson. Amongst scrub in shady situations, edges of pine woods, etc., Salwin valley, Salwin-Irrawadi divide. Only in one place, viz.:—Summit of the Yako ridge. Lat. $26^{\circ} 30'$ N. Alt. 9000 ft. N.W. Yunnan, November 1905." G. Forrest. No. 870.

CONVOLVULACEAE.

Ipomaea caloxantha, Diels. Sp. nov.

Planta repens, 0.9–3.2 m. longa. Folia (superiora) ad insertionem petioli ca. 2 mm. longi pilosa, ceterum fere glabra, e basi cordata subtriloba (lobis basalibus brevibus obsolete undulatis, lobo terminali longiore, lanceolato, acuto), 3–3.5 cm. longa (basi), 2–2.5 cm. lata. Cymae 3–5-florae, longe pedunculatae; pedunculus 2.5–4.5 cm. longus, pedicelli 0.6–1.3 cm. longi, bracteolis 2 minutis praediti. Sepala coriacea, marginata, glabra; exteriora majora, obovata, 6–8 mm. longa. Corolla intense lutea, 3–4 cm. longa. Ovarium 2-loculare 4-ovulatum.

"Creeping plant of 3–10 ft. Flowers bright yellow. On dry, exposed, rocky situations. Valley of the Mekong at the crossing of the Teng-Yueh-Talifu road. Lat. $25^{\circ} 18'$ N. Alt. 4200 ft. W. Yunnan, September 1903." G. Forrest. No. 1111.

Allied to *I. polyantha*, Miq. var. *affinis*, C. B. Clarke (*Convolvulus affinis*, Wall.), of Burmah, but the leaves are narrower, the flowers larger, the calyx glabrous.

CRUCIFERAE.

Thlaspi yunnanense, Franch., var. **dentata**, Diels. Var. nov.

Folia quam ea typi latiora, dentata, ad 15 mm. longa, 12 mm. lata.

"Plant of 3-6 inches. Flowers white, pale slate-blue on exterior of petals. In crevices of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 12'. Alt. 12-13,000 ft. Flow. May 1906." G. Forrest. No. 2130.

Cardamine (Dentaria) repens, Franch.

Dentaria repens, Franch., in Bull. Soc. Bot. France, vol. xxxii, 6.

? *Cardamine tenuifolia*, Turcz. var. *repens*, Franch. Plant. Delavay., 55.

Staminum filamenta vix dilatata non papillosa. Sepala minus concava.

"Plant of 6-18 inches. Flowers white. Dry, stony situations on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 7-8000 ft. May-June 1906." G. Forrest. No. 4327.

Cardamine (Dentaria) granulifera (Franch.), Diels.

? *Cardamine tenuifolia*, Turcz., var. *granulifera*, Franch. Plant. Delavay., 56.

Rhizoma repens hypophyllis carnosissimis et radicibus e tuberculis ortis dense obsitum. Caulis erectus 10-30 cm. altus. Folium basale longe petiolatum (an semper?), integrum, late cordatum vel reniforme. Folia caulina 3-no- vel 5-no- pinnatifida, segmenta oblanceolata vel linearia interdum tenuissima. Racemi conferti pauciflori. Sepala valde concava, subcymbiformia, 3-3.5 mm. longa, circ. 2 mm. lata. Petala obovata, nonnunquam emarginata, alba, coerulea vel pallide purpurascens, 6-7 mm. longa, 4-5 mm. lata. Stamina valde dilatata, papillosa, 4-5 mm. longa, circa 1 mm. lata, sub ipsa anthera subito tenuissime attenuata.

"Plant of 4-8 inches. Flowers white or rose-lavender. Mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 12'. Alt. 9-11,500 ft. Flow. May 1906." G. Forrest. Nos. 2140, 2189.

"Plant of 6-12 inches. Flowers white or pale mauve. Mossy, shady situations in dense pine forests on the eastern flank of the

Lichiang Range. Lat. $27^{\circ} 12'$ N. Alt. 10–10,500 ft. Flow. June." G. Forrest. No. 2258.

"Plant of 6–12 inches. Flowers white or pale rose. Dry, shady, rocky situations in pine forests on the eastern flank of the Tali Range. Lat. $25^{\circ} 40'$ N. Alt. 9–10,000 ft. Flow. June–July 1906." G. Forrest. Nos. 4335, 4335a.

Cardamine Franchetiana, Diels. Nom. nov.

Loxostemon Delavayi, Franch., in Bull. Soc. Bot. France, xxxiii, 400; in Plant. Delavay., 56.

"Parmi les pierres après la fonte des neiges au Glacier de Likiang, 9 juillet 1884." Delavay, No. 35, in Herb. Paris.

"Plant of 6–10 inches. Flowers white. Open situations on limestone drift on eastern flank of the Lichiang Range. Lat. $27^{\circ} 12'$. Alt. 11–12,000 ft. June 1906." G. Forrest. No. 2225.

This agrees with Franchet's description, but the flowers are white. Basal leaves are wanting in Forrest's specimen.

It is very near the Himalaya *Loxostemon pulchellus*, Hook. f. et Thoms., of Sikkim, which should be placed with *Cardamine*. It differs chiefly by the plurijugous leaves, but it remains to settle if this character is constant.

The three preceding species are closely allied, and may prove to be connected by numerous intermediate stages. They are very interesting, uniting, as they do, the rhizome of *Dentaria* with the foliage and habit of *Eu-cardamine*.

Solms-Laubachia, Muschler. Gen. nov.

Flores magni vel maximi, hermaphroditi. Sepala ovato-lanceolata vel lineari-lanceolata, basi aequalia, leviter convexiuscula, basi subsaccata, albo-vel rubello-marginata, pilosiuscula, persistentia. Petala magna, calyce duplo longiora, distincte unguiculata, turcosa. Stamina quoad numerum et positionem varia $2 + (2 + 2)$ vel $2 + 2$ vel $0 + 2$; antherae quadriloculares, deffloratae saepe recurvatae; filamenta interdum breviora et basi incrassata. Glandulae 4–8, a numero et positione staminum dependentes, tuberculiformes usque filiformi-elongatae; medianae lateralibus fere semper minores et plerumque inter, raro intra vel extra filamentorum geminatorum bases sitae, rarissime nullae. Siliculae immaturae, ut videtur ovato-oblongae, teretes vel compressiusculae valvis convexis, septum ovato-oblongum; stylus satis elongatus usque subnullus, stigmate saepe distincto capitato, plerumque circumcirca aequali vel supra repla magis aucto. Semina 2–3-seriata, ut videtur 5–8, immarginata; funiculis setaceis liberis. Plantae perennes, suffruticosae. Radix

crassa, saepe superne ramosa et inde multiceps, apice rudimentis foliorum delapsorum dense vel densissime vestita et in rosulam foliorum basilarium desinens. Scapi plerumque nudi vel rarius pilis minimis unicellularibus albidis subdense obtecti, uniflori, foliis longiores. Folia tenuia, modo membranacea, lineari-lanceolata vel oblongo-lanceolata, integerrima, basin versus sensim in petiolum plus minus longum attenuata, plerumque glabra vel interdum pilis eis caulis similibus pilosa.

Genus novum valde affinis *Brayae* est, sed primo visu differt floribus turcoso-coeruleis magnis, calyce persistente, sepalis convexiusculis ac glandulis maioribus.

Solms-Laubachia pulcherrima, Muschler. Sp. nov.

Rhizoma tortuosum, 12-15 cm. longum, cortice cinereo, crassiusculo, dense reticulato-rimuloso vestitum, apice plerumque ramosum; ramis brevissimis, apice foliosis, dense congestis, obscure dichotomis. Folia omnia isomorpha imbricata ramo adpressa, saepius antrorsum leviter curvula, infera vetusta et emortua cinerea, supera vel apicalia virescentia, subcrassiuscula, rigidula, ovata vel ovato-lanceolata, 2-3 cm. longa, 0.75-1 cm. lata, pilis satis longis unicellularibus simplicibus sericeis albidis plus minus dense oblecta, dein mox subglabra. Flores maximi, solitarii, longissime pedunculati (pedunculis usque ad 6-7 cm. longis, pilis eis foliorum similibus densissime oblectis); sepala ovato-lanceolata vel lineari-lanceolata, basi aequalia, albo-marginata, pilis minimis unicellularibus simplicibus flavido-albis dense vel densissime vestita; petala, etc., cf. diagn. generis.

"Plant of 2-4 inches. Flowers bright turquoise blue, fragrant, aromatic. Growing in crevices of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 12,000 ft. Flow. bright turquoise blue, May 1906." G. Forrest. No. 2164.

Allied to *Braya*, but differing in its short, one-flowered scapes, small sepals, and turquoise-coloured petals. It is dedicated to Professor Graf zu Solms-Laubach.

[In habit our plant is not unlike to *Parrya exscapa*, Mey., of the Altai Mountains and Western Tibet, but easily distinguished from it by the hairiness of leaves and peduncles, the entire leaves, the sub-equal sepals, and the colour of the larger flowers. L. Diels.]

CUCURBITACEAE.

Hemsleya amabilis, Diels. Sp. nov.

Planta scandens ad 0.9-2.7 m., glabra. Folia petiolo ca. 3 cm. longo praedita, pedato-7-8-partita, (sub lente) ciliolata

ceterum glabra; foliola anguste lanceolata, basi petiolulato-attenuata, crenato-serrata serraturis mucronulatis, apice acuminata acuta, 6-8 cm. longa, 1.5-1.7 cm. lata. Folia suprema reducta. Panicula ♂ gracilis; rhachis ramulique flexuosa, ad 15 cm. longa. Flores pedicellati, bractea minuta suffulti. Calyx fere ad basin partitus, sepala anguste ovata 4-5 mm. longa, 2-2.5 mm. lata, petala rotato-expansa, viridulo-lutea, obovato-obcordata, 4.5-6 mm. longa, 4-5 mm. lata. Stamina 1.5-2.5 mm. lata.

"Scandent plant of 3-9 ft. Flowers greenish-yellow. Open situations on scrub on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-9000 ft. June 1906." G. Forrest. No. 4755.

"Scandent plant of 4-8 ft. Shady situations on scrub on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 7-8000 ft. May-June 1906." G. Forrest. No. 4772.

Also Yunnanfu, Ducloux. No. 496.

This plant is similar to *Hemsleya chinensis*, Cogn. (Hooker's Icon. Plant., 1822), in foliage and the structure of the ♂ flowers, which, however, are much more numerous and smaller in the new species. I have not seen the ♀ plant.

DIAPENSIACEAE.

Diapensia Bulleyana, Forrest, ms., in schedis. Sp. nov.

Fruticulus nanus pulvinaris ramosissimus, 5-10 cm. altus. Rami plerumque dense conferti, rarius laxiores elongati, procumbentes. Folia basi imbricata longius vaginata; vagina dilatata 3-5 mm. longa; lamina saepe recurva, crassa supra sicca rugulosa lucida papillosa, subtus pallidior sublaevis, spatulata vel elongato-obovata, 5-8 mm. longa, 3-3.5 mm. lata; nervi supra immersi subtus obsoleti. Flores terminales singuli sessiles. Sepala subcoriacea, obovata, costata, apice apiculata, 5-6 mm. longa, 3 mm. lata. Corolla lutea carnosula; tubus 8 mm. longus, lobi suborbiculares apice subtruncati, 5-6 mm. diamet. Stamina 5 filamenta lata, margine inflexa, basi lobo sive plica ornata, 2.5 mm. longa, 1.5 mm. lata. Staminodia epipetala 5 tubo fere medio inserta, subconica vel clavata, saepe fere falcata. Stylus 12 mm. longus.

"Dwarf shrub of 2-4 inches. Flowers canary yellow. Exposed situations on ledges of cliffs and humus-covered boulders on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 11-12,000 ft. Flow. September 1906." G. Forrest. No. 1853.

This interesting little plant is exceptional in the genus by the presence of five staminodia opposite the petals; also the yellow

flowers are noteworthy. It is separated from *D. lapponica*, moreover, by the broad filaments with basal lobes. From *D. himalaica*, Hook. f. et Thoms., it is further distinguished by a stouter habit, thicker leaves, larger flowers, and a more fleshy corolla.

DIPSACACEAE.

Morina chlorantha, Diels. Sp. nov.

Rhizoma crassum, collo vestigiis petiolorum pristinorum atrofusis fibrosis cinctum. Caules 0.3-0.6 m. longi, inferne sparse subtus densius pilosi. Folia basalia membranaceo-herbacea, glaberrima, subtus pallida, inferiora oblanceolata in petiolum sensim angustata, repando-dentata, breviter spinulosa, 15-25 cm. longa, 2-3 cm. lata. Folia superiora verticillata, basi longius spinosa. Bracteae basi dilatata pallidae ibique pungenti-spinosae, flores fere includentes. Involucellum parte infera subscariosa pallidum, limbum versus viride, circ. 15-spinosum, 8-10 mm. longum. Calyx circ. 10-12 mm. longus, subcoriaceus, puberulus; tubus brevis 3-4 mm. longus, 4-5 mm. latus, 4-lobatus; lobi bini 9 mm. longi altius (fere ad dimidium) connati, ovati, apiculati. Corolla parce puberula, viridis, foetida (an cleistogama?), in specimine nostro calyce occulta, 7 mm. longa, 2-2.5 mm. lata, lobi rotundati, denticulati. Stamina 2 fertilia, filamentosa, faucem attingentia, 2 sterilia reducta, ad basin tubi sessilia.

"Plant of 1-2 ft. Flowers green, with a very rank odour. Moist, shady ledges of cliffs in side valleys on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-11,000 ft. June 1906." G. Forrest. No. 2482.

This remarkable plant is allied to *M. parviflora*, Kar. et Kir. var. *chinensis*, Batal. (which ought to be considered as a distinct species), but is different by the longer petioles of the basal leaves, the more regular toothings of the leaves, the calyx-lobes being separated by much deeper sinuses and apiculate, not obtuse.

It has not been collected by Delavay.

Morina Bulleyana, G. Forrest et Diels. Sp. nov.

Caulis 30-40 cm. altus, pilis in seriebus longitudinalibus dispositis vestitus. Folia herbacea, glabra, caulium sterilium linearia, patenti-spinosa, 12-15 cm. longa 1-1.5 cm. lata, caulium florentium infima squamiformia, superiora basi connata, lanceolata vel ovato-lanceolata, subtus pallida, (media) 5 cm. longa, 1.5-2 cm. lata. Inflorescentia subcapitata, bracteata; bracteae intensius spinosae, spinis stramineis. Involucelli tubus 4-4.5 mm. longus, spinarum circ. 15 molles, vix pungentes, 4 mm. longi.

Calyx 12-15 mm. longus, integer, spathaceus, ore obliquo spinosus atque pilosus. Corolla extus pilosa, alba vel purpurea; tubus curvatus, 20-25 mm. longus, limbi lobi late ovati, apice emarginato-bilobi, 5 mm. longi. Stamina fertilia 4.

"Dry, grassy hillsides. Chung Tien plateau. Alt. 12-13,000 ft. 1904." G. Forrest. No. 393.

Mountains near Tali. Delavay, No. 90, etc., "*M. betonicoides*, Benth.," ex Franchet, in Bull. Soc. Bot. France, xxxii, p. 8.

This is similar to *M. betonicoides*, Benth., of the Sikkim Himalaya, but the spines are shorter and softer, and the calyx very different, being spathaceous and quite entire except the spines.

***Triplostegia Delavayi*, Franch., ms., in Herb. Paris.**

Caulis e rhizomate bulboso-incrassato fibris incrassatis aucto ortus, 0.3-0.6 m. altus, villosus et glanduloso-pilosus, basi foliis brevibus deinde longioribus praeditus, simplex. Folia media subsessilia, ambitu obovata vel oblanceolata, pinnatifida vel sinuato-lobata lobis inaequaliter serratis, herbacea, in utraque facie pilosa, 4-9 cm. longa, 2-2.8 cm. lata. Panícula terminalis ampla, e corymbis divaricato-ramosis composita, bractee subovatae, bracteolae 4 ultimae involucellum florem amplexens 2.5 mm. longum formantes, pilosae et stipitato-glanduliferae, apice cymbiformi implicatae atque apice ipso subuncinato-recurvatae. Calyx exterior 8-costatus pilosus, circ. 2 mm. longus; interior breviter 5-dentatus, dentes triangulares pilosi 0.5 mm. longi. Corolla alba vel roseo-suffusa, pilosa; tubus gracilis, 6-7 mm. longus, limbi lobi elliptici, 3.5 mm. longi, 2 mm. lati. Stamina lobos fere aequantia, stylus eis aequilongus vel brevior.

"Plant of 1-2½ ft. Root tuberous. Flowers whitish-rose. Open, grassy situations on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 2755.

"Plant of 1-2 ft. Stony pastureland on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. July 1906." G. Forrest. No. 4646.

Also "Mengtze, eastern mountains, 6000 ft." A. Henry. No. 9441.

Easily recognised by its large panicle and much larger corolla. The leaves are deeper cut than in *T. glandulifera*.

EBENACEAE.

***Diospyros Balfouriana*, Diels. Sp. nov.**

Frutex vel arbor 1.5-7 m. alta. Folia (perfectiora non visa, minora ramulorum florentium) petiolo 0.5-1 cm. longo praedita,

papyracea, supra praeter costam pilosam glabra, subtus subglaucâ, sicca minutissime rugulosa glabra, ovato-oblonga, utrinque angustata, apice acuta, 2.5-4 cm. longa, 1-2.5 cm. lata; nervi subtus non prominentes, sicci, obscurius colorati. Flores in ramis brevioribus plerumque aphyllis remoti subsessiles, virides, 4-meri. Sepala mox stellato-patentia, extus fere glabra, intus praecipue basin versus albo-pilosa, late ovata, margine extrorsum revoluta, apice obtusa, 2 majora 5-6 mm. longa, 4-5 mm. lata, 2 minora 3.5-4 mm. longa, 2.5-3 mm. lata. Corollae tubus 1.5 mm. longus, limbi lobi subovati, margine ciliolati, recurvi 3.5-4 mm. longi. Staminodia 8 triangularia, pilosa 1 mm. longa. Ovarium apice pilosum, styli 4 apice bifidi, basi pilosi.

"Shrub or tree of 6-20 ft. Flowers green. Open situations in the Tali valley around the city of Tali. Lat. 25° 40'. Alt. 6700 ft. Flow. May-June 1906." G. Forrest. No. 4764.

A very similar plant, but different by the more glabrous flowers, was collected by A. Henry near Mengtze, at 5000 ft. alt. (No. 9898D.)

Is to be placed in the well-known section *Danzleria* (Bert.), Hiern; it approaches *D. Morrisiana*, Hance.

ERICACEAE.

Gaultheria Forrestii, Diels. Sp. nov.

Frutex ramosus 0.6-1.5 m. altus. Folia in petiolum brevem (0.5-1.3 m. longum) angustata, coriacea, glabra, (sicca) pallida, subtus atrofusco-punctulata, oblonga vel oblanceolata, apice breviter et obtuse acuminata, margine adpresse et leviter repandoserrata, 6-9 cm. longa, 2-3 mm. lata, nervi (sicci) primarii et secundarii pallidiores. Racemi axillares, 3.5-5 cm. longi; pedunculi pilosuli, bracteae, pedicelli, bracteolae floresque cerini pure albi; flores odorati. Bracteae pedicellum 1.5-3 mm. longum subaequantes; bracteolae subovatae sepalis adjunctae eisque simillimae. Sepala ovata, 2 mm. longa, ca. 1.6 mm. lata; corolla urceolato-campanulata, sub fauce constricta, circ. 5 mm. longa. Staminum filamenta basin versus dilatata, minute papillosa. Dentes hypogyni 10, triangulares, glabri. Ovarium turbinatum sericeum, stylus glaber.

"Low-branched shrub of 2-5 ft. Peduncles, pedicels, and flowers pure waxy white, fragrant. Moist, open situations amongst scrub on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 10-12,000 ft. July 1906." G. Forrest. No. 4175. "August 1906." G. Forrest. No. 4183.

This is a beautiful species, allied to *G. fragrantissima*, Wall.,

and *G. Hookeri*, Clarke, but more glabrous, and remarkable by the pure white waxy inflorescence.

***Rhododendron gymnanthum*, Diels. Sp. nov.**

Frutex 0.9-2 m. altus. Folia persistentia; superiorum petiolus ca. 1 cm. longus, lamina papyracea, glabra, oblanceolata, basin versus sensim angustata, apice acuta, 10-12 cm. longa, 2.5-3 cm. lata. Racemus brevis terminalis, pedunculi glabri, sepala brevia ca. 1 mm. longa, corolla infundibuliformi-campanulata, rosea, basi purpurea, superius purpureo-punctata vel striolata, 3.5-4 cm. longa, ore 2.5-3 cm. lata; limbi lobi rotundati, 1.5-2 cm. diamet. Stamina 10, filamenta basi paulo latiora, glabra, 2-3 cm. longa. Ovarium 0.5-0.6 cm. longum, conicum, glabrum, stylus ca. 3 cm. longus.

"Shrub of 3-6 ft. Flowers rose, with crimson markings. Open, rocky situations on the Mekong-Salwin divide, north-west of Tsekou. Lat. 28° 12' N. Alt. 13,000 ft. August 1904. S.E. Tibet." G. Forrest. No. 5071.

Similar to *Rhododendron likiangense*, Franch. (Tse Kou, Soulié, No. 1000), but differing by shorter and narrower leaves, larger flowers, and the peduncles not being tomentose.

***Rhododendron Forrestii*, Balf. f. ms., descr. Diels.**

Frutex scandens 0.9-1.5 m. altus; rami ultimi breves. Folia breviter petiolata, coriacea, obovata, apice minute mucronulata, margine recurva, subtus purpurascentia glandulosa, nervis reticulatis subbullata, 1.5-2 cm. longa, 0.8-1.2 cm. lata, costa subtus prominens. Bracteae summae latissimae, pallidae, apice minute tomentellae. Calyx obsoletus. Corolla intense kermesina, tubus circ. 2 cm. longus sensim ampliatus, limbi lobi suborbiculares.

"Climber of 3-5 ft. Flowers deep crimson. On moist, moss-covered rocks on the ascent of the Tsedjiong pass, Mekong-Salwin divide. Lat. 28° 10' N. Alt. 10-11,000 ft. June-July 1905. S.E. Tibet." G. Forrest. No. 699.

In habit similar to *R. dendrocharis*, Franch., but distinguished by the glabrous branchlets, the shorter petioles, the leaves being not lepidote, the calyx obsolete, and the corolla-tube longer. I could not examine the stamens and ovary without destroying the specimen.

***Rhododendron Stewartianum*, Diels. Sp. nov.**

Frutex 0.9-2.2 m. altus. Rami pallide corticati, caules novelli breves. Folia (summa) petiolo robusto ca. 1 cm. longo praedita; lamina coriacea, glabra subtus lutescenti-viridis, late obovata, apiculata, 5-7 cm. longa, 3-3.5 cm. lata, subtus

minute reticulata. Flores solitarii (vel pauci?) terminales. Calyx subscariosus, glaber, alte partitus, segmenta late ovata, obtusa, 2-3 mm. longa. Corolla campaniformis, glabra, roseo-flava; tubus 2.2-2.5 cm. longus, ca. 2 cm. latus; limbi lobi suborbiculares, 1.6-2 cm. longi et lati. Stamina ca. 10, ima basi pilosula ceterum glabra, 2.5-3 cm. longa. Ovarium minute glandulosum, stylus glaber.

"Shrub of 3-7 ft. Flowers pinkish-yellow. Open situations on mountain meadows on the ascent of the Tsedjong pass, Mekong-Salwin divide. Lat. 28° 10' N. Alt. 10-11,000 ft. June 1904." G. Forrest. No. 5069.

Nearly allied to *R. Mussoti*, Franch., but distinguished by the glabrous (not fimbriate) calyx, the narrower corolla, and the glabrous style.

***Rhododendron chasmanthum*, Diels. Sp. nov.**

Folia petiolo 0.6-1 cm. longo praedita, papyracea, supra glabra subtus squamulis brunneis conspersa, ad costam pilosa, lanceolata, (superiora) 8-10 cm. longa, 2-3 cm. lata. Corymbus terminalis; bractae lineares, pilosae, deciduae; pedunculi squamulosi 2-2.5 cm. longi. Calycis tubus dense squamulosus, lobi triangulares fusi squamulis ± destituti, ciliati, 2-3 mm. longi. Corollae tubus infundibuliformis extus squamulosus ca. 2-2.5 cm. longus, mox apertus, limbus amplius lobis quam tubo longioribus expansis ca. 5-6 cm. latus. Stamina (ca. 8?), exserta, curvata, basi pilosa, superne glabra, 3-4 cm. longa. Ovarium dense lepidotum. Stylus 3.5-4 cm. longus.

"Shady, rocky situations on the Mekong-Salwin divide to the north-west of Tsekou. Lat. 28° 10' N. Alt. 10-12,000 ft. September 1904. S.E. Tibet." G. Forrest. No. 513.

From the same district (Monbeig, in Herb. Kew!)

The material is rather scanty. The species is recognised by the very open corolla, the scaly calyx and corolla tube, and the narrow leaves.

***Rhododendron dichroanthum*, Diels. Sp. nov.**

Frutex 1-2.5 m. altus. Folia coriacea, supra glabra, inconspicua, rugulosa subtus strato tenui tomentello glauco-albo vestita, oblonga, anguste elliptica, oblanceolata vel obovata, sensim in petiolum dilatatum angustata, apice calloso-mucronulata, cum petiolo 5-10 cm. longa, 1.3-4 cm. lata. Flores 2-5-ni; bractae late ovatae, acuminatae, pallide fuscae, antrorsum tenuiter lanuginosae, deciduae, pedunculi puberuli 1.6-2.5 cm. longi. Calyx valde variabilis, lobi nunc obsoleti nunc conspicue evoluti (ad 12 mm. longi) rotundi, demum decidui. Corolla carnosa, aurantiaca vel luteo-rosea, campanulata, glabra; tubus 2.5-3

cm. longus, 2-2.5 cm. latus, lobi subrotundi, 1.2-2 cm. diamet. Stamina 10, filamenta puberula. Ovarium dense fulvo-lanuginosum; stylus glaber stamina paulum superans 2.5-3 cm. longus.

"Shrub of 2-4 ft. Flowers yellowish-rose, corolla fleshy. Moist, rocky, shady situations in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. July 1906." G. Forrest. No. 4138.

"Compact shrub of 4-6 ft. Flowers orange. Dry, open, rocky meadows. Same locality. Alt. 11-12,000 ft. July-August 1906." G. Forrest. Nos. 4142, 4157, 4158.

"Shrub of 3-5 ft. Flowers creamy-rose, corolla fleshy. Open, shady situations. Same locality. 10-11,000 ft. July-August 1906." G. Forrest. No. 4165.

This is named *Rhododendron neriiflorum* forma calycis lobis minoribus by Franchet in the Paris Herbarium (Tsang chan, Delavay, No. 2798).

***Rhododendron uvarifolium*, Diels. Sp. nov.**

Frutex 6 m. altus. Folia in petiolum latum 12-15 mm. longum angustata, coriacea, supra glabra, subtus strato tenui tomenti argentei nitentis obiecta, anguste oblanceolata, breviter acuminata, 16-22 cm. longa, 4-4.5 cm. lata, nervi laterales primarii utrinque circ. 15 adscendentes. Flores abbreviato-racemosi; bracteae dorso tomentellae, deciduae; pedunculi 2-3 cm. longi, glabrati. Calyx minutus annularis, lobi vix discreti. Corolla carnea, rosea, purpureo-maculata, campanulata, tubus 2-2.5 cm. longus, limbi lobi circ. 2 cm. diamet. Stamina 10, basi parce pilosula, inclusa. Ovarium fere glabrum, (an semper?) curvatum, 8-10 mm. longum; stylus glaber.

"Shrub of 20 ft. Flowers fleshy, pink, with deep crimson markings. In rhododendron forest on the ascent of the Nin-chang pass from the Yangtse valley to the Chung Tien plateau. Lat. 27° 30' N. Alt. 7-8000 ft. September 1904." G. Forrest. No. 5072.

This species is recognised by its very long, narrow leaves, silvery white underneath. The flowers of the specimen are not in a good state; they are remarkable by their narrow curved ovary, but this may be a result of an advanced condition.

The leaves of *R. coriaceum*, Franch., from Tsekon, while similar in shape, have a more tomentose covering; the peduncles of this species are ferrugineo-puberulous, the flowers considerably smaller than those of *R. Forrestii*; those of *R. likiangense*, Franch., of the same district, have longer petioles and are glabrous.

Rhododendron Balfourianum, Diels. Sp. nov.

Frutex 1·2–2·8 m. altus. Folia petiolo 1·5–2 cm. longo glabro praedita; lamina coriacea, supra glabra minute rugulosa, subtus strato crustaceo tomenti subsericeo-nitente vestita, anguste ovata vel oblonga, basi angustata plerumque obtusa apice acuta, 5–8 cm. longa, 2·5–3·5 cm. lata. Flores 5–7-ni; bractaeae dense pubescentes, deciduae; pedunculi glanduloso-pilosi, 2–3 cm. longi. Calyx purpurascens, glanduloso-pubescent, fere ad basin 5-lobus; segmenta subelliptica 2–8 mm. longa. Corolla infundibuliformi-campanulata, pallide rosea purpureo-maculata, circ. 2·5 cm. longa, sub limbo 2·5–3 cm. lata; limbi lobi rotundati vel late elliptici, 1·5–1·8 cm. diamet. Stamina 10 basi villosula, 1·5–2·5 cm. longa. Ovarium glandulosum; stylus inferne glandulosus superne glaber.

"Shrub of 4–9 ft. Flowers pale rose, with crimson markings, corolla thick and fleshy. Rocky, open mountain meadows on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 11–12,000 ft. July 1906." G. Forrest. No. 4166. "August–September 1906." G. Forrest. No. 4131.

This new *Rhododendron* is near to *R. adenogynum*, Diels; but the tomentum of the leaves is silky-shining, the flowers smaller, with crimson markings, the lobes of the corolla less spreading. *R. ochrocalyx*, Franch., and *R. lacteum*, Franch. (= *Faberii*, Hemsl.), are also closely allied.

R. lacteum is different in leaf, number of stamens (12), and the ovary being tomentose.

Rhododendron Beesianum, Diels. Sp. nov.

Frutex 4·5–6 m. altus. Folia petiolo robusto, nonnunquam atropurpureo, glabro praedita; lamina coriacea, supra glabra minute rugulosa, subtus praeter costam glabram tomento tenui cinnamomeo e pilis radiatim divisis effecto deterrenti vestita, anguste oblanceolata, basi rotundata, 16–18 cm. longa 5–6 cm. lata, nervi laterales primarii 16–20 utrinque adscendentes. Flores breviter racemosi, bractaeae dense pubescentes deciduae; pedunculi rubri pubescentes. Calyx minutus, annularis, lobi vix discreti. Corolla saturate et intense rosea, ampla, latissime campanulata; tubus 3–3·5 cm. longus 4·5–5·5 latus; limbi lobi subreniformes vel suborbiculares, 2–3 cm. longi et lati. Stamina 10 inclusa, basi minute puberula, circ. 3 cm. longa. Ovarium dense ferrugineo-tomentosum, stylus subglaber stamina paulum superans.

"Shrub of 15–20 ft. Flowers deep rich rose. Open pine forests at base of cliffs on the eastern flank of the Lichiang Range.

Lat. 27° 12' N. Alt. 11-12,000 ft. May 1906." G. Forrest. No. 2323.

R. Beesianum is allied to *R. Delavayi*, Franch., but the leaves and flowers are much larger and the corolla more open. In habit it reminds of *R. setchuenense*, Franch., of Cheng Kou, Northern Szechuan, but this species has a glabrous ovary.

***Rhododendron anthosphaerum*, Diels. Sp. nov.**

Frutex vel arbor 6-9 m. alta. Folia petiolo glabro 1.5 cm. longo praedita; papyracea, supra glabra, subtus rufescenti-pallidiora, oblanceolata, acuta, 8-13 cm. longa, 2.5-5.2 cm. lata, nervi subtus inconspicui. Flores 10-15 dense congesti, pedunculi 7-12 mm. longi, pubescentes. Calycis minuti lobi inconspicui triangulares, glandulosi, vix 1 mm. longi. Corolla intense rosea atropurpureo-maculata, campanulata; tubus 2.5-3.5 cm. longus 3.2-4 cm. latus; lobi rotundati 1.5-2 cm. diamet. Stamina 10 basin versus minute puberula, 3-3.5 cm. longa. Ovarium glabrescens, 5-8 mm. longum; stylus 3-3.5 cm. longus, praeter basin puberulam glaber.

"Shrub or tree of 20-30 ft. Flowers bright rose-magenta, with a few markings of black-crimson. Open situations in pine forests on the ascent of the Sung-kwei pass from the Lang Kung valley. Lat. 26° 30' N. Alt. 10-11,000 ft. April 1906." G. Forrest. No. 2042.

Habit of *R. irroratum*, Franch., but easily recognised by the colour of the flowers and the more glabrous ovary and the absence of glands on the style.

***Rhododendron lacteum*, Franch., in Bull. Soc. Bot. France, xxxiii (1886), 231.**

Folia basi saepe angustata, nervi laterales primarii supra tenuiter insculpti. Corolla nonnunquam 8-loba, stamina 16.

"Tree of 20-30 ft. Flowers white, fleshy, with a blotch of rich crimson at base of corolla. Open situations in pine forests on the descent from the Sung-kwei pass to the Sung-kwei valley. Lat. 26° 15' N. Alt. 10-11,000 ft. April 1906." G. Forrest. No. 2159.

var. ***macrophyllum***, Franch., in Bull. Soc. Bot. France, xxxiv (1887), 280.

"On uppermost edge of pine belt on hills dividing the Sung-kwei and Lang Kung valleys, three days north of Tali. Lat. 26° 15' N. Alt. 13-14,000 ft. A tree of 15-30 ft., stems in some instances 12-16 in. in diamet. December 1904." G. Forrest. No. 501.

I do not think that "*macrophyllum*," Franch., is even a

variety. The size of leaves seems to be a fluctuating character of these trees.

Rhododendron adenogynum, Diels. Sp. nov.

Frutex ramosus 1·8-2·5 m. altus. Folia petiolo crasso glabro 1-1·5 cm. longo praedita coriacea supra glabra, sicca minute rugulosa, subtus praeter costam tomento pilis ramosis effecto rufidulo aequali lanuginoso opaco vestita, lanceolato-ovata utrinque angustata apice apiculata 6-9 cm. longa 2-3 cm. lata. Flores 6-10-ni ampli; bractaeae dense pilosae deciduae; pedunculi glanduloso-pubescentes 2-3 cm. longi. Calyx purpurascensuffusus glanduloso-puberulus fere ad basin 5-lobus; segmenta subelliptica 1-1·5 cm. longa, 0·5-0·7 cm. lata. Corolla carnosula glabra nisi intus basi puberula, fragrans, alba, extus purpureosuffusa, latissime infundibuliformis denum lobis patentibus fere rotata, tubus 2-2·5 cm. longus, lobi rotundi 2-2·8 cm. longi, 2·5-3 cm. lati. Stamina 10, praeter basin glanduloso-puberulam glabra, 2·5-3 cm. longa. Ovarium dense glandulosum, stylus basi glandulosus superne glaber stamina superans.

"Branched shrub of 6-8 ft. Flowers white, corolla slightly fleshy, tinged pink on exterior, especially at base, fragrant. Scattered over grassy mountain slopes in small clumps of 3-4 plants. Eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 11-12,000 ft. June 1906." G. Forrest. No. 2395.

This species is allied to *R. Faberii*, Hemsl., in Journ. Linn. Soc. xxvi, 22 (*R. Prattii*, Franch., in Journ. de Bot. ix, 1895, p. 389), but differs from that by its larger, more open corolla, the stamens being puberulous only and the non-hairy ovary. Another similar species, *R. Brettii*, Hemsl. et Wils., in Kew Bulletin, 1910, p. 106, is different by its glabrous leaves. Lastly, the plant mentioned by Franchet as *R. Faberii*, "envoyée à Kew sous le nom de *R. ochrocalyx*" (Delavay, No. 2635), seems to be related, but the indumentum is lighter and the flowers smaller.

Rhododendron taliense, Franch., in Bull. Soc. Bot. France, xxxiii (1886), 232.

Corolla infundibuliformi-campanulata saepe major, 2·5-4·5 cm. limbo 3·5-4 cm. longa, ochroleuca vel alba vel roseo-alba intus purpureo-maculata, (an semper ?) inodora.

"Large branching shrub of 15-25 ft. Flowers pinkish-white, base of the interior of corolla deep crimson. Open, rocky slopes on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 12,000 ft. May 1906." G. Forrest. No. 2408.

"Branching shrub of 10-20 ft. Flowers white, with a crimson blotch on interior of corolla. Possibly a variety of No. 2408. Umbels looser, and formed of fewer flowers, those larger. Leaves

broad, with the under surface of a lighter shade." Same locality. G. Forrest. No. 2409.

"Loosely branched shrub of 4-5 ft. Flowers pinkish-white, with crimson markings. Dry, rocky situations on mountain meadows on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 4136.

"Shrub of 15-25 ft. Flowers pale yellow. In and on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 12,000 ft. August 1906." G. Forrest. 4160.

"Shrub of 4-8 ft. Flowers pale creamy-yellow. Moist, rocky situations in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 11-12,000 ft. July-August 1906." G. Forrest. No. 4167.

The species is recognised by the tomentum of the under side of the leaves, by its glabrous ovary and hairy stamens. The size of leaves and flowers is variable; the colour of the corolla varies from pale yellow to pinkish-white.

Rhododendron Souliei, Franch., in Journ. de Bot. ix (1895), 393.

Filamenta speciminum nostrorum basi paleaceo-pilosa. Ovarium glandulis stipitatis dense obtectum; stylus superne glaber stamina superans, nonnunquam e corolla exsertus.

"Shrub of 4-8 ft. Flowers pale rose. Open, rocky situations on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10-11,000 ft. July 1906." G. Forrest. No. 4148.

"Shrub of 6-10 ft. Flowers rose-pink. Dry, rocky situations on mountain meadows on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10-11,000 ft. July 1906." G. Forrest. No. 4150.

"Shrub of 3-6 ft. Flowers bright lavender-rose. Open mountain meadows on the margins of pine forests and cane brakes on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 11-12,000 ft. August 1906." G. Forrest. No. 4154.

Rhododendron chartophyllum, Franch., in Journ. de Bot. ix (1895), 396; Pl. nouv. Chin. occ. p. 74.

"Erect shrub of 4-9 ft. Foliage deciduous. Flowers from pure white to blue-lavender, with a few deep green markings. Dry or moist situations amongst scrub in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-10,500 ft. May-June 1906." G. Forrest. No. 4163.

f. *praecox*.

Flores foliis delapsis ante novella evoluta orti.

"Erect or spreading shrub of 4-8 ft. Flowers white, in some specimens pinkish on exterior of corolla, with rich crimson markings. Foliage deciduous. Flowers appearing first. Amongst dwarf scrub, in open situations on the ascent of the Sung-kwei pass from the Lang Kung valley. Lat. 26° 30' N. Alt. 9000 ft. April 1906." G. Forrest. No. 2030.

EUPHORBIACEAE.

Euphorbia megistopoda, Diels. Sp. nov.

Rhizoma napiforme, percrassum, subhorizontale, hinc inde caules gignens. Caules longe hypogaei nudi tenues, deinde hypophyllis squamiformibus obtecti, apice epigaei 5-7.5 cm. longi pubescentes, folia ramosque et steriles et florigeros subcorymbose emittens. Folia breviter oblanceolata spatulata vel oblonga, glabra, 1-1.5 cm. longa, 0.3-0.5 cm. lata. Rami floriferi quam rami steriles breviores, 2.5-3 cm. longi. Folia floralia quam cetera latiora involucrantia, flavescentia. Cyathium pubescens; lobi longius ciliati 0.6 mm. longi, 1.5-1.8 mm. lati; glandulae glabrae, transverse ellipticae, 0.5 mm. longae, ca. 2 mm. latae. Ovarium glabrum ellipsoideum, 1.5 mm. longum; styli 3 liberi, 1.5 mm. longi, apice obsolete bilobi.

"Plant of 2-3 inches. Bracts and flowers greenish-yellow. Damp, peaty ground in openings in scrub on the eastern flank of the Lichiang Range. Lat. 27° 10' N. Alt. 10,000 ft. June 1906." G. Forrest. No. 2237.

Very close to *E. bupleuroides*, Diels, but distinguished by the broader cauline leaves and the sterile branches exceeding the inflorescence; perhaps only a habitat-form of *E. bupleuroides*.

Euphorbia bupleuroides, Diels. Sp. nov.

Caulis 7-20 cm. longus, inferne foliis remotis brevibus nonnunquam squamiformibus tectus, superne ramosus atque foliatus, cum ramis pubescens. Folia linearia, anguste oblonga vel oblanceolata-linearia, costata, glabra, subtus subglauescentia, 1.2-1.8 cm. longa, 0.25-0.4 cm. lata. Rami floriferi corymbum ramos steriles superantem efficientes 3-6 cm. longi. Folia floralia quam cetera multo latiora, late ovata vel late elliptica nonnunquam suborbiculari-rhombea, 0.7-1 cm. lata, flava. Cyathium cum lobis dense pubescens; glandulae subreniformes, crassiusculae, glabrae, 1.5 mm. longae, 2.5 mm. latae. Ovarium glabrum, styli praeter basin liberi apice bilobi.

"Barren pine woods between Chen-nam cho and Sha-chiao. March 1905." G. Forrest. No. 224.

"Plant of 6-8 inches. Flowers greenish-yellow. Dry, stony

ground on the eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 8-9000 ft. June-August 1906." G. Forrest. No. 4596.

"Plant of 3-6 inches. Flowers yellow. Dry, clayey pasture in the Salwin valley. Lat. $24^{\circ} 40' N$. Alt. 4000 ft. April 1906." G. Forrest. No. 5008.

Allied to *E. Stracheyi*, Boiss., but taller, the leaves of the stem and branches narrower, the floral ones deeper yellow, the cyathium more pubescent.

***Euphorbia glaucopoda*, Diels. Sp. nov.**

Caulis adscendens, 0.45-1 m. altus, apicem versus pubescens. Folia in petiolum brevem basi conspicue glaucum sensissime angustata, oblanceolata, integra, glabra, costata, praeterea nervis obsoletis praedita, 6-10 cm. longa, 1.7-2.3 cm. lata. Corymbi in apice caulis axillares et terminales, pedunculi 2.5-4 cm. longi, puberuli. Folia floralia valde reducta, 4-6 mm. diamet., viridia, late ovata vel triangularia, apice saepe obtusissima vel rarius acuta. Cyathia solitaria, parva, glabra, 1.5 mm. longa; lobi 1 mm. diamet., altius bifidi; glandulae meniscoideo-obreniformes, glabrae, 0.6 mm. longae, circ. 2 mm. latae. Capsula laevis; semina lucida.

"Erect plant of $1\frac{1}{2}$ -3 ft. Moist situations by streams in dense jungle. On the ascent of the Irrawadi-Ming Kwang divide. Lat. $25^{\circ} 45' N$. Alt. 7-9000 ft. N.W. Yunnan. October 1903." G. Forrest. No. 962.

This remarkable species is in habit somewhat similar to *E. khasyana*, Boiss., but very different in the structural details of the cyathia, also easily distinguished by the short hairiness of the peduncles.

***Euphorbia Bulleyana*, Diels. Sp. nov.**

Caudex lignescens repens, caules adscendentes, 0.3-0.45 m. alti, glabri, basi nudi vel hypophyllis squamiformibus obtecti, deinde foliis sparsis ramisque axillaribus foliatis brevibus praeditus. Folia basi contracta, lanceolata vel lanceolato-oblonga, integra, caulis primarii 3-3.5 cm. longa, 3.8-1 cm. lata, ramorum minora, herbacea, subtus glaucescentia, glabra, costa supra pallidior. Folia floralia latiora, breviora, rubescentia, summa involucrentia late cordato-triangularia, ca. 1 cm. longa et lata. Cymae vel in axillis foliorum superiorum longe pedunculati vel terminales, nutantes. Cyathium glabrum, 2.5 mm. longum; lobi parvi; glandulae transverse ellipticae, 1 mm. longae, 2 mm. latae. Ovarium laeve longius stipitatum, nutans, 1.5 mm. longum; styli 3 apice incrassati, 1 mm. longi.

"Plant of $1-1\frac{1}{2}$ ft. Flowers nodding, bracts ruddy green.

Moist, shady situations in pine forests and on mountain meadows on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 10' N$. Alt. 9-10,500 ft. May 1906." G. Forrest. No. 2231.

This species is apparently not closely allied to any other of the region, and easily recognised by its nodding, ruddy green inflorescences.

GENTIANACEAE.

Gentiana asterocalyx, Diels. Sp. nov.

Annual. Caulis ramosus, 7-15 cm. longus, purpurascens. Folia pallida, basalia late lanceolata, caulina anguste lanceolato-subulata, margine subhyalina, 10-12 mm. longa. Flores ad ramorum apices solitarii, sessiles. Calycis 15-nervi tubus 5-6 mm. longus, 3-3.5 mm. latus; dentes tubo sublongiores, margine involuti, aristato-subulati, demum stellato-patentes, scaberuli ca. 8-9 mm. longi. Corolla extus viridis intus intense coerulea, tubus subobconicus 7-11 mm. longus, lobi limbi triangulares ca. 5 mm. longi, plicae fere duplo breviores. Ovarium brevissime stipitatum, infundibuliforme, ca. 5 mm. longum; stylus papillosus 4 mm. longus.

"Plant of 3-6 inches. Corolla interior bright blue, exterior green. Dry situations in open pine forests on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 30' N$. Alt. 11,000 ft. June 1906." G. Forrest. No. 2415.

An ally of *G. scariosa*, Balf. f. et Forrest, but a taller plant, distinguished also by the leaves being less crowded, the longer calyx, with teeth finally spreading and exceeding in length the tube of the corolla, and by the short stipes of the ovary.

Gentiana decorata, Diels. Sp. nov.

Planta e basi multicaulis, caulibus decumbentibus caespitosa, 2.5-5 cm. alta. Folia ad caulis partem superiorem conferta, parva, basi vaginata connata, lanceolata, spathulata, vel oblanceolata, apice $\pm$ acuta, margine obsolete papillosa, 1.5-5 mm. longa, vix 1-1.5 mm. latiora. Flores solitarii caules terminantes. Calycis tubus 3-4 mm. longus, lobi foliacei suboblanceolati vel anguste spathulati, breviter mucronulati, 3-4 mm. longi. Corolla intense coerulea; tubus 5-6 mm. longus, lobi elliptici valde concavi, latere altero appendice dentiformi praediti, 8-9 mm. longi. Ovarium cum stylo stigmatibusque demum revolutis 12-13 mm. longum. Antherae intense coeruleae.

"Plant of 1-2 inches. Flowers deep indigo-blue. Forming tufts on ledges of cliffs and on humus-covered boulders on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20' N$. Alt. 13-14,000 ft. September 1906." G. Forrest. No. 3021.

" Plant of 1-2 inches. Flowers deep purplish-blue, striped a brighter shade. Moist, open, stony pastureland on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10-11,000 ft. September 1906." G. Forrest. No. 3827.

Apparently allied to *G. infelix*, Clarke, but, in our plant, the leaves are narrower, the calyx narrower, and the flower more than double as large.

Gentiana Georgei, Diels. Sp. nov.

Planta 5-7.5 cm. alta, rosulas steriles et caules florentes gignens. Folia rosularum sterilium ad 6 cm. longa, 0.8-1 cm. lata; folia caulium florentium saepe breviora, infima reducta, cetera lanceolata basi imbricata, ad 4 cm. longa, 1 cm. lata, saepe purpurascentia, margine dense albo-papillosa. Flos solitarius sessilis. Calycis tubus pallidus subhyalinus, 2-2.3 cm. longus, ore fere truncatus; sepala lanceolata parte infera tubo quasi adnata, supera 1-1.5 cm. libera purpurascentia costa margineque albo-papillosa. Corolla elongato-campaniformis, intense purpurascenti-coerulea extus viridi-striata atque basi viridis, 6 cm. longa; tubus ore 2-2.5 cm. lata; segmenta late triangularia, 0.8 cm. longa et lata, plicae vix asymmetricae, triangulares, 0.4 cm. longae, 0.7-0.8 cm. latae. Ovarii stipes 0.6-0.7 cm. longus; ipsum 1.5-1.7 cm. longum, stylus 1-1.2 cm. longus. Stamina aequalia.

" Plant of 2-3 inches. Corolla deep purplish-blue interior, exterior striped greenish with the base green. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11-12,000 ft. October 1906." G. Forrest. No. 3110.

Very near *G. callistantha*, Diels et Gilg., of the Semenov Range, North-eastern Tibet, but differing by the sterile rosettes, the equal stamens, and the colour of the corolla being an intense blue, not a pale greenish-white. Another still nearer species is *G. rosularis*, Franch., of Tatsienlu, which is a smaller plant, having the rosulate leaves much shorter and the corolla narrower. Possibly, *G. Georgei* is only a variety of Franchet's species.

Gentiana Harrowiana, Diels. Sp. nov.

Planta caespitosa rosulas et steriles et florentes 2.5-5 cm. longas gignens. Folia conferta, crassiuscula herbacea, glabra, spathulata vel obovata, obtusa 1-1.5 cm. longa, 0.5-0.7 cm. lata; nervi praeter costam obsoleti. Flores plerumque complures conferti. Calyx subhyalinus, pallidus, paulo inflatus; tubus circ. 10 mm. longus, dentes herbacei, virides, anguste triangulares 2.5 mm. longi. Corolla intense coerulea, extus viridescens; tubus ca. 15 mm. longus, limbi lobi ovato-triangulares

3-3.5 mm. longi, plicae asymmetricae introrsum protrusae lobis breviores. Stamina 6-7 mm. longa. Ovarii stipes 6-7 mm. longus; ipsum 8 mm. longum, stylus cum stigmatibus papilloso 2-2.5 mm. longus.

"Procumbent plant of 1-2 inches. Flowers bright blue, exterior greenish-blue. Open, rocky mountain pastureland on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 3825.

Allied to *G. chinensis*, Kusnezow, of Szechuan, but the stems of our plant are shorter, the leaves closer set, the calyx relatively larger, broader, paler, and the corolla much shorter.

Pleurogyne oreocharis, Diels. Sp. nov.

Caulis simplex, 7-15 cm. longus, erectus, glaber, 1-2-florus. Folia petiolo 0.5-1 cm. longo dilatato praedita, late ovata vel subrotunda, 0.8-1.2 cm. longa, 0.6-0.9 cm. lata, glabra. Flores ampli. Sepala spathulata 0.7-1 cm. longi. Petala stellato-expansa, extus viridula, intus coerulea purpureo-suffusa, intense coeruleo-striata, anguste obovata vel oblonga, 1.8-2 cm. longa, 0.7-1 cm. lata; foveolae binae inaequilateraliter infundibuliformes, ore fimbriatae, ca. 2-2.5 mm. longae. Stamina 0.8-1 cm. longa. Ovarium (siccum aurantiacum), anguste cylindricum, 1.2-1.5 cm. longum.

"Plant of 3-6 inches. Flowers blue, with a pinkish tinge, striped deep blue, green on exterior. Open, rocky situations on mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 3024.

This beautiful species is similar in foliage to *P. carinthiaca*, L. From both *P. macrantha*, Diels et Gilg, and *P. bella*, Hemsl., it is easily distinguished by the shape of the stalked leaves and the simple stems.

Swertia (Ophelia) hypericoides, Diels. Sp. nov.

Annua. Caulis basi simplex, deinde brevi-ramosus, 15-30 cm. longus. Folia basalia tempore florendi marcescentia, caulina sessilia oblonga vel anguste obovata, 1-3-nervia, obtusa vel acuta, 2-2.5 cm. longa, 4-6 mm. lata, superiora angustiora. Panicula ramis suberectis angusta, pedicelli calycem saepe superantes. Sepala lanceolata vel oblanceolata, mucronulata, 5-6 mm. longa; petala diaphana, pallide cinereo-coerulescentia, anguste ovata acuminata, foveolis 2 sejunctis membrana conspicue ciliata ornatis supra basin praedita, 6-7 mm. longa. Stamina 4-5 mm. longa, gynaecium subaequantia.

"Plant of 6-12 inches. Corolla transparent, of a pale, watery bluey-gray. Dry, barren pastureland at the base of the foothills

of the Lichiang Range. Lat. $27^{\circ} 10'$ N. Alt. 25–2600 m. July 1906." G. Forrest. No. 2542.

This is very near *S. punicea*, Hemsl. The colour of the flower is very variable in that species (cp. Franchet, in Bull. Soc. Bot. France, xliii, p. 318): brown, purple, or yellowish. But the curious pale, watery, bluish colour of the small flowers of Forrest's plant has apparently not yet been observed. Possibly, it may be only a form of *S. punicea*, Hemsl.

Swertia calicina, Franch. var *major*, Diels. Var. nov.

Omnibus partibus forma typica multo major. Caulis 20–30 (non 8–12 cm.). Folia inferiora cum petiolo 15–17 cm. longa, 2 cm. lata. Sepala 20–25 mm. (non 15–18 mm.) longa, 5–7 mm. lata, interiora angustiora. Petala pallide citrina, 20–25 mm. longa, 8–12 mm. lata.

"Plant of 9–12 inches. Corolla pale lemon yellow, veined purplish towards base, with the base purple maroon. Shady, grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 25'$ N. Alt. 11,000 ft. September 1906." G. Forrest. No. 2926.

The typical form was collected in the same neighbourhood: "coteaux de Likiang-Senchan, alt. 4000 m." (Delavay, No. 2208), but is a much smaller plant than this fine variety.

GERANIACEAE.

Oxalis leucolepis, Diels. Sp. nov.

Stolones radicanes hypophyllis remotis bulbilloso-incrassatis cretaceo-albis praediti; hypophylla basalia caulis florentis pauca (1–3) eodem modo incrassata et conspicue alba. Folia petiolo 4–6 cm. longo praedita, membranacea; foliola late obcordata, parce pilosula, glabrescentia, subtus glauca, ca. 1 cm. longa, 0.8–1.2 cm. lata. Pedunculus 6–10 cm. longus. Sepala anguste ovato-oblonga, ciliolata, 4–5 mm. longa, 1.5–2 mm. lata. Petala angusta oblanceolata vel subcuneata, apice incisa biloba, 10–12 mm. longa, 3–4 mm. lata, alba venis purpureis picta. Stamina circ. 4 mm. longa. Ovaria 1.5 mm. longa, styli 4.5 mm. longi.

"Plant of 2–4 inches. Flowers white, veined deep purple. Open, moist situations on humus-covered boulders in a side valley on the eastern flank of the Tali valley. Lat. $25^{\circ} 40'$ N. Alt. 9–10,000 ft. July–August 1906." G. Forrest. No. 4287.

I do not know if this interesting form will prove specifically different from *O. acetosella*. By describing it, I want to draw the attention of the collectors to it. Forrest's specimen is certainly

very different from the typical *O. Acetosella*, e.g. Forrest, No. 2144, by its much smaller size in all parts, the relatively longer peduncle (much exceeding the leaves), the very few scales at the base of the flowering shoot, their bulbous development and curious chalky-white colour, the very narrow bifid petals, and the late time of flowering.

GESNERACEAE.

Roettlera Forrestii, Diels. Sp. nov.

Folia rosulata; exteriora petiolata, interiora sessilia, herbacea, dense ferrugineo-villosa, anguste ovata vel suboblonga, grosse dentata dentibus integris vel iterum crenulatis, cum petiolo 8-14 cm. longa, 3-4.5 cm. lata, nervi primarii 5-6 subtus prominentes. Scapi complures, 7-20 cm. longi 4-7-flori, ferrugineo-villosi vel glanduloso-pilosi. Calyx alte 5-partitus, segmenta subovata, pilosa, 5-7 mm. longa, 2.5-3 mm. lata. Corolla lutea; tubus late cylindricus, pilosulus, 9-10 mm. longus, 6-7 mm. latus, lobi 3-5 mm. longi, 3-4 mm. lati. Stamina 2 fertilia 5-7 mm. longa, staminodioidea 5 mm. longa. Discus 1 mm. altus. Ovarium 3-4 mm. longum, stylus perbrevis, stigma patelliforme 1-1.5 mm. longum. Capsula circ. 2.5 cm. longa, 0.4 mm. lata.

"Plant of 3-9 inches. Flowers canary yellow. On moss-covered boulders and branches of trees in very shady situations on the eastern flank of the Lichiang Range. Lat. 27° 15'. Alt. 10-11,000 ft. July 1906." G. Forrest. No. 2510.

Allied to *R. aurea*, Franch., but quite different by the sessile inner leaves, the longer sepals, and the shorter and broader corolla.

Didissandra amabilis, Diels. Sp. nov.

Rhizoma gracile, repens. Caulis solitarius, adscendens vel erectus, 15-25 cm. longus, longe nudus, apice folia conferta 3-4 majora atque nonnulla minuta floresque 2 rarius 3 gignens. Folia breviter petiolata vel sessilia; lamina tenuiter herbacea, praecipue supra strigulosa subtus pallidior nonnunquam violascens, obovata saepe asymmetrica, basin versus angustata ibique integra, ceterum serrata, 7-10 cm. longa, 3-6.5 cm. lata. Flores pedunculo bibracteolato 2-4 cm. longo gracili praediti, insignes. Sepala pallida parce pilosa, anguste ovata vel lanceolata, 1.2-1.5 cm. longa, 0.3-0.45 cm. lata. Corolla aurantiaco-flava, fusco-maculata; tubus latus, paulo inflatus, 2.5-2.7 cm. longa, 1.7-2.2 cm. lata, labii superi 1.4 cm. longi, lobi 3 circ. 6-8 mm. longi, 5-7 mm. lati, labii inferi lobi 5-6 mm. longi, 7-8 mm. lati. Stamina in tubo inclusa. Ovarium ca. 8 mm. longum; stylus 1-1.3 mm. longus.

"Plant of 6-9 inches. Flowers light-yellow, spotted purple. Moist moss-covered ledges and crevices of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 2689.

"Plant of 6-12 inches. Flowers orange-yellow, spotted orange-brown. On trees and humus-covered boulders in shady situations in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. July-August 1906." G. Forrest. No. 4385.

The leaves are arranged about as in *Didymocarpus oblonga*, DC., but everything else is different.

Didissandra muscicola, Diels. Sp. nov.

Acaulis. Folia subsessilia, ad basin et marginem pilis multicellularibus fuscis vestita, praeterea in utraque facie densissime cinereo-velutina, lanceolato-ovata vel oblonga, conspicue serrata, 8-10 cm. longa, 2-3.8 cm. lata. Scapi pilis fuscis patulis vestiti, 20-30 cm. alti, apice corymboso-3-4-flori; pedicelli graciles, 3-3.5 cm. longi. Sepala anguste ovata, glanduloso-pilosa, 5 mm. longa, 1.8 mm. lata. Corolla intense aurantiaca, campanulata, sub fauce constricta, 30 mm. longa, 15 mm. lata; labii superioris lobi 2 breves, labium inferius longius, lobi semiorbiculares ciliolati, 5-6 mm. longi. Capsula subclavata, 3.5-4.5 cm. longa, 0.4 cm. lata, stylo apice breviter bilobo circ. 0.5 cm. longo praedita.

"Plant of 6-12 inches. Flowers deep orange. On moss-covered boulders and trees in shady rhododendron forest in side valleys of the Mekong, Mekong-Salwin divide. Lat. 27° 30' N. Alt. 7-8000 ft. July 1905." G. Forrest. No. 5095.

A similar plant with smaller flowers from Northern Szechuan, Cheng Kou (Farges, No. 1455) is in the Paris Herbarium (unnamed).

Boea arachnoidea, Diels. Sp. nov.

Caulis erectus, 15-30 cm. altus, ubique praecipue ad foliorum insertiones arachnoideo-lanuginosus. Folia inferiora petiolo 5-6 cm. longo, floccoso-lanuginoso praedita, lamina membranacea, supra pilosula, subtus ± lanuginoso-pilosa, e basi obtusa ovata vel elongato-elliptica, crenato-serrata, usque ad 10 cm. longa, 3.5 cm. lata. Folia superiora multo minora. Inflorescentiae ex axillis foliorum omnium ortae, corymbosae, pedunculis 2-3 cm. longis praeditae; pedicelli 1.5-2 cm. longi, dense lanuginosi. Flores adhuc ignoti. Sepala 5 anguste ovata, membranacea, 6 mm. longa, 2 mm. lata, trinervia, apice ustulato-callosa, fructifera omnino reflexa, arachnoideo-pilosa. Capsula torta, circ. 2 mm. longa. Semina ovoidea castaneo-fusca exappendiculata.

"Plant of 6-12 inches, growing in clefts of cliffs in the Ming Kwang valley, near Pei sha. Lat. 25° 25' N. Alt. 6-7000 ft. Fruiting October 1905." G. Forrest. No. 929.

In habit this is somewhat similar to *Chirita hamosa*, Wall., of India and Southern Yunnan.

HAMAMELIDACEAE.

Corylopsis yunnanensis, Diels. Sp. nov.

Frutex 1-3 m. altus. Rami graciles, adulti cortice brunneo, atropurpureo vel purpureo-fusco albo-lenticellato tecti, novelli glauco-pruinosi. Folia petiolo glauco et piloso 0.7-1.2 cm. longo praedita, chartaceo-herbacea, supra glabra, subtus glauca, primum sericeo-pilosa demum ad nervos rufos pilosa ceterum glabra, inaequaliter subovato-elliptica vel obsolete pentagona, basi subtruncata ipsa fere cordato-incisa, apice triangulari acuta, leviter repando-serrata serraturis incurvatis, 5-6 cm. longa, 3-3.5 cm. lata; nervi subtus prominuli circ. 8 utrinque adscendentes. Folia tempore florendi haud evoluta, novella stipulis magnis scariosis, extus saepe purpureis glabris vel pubescentibus intus dense sericeo-tomentellis concavis late obovatis vel suborbicularibus, 1-1.8 cm. longis 1.2 cm. latis occulta, in ramulis floriferis 2-3-na postea evoluta. Spicae densae pendulae, 1.5-2.5 cm. longae; bracteae scariosae suborbiculares, longe pilosae, circ. 6 mm. diamet.; bracteolae similes sed multo minores, 3-4 mm. longae, 1.5-2 mm. latae. Calycis segmenta triangulari-ovata, dorso pilosa, 1.5-2 mm. longa, nonnunquam basi appendiculo minuto aucta; petala ampla, conspicua, lutea vel intense flava, suborbicularia, subito in unguem contracta, 6-7 mm. longa, 5-6 mm. lata; "nectaria" 10, crassa, 0.5-1 mm. longa, apice truncata atque subimplicata. Stamina 4-5 mm. longa. Styli 2-2.5 mm. longa, basi incrassata parce pilosa. Capsula parte infera longitudinaliter costata, supera pilosa, stylis extrorsum curvatis persistentibus coronata.

"Shrub of 10-20 ft. Flowers pale yellow. Open situations in mixed forests in side valleys on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 10-11,000 ft. Fruiting September 1906." G. Forrest. No. 3098.

"Shrub of 4-10 ft. Flowers light orange yellow. Dry, open situations on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. Flow. May 1906." G. Forrest. No. 4095.

"Shrub of 6-10 ft. Flowers bright yellow. Moist situations in thickets on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-9000 ft. April 1906." G. Forrest. No. 4731.

Allied to *C. sinensis*, Hemsl. in Garden. Chronicle 1906, i. p. 18, and Hook. Icon. pl. 2820, fig. 17-20, but different in foliage, number and structure of staminodes, and with shorter styles.

LABIATAE.

Plectranthus oreophilus, Diels. Sp. nov.

Planta gracilis, 15-25 cm. alta. Folia 4-5, in ima basi caulis rosulato-conferta, herbacea, subsessilia, basin versus cuneato-angustata, herbacea, glandulosa et in utraque facie molliter pilosa, late ovata margine crenata, 4-6 cm. longa, 3-3.5 cm. lata. Scapus gracilis. Racemus e verticillastris subremotis 1-1.5 cm. longis compositus 7-12 cm. longus. Bracteae purpureo-violascentes, anguste ovatae, 2-4 mm. longae. Calyx coloratus, bilabiatus, glanduloso-puberulus, labia circ. 3 mm. longa. Corolla declinata coerulea, tubus gibbus, 5 mm. longus, 2.5 mm. latus, labium superius 3-fidum, lobo mediano iterum brevius bifido, 4 mm. longum, labium inferius 5-6 mm. longum.

"Plant of 6-9 inches. Flowers blue. Open situations on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12'. Alt. 10-11,000 ft. July 1906." G. Forrest. No. 2564.

In flower this is similar to *P. excisus*, Maxim., but a much smaller plant, very different in foliage, the leaves without the characteristic cuspidate apex of Maximowicz's plant.

Plectranthus phyllopodus, Diels. Sp. nov.

Caulis 0.3-0.45 m. altus, quadrangulus, pilosus, basi ipsa aphyllus, dein foliatus. Folia petiolo longo sensim in laminam obcuneato-dilatato 2-4.5 cm. longo praedita; lamina herbacea, in utraque facie pilosa, triangulari-vel subrhombeo-ovata, crenato-dentata, 4-6 cm. longa, 3-4 cm. lata. Inflorescentia paniculata vel racemosa, angusta e cymis breviter pedunculatis divaricatarum ramulosis composita, bracteae pedicellique graciles. Calyx nigro-glandulosus, 2 mm. longus, minute pubescens, dentes subaequales triangulari-ovati. Corolla coerulea; tubus gibbus 4 mm. longus, labium superius 4-fidum 2.5-3 mm. longum, inferius 3.5 mm. longum.

"Plant of 1-1½ ft. Flowers pale blue. Open pasture on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-10,000 ft. May-June 1906." G. Forrest. No. 4555.

"Plant of 12-15 inches. Flowers blue. Margins of pine forests and on mountain meadows on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10-11,000 ft. July-August 1906." G. Forrest, No. 4556.

Allied to *P. Cavaleriei*, Léveillé, but morerobust, leaves broader, more hairy, less glandular, with smaller teeth; the flowers larger.

Plectranthus pleiophyllus, Diels. Sp. nov.

Frutex 1-1.4 m. altus. Ramuli glanduloso-puberuli, foliati. Folia brevissime petiolata, herbacea, supra minute glanduloso-puberula, subtus parcius eisdem glandulis conspersa, ovata vel rotundata, basi ipsa integra, ceterum regulariter serrata, 3.5-4 cm. longa, 2-2.5 m. lata. Cymae e foliorum axillis longe pedunculatae, inferiores circ. 4 cm. longae. Calyx subglandulosus, 4-5 mm. longus, dentes subaequales triangulares. Corollae tubus basi gibbus calycem vix superans. Corolla intense coerulea; labium superius 4-fidum, circ. 3 mm. longum, inferius 5-6 mm. longum tubo longius.

"Shrub of 3-5 ft. Flowers bright blue, foliage aromatic. Dry, rocky situations amongst scrub in side valleys on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 9-10,000 ft. June 1906." G. Forrest. No. 2333.

Recognised by the branches being leafy to the top, the cymes axillary, the corolla-tube very short.

Plectranthus adenantus, Diels. Sp. nov.

Caules 15-30 cm. alti, basi ramosi, ceterum subsimplices. Folia inferiora pauca minora, media rhombeo-ovata in petiolum sensim angustata, antrorsum subdentata, supra glandulosa et breviter pilosa, subtus pallidiora, praeter glandulas nonnisi ad nervos puberula, cum petiolo 4-5 cm. longa, 2.5-3 cm. lata. Panicula (vel racemus) angusta e cymis composita. Cymae e bractearum mox decrescientium axillis ortae, 1-1.5 cm. longae, 3-5-florae. Flores graciliter pedicellati. Calyx violascens, nervosus, pilosus, 2.5 mm. longus, 3 mm. latus, dentes triangulares subaequales. Corolla coerulea glandulosa, tubus brevis basi gibbus 4 mm. longus, labium inferius circ. 6 mm. longum.

"Plant of 6-12 inches. Flowers blue. Grassy situations in and on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 4557.

Allied to *P. melissoides*, Benth. of the Khasia Hills. In habit and foliage it is also similar to *P. irroratus*, Forrest, but the corolla-tube is much shorter.

Plectranthus irroratus, G. Forrest, ms. in schedis. Sp. nov.

Frutex 0.6-0.9 m. altus. Ramuli pubescentes, purpurascens. Folia breviter petiolata, late ovata, basi oblique truncata, serrata, supra ubique et subtus ad nervos hispidula, glandulosa, subtus glauca. Racemus foliatus, cymae ex axillis foliorum

superne decrescentium ortae, inferiores 1-1.5 cm. longe pedunculatae. Calyx coloratus hispidulus, 5-6 mm. longus, dentes lanceolato-ovati. Corolla coerulea pilosula; tubus 10 mm. longus, labia circ. 5 mm. longa.

"Shrub of 2-3 ft. Flowers blue. Dry shady situations amongst underscrub in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 9-10,500 ft. June 1906." G. Forrest. No. 2507.

In habit this is not unlike *P. pharicus*, Prain, of Eastern Tibet, but the flowers are much larger, and the lip relatively much shorter.

Plectranthus Forrestii, Diels. Sp. nov.

Species 0.6-1.8 m. alta. Caules quadranguli pilosi. Folia herbacea, utrinque pilosa, ovata, in petiolum cuneato-angustata, margine crenato-dentata, cum petiolo 7-10 cm. longa, 5-7 cm. lata. Inflorescentia paniculata, ad 30 cm. longa; cymae saepe compositae, laxiflorae. Calyx aperte-campanulatus, coloratus, pilosus, 5 mm. longus, dentes quam tubus breviores, late triangulari-ovati, 2.5 mm. lati. Corolla intense coerulea, in latere infero pilosula, tubus circ. 10 mm. longus basi gibbus, 4 mm. latus; labium superius 4-fidum 6-7 mm. longum, inferius 6-7 mm. longum.

"Plant of 2-4 ft. Flowers bright blue. Whole plant strongly aromatic. Grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20'. Alt. 11,000 ft. August 1906." G. Forrest. No. 2851.

Nearly related to *P. irroratus*, Forrest, but the inflorescence is much larger, more open, the bracts smaller, the pedicels longer, the calyx teeth shorter and broader.

Plectranthus Bulleyanus, Diels. Sp. nov.

Frutex humilis, 0.6-0.9 m. altus. Ramuli ultimi subherbacei, quadranguli, purpurei. Folia anguste ovata, in petiolum cuneato-angustata, herbacea, glandulosa, supra praeterea breviter hispidula, margine dentata, cum petiolo 4-6 cm. longa, 2-2.5 cm. lata. Racemus e cymis brevissimis compositus, angustus, 6-8 cm. longus; cymae e bractearum mox reductarum axillis ortae. Calyx pilosulus, 2.5 mm. longus; dentes subaequales ovato-triangulares. Corolla intense coerulea basi rosea pilosula; tubus 5-7 mm. longus basi gibbus, labium superius 4-fidum circ. 4 mm. longum, inferius 5-6 mm. longum.

"Dwarf shrub of 2-4 ft. Flowers deep blue, pinkish at base of corolla. Dry situations amongst scrub on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 8-9000 ft. June 1906." G. Forrest. No. 4554.

This species has relatively narrow leaves, and a very narrow inflorescence with small bracts. The calyx is small, the corolla relatively large, with a longer tube.

Plectranthus phyllostachys, Diels. Sp. nov.

Frutex 0.9-3 m. altus. Rami patenti-pilosi. Folia (inferiora non visa), summa subsessilia, utrinque rugosa, pilosa, e basi subcordata ovata, argute crenato-dentata, 3 cm. longa, 2 cm. lata, nervi subtus reticulato-prominentes. Verticillastri parvi in axillis foliorum sensim decrescentium fere occulti, paniculam e thyrsis foliatis elongatis angustis compositam efficientes. Flores breviter pedicellati vel subsessiles, calyx aequaliter 5-dentatus, dense pilosus, 2.5 cm. longus; corollae luride luteae puberulae tubus 3 mm. longus, labia 3 mm. longa. Stamina faucem attingentia.

"Shrub of 3-9 ft. Flowers dirty yellow. Dry rocky situations. Hoching and Lichiang Valley. Alt. 8-10,000 ft. September 1904." G. Forrest. No. 624.

Allied to *P. ternifolius*, Don, but different by less tomentum, and the panicle being leafy to the top; even the uppermost leaf-like bracts are longer than the whorls of flowers. The leaves are shorter than those of the above species.

Plectranthus leucanthus, Diels. Sp. nov.

Caulis 25-50 cm. longus, parce pubescens, inferne et supra medium subaphyllus. Folia petiolo superne obcuneato-alato 1.5-3 cm. longo praedita, herbacea, glandulosa, supra praeterea pilosula, anguste ovata, dentata, petiolo excepto 4-5 cm. longa, 2-3 cm. lata. Inflorescentia paniculata vel racemosa e cymis composita, 5-20 cm. longa, puberula. Calyx circ. 2 mm. longus, demum apertus, ad basin barbato-pilosus, ceterum puberulus, dentes ovato-triangulares, inferi paulo longiores. Corolla alba, labium superius 4-fidum circ. 3 mm. longum, inferius roseo-maculatum 3 mm. longum.

"Hills of the Yangtse-Mekong divide at an elevation of from 6 to 10,000 ft. Moist woods. Flowers white, lower lobe of corolla spotted pink. September 1904." G. Forrest. No. 595.

Plectranthus megathyrsus, Diels. Sp. nov.

Planta 0.9-1.5 m. alta. Caules quadranguli, pilosi. Folia (superiora) petiolo obcuneato-alato circ. 2 cm. longo praedita; lamina late ovata, basi subtruncata, in utraque facie pilosa, dentata, 5-6 cm. longa, 4-5 cm. lata. Inflorescentia ampla, paniculata, ad 30 cm. longa, 20 cm. lata, rami e cymis demum divaricatis composita. Calyx pilosus, 4.5-5 mm. longus, demum auctus, dentes triangulares acuti. Corolla pallide coeruleo-

purpurascens; tubus basi gibbus, 4-5 mm. longus, labium superius quadrifidum, 3-4 mm. longum, inferius 5 mm. longum.

"Plant of 3-5 ft. Flowers pale purplish blue. Western slopes of the Tsan shan Range, amongst grass and scrub. Lat. 25° 40'. Alt. 9-10,000 ft. September 1903." G. Forrest. No. 897.

The relation of this species seems to be with *Plectranthus amethystoides*, Benth.; but it is a much larger plant in all parts, and much more hairy. It is also similar to *P. Forrestii*, Diels, but the calyx is smaller, with longer and more acute teeth, the corolla considerably smaller.

Coleus wulfenoides, Diels. Sp. nov.

Caules e rhizomate crasso erecti graciles circ. 25 cm. alti. Folia omnia basi appropinquata 4-5, sessilia, praeter nervos hinc inde pilosos subglabra, obovata, basin versus sensim angustata, apice obtusa, margine crenato-serrata vel subintegra. Racemus e verticillastris 4-6 remotis compositus, bractae parvae coloratae deflexae, late obovatae vel ovatae. Calyx 5-6 mm. longus, bilabiatus, labium superius amplum rotundatum 4 mm. longum, 3.5 mm. latum, inferioris dentes 2.5 mm. longi acuti, e basi triangulari rigide subulati, demum subspinescentes. Corolla purpurea puberula, tubus 7-8 mm. longus, labia limbi subaequalia 5 mm. longa superius 4-fidum. Calyx fructifer decurvus auctus, 7-8 mm. longus, limbo circ. 10 mm. lato.

"Common in pine woods, sides of Hocking and Lichiang valleys. Alt. 8-9000 ft. Flowers purple. September 1904." G. Forrest. No. 126.

In habit this is similar to *Orthosiphon scapigerum*, Benth., but the leaves are narrower, with shorter teeth, the corolla longer and more hairy, the upper lip more obtuse. An allied form was collected by Ducloux (No. 939).

Elsholtzia heterophylla, Diels. Sp. nov.

Caulis erectus, strictissimus, 0.3-0.8 m. altus, atropurpureus, hirtus, basi stolones repentes emittens. Folia stolonum parva, breviter petiolata, late elliptica vel subrotunda, leviter crenato-serrata, 0.4-0.6 cm. diamet., glabra. Folia caulina subcoriacea, glabra glandulis conspicuis ornata, sessilia lanceolata vel oblonga, obsolete serrata vel serrato-crenata, 2-2.5 cm. longa, 0.5-0.7 cm. lata, costa et nervi primarii subtus conspicui. Spica unica terminalis; bractae dense imbricatae, latissimae, breviter cuspidatae vel obtusae, purpureo-venosae atque suffusae quasi pictae, ad 6-8 mm. latae. Calyx 3.5 mm. longus, dentes breves, pilosae. Corolla roseo-purpurea, valde lanuginosa, longius ex-

serta; tubus elongatus limbum versus sensim ampliatus 10-12 mm. longus, stamina exserta.

"Erect plant of 1-2½ ft. Flowers rose purple. Moist boggy grass and bracken covered situations in the Ming Kwang valley north of Li-shih-tou-ho. Lat. 25° 30'. Alt. 6-7000 ft. October 1905." G. Forrest. No. 934.

The same plant has been collected in Yunnan by Maire (No. 1017) and by A. Henry (Nos. 9950, 9950a.).

It is allied to *E. Bodinieri*, but differs in its taller stems, more glabrous leaves and the stronger heterophylly of stem and stolons.

Elsholtzia luteola, Diels. Sp. nov.

Annua, simplex vel ramosa, 8-40 cm. alta. Caulis demum lutescens, seriebus longitudinalibus pilosis instructus. Folia glandulosa ceterum fere glabra, breviter petiolata vel sessilia e basi subcuneata sublancoolata, serrata, 2-3 cm. longa, 0.5-1 cm. lata. Rami fere omnes spicigeri. Spicae secundae, mensuris variabiles, maximae ad 5 cm. longae, 1 cm. latae. Flores arcte congesti, brevissime pedicellati. Bracteae imbricatae, latissimae, amplexantes, membranaceae, lateribus subhyalinae, late reniformes, longe cuspidatae, extus nervosae, pilosae, 5-6 mm. longae, 8-10 mm. latae. Calyx glandulosus, pilosusque, 2.5 mm. longus, dentes cuspidati. Corolla pallide lutea, exserta, 5-6.5 mm. longa, pilosula.

"Moist ground, sides of streams. Chung Tien plat. 12-13,000 ft. Flowers pale yellow. September 1904." G. Forrest. No. 625.

Allied to *E. cristata*, Willd., and very much like it in habit, but the bracts are sessile, the calyx larger, and the corolla yellowish.

Calamintha discolor, Diels. Sp. nov.

Caulis 0.2-0.4 m. longus, pilis retrorso-curvatis albido-cinereus, nonnisi parte infera ramosus. Foliorum petiolus 1-2 cm. longus, lamina membranacea, utrinque parce pilosula, subtus pallidior subglaucula, anguste ovata vel lanceolata, basin versus subcuneato-angustata, serrata vel crenato-serrata, 3-7 cm. longa, 1.5-3 cm. lata. Verticillastri in axillis foliorum summorum, multiflori; bracteae subulatae, longe pilosae, 5-7 mm. longae; pedicelli graciles 2-5 mm. longi. Calycis tubus curvatus, 7 mm. longus, dentes circ. 3 mm. longi, superi triangulares, inferi mox subulati omnes acuti hirsuti. Corolla pallide rosea purpureo-venosa, et maculata, puberula 15-20 mm. longa, labia circ. 4-5 mm. longa.

"Plant of 9-14 inches. Flowers pale rose, spotted and veined a deeper shade. Grassy openings in, and on the margins of, pine forests in side valleys on the eastern flank of the Tali Range.

Lat. 25° 40' N. Alt. 9-10,000 ft. June-July 1906." G. Forrest, No. 4527.

Apparently allied to *C. multicaulis*, Maxim., a Japanese species, but the leaves are longer and the flowers much larger.

Calamintha chinensis, Benth. in DC., Prodr. xii, p. 233.

Ind. Flor. Sin. ii, p. 283 (Journ. Linn. Soc. xxvi, p. 283).

"Plant of 12-18 inches. Flowers pale rose-purple. Grassy situations amongst scrub on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 7-9000 ft. June 1906." G. Forrest. No. 4522.

A very small-flowered form.

var. **megalantha**, Diels. Var. nov.

Saepe purpurascens. Corollae tubus circ. 1 cm. longus, lobi circ. 3 mm. longi.

"Plant of 6-12 inches. Flowers rose-red. Amongst grass in willow scrub, margins of streams on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11,000 ft. June 1906." G. Forrest. No. 2476.

Salvia Bulleyana, Diels. Sp. nov.

Caules 30-45 cm. alti, superne pubescentes. Folia (inferiora) petiolo 4-5 cm. longo praedita, supra minute pilosula, subtus ad nervos pilosula ceterum glandulosa, e basi cordata vel excisa triangulari-ovata vel hastata, serrato-crenata, 4-7 cm. longa, 3.5-5 cm. lata. Racemus basi nonnunquam paniculatus; bracteae late ovatae, subsessiles, coloratae; verticillastri plerumque 4-flori. Calyx bilabiatus pilosus, 12-14 mm. longus, apice hians apertus, circ. 10 mm. latus, violaceo-suffusus et -nervosus. Corolla praecipue parte dorsali pubescens, purpurascenti-coerulea; tubus basi angusta rectus circ. 12-14 mm. longus, deinde curvatus atque per 10 mm. sensim ad faucem 10-12 mm. latam ampliatus; galea brevis circ. 7 mm. longa, labii inferioris lobi laterales 3 mm. longi, subtriangulares; medianus 5 mm. longus circ. 8 mm. latus.

"Plant of 12-18 inches. Flowers purplish-blue. Rocky pasture on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 2100 to 2450 m. June 1906." G. Forrest. No. 4546.

The shape of the calyx and corolla is somewhat like that of *S. castanea*, Diels, but the foliage is very different, the lower leaves being cordate-ovate, the upper ones hastate.

Salvia castanea, Diels. Sp. nov.

Caules 0.4-0.6 m. alti, quadranguli, superne pubescentes. Folia pleraque in parte infera caulis orta, longissime (14-16 cm.) petiolata, supra pilosula, subtus cinereo-tomentella, nervis notata,

e basi rotundata vel leviter cordata elongato-ovata vel anguste triangularia, crenaturis parvis inaequalibus crenata, 10-13 cm. longa, 5-6 cm. lata. Folia caulina pauca. Racemus simplex vel basi ramis brevibus auctus, e verticillastris circ. 8 remotis compositus; bracteae violaceo-marginatae, pilosae, late obovatae vel ovatae. Flores 4-6-ni, patuli. Calyx bilabiatus, pilosus, atropurpureo suffusus, dorso 15-18 ventre 12-14 mm. longus, apice late hians 18 mm. latus. Corolla purpurascens-castanea, basi rubescenti-lutea, praecipue ad galeam pubescens; tubus parte infera 15-18 cm. longa angustior dein parte supera 10 mm. longa curvatus atque faucem versus ad 12 mm. ampliatus; labii inferioris lobus medianus transverse ellipticus, 5 mm. longus 10-12 mm. latus.

"Plant of 1½-2 ft. Flowers purplish-maroon, base of corolla reddish-yellow. Shady grassy situations on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 25'. Alt. 10-11,000 ft. September 1906." G. Forrest. No. 2938.

Allied to *S. hians*, Royle, but differing by the narrower leaves, the longer racemes, and the much narrower tube of the corolla.

***Salvia digitaloides*, Diels. Sp. nov.**

Caules 0.3-0.6 m. alti, dense pubescentes. Folia pleraque basalia, petiolo 6-8 cm. longo praedita, in utraque facie molliter tomentella, supra saturate viridia, subtus alba, subrugulosa, oblongo-elliptica, crenata, 3.5-7 cm. longa, 2-3 cm. lata. Folia caulina pauca, superiora sessilia. Racemus e verticillastris 3-8 remotis compositus; verticillastri 4-6-flori; bracteae late ovatae vel obovatae, integrae, longe pilosae. Flores patuli vel subpenduli, breviter pedunculati. Calyx bilabiatus longe pilosus, laete viridis, violaceo-nervosus, 10-12 cm. longus, apice 10 cm. latus, labia latissime triangularia breviter. Corolla ochroleuca vel pallide lutea, violaceo-notata, praecipue dorso lanuginosa; tubus circ. 30 mm. longus e basi tubulosa sensim subcampanulato-ampliatus sub fauce 12-15 mm. latus; galea 8-10 mm. longa; labii inferioris lobus medianus transverse ellipticus, circ. 10 mm. latus. Stamina connectivum 5-7 mm. latum. Stylus apice introrsum decurvus.

"Plant of 1-2 ft. Flowers creamy yellow with pale violet markings. Shady dry situations in pine forest at the foot of the Sung Kwei valley. Lat. 26° 30' N. Alt. 8-9000 ft. April 1906." G. Forrest. No. 2031.

This beautiful species is at once recognised by its soft velvety leaves, which are nearly all basal, and by its narrow bell-shaped flowers.

Salvia Forrestii, Diels. Sp. nov.

Caules adscendentes, quadranguli, sublanuginosi, 30–75 cm. alti. Folia caulium fertilium infera minus robusta, longe petiolata caulina petiolo 5–7 cm. longo praedita, in utraque facie pilosula e basi cordata vel nonnunquam subhastata subpentagono-cordata vel late-ovata, 5–7 cm. longa, 5–7 cm. lata. Inflorescentia paniculata, parce lanuginosa et glutinosa, rami e verticillastris 2–4-floris compositi, bractee late ovatae, apiculatae, conspicuae. Calyx pallidus, 16–18 cm. longus, 12 mm. latus, brevissime bilabiatus vel fere subtruncatus. Corolla intense aurantiaca, parce lanuginoso-pilosa; tubus anguste campanulatus, 22–23 cm. longus, 10–12 cm. latus; galea 10 mm. longa, 4 mm. lata, labium inferius quam galea vix longior, lobus medianus 8–10 mm. latus.

"Plant of 1–2½ ft. Flowers bright orange. Shady situations in mixed and pine forests on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 9–11,000 ft. August 1906." G. Forrest. No. 4548.

This is allied to *S. hylocharis*, but it is a much smaller plant. The lower lip of the corolla is about as long as the upper one.

Salvia flava, G. Forrest, ms. in schedis. Sp. nov.

Rhizoma suberectum robustum. Caules e basi adscendenti erecti, 20–50 cm. alti, praecipue superne ± pilosi. Folia basalia longe petiolata, in utraque facie sparse vel densius pilosula, subtus plerumque glandulosa, hastato-triangularia vel -ovata, crenata vel duplo-crenata vel crenato-serrata, 4–16 cm. longa, 2.5–8 cm. lata. Racemi e verticillastris 4–8 subremotis compositi, verticillastri plerumque 4-flori. Calyx pilosus, 10–12 mm. longus, apice 9–10 mm. latus, bilabiatus; labium inferius bidentatum. Corolla flava, tubus e basi anguste tubulosa faucem versus ad 12 mm. dilatatus, pars angusta circ. 13 mm. longa, dilatata 10 mm. longa; galea 10 mm. longa, parcius lanuginosa; labii inferioris lobi laterales 3 mm. longi, 7 mm. lati, lobus medianus transverse ellipticus, emarginatus, violaceo-purpureo-maculatus, striatus vel punctatus, 7 mm. longus, 12 mm. latus.

"Plant of 9–18 inches. Flowers canary yellow with purple markings on upper lobe of corolla. Shady pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10–11,000 ft. June 1906." G. Forrest. No. 2262.

"Plant of 1–1½ ft. Flowers yellow, blotched and veined deep purple. Dry open situations in side valleys on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 8–9000 ft. June–July 1906." G. Forrest. No. 4545.

"Plant of 12-18 inches. Flowers bright yellow. Dry, shady pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-11,000 ft. July-August 1906." G. Forrest. No. 4547.

var. *megalantha*, Diels.

Calyx 13-15 mm. longus. Corollae tubi pars angustior 15-17 mm. longa, dilatata 12 mm. longa, apice 15 mm. lata. Labii inferioris lobus medianus 18 mm. latus conspicue fusco- vel purpureo-maculatus.

"Plant of 15 inches. Flowers canary yellow, lower lobe of corolla marked reddish-brown. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 20'. Alt. 11-12,000 ft. July 1906." G. Forrest. No. 2548.

"Plant of 2-3 ft. Flowers deep yellow with purple blotch in lower lobe of corolla. Pass between Teng Chuan and Sung Kwei valleys. Moist places on edge of woods. Alt. 2400 to 3050 m. September 1904." G. Forrest. No. 602.

The plant is variable in size and hairiness of the leaves and stem, as well as in size and marking of the flower.

Salvia hylocharis, Diels. Sp. nov.

Caulis quadrangulus, superne sublanuginosus, 45-90 cm. altus. Foliorum superiorum petiolus sublanuginosus 4-10 cm. longus, lamina in utraque facie parcius pilosula, latissime cordata, margine calloso-crenata, 14-16 cm. longa et lata. Panicula ampla pyramidalis, rami e verticillastris 2-4-floris laxius compositi; bracteae late obovatae integrae, ciliatae. Calyx parcius praecipue ad margines lanuginosus vel glabratus, amplus, pallidus, 20-25 mm. longus, apice 14 mm. latus, brevissime bilabiatus vel potius labiis latissimis emarginato-subtruncatus. Corollae intense flavae tubus e basi ipsa angusta sensim et aequaliter amplius et dilatatus, 25-26 mm. longus, sub fauce 14 mm. latus, praeter galeam lanuginosulam fere glaber; galea brevis 10 mm. longa; labii inferioris quam galea longioris lobi laterales 14 mm. longi, 14 mm. lati, lobus medianus violaceo-notatus, subreniformis, 7 mm. longus, 14 mm. latus. Stamina filamentum 8 mm. longum, pars antherifera quam sterilis duplo longior 8 mm. longa.

"Plant of 1½-3 ft. Flowers rich yellow, lower lobe of corolla marked violet. Open situations in dense pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-11,000 ft. June 1906." G. Forrest. No. 2394.

This is one of the most magnificent species of the genus. The leaves are very similar to those of *Ligularia*.

Salvia trijuga, Diels. Sp. nov.

Perennis 0.3–0.6 m. alta. Caulis pilosus. Folia^{*} ternata, in utraque facie pilosa, inferiora longe (5–7 cm.) petiolata, foliola (terminale longius) petiolulata; foliola e basi subcordata vel truncata ovata vel elliptica, crenata, obtusa, superiora trifida, suprema integra; foliorum inferiorum foliola lateralia 4 cm. longa, 2.8 cm. lata, terminale 5–6 cm. longum, 4–5 cm. latum petiolulo 2.5–3 cm. longo praeditum. Inflorescentia paniculata, ampla; rami angulo acuto erecti; verticillastri pauci, saepe 1–2-flori; bracteae parvae, coloratae, anguste ovatae. Flores breviter pedicellati pedicello circ. 3 mm. longo. Calyx glanduloso-pubescent[±] violaceo-suffusus, bilabiatus, 10–11 cm. longus, limbo 8–9 cm. latus; labium inaequaliter 3-dentatum, inferius bidentatum. Corolla varie purpurascens vel coeruleo-rosea, luteolomaculata; tubus circ. 20 mm. longus, antrorsum sensim ad 9–10 mm. ampliatus; galea paulum porrecta, puberula, 9 mm. longa, labii inferioris lobi laterales breviter late falcati, 5 mm. longi, lobus medianus transverse ellipticus vel subrotundus, 5 mm. longus, 10 mm. latus. Staminum connectivum circ. 8 mm. longum.

"Teng Chuan and Sung Kwei valleys, generally in woods or shady places. Alt. 7–10,000 ft. September 1904." G. Forrest. No. 65.

"Plant of 1–2 ft. Flowers rose lavender and pale yellow. Dry, chalky pasture on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 10–11,000 ft. August 1906." G. Forrest. No. 2813.

Nepeta Stewartiana, Diels. Sp. nov.

Caulis 0.6–1.5 m. altus, ramosus, quadrangulus, minute pubescens. Folia infima ante tempus florendi marcescentia, media petiolata petiolo 1–1.5 cm. longo, herbacea, minutissime pilosula et glandulosa, oblonga vel lanceolata, serrata, 6–10 cm. longa, 2–2.5 cm. lata, superiora decrescentia. Panicula bracteis foliaceis ornata, verticillastri breviter pedunculati vel subsessiles, remoti; bracteolae lineari-lanceolatae. Calyx cylindricus, pilosus, saepe violascens, 10–14 mm. longus, dentes 3 superiores altius connati, apices liberi triangulares circ. 1.5 mm. longi, 2 inferiores lanceolati acutissimi 5 mm. longi. Corolla coerulea vel violacea, intensius maculata striataque, parce puberula vel fere glabra; tubus curvatus longe exsertus, 20–25 mm. longus, sub limbo 10 mm. latus, lobi labii superi circ. 4 mm. lati, lobi laterales inferi 3 mm. longi, 4 mm. lati, medianus transverse ellipticus, emarginatus, 5–6 mm. longus, 9–10 mm. latus, ad palatum barbatus.

"Plant of 3-5 ft. Flowers deep purplish-blue. Valley of the Sung Kwei. Alt. 8-10,000 ft. September 1904." G. Forrest. No. 598.

"Plant of 2-3 ft. Flowers blue, stripped and spotted a darker shade, whole plant aromatic. Grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 2960.

This showy species is allied to *N. Souliei*, Léveillé, but differs in its more glabrous leaves, and much longer calyx. Both belong to the group of *N. macrantha*, Fisch.

***Nepeta tenuiflora*, Diels. Sp. nov.**

Caulis 0.3-1 m. altus, quadrangulus, pilosulus, ramosus. Foliorum (mediorum) petiolus 2-2.5 cm. longus; lamina pilosula et glandulosa, herbacea, subtus pallidior, e basi subtruncata, lanceolata, acuta, serrata serraturis obliquis minute callosis, 10 cm. longa, 3 cm. lata, superiora decrescentia. Inflorescentiae terminales parvae, verticillastri breviter pedunculati. Calyx glandulosus, dentes 3 superi 8 mm. longi, alte connati, apices liberi triangulares 1.5 mm. longi, 2 inferi 5-6 mm. longi, apices liberi 2 mm. longi. Corolla erecta subcurvata coerulea, gracilis, 12-16 mm. longa, labium superum circ. 4 mm. longum, inferum vix majus, lobus medianus obovatus, crispulus, 3 mm. longus.

"Plant of 1-3 ft. Flowers blue; whole plant strongly aromatic. Open grassy situations in and on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 9500-11,000 ft. August 1906." G. Forrest. No. 2657.

Easily recognised by its small narrow flower.

***Dracocephalum bullatum*, Forrest, ms. in schedis. Sp. nov.**

Rhizoma radicibus fibrosis robustis elongatis praeditum. Caules adscendentes, 7-25 cm. longi, purpurascens, cinereo-pilosi. Folia basalia et inferiora longe petiolata petiolo ad 4 cm. longo, lamina subcoriacea, mox glabra, subtus pallida purpurascens, e basi cordata ovato-elliptica, crenata, ad 5 cm. longa, 4 cm. lata, superiora multo minora subsessilia, omnium nervi subtus elevati conspicui. Racemus densiflorus, 6-8 cm. longus. Bracteae pallidiores, inferiores amplae, imbricantes, subtus ± purpurascens vel purpureo-nervosae, pilosae, praecipue ad marginem ciliatae. Calyx 1.5-2 cm. longus, pilosus, segmentum superius obtusum late ellipticum saepe violascens, 4 inferiora triangularia vel lanceolata acuta 0.5-0.6 cm. longa. Corolla 3-3.5 cm. longa, saturate coerulea, extus pubescens; tubus e basi anguste sensim ad 1-1.2 cm. dilatatus, labium superius 1.2 cm. latum, 0.5-0.6 cm. longum, bilobum, labium inferius

minute intensius maculatum, lobo mediano producto 0.8 cm. lato ornatum. Stamina inclusa, filamentum pilosum.

"Plant of 3-7 inches. Flowers bright blue, lower lobe of corolla minutely marked a deeper shade. Open situations on limestone drift at base of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11,000 ft. Flow. August 1906." G. Forrest. No. 2730.

This fine species is related to the Himalayan *Dracocephalum speciosum*, Benth., and *D. nutans*, L.; the large bracts and flowers are very showy.

Scutellaria Forrestii, Diels. Sp. nov.

Rhizoma repens, caules erectos emittens. Caulis quadrangulus, patenti-pilosus, 15-20 cm. altus. Folia inferiora minuta, superiora petiolo 2.3 mm. longo praedita, in utraque facie pilosa, supra viridia subtus purpurascentia vel violascentia, late ovata, crenato-serrata apice obtusa, 2.5 cm. longa, 2 cm. lata. Bracteae calycem longe superantes, inferiores foliaceae superiores decrescentes subintegrae. Flores subsessiles conspicui. Calyx parvus circ. 3 mm. longus, circ. 5 mm. latus, pilosus. Corolla intense et saturate coerulea extus pilosa, basi curvata; tubus 2.5-3 cm. longus, labium superius breviter emarginatum, labii inferioris lobi laterales superiori longe adnati atque quasi ei pertinentes; lobus medianus amplissimus 1.2 cm. longus et latus, subrotundus.

"Plant of 6-8 inches. Flowers deep rich blue. On ledges and in clefts of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 10-11,000 ft. Flow. June 1906." G. Forrest. No. 2281.

A very beautiful species of the affinity of the Himalayan *Scutellaria angulosa*, Benth.

Scutellaria likiangensis, Diels. Sp. nov.

Pluricaulis, caules adscendentes, fusco-purpurei, 4-anguli, lateribus alteris densius pilosi, 0.3-0.5 m. longi, simplices vel apice ramis 1-2 aucti. Folia sessilia, inferiora minora, oblongo-elliptica, utrinque acuta, breviter crenato-serrata vel subintegra, nervis hinc inde pilosula ceterum glaberrima, sensim in bracteas transeuntia. Bracteae anguste oblongae, vel breviter ovatae, integrae, (cum rhachi) densius glanduloso-pubescentes, saepe purpurascentes calycem superantes. Flores in spicam bracteatum angustam collecti, bini oppositi. Pedicelli perbreves. Calyx 3-4 mm. longus, dense pubescens, purpurascens, dentes breves; corolla viridulo-lutea purpureo-suffusa vel -venosa, puberula, tubus circ. 2 cm. longus, labia 5-6 mm. longa.

"Plant of 1-1½ ft. Flowers greenish-yellow, veined and marked pale purple. Open dry situations amongst scrub, also

in pine forests along the base of the eastern flank of the Lichiang Range. Lat. $27^{\circ} 12' N$. Alt. 9-10,000 ft. June 1906." G. Forrest. No. 2424.

Related in several characters to *S. angulosa*, Benth., but different in habit, shape of leaves, and colour of the flower.

Chelonopsis odontochila, Diels. Sp. nov.

Fruticosa 1·8-3 m. alta. Ramuli puberuli. Foliorum petiolus pubescens, 2-3 cm. longus; lamina herbacea, utrinque pilosa, obsolete rugulosa, ovata, subacuminata, serrata vel crenato-serrata, 4·5-6 cm. longa, 3-4 cm. lata. Flores axillares, singuli vel terni, pedunculo 1-2 cm. longo bibracteolato suffulti. Calyx campanulatus, 10-12 mm. longus, deinde ampliatus siccus, dentes subtriangulares, apiculati, 2-4 mm. longi, subaequales. Corolla flava, pubescens, 30-35 mm. longa, ad 12 mm. lata; limbus parvus, labium superius circ. 3 mm. longum, inferioris lobi laterales circ. 3 mm. diamet., medianus major margine conspicue dentatus.

"Shrubby plant of 6-10 ft. Flowers yellow. Valley of the Yangtse between Tzuko and Chinho. Alt. 6-7500 ft. October 1904." G. Forrest. Nos. 22, 600.

Markedly different from *C. moschata*, Miq., in leaves, calyx, and corolla.

Colquhounia decora, Diels. Sp. nov.

Frutex semi-scandens 1·8-3 m. longus. Rami graciles puberuli, internodia elongata. Folia petiolata, petiolo 1-2·5 cm. longo, herbacea, dense glandulosa et pilis simplicibus paucissime puberula, subtus pallidiora, anguste ovata, longe acuminata, serrata serraturis subcallosis, 3·5-5 cm. longa, 2-2·5 cm. lata, nervi parum conspicui. Cymulae axillares, breviter pedunculatae, pauciflorae; pedunculi stricti, 0·5-1 cm. longi; pedicelli 2-3 mm. longi. Calyx oblique infundibuliformis, pubescens, 5 mm. longus, sub limbo 4-5 mm. latus, dentes triangulares 3 mm. longi; post anthesin ampliatus subcoriaceus. Corolla coccinea, extus puberula; tubus e basi angusta mox ampliata, 13 mm. longus; labium superum concavum, ellipticum, apice obtusum, circ. 7 mm. longum, inferum reflexum tripartitum, segmenta lateralia 7 mm., medium protractum angustum, 5 mm. longum. Stamina 6 mm. exserta. Styli rami inaequales.

"Semi-climbing shrub of 6-10 ft. Edges of cane brakes on hills west of Yunnanfu. Alt. 7-8000 ft. February 1903. Flowers dull Indian red." G. Forrest. No. 327A.

Allied to *C. elegans*, Wall.; but much more glabrous, the calyx is larger and much broader, the tube of the corolla remarkably short, the petiole is larger, the leaves more acuminate

and more deeply serrate. A form of Central China (Henry, No. 3334), *C. elegans*, Wall., *B. pauciflora*, Prain, which has much smaller flowers, seems quite different. Nearer is the plant collected by Henry (No. 9089a) near Mengtze, but more hairy and differing in the leaves.

***Phlomis betonicoides*, Diels. Sp. nov.**

Caules 0.3–0.8 m. alti erecti quadranguli dense hispidi. Folia basalia 6–12 cm. longe petiolata, lamina mollis, subtus stellato-supra potius hispido-pilosissima, subrugulosa, e basi cordata anguste ovata, crenato-dentata, obtusa, 8–10 cm. longa, 5–6 cm. lata, nervi subtus prominentes. Folia caulina 1–3-na, superiora sessilia lanceolata, dentata; bracteantia patentia 5.6 cm. longa. Verticillastri densi multiflori; bracteae bracteolaeque subulatae, sursum curvatae, subrigidae, atropurpureae, 4–8 mm. longae. Calyx praecipue antrorsum hispidulus, 10 mm. longus, inter dentes circ. 1.5–2 mm. longos rigidiusculos bidentulatus. Corolla rosea, extus stellato-hispidula; galea intus barbata, 7 mm. longa; labii inferioris lobi laterales subtriangulares subintegri, medianus paulo latior obovato-ellipticus.

"Plant of 1–2½ ft. Flowers rose-pink. Stony, barren but cultivated ground on plain at north end of the Lichiang valley. Lat. 27° 10' N. Alt. 9000 ft. June 1906." G. Forrest. No. 2307.

***Phlomis Forrestii*, Diels. Sp. nov.**

Caules 0.3–0.9 m. alti, quadranguli, praecipue in sulcis stellato-pubescentes. Folia (superiora) petiolo 2–2.5 cm. longo praedita; lamina herbacea, supra parce hispida, subtus stellato-pubescent pallidior, subovata, serrata, acuminata, 6–8 cm. longa 3.5–4 cm. lata. Verticillastri 4–7-flori, bracteae spinescentes calyce dimidio breviores. Calyx minute stellato-pilosulus, conspicue nervosus, circ. 8 mm. longus, dentes rigidi apice spinescentes, 1.5 mm. longi. Corollae livide purpureae tubus 10–11 mm. longus; limbus extus stellato-tomentellus, galea 8 mm. longa, intus barbata, margine inciso-denticulata, labii inferioris 8 mm. longi lobus medianus 5–6 mm. latus cum lateralibus dimidio angustioribus margine inciso-denticulatus.

"Plant of 2–3 ft. Flowers dull livid crimson. Amongst scrub in and on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9–11,000 ft. August 1906." G. Forrest. No. 4558A.

This is allied to *Phlomis melanantha*, Diels, but the calyx is minutely stellato-puberulous almost papillose, not hairy, and has much shorter teeth. The corolla is smaller, and of a dull livid crimson colour.

Phlomis Franchetiana, Diels. Sp. nov.

Caules 0.6-0.9 m. alti, stellato-pubescentes. Folia media 6 cm. longe petiolata, lamina herbacea, in utraque facie pilis stellatis scabra, subtus pallidior, e basi altius cordata, late ovata, crenato-dentata, apice acuminata, 10-12 cm. longa, 6-9 cm. lata. Verticillastri 4-6-flori; bracteolae brevissimae, 1.5 mm. longae. Calyx extus stellato-pubescent, circ. 8 mm. longus, dentes 1-1.5 mm. longi. Corolla livide purpurea, extus stellato-tomentella, galea intus barbata, 6 mm. longa margine inciso-denticulata, labii inferioris lobi margine obsolete eroso-denticulati, lobus medianus quam laterales vix latior sed fere dimidio longior, concavus, circ. 5-6 mm. longus.

"Plant of 2-3 ft. Flowers dull livid crimson. Amongst scrub in and on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 9-11,000 ft. August 1905." G. Forrest. No. 4558.

From *P. Forrestii*, Diels, distinguished by shorter bracteoles, smaller corolla, the proportions of the lower lip and the stellate tomentum of the leaves which are more crenate.

Phlomis melanantha, Diels. Sp. nov.

Caules 0.6-0.9 m. alti, quadranguli, fere glabri. Folia caulina inferiora minora, mediorum petiolus atropurpureus, parce hispidus 5-6 cm. longus; lamina herbacea, supra parce strigoso-hispida, subtus pallidior et magis glabra, cordata vel cordato-ovata, dentata vel serrato-dentata, apice longius acuminata, 6-8 cm. longa, 3.5-6.5 cm. lata. Verticillastri axillares densiflori, bractaeae et bracteolae lineares calycem aequantes vel paulo superantes, apice subspinescentes. Calyx purpurascens, circ. 8 mm. longus, ad nervos et dentes hinc inde hispidus, dentes rigidi spinescentes, 4 mm. longi, erecti. Corolla atropurpurea; tubus circ. 10 mm. longus; limbi segmenta conspicue inciso-dentata, extus sericeo-pilosa; galea intus longe albo-barbata, 10 mm. longa; labii inferioris 7 mm. longi lobus medianus 5-6 mm. latus, quam laterales subduplo latior.

"Plant of 2-3 ft. Flowers deep almost black crimson. Open grassy situations amongst scrub on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-11,000 ft. July 1906." G. Forrest. No. 2540.

The sharply-toothed lobes of the deep crimson, "almost black" (ex G. Forrest) corolla are remarkable.

Ajuga Forrestii, Diels. Sp. nov.

Caulis 15-50 cm. longus, adscendens vel erectus, ima basi hypophyllis squamiformibus vestitus, villosus; stolones nulli.

Folia inferiora saepe breviter petiolata, cetera sessilia, herbacea, utrinque pilosa, oblonga vel lanceolato-oblonga, leviter crenatodentata, obtusa, 5-8 cm. longa, 1.5-2.6 cm. lata. Verticillastri in spicam bracteata densam conferti. Bracteae ovatae, subintegrae, $\pm$ coeruleae, flores longe superantes 2-3 cm. longae, 0.7-1.2 cm. latae. Calyx infundibuliformis, basi glabrescens, ceterum pilosus, intense coeruleus, tubus 3-4 mm. longus, dentes triangulares 5-6 mm. longi, 1.5-2 mm. lati. Corolla pallide coerulea, tubus rectus, pubescens, 8-10 mm. longus, lobi laterales 3 mm., medianus emarginatus, 4-5 mm. longus. Stamina breviter exserta.

"Plant of 6-12 inches. Flowers pale blue. Dry, stony situations on cultivated patches on plain at the north end of the Lichiang valley. Lat. 27° 10' N. Alt. 8500-9000 ft. May 1906." G. Forrest. No. 2133.

This showy species is recognised by the narrow leaves and the dense spike with coloured bracts much longer than the flowers. It is allied to *A. bracteosa*, Wall., but I have not seen any form matching it.

***Ajuga lupulina*, Maxim. var. *major* Diels. Var. nov.**

"Plant of 3-9 inches. Flowers watery white, veined and streaked bright blue. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10-11,000 ft. June 1906." G. Forrest. No. 2448.

This is a remarkable form of the species, much stronger and larger than the type or any form previously found, the leaves and bracts being much broader, some of them fully 8 cm. long and 3.5 cm. broad.

***Ajuga campylantha*, Diels. Sp. nov.**

Planta semidecumbens, basi plerumque stolones emittens. Caulis 7-25 cm. altus, dense flavido- vel albido-pilosus. Folia in petiolum brevem angustata, herbacea, utrinque dense hispidulo-pilosula, oblonga-ovata vel elliptica, basi integra, ceterum leviter repando-serrata vel -crenata, 3-5 cm. longa, 1.5-2.5 cm. lata, floralia densius vestita, verticillastros superantes. Calycis dense pilosi dentes triangulares tubo aequilongi; calyx 5-6 cm. longus. Corollae albae atropurpureo-venosae papilloso-pubescentis tubus curvatus 12-15 mm. longus, labium inferum 7 mm. longum, lobus medianus 4-5 mm. latus, labium superum 3-4 mm. longum. Stamina corollam aequantia vix exserta. Stylus apice brevissime bifidus.

"Semi-procumbent plant of 3-9 inches. Corolla white, veined purplish-black. Dry, stony pastureland on the northern end of the Lichiang plain. Lat. 27° N. Alt. 8500 ft. August 1906." G. Forrest. No. 2700.

Easily recognised from the other stoloniferous species by the curvate tube of the corolla and hardly exerted stamens.

LAURACEAE.

Machilus mekongensis, Diels. Sp. nov.

Frutex? Rami glabri. Folia petiolo 1-2 cm. longo praedita, lamina papyracea, glabra subtus glauca, late ovata vel obovata, obtuse acuminata, 6-9 cm. longa, 3.5-4.5 cm. lata, nervi rufo-colorati utrinque circ. 3-4 angulo acuto adscendentes subtus tenuissime prominuli; nervuli minutissime reticulati. Paniculae cum pedunculo 3-6 cm. longo 6-10 cm. longae, 2.5-3 cm. latae, ramuli utrinque 2-4 patentes, cymosi, plerumque triflori; pedicelli 2-3 mm. longi. Flores $\pm$ pubescentes, ca. 3 mm. longi. Perianthii segmenta carnosula, triangulari-ovata, 1.6-2 mm. longa, 1.2 mm. lata. Staminodia exteriora 6 subspathulata, interiora 3 biglandulosa, intima 3 minuta, lanceolato-clavata pilosa.

"Shupa valley. Shrubby hillsides. Alt. 11,000 ft. Yangtse-Mekong divide, Tibet. 1904." G. Forrest. No. 370.

"Mekong-Salwin divide behind Tsekou mission, Tibet. 1904." G. Forrest. No. 372.

Litsea Forrestii, Diels. Sp. nov.

Frutex 1.8-3 m. altus. Rami graciles rufo-vel fusco-corticati, tempore florenti efoliati foliaque novella subgignentia. Umbellae ex axillis foliorum pristinorum delapsorum longe pedunculatae, pedunculis 1.5-3.5 longis. Involucri phylla lata, subrotunda, extima 2 scariosa fusca pallidius marginata, 0.5-0.6 cm. longa; interiora pallida, mox decidua; pedicelli albo-sericei, 2.5-3 mm. longi. Flores σ in umbella 8-12, basi sericei, flavi. Perianthii segmenta 5-6 late elliptica, concava, trinervia, intus glabra, 3.5 mm. longa, 3 mm. lata. Stamina 6 exteriora 2.5 mm. longa, 3 interiora biglandulosa 2 mm. longa.

"Shrub of 6-10 ft. Moist, shady hillside. South end of Chao Cheo valley. Alt. 7000 ft. March 1905." G. Forrest. No. 374.

This graceful species belongs to the group of *L. sericea*; it is easily recognised by the long peduncles of the inflorescences.

LEGUMINOSAE.

Astragalus coelestis, Diels. Sp. nov.

Caulis fere omnino hypogaeus, gracilis, apice hypophyllis squamiformibus praeditus. Stipulae amplae, late ellipticae,

obtusae, scariosae, circ. 5 mm. longae 3-4 mm. latae; petiolus pubescens, 3-5 cm. longus; foliola 2-3-juga brevissime petiolulata, glaucoviridia, supra glabra subtus primo dense demum parce pubescens, obovata vel late elliptica, apice nonnunquam emarginata, circ. 1 cm. longa, 6-9 mm. lata. Scapus (an semper?) singulus, 5-10 cm. longus, pubescens, 1-4-florus. Calyx campanulatus, extus nigro-pilosus, bilabiatus, labio supero brevissime bidentato, infero 3-dentato, 3-5 mm. longus. Corolla intense coerulea; vexillum orbiculare, apice conspicue emarginatum, 9-10 mm. diamet.; alae 10-11 mm. longae, 3-3.5 mm. latae; carina brevissima, 5 mm. longa, 2 mm. alta. Stylus sursum curvatus brevissimus.

"Plant of 2-4 inches. Flowers bright blue. Dry mountain pastureland on the eastern flank of the Lichiang Range. Lat. 27° 10'. Alt. 9-11,000 ft. May 1906." G. Forrest. No. 2221.

A bright-blue flowering herb, the smallest of the Yunnan species of the genus.

***Astragalus dolichochaete*, Diels. Sp. nov.**

Caules procumbentes, pilis nigris conspersi, 0.3-0.6 m. longi. Stipulae anguste triangulatae, acutae, 4-6 mm. longae. Folia 8-10 cm. longa, 2.5-3 mm. lata, herbacea, foliola 7-9-juga, breviter petiolulata, subelliptica, mucronulata, supra glabra, subtus glauco-pallidiora pilis albis minutis vestita, 1-1.2 cm. longa, 0.3-0.6 cm. lata. Racemi axillares et terminales, longissime (6-10 cm.) pedunculati; bracteae lineari-subulatae, 7-8 mm. longae; pedicelli brevissimi. Calyx pallide viridis pilis nigris conspersus, tubus circ. 4 mm. longus, dentes longissimi aristiformes, 8-10 mm. longi. Corolla sulphurea, apice purpurascens; vexillum suborbiculare, apice emarginatum, 15 mm. diamet.; alae 13 mm. longae, 3-4 mm. latae, carina 12-13 mm. longa, circ. 5 mm. lata; stylus sub stigmate pilis paucis praeditus.

"Procumbent plant of 1-2 ft. Flowers pale lemon yellow, tipped purple. Open mountain pastureland on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 9-11,000 ft. July 1906." G. Forrest. No. 2608.

Belongs to the Subgen. *Phaca*; it is easily recognised by the long awn-like teeth of the calyx.

***Indigofera leptosepala*, Diels. Sp. nov.**

Fruticulus humilis ramosus. Ramuli novelli pilis fuscis patulis villosula. Folia subsessilia, 4-5-juga, rhachis eodem modo villosula; foliola herbacea, pilis longis albidis adpressis pilosa subtus glauca, obovata vel elliptica conspicue mucronulata, 0.6-1.5 cm. longa, 0.4-0.9 cm. lata. Stipulae angustissime lanceo-

latae subulatae, villosulae, ad 5 mm. longae. Racemi breviter pedunculati 5-12-flori, fusco-villosulae. Flores pedicellati. Calyx fusco-villosulus, tubus dilatatus, circ. 2 mm. longus, dentes longi subulati, ad 4 mm. longi. Corolla pallide rosea dense pubescens, 10-12 mm. longa, vexillum ca. 8 mm. latum, carina 3 mm. alta, alae basi breviter plicato-calcaratae 4 mm. latae.

"Dwarf shrub of 1-2 ft. Flowers pale rose. Dry open situations amongst scrub on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10-11,000 ft. July 1906." G. Forrest. No. 2651.

In habit not unlike to *I. hirsuta*, L., but the leaflets are much smaller and fewer, the racemes loose, the flowers much larger. The nearest of the Yunnan species is *I. chaetodonta*, Franch., which has a very similar calyx, but a different corolla, and is "pilis strigosis semiadnatis haud dense vestita" (Franchet, Plant. Delavay., 155).

Millettia Harrowiana, Diels. Sp. nov.

Rami adulti, albo-lenticellati. Folia in tempore florendi nondum matura tenuia, 4-5-juga, foliola opposita petiolulata, glabra, oblongo-elliptica, vel rarius anguste subovata, basi subinaequilateralia, apice breviter acuminata acumine saepe recurvo, 4.5-5.5 cm. longa, 1.5-2.5 cm. lata. Racemi infra folia orti cum pedunculo 12-16 cm. longi; pedicelli 2-3 fasciculati, 2-3 mm. longi, apice bibracteolati, cum calyce campaniformi breviter dentato circ. 5 mm. longo ferrugineo-sericeo-velutino. Corolla pallido-rosea circ. 7 mm. e calyce progressa. Androecium 7-8 mm. longum. Ovarium sericeum.

"Shrub of 10-20 ft. Flowers pale-creamy-rose. Dry, open situations along the base of the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. August 1906. W. Yunnan, China." G. Forrest. No. 1874.

Closely allied to *M. scabricaulis*, Franch., of the Tapintze district east of Tali, but the leaves are softer at the time of flowering, and somewhat smaller, the calyx longer, the corolla smaller and of a paler colour.

Vicia dichroantha, Diels. Sp. nov.

Herba scandens, 1.8-3 m. alta. Caules superne sulcati, puberuli. Folia sessilia 10-15 cm. longa; stipulae ab insertione utrinque productae, deorsum basi obtusae, margine repandocrenatae, sursum semi-ovatae, apice acute acuminatae, 1.5-1.8 mm. longae, 3-4 mm. latae; foliola 8-10, brevissime petiolulata, opposita vel alterna, supra punctulata, subtus glauca pilosa, linearia vel lanceolato-linearia, apice obtusa apiculata, 5-8 cm. longa, 5-8 mm. lata. Racemi axillares longe pedunculati, pedun-

culus 8-12 cm. longus, ipsi 5-6 cm. longi, novelli dense pilosi; pedicelli pilosuli breves; flores patuli vel penduli. Calyx submembranaceus, pallidus, pilosus, limbo obliquus, 4-5.5 mm. longus, dentes e basi lata acutissimi fere subulati, superi quam inferi breviores. Corolla "luride aurantiaca," vexillum apice purpureum late obovatum, apice emarginatum, 12 mm. longum, circ. 8 mm. latum; alae 12 mm. longae, 2.5 mm. latae, carina 10-12 mm. longa, 4 mm. alta.

"Scandent plant of 6-10 ft. Flowers dull orange, vexillum tipped purple. On scrub in dense thickets on the eastern flank of the Lichiang Range. Lat. 27° 12'. Alt. 9500 ft. June 1906." G. Forrest. No. 2443.

A fine species of the Sect. *Cracca*, allied to *V. tenera*, Grah., of the Western Himalaya, but different by its stipules, the more obtuse leaflets, the hairy calyx and larger corolla. From *V. tenera*, var. *yunnanensis*, Franch. (probably a distinct species), it is separated by the nearly subulate sepals. I have not seen Franchet's plant.

Dumasia Forrestii, Diels. Sp. nov.

Caulis scandens, pilis nigris parce conspersus ceterum glaber. Folia subchartacea, inferiora petiolo ad 8 cm. longo praedita, foliola stipellata petiolulata, laete viridia, praeter pilos illos paucos glabra, late ovata, apice retusa vel emarginata mucronulata, terminale 4-4.5 cm. longum, 3.5-4 cm. latum, lateralialia ca. 4 cm. longa, 3-3.5 cm. lata; stipulae lanceolatae nervoso-striatae saepe purpurascens, circ. 5-6 mm. longae. Folia superiora brevius petiolata minora. Racemi axillares pedunculo ipsis longiore 2.5-3.5 cm. longo praediti. Flores conferti. Bractea bracteolaeque stipulis simillimae flori subsessili dense appropinquatae, persistentes, 6-7 mm. longae, 2.5 mm. latae. Calyx pallide viridis circ. 10 mm. longus, 5 mm. latus ore oblique truncatus. Corolla pallide lutea, ca. 15-16 mm. longa. Vexillum calcaratum. Stylus ad curvaturam complanatus.

"Amongst scrub in the Mekong and Wei Hsi valleys. Lat. 27° 28' N. Alt. 7-9000 ft. October 1904." G. Forrest. No. 1124.

A very distinct species, remarkable by its nearly glabrous retuse leaflets, and the large conspicuous bracts and bractlets persisting close to the gibbous base of the calyx.

Mucuna montana, Diels. Sp. nov.

Caulis debilis scandens, 0.4-1.5 m. altus, cinereo-pilosus. Folia longe petiolata, stipulae mox deciduae vel obsoletae; petiolus 10-12 cm. longus, cinereo-pilosus; foliola herbacea, in utraque facie pilosa, subtus pallidiora, cinerea, petioluli

subferrugineo-pilosi. Foliolum intermedium longius (1.5-2.5 cm.) petiolulatum, transverse-subrhombeum, apice cuspidulatum, 6-7 cm. longum, 6.5-8 cm. latum; foliola lateralia inaequilateralia latere basiscopo latiore, subpentagono-elliptica, 6-8 cm. longa, 5.5-6 cm. lata. Racemi quam petiolus breviores, 5-8 cm. longi, pedunculus tenuis gracilis. Flores 5-10. Calyx pilosus, tubus 5-6 mm. longus et latus, dentes superi triangulares vel late lanceolati, 5-6 mm. longi, inferus longior, concavus, acutus. Corolla carnosa, rosea purpureaque; vexillum late ellipticum, apice excisum, 22 mm. longum, circ. 19 mm. latum; alae circ. 25 mm. longae, basi appendiculo calcariformi praeditae; carina circ. 25 mm. longa, apice involuto-recurva.

"Weakly scandent plant of 1½-5 ft. Corolla fleshy, pink and carmine. Dry, stony situations amongst scrub on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 9-10,000 ft. July 1906." G. Forrest. No. 2697.

A very distinct species.

LOGANIACEAE.

Buddleia adenantha, Diels. Sp. nov.

Frutex 1.2-2.5 m. altus. Folia superiora subsessilia, supra praeter nervos glabrescentia, subrugulosa, subtus crasse albotomentella, lanceolata, breviter serrulata, utrinque angustata, apice acuminata, 5-6 cm. longa, 1-1.5 cm. lata. Thyrsi elongati angusti e cymis sessilibus compositi, 5-6 cm. longi, 1-1.2 cm. lati. Calyx tomentellus 3.5 mm. longus, lobi triangulares acuti. Corolla cinereo-purpurascens fragrans extus praeter pilos stellatos sparsos glandulis amplis densissime vestita, tubus 5 mm. longus, intus dense pilosus, limbus brevis, lobi late ovati. Gynaeceum 3 mm. longum, ovarium superne densius stellato-pilosum.

"Shrub of 4-8 ft. Flowers greyish-purple, fragrant. Amongst scrub on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-11,000 ft. Flow. June-August 1906." G. Forrest. No. 4736.

B. adenantha, sp. nov., resembles *B. asiatica*, Lour., in habit; it is easily recognised by the glandular indumentum of the small greyish-purple corollas.

Buddleia agathosma, Diels. Sp. nov.

Frutex 1.2-2.2 m. altus. Caulis tomento deterrenti obtectus, ipse fulvus vel purpurascens. Folia in utraque facie, subtus densius, molliter tomentella tomento deterrenti, petiolus 1.5-3 cm. longus, superne alatus; stipulae rotundae, integrae, 1.5-2 cm. diamet.; lamina herbacea, mollis, supra rugosa, e basi

truncata ovata, crenato-dentata, dentibus conspicuis callosopapiculatis, acuta, 9-14 cm. longa, 6-7 cm. lata, nervi supra immersi subtus prominuli. Inflorescentia demum paniculata, thyrsi bracteati, interrupti, e cymis subglobosis pedunculatis remotis compositi. Calyx tomentellus, 3.5 mm. longus, dentes breves lati. Corolla extus pubescens purpureo-coerulea vel violacea; tubus 6-7 mm. longus, 2.5 mm. latus; lobi 3.5 mm. longi, 3 mm. lati. Stamina supra medium affixa. Ovarium cum stylo pubescens.

"Shrub of 5-9 ft. On exposed cliffs to the west of Yunnanfu. Flowers purplish-lavender, very fragrant. Alt. 8000 ft. Yunnan. Flow. February 1905." G. Forrest. No. 593.

This new species is distinguished from the other Chinese forms by its large stipules, the truncate leaves which have a very soft tomentum and conspicuous regular toothing, and the head-like cymes forming a much interrupted thyrses. In affinity it seems to approach *B. officinalis*, Maxim.

Buddleia brachystachya, Diels. Sp. nov.

Frutex ramosissimus 30-50 cm. altus. Folia opposita petiolata crassiuscula mollia supra praeter costam glabrata subtus dense luteolo-tomentella, oblonga vel lanceolato-oblonga, integra vel varius obsolete dentata, 3-4 cm. longa, 1-1.2 cm. lata. Thyrsi breves nonnunquam fere capitati, 1.5-3 cm. longi. Calyx densissime tomentosus 2.5 mm. longus, lobi crassiusculi breviter triangulares obtusiusculi. Corolla lavandulaceo-coerulea fragrans 0.8-1 cm. longa extus stellato-pubescens, lobi intus glabri circ. 2 mm. longi. Stamina circ. in medio tubi inserta. Ovarium dense pilosum.

"Dwarf shrub of 12-18 inches. Flowers lavender colour and fragrant. In dry exposed situations amongst rocks, on the descent from the Lu-po pass to the Salwin, Mekong-Salwin divide. Lat. about 27° N. Alt. 7-8000 ft." G. Forrest. No. 1076.

B. brachystachya has the appearance of *B. alternifolia*, Max., but the leaves are opposite.

Buddleia Forrestii, Diels. Sp. nov.

Frutex 1.2-2.5 m. altus. Folia superiora in petiolum brevem angustata auriculato-stipulata, mollia, supra pilosula subtus tomento pallide cinnamomeo vestita, lanceolata vel oblanceolata, crenato-serrata, 10-20 cm. longa, 3-5 cm. lata. Inflorescentia thyrsioidea e cymis pedunculatis composita. Flores fragrant, pedicellati, pedicelli 1.5-2 mm. longi parce pilosi. Calycis 4-5 mm. longi tubus parce stellato-pilosus, dentes sinu lato separati, breves, late triangulares, apice subrecurvi. Corolla castaneo-

fusca, 8-10 mm. longa; tubus 3.5 mm. latus, extus parce pilosus, intus pubescens, lobi densius pilosi vel subtomentelli, 2.5-3 mm. longi. Stamina sub medio tubo vel paulo supra affixa. Ovarium glabrum.

"Shrub of 4-8 ft. Flowers grey and maroon, fragrant. Amongst scrub on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 8-10,000 ft. July 1906." G. Forrest. No. 4666.

"Shrub of 10-15 ft. Flowers reddish-maroon, fragrant. On ledges of cliffs and very stony ground, western slopes of the Tsan Shan Range, near head of Yang-pi valley. Lat. 25° 40' N. Alt. 9-10,000 ft. Flow. September 1903." G. Forrest. No. 979.

Allied to the beautiful *B. Colvillei*, Hook. f. of Sikkim, which has very similar leaves, but the flowers of the new species are smaller, the corollas more hairy, and the calyx of a different shape.

***Buddleia myriantha*, Diels. Sp. nov.**

Frutex 1-2.5 m. altus. Folia superiora in petiolum brevem angustata, auriculata auriculis parvis, herbacea, supra sicca atro-viridia, pilosula, subtus dense tomentella cinereo-vel ochraceo-alba, lanceolata, acuta, minute duplicato-serrata, serraturis callosis, 10-13 cm. longa, 2.3-3 cm. lata, costa supra impressa. Inflorescentia paniculata; thyrsi anguste cylindrici, 15-20 cm. longi, 2-2.5 cm. lati, e cymis pedunculatis compositi. Flores angusti, numerosissimi, cinereo-villosi. Calycis tubus 3 mm. longus, dentes lanceolato-lineares vel subulati, 1.5 m. longi, acuti. Corolla saturate vel luride purpurea 5-7 mm. longa. Stamina sub medio vel paulo supra affixa. Ovarium cum stylo clavato glabrum.

"Shrub of 6-10 ft. Flowers dull purple. Dry open situations on the borders of pine woods. Western slopes of the Tsan Shan Range. Yang-pi pass. Lat. 25° 40' N. Alt. 7-9000 ft. September 1905." Forrest. No. 912.

"Shrub of 4-8 ft. Flowers deep purple, fragrant. Dry, stony situations on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 7-9000 ft. June-August 1906." G. Forrest. No. 4760.

Allied to *B. variabilis*, Hemsl., but markedly different by the subulate teeth of the calyx and the villose corolla.

LORANTHACEAE.

***Loranthus Balfourianus*, Diels. Sp. nov.**

Planta 0.3-1 m. longa. Rami crassiusculi laeves, cortice purpureo vel fusco, subnitido obtecti. Folia subsessilia, carnosocoriacea glabra, oblonga, basin versus angustata, apice obtusa, praeter costam utrinque nervis 1-3 acutangulo-abeuntibus

(siccis) prominulis praedita, 4-6 cm. longa, 0.8-1.8 cm. lata. Flores extra-axillares pauci fasciculati, pedicelli 3-5 mm. longi. Bracteae obsoletae. Calyx bracteola triangulari adpressa suffultus, circ. 3 mm. longus, ore undulato paulum ampliatus, breviter ciliatus. Corolla glabra aurantiaco-kermesina, leviter curvata, cylindrica; tubus 15 mm. longus, superne circ. 2.5 mm. latus, basin versus ad 3 mm. dilatatus; limbi lobi 4 cochleariformes 4-5 mm. longi, 1.5 mm. lati. Stamina 4, filamenta purpurascens circ. 2 mm. longa, antherae 2.5 cm. longae. Stylus 20-25 mm. longus. Fructus flavus ovoideus.

"Banks of Mekong between Bati and Tsekou. Alt. 6000 ft. Tibet. 1904." G. Forrest. No. 453.

"Plant of 1-3 ft. Flowers orange crimson, fruit yellow. Parasitical on many plants, but mostly those of the genera *Prunus* and *Salix*. On these in open situations amongst scrub on the eastern flank of the Lichiang Range. Lat. 27° 10' N. Alt. 10,000 ft. May 1906." G. Forrest. No. 2215.

"This species is widely distributed in Yunnan. I have collected it in most valleys from Yunnanfu north to Tsekou 25°-28°. Most commonly parasitical on the Peach and a species of *Salix*. Alt. 4-10,500 ft. April-July."

A distinct species, as far as I can see, not closely allied to any of the species described from India.

Loranthus caloreas, Diels. Sp. nov.

Planta 0.6-1.2 m. diamet. Rami valde nodosi verrucoso-asper, cinereo-corticati. Folia parva, ad ramulos abbreviatis nodiformes fasciculata, breviter petiolata vel subsessilia, coriacea, glabra, oblanceolata vel oblonga obtusa, (sicca) praeter costam enervia, 1.5-2 cm. longa, 2.5-5 mm. lata. Flores supra folia ad apices ramulorum pauci vel bini fasciculati, brevissime (1-2 mm.) pedicellati. Bracteae minutae late reniformes. Bracteola calyci appropinquata subovata, apice obtusa saepe ustulata, 1.6-2 mm. longa. Calyx ovoideo-cyathiformis, limbo in lobulos disruptus, 2-2.5 mm. longus. Corollae tubus curvatus et basi et apice attenuatus, intense scarlatinus, 2-2.5 cm. longus, limbi lobi 4 demum reflexi, saturate virides, circ. 0.5-0.6 cm. longi. Antherae erectae, edentatae, 3.5 mm. longae. Stigma capitatum parvum.

"Plant of 2-4 ft. Flowers bright scarlet, limb of perianth bright green. Parasitical, forming dense brilliantly coloured masses on conifers only, in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 9-11,000 ft. July 1906." G. Forrest. No. 2600.

Allied to *L. Balfourianus*, Diels, but the leaves are smaller, nearly veinless, the branches very rough and grey-barked, the corolla-tube more curved, the free segments green.

MALVACEAE.

Hibiscus Forrestii, Diels. Sp. nov.

Caulis 1·2-1·8 m. altus, praecipue superne hispidus. Foliorum petiolus hispido-pilosus, 6-10 cm. longus; lamina herbacea, in utraque facie hispida, 10-12 cm. longa, 12-15 cm. lata, 5-loba, lobis 2 inferis minoribus, omnibus ovatis acuminatis dentato-serratis. Bracteolae 5 lanceolatae, extus pilis luteolis dense hispidae, 2-2·5 cm. longae. Calyx spathaceus, 2·5 cm. longus, petala lutea basi purpureo-fusca, 5-6 cm. longa. Capsula densissime hispida.

"Plant of 4-6 ft. Flowers yellow, base of petals deep maroon. Dry, open hillsides around Teng-Yueh. Lat. 25° N. Alt. 6-7000 ft. October 1903." G. Forrest. No. 993.

Allied to *H. pungens*, Roxb., but much more hispid in all its parts, the leaves less deeply cut with more ovate segments, the flowers somewhat smaller.

MELASTOMATACEAE.

Oxyspora serrata, Diels. Sp. nov.

Frutex ramosus, 0·6-1·2 m. altus, rami cortice pallido brunneo costato praediti, novelli ad nodos strigulosi. Foliorum petiolus 1-2 cm. longus; lamina membranaceo-herbacea, supra in margine atque ad nervos exteriores faciei inferae parce hirto-setulosa, supra viridis subtus pallide violascens vel purpurascens, anguste ovata vel sublanceolata acuminata, serrata, 6-9 cm. longa, 1·6-3 cm. lata, nervi primarii 3 secundariis transversis conjuncti, secundarii marginales sursum arcuati conjuncti. Panicula terminalis, 5-20-flora. Pedunculi, pedicelli, receptaculum setuloso-glandulifera; pedicelli 3-6 mm. longi. Receptaculum campaniforme, 4-5 mm. longum, 2·5 mm. latum. Petala 8-10 mm. longa, late ovata, apice breviter acuminata, intense rosea. Stamina breviorum 7-8 mm. longorum connectivum basi dorsali calcare brevissimo plerumque reflexo praeditum.

"Branched shrub of 2-4 ft. Flowers bright rose-red. Moist, very shady situations on the Irrawadi-Ming-Kwang pass. Lat. 25° 50' N. Alt. 8-9500 ft. Upper Burmah. October 1903." G. Forrest. No. 960.

Easily recognised by its serrate leaves with bristly hairs.

OLEACEAE.

Ligustrum ionandrum, Diels. Sp. nov.

Frutex dense ramosus 0·9-3 m. altus. Rami cortice pallide cinereo-fusco praediti, novelli dense pubescentes. Folia parva

breviter petiolata subrhombico-elliptica vel subobovata apice obtusa vel acuta subcoriacea supra lucida in utraque facie glabra, nervi vix conspicui, 3 cm. longa, 1.5 cm. lata, ea ramulorum laterali-um dimidio minora. Inflorescentiae ramulos breves terminantes pseudo-racemos circ. 2 cm. longos densifloros efficientes, earum rhachis subvelutina, flores glaberrimi fragrant. Calyx 1.5 mm. longus, apice subtruncatus obsolete 4-dentatus. Corollae albae tubus 4 mm. longus sub limbo infundibuliformi-ampliatu-s, lobi reflexi 1.5-2 mm. longi. Antherae oblongae violaceae e fauce exsertae. Stylus 2-2.5 mm. longus, stigma apice bilobum.

"Compact shrub of 3-9 ft. Flowers white, anthers violet, fragrant. Dry, open situations amongst scrub in side valleys on the eastern flank of the Lichiang Range. Lat. 27° 10' N. Alt. 9-10,000 ft. Flow. May 1906." G. Forrest. No. 2196.

This species is allied to *L. Henryi*, Hemsl., but it has a more compact habit and narrower leaves.

Jasminum Beesianum, G. Forrest et Diels. Sp. nov.

Frutex 0.3-0.9 cm. altus. Rami novelli pilosi demum glabrati, angulati, ramulosi. Folia opposita, simplicia, parva, brevissime petiolata, ovata vel lanceolata, supra praeter costam glabra subtus pubescentia pallida, 1.2-2.5 cm. longa, 0.5-0.8 cm. lata. Flores ad apicem ramulorum singuli vel saepius terni, clavato-pedicellati. Calycis lobi lineares, 2.5-5 mm. longi, quam tubus fere duplo longiores. Corolla rosea vel purpurascens fragrant-issima, tubus circ. 1 cm. longus antrorsum sensim ampliatu-s, lobi erecti vel demum patuli, late elliptici vel suborbiculares, 4-5 mm. longi, 3-4 mm. lati.

"Shrub of 1-3 ft. Flowers pink or deep rose, strongly fragrant. Amongst rocks and stones on dry, barren, open ground at the south end of the Sung-kwei valley. Lat. 26° 20' N. Alt. 8-9000 ft. Flow. April 1906." G. Forrest. No. 2021.

A beautiful scrub, of the section *Unifoliolata*, DC. It is nearly related to a specimen in the Paris Herbarium named *Jasminum Delavayi* by Franchet (but never published), collected by Bonvalot and the Prince of Orleans, between Batang and Litang in a humid valley, on June 19th. This has the corolla lobes somewhat mucronulate, and the foliage more glabrous, but I think it belongs to the same species. Why Franchet named it "*J. Delavayi*" in manuscript I do not know. I have not seen any specimens of it collected by Delavay in the Paris Herbarium. Therefore I prefer not to use the name suggested by Franchet.

ONAGRACEAE.

Epilobium Forrestii, Diels. Sp. nov.

Caulis strictus, simplex vel basi pauci-ramosus ramis virgatis. Folia basalia petiolata, lamina elliptica subtus purpurea glabra; caulina sessilia, glabra, erecta, oblonga, obsolete paucidentata, 1.5-2.5 cm. longa, 0.3-0.6 cm. lata. Flores racemosi, longiuscule pedunculati, pedunculi 2-2.5 cm. longi. Calycis purpurei lobi lineari-lanceolati 6-7 mm. longi, 2 mm. lati. Petala intense roseo-purpurea, 12 mm. longa, 10 mm. lata, apice alte incisa, lobis subtruncatis nonnunquam obsolete angulato-dentatis. Ovarium cinereo-pubescent, mox leviter curvatum, 1.5-2.5 cm. longum. Stylus 10-12 mm. longus, stigmata 3 patentia.

"Plant of 10-16 inches. Flowers deep rose-purple. Stony, boggy situations in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-10,000 ft. July-August 1906." G. Forrest. No. 4460.

PAPAVERACEAE.

Corydalis homopetala, Diels. Sp. nov.

Planta 15-30 cm. alta. (Folia basalia non visa). Folia membranaceo-herbacea, caulina inferiora petiolo 2-4 cm. longo praedita, ternato-composita, pinnae primi ordinis cum petiolulo 3-4 cm. longo bicompositae, segmenta ultima subovata vel oblanceolata, apiculata, 0.5-1 cm. longa. Racemus haud multiflorus. Bractee inciso-dentatae, superiores integrae; pedicelli 3-12 mm. longi, demum decurvato-patuli. Flores flavi, colore obscuriore suffusi, fragrant. Petali exterioris postici lamina vix cristata alata-ve 5 mm. longa; calcar 10 mm. longum subrectum vel levissime decurvatum; petalum exterius anticum (calcare neglecto) postico simillimum, lamina 4 mm. longa, clavis 4 mm. longa. Petala interiora apice cohaerentia, 9-10 mm. longa. Capsula (immatura) obovoidea.

"Plant of 6-12 inches. Flowers yellow with darker markings, fragrant. Open grassy situations on the margins of cane brakes on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10-11,000 ft. Flow. July 1906." G. Forrest. No. 4379.

Not far from *C. petrophila*, Franch., but the foliage is less cut, the flowers yellow, the blade of the outer petal hardy crested.

Corydalis Balfouriana, Diels. Sp. nov.

Radices napiformi-incrassati. Caules complures, simplices, 20-30 cm. alti. Folia basalia pauca, 1-2, petiolo adscendente

4-7 cm. longo praedita, trifoliata, foliola latissime obovata vel obtriangularia, apice vel fere ad medium dentato-incisa, 1-2.3 cm. longa, 1.5-2 cm. lata. Folia caulina 1-2, raro petiolata, plerumquesessilia, ad basin tripartita segmentis integris semiovatis vel lanceolatis vel iterum 2-3-partitis. Bracteae integrae, ovatae, sursum decrescentes. Florum inferiorum pedicelli graciles, 8-15 mm. longi. Petalum exterius posticum vix alatum, apice subacutum, 4-5 mm. longum, calcare 6-8 mm. longo obtuso lato instructum, anticum concavum, anguste alatum, interiora basi bidentata apice cohaerentia atque exterius posticum 10 mm. longum paulo superans.

"Shady places round city wall, Talifu. Alt. 6500 ft." G. Forrest. No. 67.

"Mekong Valley round Hsia Wei Hsi, mountain pastureland, open places in pine woods. Alt. 7-9000 ft." G. Forrest. No. 68.

It is related to *C. pachycentron*, Franch., and *C. trifoliolata*, Franch., but from these and all the allied species easily recognised by its broad shallowly cut basal leaves. I am doubtful whether the locality for No. 67 is right. The specimen is quite identical with No. 68; it may be a mistake with the label.

***Corydalis yunnanensis*, Franch. var. *megalantha*, Diels.**

Flores cum calcare 2-2.7 cm. longi.

"Shady situations in mixed forests on the Mekong-Salwin divide. Lat. 28° 12'. Alt. 10,000 ft. Flow. September 1904." G. Forrest. No. 223.

"Shady situations in the Mekong Valley near Bati. Lat. 27° 40'. Alt. 6-9000 ft. Flow. October 1904." G. Forrest. No. 292.

***Corydalis heterocentra*, Diels. Sp. nov.**

Caules complures, adscendentes, 25-40 cm. alti. Folia membranaceo-herbacea, basalia 10-20 cm. longe petiolata, ternato-composita, pinnae primi ordinis circ. 2.5 cm. longe petiolulatae, ipsae 2-2.5 cm. longae et latae, pinnae secundi et tertii ordinis iterum iterumque fere ad basin tripartitae, segmenta ultima anguste cuneato-linearia, obtusa vel obsolete ustulato-apiculata. Folia caulina pauca, basalibus similia, decrescentia. Bracteae inferiores partitae, superiores oblongae integrae. Pedicelli 1-2.5 cm. longi bracteam superantes. Flores purpurascenti-rosei; petala interiora basin versus albida. Sepala oblonga vel lanceolata paucidentata. Petali exterioris postici lamina ala angusta dentata utrinque praedita, vix cristata, acuta, 8-10 mm. longa, calcar rectum vel paulum decurvum, 12-14 mm. longum. Petali exterioris antici lamina 7-10 mm. longa, utrinque

ala 4-5 mm. lata dentata ornata, clavis 6-7 mm. longa basi conspicue saccata vel breviter calcarata. Petala interiora apice cohaerentia, bidentata, circ. 10 mm. longa.

"Plant of 10-16 inches. Flowers purplish-rose with white markings. Dry, stony situations at the base of cliffs on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-11,000 ft. Flow. August 1906." G. Forrest. No. 4382.

The leaves of this nice plant remind to those of our *C. cava*. The structure of the anticonic petals is remarkable by the broad wings of the lamina and the short basal spur. The shape of the flowers is not unlike that of *C. mucronata*, Franch., of Mupin, which is easily distinguished by its fimbriate sepals.

Corydalis Bulleyana, Diels. Sp. nov.

Rhizoma subrepens. Caules plures, 15-60 cm. alti. Folia radicalia numerosa, glauca, longissime (3-15 cm.) petiolata, lamina ambitu late triangularis, pinnae primi ordinis inferiores petiolulatae, secundi ordinis subsessiles iterum alte fissae, segmenta ultima late cuneata vel demum sublinearia, obtusiuscula vel apiculata, purpureo-marginata. Folia caulina nonnulla basalibus similia decrescentia. Bractaeae oblongae vel obovatae pleraeque integrae. Flores 5 mm. vel brevius pedicellati "roseo-lavandulacei" vel saturate rosei, fragrant. Petali exterioris postici lamina 8-10 mm. longa ala (vel "crista") dentata conspicua ornata, calcar leviter decurvum obtusiusculum 11-14 mm. longum; petalum exterius anticum 10-14 mm. longum, antrorsum crista dentata ornatum, basi minute saccatum. Petala interiora bidentata circ. 6-10 mm. longa. Capsula cylindrica stylo incurvo ornata.

"Plant of 6-10 inches. Flowers deep rich rose, fragrant; margins of leaves crimson. Moist situations on limestone drift at base of limestone cliffs on eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-11,000 ft. June 1906." G. Forrest. No. 2249.

"Au dessus du village de San tchang Kien (Ho Kin), 8 juillet 1889." Delavay. No. 3757 in Herb. Paris.

The species is allied to *C. taliensis*, Franch.

POLYGONACEAE.

Polygonum Emodi, Maxim., var. *dependens*, Diels. Var. nov.

Planta quam typica major et robustior. Rami floriferi ad 20 cm. longi. Folia ad 12 cm. longa, 1.6 cm. lata. Racemi 3-5 cm. longi. Cetera typica.

"Plant of 1-2 ft. Flowers deep crimson. Pendulous on cliffs and boulders, forming clumps, on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20'$ N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 2761.

I have never seen any Himalayan specimen of *P. Emodi*, Meissn., as large as this variety. Apart from the extraordinary development of all parts, our plant agrees with the type in every respect.

***Polygonum jucundum*, Diels. Sp. nov.**

Caulis (vix radicans ?) 0.3-0.6 m. altus, purpurascens, superne parce strigillosus. Ochreae scariosae, fuscae, petiolo multo longiores pilis brevibus recurvis purpurascensibus subhispida. Folia ad basin petioli circ. 0.5 cm. longi auriculo parvo praedita, herbacea subtus pallidiora saepe margine purpurascens, parce hispida, lanceolata vel lanceolato-oblonga, apice acuminata, 5-8 cm. longa, 2.2-2.6 cm. lata. Capitula plerumque geminata, pedunculata pedunculo minute scaberulo, 5-8 mm. diamet. Bractae glabrae, late ovatae, valde concavae, in mediana virides ceterum scarioso-hyalinae, circ. 3-3.5 mm. longae, 2.5 mm. latae. Perianthium basi conspicue attenuata ovarium amplexans, pallide purpureo-roseum; segmenta anguste obovata 4.5-5 mm. longa. Stamina 8, circ. 3 mm. longa, perianthii segmenta aequantia. Ovarium 0.6-0.7 mm. longum, styli ultra medium connati circ. 1.3 mm. longi.

"Plant of 1-2 ft. Flowers pale purplish-pink. Open situations, amongst grass, along the base of the eastern flank of the Tali Range. Lat. $25^{\circ} 40'$ N. Alt. 6700-8000 ft. June-July 1906." G. Forrest. No. 4576.

Sect. *Cephalophilon*. Allied to *P. sphaerocephalum*, Wall., *P. microcephalum*, Don, and *P. capitatum*, Ham. I have not seen the ripe fruit.

***Polygonum cyanandrum*, Diels. Sp. nov.**

Caules basi nonnunquam radicantes, parce ramosi, 5-30 cm. longi. Folia inferiora quam superiora minora. Ochreae scariosae fuscae pilis retrorsis albidis quasi barbatae, petiolo breviores. Petiolus 2-10 mm. longus. Lamina membranacea, subtus pallidior, parce ciliata vel tota glabra, e basi saepe subtruncata ovata vel oblongo-ovata, 0.3-2 cm. longa, 0.25-1.5 cm. lata. Capitula parva pauciflora inter folia summa fere occulta. Flores breviter pedicellati. Perianthii albidii segmenta subobovata vel oblongo-elliptica, 1.3-1.5 mm. longa, 0.8-1 mm. lata. Stamina 8 fertilia, antherae cyaneae. Nectaria interstaminalia conspicua. Styli 3, stigmata capitata.

"Procumbent plant of 6-12 inches. Flowers greenish-white,
G

tipped pink. Moist, grassy situations on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 2670 pt. (Mixed with *P. radicans*, Hemsl.)

"Plant of 2-4 inches. Flowers white. Moist, open situations on mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10-11,000 ft. September 1906." G. Forrest. No. 2923. Much smaller specimens.

Nearly allied to the Himalayan *P. filicaule*, Wall., but more branched; leaves larger, subtruncate at the base, more glabrous; stamens all fertile. In habit, it resembles *Koenigia pilosa*, Maxim. The two specimens are very different in size.

Polygonum radicans, Hemsl. in Journ. Linn. Soc. xxvi, 347.

Perianthii segmenta glandulosa. Stamina fertilia 3, staminodia 5, omnia caerulescentia.

"Plant of 2-5 inches. Flowers pale rose. On moist, moss-covered ledges of cliffs and boulders in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-10,000 ft. August 1906." G. Forrest. No. 4569.

The type is from summit of Mount Omi, Szechuan.

This is very near to *P. cyanandrum*, Diels, and *P. filicaule*, Wall., also to *Koenigia fertilis*, Maxim., but differs by the strigillose leaves, the number of stamens and staminodes.

Polygonum delicatulum, Meissn. in DC. Prodr. xiv (1857), 127.

Specimina nostra androecio trimero atque fructibus perianthio vix longioribus praedita.

"Plant of 3-6 inches. Flowers pale pink. Moist, rocky, or shady situations. Western slopes of the Tsan Shan Range. Lat. 28° 40' N. Alt. 9-11,000 ft. September 1905." G. Forrest. No. 900.

"Plant of 1-4 inches. Flowers pinkish-white. Stony pasture on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-9000 ft. July-August 1906." G. Forrest. No. 4568.

Polygonum Forrestii, Diels. Sp. nov.

Rhizoma sympodiale, longe reptans, hypophyllis amplis scariosis purpureo-fuscis dense obtectum, apice folia sparsa longius petiolata atque caulem floriferum emittens. Caulis parce foliatus plerumque ramo 1-2 emisso recto quasi bifurcatus, 5-25 cm. longus, plus minusve villosus. Folia basalia petiolo 3-5 cm. longo praedita, suborbicularia vel elliptico-reniformia, obtusa, hinc inde pilosa, margine nonnunquam undulato densius ciliato, subtus saepe purpurascens, 1-3 cm. longa, 1.2-3.5 cm. lata,

nervi patentēs. Folia caulina similia, brevius petiolata; ochreae petiolo conspicue breviores. Inflorescentia corymboso-paniculata dense conferta, hinc inde foliata. Bractae tenuiter scariosae fuscae, pedicellis longioribus; pedicelli dense pilosi, 2-4 mm. longi. Tepala 4-5, inaequalia, nonnunquam partim connata, marginibus saepe sese tegentia, obovata vel late obovata, plurinervia, basi subsaccato-producta, ochroleuco-alba, intus ima basi nectariis transversis atropurpureis praedita, 2.5-3.5 mm. longa et lata. Stamina 6-8, circ. 1.5 mm. longa, antherae atropurpureae vel fuscae. Gynaeceum 0.7-0.8 mm. longum, styli 3 liberi, stigmata capitata.

"Marshy ground on hillsides. Descent of Kari Pass, Yangtse-Mekong divide. Alt. 10,000 ft. Tibet, 1904." G. Forrest. No. 38.

"Plant of 2-4 inches. Flowers white. Crevices of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 2911.—Smaller than the other specimens. Stems often not much longer than the basal leaves.

"Plant of 4-8 inches. Flowers creamy white. Moist ledges and in crevices of cliffs in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-11,000 ft. June-September 1906." G. Forrest. No. 4590.

Also Tali region, Delavay, No. 261, No. 4043 in Herb. Paris and Tsekou, Monbeig in Herb. Kew.

This remarkable *Polygonum* is similar in habit to *Oxyria*. Its affinity is with *P. nummularifolium*, Meissn., of the Alpine Himalaya, but it differs by the number of stamens and styles, and generally much larger size. It shows evidently that Hooker (Fl. Brit. Ind. v, 49) was right in placing *P. nummularifolium* into *Aconogon*; Meissner thought it belonged to *Cephalophilon* (DC. Prodr. xiv, 127).

Polygonum suffultum, Maxim. in Bull. Acad. Sc. St. Pétersbourg, xxii (1877), 233. (Mél. biolog. ix, p. 616). I.F.S. ii, 350 (Journ. Linn. Soc. xxvi, 350).

"Plant of 6-12 inches. Flowers pink. Moist, grassy, shady situations in mixed and pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 9-10,000 ft. May 1906." G. Forrest. No. 2186.

"Plant of 9-12 inches. Flowers white. Mossy, shady situations in mixed forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. June-August 1906." G. Forrest. No. 4571.

"Plant of 3-6 inches. Flowers pinkish white. Shady, grassy situations on the margins of pine forests on the eastern flank of

the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 9-11,000 ft. May-June 1906." G. Forrest. No. 4585.

Rhizoma in speciminibus nostris haud rectum, sed horizontale, caules saepe solitarii; folia supra et margine puberula, ceterum plantae japonicae similis videtur. Planta simillima est *Polygonum constans*, Cummins, from Yatung (Chumbi) and Sikkim.

***Polygonum leptopodum*, Diels. Sp. nov.**

Caulis subsimplex vel basi valde ramosus, rami adscendentes, non nisi parte infera foliati, deinde longe nudi, subglabri, 5-30 cm. longi. Stipulae breves pallidae; petiolus foliorum inferiorum 1-1.5 cm. longus, superiorum brevior; lamina firme herbacea, praecipue supra scaberula, e basi sagittata vel truncata triangularis, 1.5-2 cm. longa et (basi) lata, vel minor. Panicula e racemis remotis longe pedunculatis filiformibus composita. Racemi nonnunquam interrupti 0.6-1.5 cm. longi, graciles. Bractae stipulis similes quasi semicymbiformes circ. 1.5 mm. longae, saepe purpurascens-suffusae; pedicelli ad 3 mm. longae. Petala subelliptica 1.5-2 mm. longa, alba vel rosea. Antherae albae vel roseae. Ovarium 0.8 mm. longum, styli 3 liberi filiformes 1 mm. longi.

"South end of Lang Kung valley. Dry, stony hillsides. Alt. 9000 ft. 1904." G. Forrest. No. 202.

"Plant of 2-6 inches. Flowers white. Dry, stony ground at the northern end of the Lichiang Plain. Lat. $27^{\circ} 10' N$. Alt. 8500-9000 ft. July 1906."

"Plant of 6-12 inches. Flowers white. Open, stony pastureland on the eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 7-8000 ft. May 1906." G. Forrest. No. 4570.

Sect. *Fagopyrum*. The only allied species is *Polygonum gracilipes*, Hemsl., of Szechuan and Hupeh; but this has taller, more leafy stems, axillary inflorescences, and fewer more distant flowers in a very narrow spike.

***Polygonum oliganthum*, Diels. Sp. nov.**

Caules numerosi, graciles, basi radicanes, 0.4-0.6 m. longi, minutissime aculeolati, ad nodos aculeolis recurvis magis conspicuis praediti, internodia superiora longa. Stipulae longe tubulosae puberulae, apice truncatae longeque ciliatae, 0.8-1 cm. longae; petiolus purpurascens, scaber, 0.6-0.8 cm. longus; lamina herbacea, e basi truncata ovata, apice acuminata, 2.5-3 cm. longa, 1-1.3 cm. lata, nervi primarii 12-15 utrinque patentibus. Inflorescentia pauciramosa glanduloso-pubescentis, saepe purpureo-suffusa, flores pauci, inferi remoti; bractae latissime ovatae, margine lacerae, 3 mm. longae, plerumque biflorae;

pedicelli 1.5 mm. longi. Petala rosea 3 mm. longa. Ovarium 0.8 mm. longum, styli 3 longe connati, apice liberi, stigmata capitata. Nux perianthio inclusa, perianthium subaequans, trigona brunnea nitida.

"Slender plant of 1-1½ ft. Flowers pale rose. Amongst long grass on mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 10-11,000 ft. September 1906." G. Forrest. No. 2985.

Sect. *Echinocaulon*. Allied to the polymorphous *P. pedunculare*, Wall., from which it differs by the shape of the leaves, the bracts, and the trigonous nut.

***Polygonum calostachyum*, Diels. Sp. nov.**

Caudex percrassus, stipulis fuscis dense obtectus. Caulis 0.3-0.6 m. altus, glaber, foliatus. Foliorum basaliū petiolus 5-7 cm. longus, latus; lamina subchartacea, supra lucida subtus parce puberula, ceterum glabra, elliptica, basi rotundata vel inaequilateraliter in petiolum decurrens, apice breviter acuminata, 10-15 cm. longa, 3.8-4.6 cm. lata. Folia caulina petiolo stipulis breviorē suffulti, lamina basi subcordata nonnunquam subamplectens. Racemi 4-5 cm. longi, fere 2 cm. lati; bractae imbricatae late tubulosae, limbi lobi apice breviter acuminati, pedicelli graciles 5-7 mm. longi. Flores (an semper?) suberecti vel patuli. Corolla "intense kermesina," sicca atropurpurea, petala ovato-elliptica 5-6 mm. longa, 3-4 mm. lata. Stamina 8. Ovarium elongatum, styli liberi 4 mm. longi.

"Plant of 1-2 ft. Flowers deep crimson. Moist mountain meadows on the eastern flank of the Mekong-Salwin divide. Lat. 28° N. Alt. 9-11,000 ft. September 1904. S.-E. Tibet." G. Forrest. No. 241.

Also Tsekou (Monbeig in Herb. Kew!).

Sect. *Bistorta*. An allied plant to this was collected in a very incomplete state by Griffith, in Bhotan, on rocks above Sanah vix infra 9500 ad 10,000 ft. (Griff. Itin. Notes, p. 410, n. 637.) (*P. Griffithii*, Hook. f. cf. Hook. Fl. Brit. Ind. v, 54.) It may prove identical with our new species.

***Polygonum subscaposum*, Diels. Sp. nov.**

Caudex crassus, apice stipulis amplis fuscis foliorum basaliū coronatus. Caules complures non nisi basi foliati, superne squamis fuscis (ochreis elaminatis) tecti, 15-25 cm. longi, glabri. Foliorum basaliū petiolus 2.5-4 cm. longus, latus, glaber; lamina subherbacea, supra scabra subtus tomento pannoso pallide cinnamomeo vel albido dense vestita, ± elliptica vel elliptico-ovata, ad 12 cm. longa 6 cm. lata, sed dimensionibus varia, nervi numerosi

tenues, reticulati, marginem revolutum versus incrassati ibique colore pallidior conspicui. Racemi densiflori, ca. 3 cm. longi, 1.2-1.5 cm. lati; flores intense rosei patuli vel subdecurvi; bractae scariosae fuscae acuminatae.

"Plant of 6-9 inches. Flowers bright pink. Moist, rocky mountain meadows on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 12-13,000 ft. August 1906." G. Forrest. No. 4559.

Sect. *Bistorta*. Allied to *P. affine*, Don, of the Western Himalaya; recognised by the large broad leaves with buff tomentum beneath, the short, nearly leafless, scapes with brown scales.

Rheum Forrestii, Diels. Sp. nov.

Rhizoma robustissimum. Acaulis? Folia (non nisi manca visa) basalia? coriacea, e basi subcordata suborbicularia breviter acuminata. Panícula scapum 0.6-0.8 cm. longum striatum basi glabrum supra papillosum terminans, rami inferiores 5-6 cm. longi iterum ramosi, superiores abbreviati, demum erecti. Pedicelli graciles filiformes. Perianthii segmenta alba, viridi-uninervia, longiora circ. 2 mm. longa, 1.2-1.4 mm. lata. Stamina 9-10, crassa, subconica, brevia, 0.6 mm. longa. Ovarium obovoideum, styli 3 decurvi subclavati. Perianthium fructiferum vix ampliatum. Fructus ambitu subellipticus trialatus, basi alte cordatus, apice subretusus, corpus circ. 7-8 mm. longum, 5-6 mm. latum, granulatum; alae fuscae, 1-1.5 mm. latae.

"Plant of 2-2½ ft. Flowers white. Clefs and ledges of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 9500-11,000 ft. July 1906." G. Forrest. No. 2463.

The material of this interesting addition to the genus is very incomplete. It seems to be related to *R. tibeticum*, Maxim., but further material is wanted for a better understanding of the species.

RANUNCULACEAE.

Clematis Delavayi, Franch., in Bull. Soc. Bot. Fr. xxxii (1885), 360. var. *spinescens*, Balf. f. ms.

Frutex 0.6-1 m. altus, divaricati-ramosus, rigidus, rami demum subspinescentes. Foliorum minorum petioli et rhachides saepe persistentes. Folia 1-2 cm. longa, 2-4-juga, foliola integra, 3-4 mm. longa, 1-2 mm. lata. Flores terminales plerumque solitarii, raro ternati; sepala 0.6-1.2 cm. longa, viridescenti-albida. Cetera typi.

"Extremely arid situation on limestone formation in the valley

of the Yangtse below Pung-tzu-la. Lat. $28^{\circ} 18' N$. Alt. 9-10,000 ft. September 1904." G. Forrest. No. 92.

This is an extremely xerophytic form of *C. Delavayi*, in aspect very unlike the southern type. Still it is easily recognised by the pinnate leaves being silky beneath.

***Thalictrum tofieldioides*, Diels. Sp. nov.**

Rhizoma apice petiolorum pristinorum vestigiis fibrosis vestitum. Folia omnia basalia, petiolo violascente 5-10 cm. longo praedita; lamina estipellata, papyracea, supra lucida, nervis (siccis) prominulis notata, subtus pallide glaucescens, ternata, rami inferiores iterum ternati, segmenta fere sessilia, reniformi-rotundata crenata vel subdentata, foliola 0.7-1 cm. longa. Scapi 1-3, rigescentes, 20-40 cm. alti, sicci sulcati glabri, apice simplices vel ramis suberectis 1-3 aucti, rami basi nudi antrorsum racemum angustum fere subspicatum (floribus initio fere sessilibus demum breviter pedunculatis) gignentes. Perianthium luteum. Sepala staminibus breviora 3-3.5 mm. longa. Stamina 5 mm. longa, filamentum apice haud dilatatum antheram aequans vel sublongius, antherae oblongae minute mucronulatae. Carpella circ. 3-5 quam stamina breviora, ovarium papillosum quam stigma sessile subsagittatum elongatum amplum fere duplo brevius.

"Plant of 9-15 inches. Flowers yellow. Dry, shady situations amongst scrub on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 12' N$. Alt. 9-10,000 ft. May 1906." G. Forrest. No. 2149.

Yunnanfu, Tchong-chan, 25th June 1905. (Ducloux, No. 3578.)

The plant is allied to *T. alpinum*, Linn., and *T. leuconotum*, Franch. From the former it is distinguished by the more rounded leaflets, the taller scapes, the nearly sessile flowers, the yellow perianth, the less mucronate anthers; from *T. leuconotum* it is separated by the exstipellate leaves, the leafless scapes, the greater number of carpels, and the much shorter carpel.

***Anemone trullifolia*, Hook. f. et Thoms. Fl. Ind. p. 22. Flor. Brit. Ind. i. (1872), p. 9.**

var. *holophylla*, Diels.

Folia basalia vix petiolata vel lamina in petiolum sensissime transeunte praedita, tenuiter herbacea, longe pilosa, cuneata, basin versus integra, apice crenato-serrata, 4-8 cm. longa, 1.5-2.3 cm. lata. Scapus 12-18 cm. longus. Folium involucrale tripartitum, segmentis anguste ovatis integerrimis. Perianthium extus coeruleum intus album.

"Plant of 2-5 inches. Perianth white, exterior bluish. Forming large patches on open, grassy, rocky slopes, eastern flank of the Lichiang Range. Lat. $27^{\circ} 20'$ N. Alt. 10-11,000 ft. May 1906. Yunnan, W. China." G. Forrest. No. 2166.

"Plant of 6-10 inches. Interior of perianth white, exterior blue. Open situations in pine forests on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20'$ N. Alt. 10,500-11,000 ft. June 1906." G. Forrest. No. 2226.

This variety is very much like the var. *Souliei*, Fin. et Gagnep., but has white (exterior blue) flowers, not yellow ones.

Anemone obtusiloba, Don, var. **coerulea**, Ulbrich in Engler's Bot. Jahrb. xxxvii, p. 242.

Folia basalia conspicue petiolata; lamina herbacea, subtus dense et longe pilosa, alte trilobata, segmentis latis obovatis crenatis, 1.5-2.5 cm. longa et lata. Scapus 4-10 cm. longus. Folium involucre tripartitum, segmentis late ovatis incisobatis et crenato-serratis. Perianthium extus coeruleum intus album.

"Plant of 2-6 inches. Flower white, exterior of perianth blue. Crevices of rocks, eastern flank of the Lichiang Range. Lat. $27^{\circ} 20'$ N. Alt. 10-11,000 ft. May 1906. Yunnan, W. China." G. Forrest. No. 2152.

"Plant of 2-4 inches. Exterior of perianth blue, interior white. Arid, stony plain at the north end of the Lichiang valley. Lat. $27^{\circ} 12'$ N. Alt. 8500 ft. June 1906." G. Forrest. No. 2232.

A reduced form, only 2.5-5 cm. high, with flowers white striped bright green seems to belong to the same variety.

"Stony pastureland at base of the eastern flank of the Lichiang Range. Lat. $27^{\circ} 12'$ N. Alt. 9-10,000 ft. July 1906." G. Forrest. No. 2634.

This is hardly different from certain forms of *A. trullifolia*, Hook. f. et Thoms.

Caltha palustris, L. var. **umbrosa**, Diels. Var. nov.

Planta gracilis, 15-30 cm. alta. Foliorum basaliu petiolus 10-12 cm. longus, lamina membranaceo-herbacea alte cordata 2-3.5 cm. longa et lata argute dentata. Folia caulina reducta alte partito-incisa segmentis argute serratis vel dentatis. Flores aurantiaco-flavi pro genere parvi. Sepala anguste obovata 0.7-1 cm. longa, 0.5-0.7 cm. lata. Carpella 4-6.

"Plant of 6-9 inches. Flowers orange-yellow. Moist situations in shady pine forests along the base of the eastern flank of the Lichiang Range. Lat. $27^{\circ} 30'$ N. Alt. 11,000 ft. June 1906." G. Forrest. No. 2479.

This variety is easily recognised by the slenderness of all its parts, the small flowers, the limited number of carpels.

Delphinium Forrestii, Diels. Sp. nov.

Caulis crassus, 22–32 cm. altus, dense hispidus. Folia pleraque basalia longe petiolata petiolo 10–12 cm. longo, hispidula, ambitu orbicularia alte 5-fida, segmentis iterum fissis alte crenato-serratis, 5–6 cm. longa, 7–8 cm. lata; folia caulina pauca, brevius et latius petiolata, sensim in bracteas trifidas vel supremas integras transeuntia. Racemus multiflorus, densus, 12 cm. longus, 5 cm. latus; pedunculi floresque axi contigui, bracteolae binae anguste oblongae flori approximatae, hirsutae. Perianthium ex collectore "pellucidum pallide albe dilute lilacinum venis saturatius violaceis pictum," extus pilis longis hispidum et glandulis elongatis (siccis) flavis obsitum. Sepalum posticum calcare quam lamina paulo brevius 2 cm. longo praeditum, lamina circ. 3 cm. longa; lateralia latissime ovata 1.6–1.8 cm. longa. Petala (sicca) atrofusca, omnia glabra, superiora cum calcare quam calcar sepalinum aliquantum brevius circ. 3 cm. longa, inferiora ad basin unguis subcallosa lamina alte bifida praedita, circ. 1.3 cm. longa. Carpella 3, ovarium hirsutum.

"Plant of 9–12 inches. Perianth semi-transparent, of a pale, watery, violet-purple colour, veined a darker shade. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 12–13,000 ft. September 1906." G. Forrest. No. 3030.

This is the first species of the remarkable tribe "*Brevicalcarata*," Huth (in Engler's Bot. Jahrb. xx (1895), 392), discovered in South-western China; it is distinguished from the allied forms by the totally glabrous petals.

Delphinium Bulleyanum, G. Forrest, msc. Sp. nov.

Caulis 0.6–1.4 m. altus, praeter inflorescentiam pubescentem laevis, subglaucescens vel violascens, glaber. Folia et basalia et caulina longe petiolata, petiolo 5–8 cm. longo; lamina utrinque striguloso-pilosula, subtus pallida, 5–6 cm. longa, 9–10 cm. lata, alte palmatifida, segmenta subcuneata, inciso-serrata. Inflorescentia foliis jam mediis ramos fertiles gignentibus ampla paniculata; pedunculi pubescentes stricti, subcurvati, bracteolis 2 oppositis, minutis, subulato-linearibus praediti, 2–2.5 cm. longi. Flores intense et saturate coerulei; perianthium extus puberulum. Sepala ovato-elliptica, apice obtuso-acuminata, 1–1.3 cm. longa, 0.5–1.6 cm. lata, calcar valde hamatum fere hippocrepiforme, ad insertionem floris apice reversum; petala superiora apice emarginata, inferiora alte bifida ciliata atque barbata. Carpella 3, ovarium parce pilosulum.

"Plant of $2\frac{1}{2}$ – $4\frac{1}{2}$ ft. Flowers deep rich blue. Moist, rocky situations amongst scrub on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20'$ N. Alt. 11–12,000 ft. August 1906." G. Forrest. No. 2694.

This *Delphinium* is easily recognised by the curious shape of the spur of the perianth. It resembles therein *D. Bonvaloti*, Franch., of the Tatsienlou region, but is distinguished from that by its pubescent leaves, the colour of the perianth, and the nearly glabrous carpels. Soulié, No. 1097 was placed with *Delphinium Delavayi*, Franch., var. *acuminatum*, Franch., by Finet et Gagnepain, but is different from it; it has a similar spur to that of *D. Bulleyanum*, but longer and more hairy flowers.

Aconitum jucundum, Diels. Sp. nov.

Caulis 0.6–0.9 m. altus, praeter inflorescentiae axem pubescentem glaber. Folia fere omnia basalia, petiolo ad 45 cm. longo praedita; lamina tenuiter herbacea, supra glabra subtus ad nervos prominentes parce pilosa, ambitu pentagona, 13–14 cm. longa, 15–16 cm. lata, alte 5-fida, segmentis cuneato-obovatis, antrorsum argute crenato-serratis serraturis nonnullis acuminato-protractis. Racemus simplex vel basi subramosus gracilis; bractae basales inferiores longe vaginantes, apice breviter 5- vel trifida foliaceae, superiores ovatae vel oblongae, integrae coloratae; pedunculi graciles, inferiores 2.5 cm. longi, superiores breviores luteo-hirsuti. Flores "roseo-purpurascens" parce pilosi. Cassis gracilis 1.6–1.8 cm. alta, basi 1–1.2 cm. lata in rostrum subrecurvum elongata. Sepala lateralialia 1 cm. longa, 0.9 cm. lata, intus barbata, inferiora anguste ovata vel lanceolata 0.7 cm. longa. Petala calcare involuto et lamina illud vix superante appendiculo barbulato ornata praedita 1.5 cm. longa. Carpella 3, ovarium dense pilosum.

"Plant of 2–3 ft. Flowers rose-purple. Open mountain meadows on the eastern flank of the Tali Range. Lat. $25^{\circ} 40'$ N. Alt. 9–11,000 ft. August 1906." G. Forrest. No. 4369.

This is a species of the *Lycotomum* section, but completely different from *A. brevicaratum* (Fin. et Gagnep.), Diels. The stem and leaves are nearly glabrous, the flowers pedunculate, the perianth pale coloured, the hood less beaked, the petals totally different, and the carpels more hairy, although all other parts of the plant are much more glabrous.

It resembles *A. scaposum*, Franch., of Central China, but the bracts are all entire, the hood shorter, the leaves more deeply cut and more glabrous.

Aconitum brevicealcaratum (Fin. et Gagnep. s. tit. var.) Diels.

A. Lycoctonum, Linn., var. *brevicalcaratum*, Fin. et Gagnep.,
f. *bracteatum*, Fin. et Gagnep. in Bull. Soc. Bot. France, li
(1904); Contrib. Fl. As. Orient. i. (1905), 199, pt. vi, fig. 29.

Planta 0.6–0.9 m. alta, tota pilis sericeo-velutinis (siccis) aureo-nitentibus vestita. Folia fere omnia basalia, longissime (30–35 cm.) petiolata; lamina ambitu fere rotunda, 10–13 cm. longa et lata, alte 5–7-fida, segmentis obovatis iterum fissis atque inciso-serratis, nervi primarii et secundarii subtus prominentes, dense velutini. Racemus angustus, simplex, vel basi ramis erectis 2–4 auctus; bracteae inferae partitae, mediae trifidae, supremae integrae flores novellos superantes. Flores subsessiles vel demum pedicello brevi aureo-velutino praediti, luride livido-violacei; perianthium ± pilosum vel pubescens. Cassis 2.2–2.5 cm. alta, basi 1.2 cm. lata in rostrum conspicuum progressa. Sepala lateralalia circ. 1.2 cm. diamet., inferiora oblongo-ovata 1 cm. longa, 0.4 cm. lata. Petala calcare obtuso brevissimo et lamina linguiformi illo multo longiore nuda praedita 2–2.2 cm. longa. Carpella 3, ovarium parce pilosum.

"Plant of 2–3 ft. Flowers dull livid purple. Open, grassy mountain slopes on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11–12,000 ft. July 1906." G. Forrest. No. 2777.

This fine species of the *Lycoctonum* section is recognised by its conspicuously beaked hood, the obsolete spur of the petals, the nearly sessile flowers, and the golden hue of the whole plant.

Aconitum Bulleyanum, Diels. Sp. nov.

Planta fere glabra, circ. 1.2 m. alta. Caulis glaberrimus, nitidus, superne subvolubilis. Foliorum inferiorum petiolus 10–12 cm. longus, superiorum 6–7 cm. longus; lamina herbacea, in utraque facie glabra, 10–13 cm. longa, 15–20 cm. lata, alte 5–7-lobata, segmentis alte incisis, argute dentatis, dentibus mucronulatis, nervi in utraque facie (sicci), colore pallidi. Inflorescentiae ex axillis foliorum etiam inferiorum ortae, patentes, pauciflorae, 11–14 cm. longae; pedicelli subrectangulo-patentes vel refracti, 3–3.5 cm. longi. Sepala extus glabra, margine et intus pilosa, saturate violacea, cassis circ. 2 cm. longa, 1.2–1.5 cm. lata, basi linea obliqua truncata; sepala inferiora circ. 1.5 cm. longa. Petala usque 1.5–1.7 cm. longo et lamina 1 cm. longa emarginata praedita, calcare recurvato. Stamina glabra non dentata. Carpella 5 glabra.

"Plant of 4 ft. Flowers deep purple. Open situations on the margins of pine forests on the eastern flank of the Tali Range.

Lat. 25° 40' N. Alt. 10-11,000 ft. September 1906." G. Forrest. No. 4372.

Allied perhaps to *A. Delavayi*, but distinguished by its glabrous leaves and flowers, by the dark colour of the flower and the glabrous carpels.

It is the same as "*Aconitum palmatum*, Don" (Delavay, No. 4242.)

Aconitum Souliei, Fin. et Gagnep. in Contrib. Flore As. Orient. i. (1905), 212, pt. ix, f. B. 3-5.

Flore violaceo.

"Pine woods at an altitude of 14,000 ft. On range between Chung tien plateau and Yangtse valley." Forrest. No. 270.

The leaves are more glabrous than in the type, and the flowers violet, not pale yellow as in Soulie's plant.

Aconitum transectum, Diels. Sp. nov.

Caulis 0.9-1.6 m. altus, pubescens, superne ramosus. Folia infima tempore florendi evanida, inferiora petiolo circ. 5-7 cm. longo praedita, lamina 5-7-palmata, praeter nervos subtus pilulosos glabra, segmenta primaria ambitu anguste obovata alte pinnatifida, segmenta secundaria inciso-dentata dentibus breviter mucronulatis; segmentum primarium medianum circ. 8-9 cm. longum, 4-4.5 cm. latum, nervi principales subtus prominentes. Folia superiora brevius petiolata, cum illis ramorum demum fere sessilia. Rami floriferi inferiores arcuato-adscentes; racemus terminalis ad 35 cm. longus. Flores breviter pedunculati, cum pedunculo extus minute pubescentes, pallidissime coerulei vel albescentes, margine intense coeruleo-tincti. Cassis ampla circ. 2-2.3 cm. lata et alta, latere infero linea rectissima truncata, apice rostro parvo praedita. Petala ungue circ. 1 cm. longo piloso instructa, calcare fere recto apice saccato atque lamina bifida ornata. Filamenta glabra. Carpella 3-4 sericeo-pilosa.

"Plant of 3-5 ft. Flowers very pale blue, almost white, with the margins of the perianth rich bright blue. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 11-12,000 ft. August-September 1906." G. Forrest. No. 2868.

In habit, similar to *A. Kusnezoffii*, Rehb., and *A. Wilsoni*, Stapf, but distinguished by the petals which are not unlike to those of *A. ferox*, Wall., and remarkable by its very pale flowers, with a large hood, being truncate at the base by a completely straight line.

Aconitum brachypodum, Diels. Sp. nov.

Caulis basi nudus, 0.5-0.6 m. altus, superne pubescens. Folia conferta, brevissime (vix 1 cm.) petiolata, 5-7-partita, segmenta

iterum alte fissa, ultima linearia vel anguste triangularia, utrinque glabra, subtus pallidiora. Racemus 10-15 cm. longus. Pedunculi stricti, pubescentes, 2-3 cm. longi. Flores 3-3.3 cm. longi, 2-2.3 cm. lati, (ex collectore) "intense caerulei basin perianthii versus pallidiores." Sepala extus minute pilosula; cassis mediocris conspicue curvata rostrata; petala ungue circ. 2 cm. longo, lamina brevi, calcare parvo praedita. Stamina filamenta dentata. Carpella 5, ovarium (siccum) luteo-velutinum.

"Plant of 1½-2 ft. Flowers bright blue, lighter towards base of perianth. Open, grassy situations in, and on the margins of, pine forests on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 3044.

The species is easily recognised by its short petioles, the curved and conspicuously beaked casket of the flower, and the dense velvet of the ovary.

This is close to part of *A. Napellum*, Linn., var. *sessiliflorum*, Fin. et Gagnep., as far as Soulié, No. 3034 of Yargong, and Soulié, No. 358 of Tizou, are concerned.

***Aconitum venatorium*, Diels. Sp. nov.**

Caulis ex collectore 0.5-1 m. altus. Folia prope basin caulis conferta, longe (15-20 cm.) petiolata; lamina utrinque glabra, subtus pallidissima, 10-12 cm. longa, 18-25 cm. lata, tripartita, segmenta primaria petiolulata vel saltem tenuissime contracta, iterum tri-vel quinquefida, segmenta ultima alte serrata serraturis ustulato-mucronulatis. Racemus simplex angustissimus, bracteatus, pubescens, ad 40 cm. longus, 4-4.5 cm. latus; pedunculi stricti, erecti, cauli fere adpressi. Bractee integrae, ovatae. Flores 2.5 cm. longi, 1.5 mm. lati. Sepala puberula, intense violacea. Cassis circ. 2.2-2.5 cm. alta, 1.4-1.6 cm. lata, apice breviter rostrata. Petala calcare parvo obtuso ornata. Stamina plerumque haud dentata. Carpella 5, ovarium pilosum.

"Open, grassy, rocky situations on the descent from the Ming-Kwong-Irrawadi divide towards Tsu-yu-ho, in the Irrawadi basin. Lat. 26° N. Alt. 9-10,000 ft. Upper Burma. October 1905." G. Forrest. No. 826. This is the species of *Aconitum* from the tubers of which is expressed the arrow poison in use by the Tibetans, Mossoo, Lissoo, Minchia, Lutz, Chintzu, and other tribes of N.-W. Yunnan, and S.-E. China."

"Erect plant of 1½-3 ft. Flowers deep violet purple. Moist, open hillsides, edges of scrub, etc. Irrawadi-Salwen divide. Lat. about 26° N. Alt. 8-11,000 ft. October 1905." G. Forrest. No. 883.

"Fragments of a plant collected and brought in by a Lissoo boy. Habitat, head of Ming Kwong valley in pine-woods?

Not likely to be a cultivated specimen in such a country which is very wild. January 1906." G. Forrest. No. 1101.

This species is near to *A. acaule*, but differs by the harder, more deeply cut leaves, the smaller bracts, the shortly spurred petals, the less velvety ovaries, which are more narrowed at the top, and bear a longer style.

Aconitum acaule (Fin. et Gagnep. sub tit. var.), Diels.

Aconitum Napellus, L. var. *acaule*, Fin. et Gagnep. in Bull. Soc. Bot. France, li (1904); in Contrib. Fl. As. Orient. i. (1905), 209.

Caulis (ex collectore) 0.5-0.9 m., inferne glaber, superne minute velutinus. Folia 2-3 basi appropinquata, petiolo longissimo (circ. 20 cm.) praedita, media mox decrescentia, superiora bracteoidea, lamina inferiorum 8-12 cm. longa, 10-14 cm. lata, tripartita, segmenta lateraliter iterum alte bifida, medium trifidum, omnia conspicue serrata, omnia subtus pallida, glabra vel praecipue ad nervos subtus elevatos pilosa. Racemus simplex vel basi ramis brevibus paniculato-auctus, bracteatus, velutinus, angustus, 12-30 cm. longus, 5-6 cm. latus. Bracteae (saltem superiores) oblongae, integrae, nonnunquam leviter coloratae. Flores circ. 3 cm. longi, 1.5-1.6 cm. lati. Sepala pubescentia, intense coerulea. Cassis circ. 2.5 cm. alta, angusta, apice rostrata. Petala apice obtusissima, haud calcarata, lamina brevi praedita. Stamina saltem interiora dentata. Carpella 5, ovarium (siccum) luteo-velutinum.

"Open mountain pastureland on the Tali Range to the west of Tali fu. Lat. 25° 40' N. Alt. 9-10,000 ft. October 1904." G. Forrest. No. 280.

"Plant of 1-2½ ft. Flowers deep clear blue. Open, grassy ledges of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10,500-11,500 ft. October 1906." G. Forrest. No. 3089.

"Plant of 1½-3 ft. Flowers deep blue. Dry ledges, and at the base of cliffs in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-10,000 ft. August-October 1906." G. Forrest. No. 4691.

The bracteate narrow raceme of medium-sized deep blue flowers, the beaked hood, the golden velvet of the ovaries are distinct features of this species.

ROSACEAE.

Sibiraea tomentosa, Diels. Sp. nov.

Frutex 0.6-1.2 m. altus. Rami juniores cortice fusco-purpureo obtecti, novelli tomentelli. Folia ad apices ramorum conferta,

coriacea, supra laevia glabra, margine et subtus cinereo-tomentosa nervis tomento occultis, oblanceolata, 5-7 cm. longa, 1.5-2.5 cm. lata, apice brevissime apiculata. Spicae confertae sessiles, ♂ 1.5-3 cm. longae densiflorae. Calycis tubus 1.5 mm. longus late infundibuliformis, lobi triangulares 2 mm. longi. Petala spathulata, calyce tenuiora, pallide ochroleuco-alba 2.5 mm. longa. Stamina circ. 20, circa 2 mm. longa. Spicae fructiferae 3-3.5 cm. longae. Carpodia 5 libera, ventre sub apice pilosa, ceterum glabra, laevia, lucida, brunnea.

"Shrub of 2-4 ft. Flowers pale yellowish-white. Moist, rocky situations in the bed of a stream on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 11,000 ft. Flow. et fruit. June 1906." G. Forrest. No. 2432.

Potentilla articulata, Franch., in Plant. Delavay. p. 210; Th. Wolf, Monog. der Gatt. Potent.—(Biblio. Bot. 71, 1908, p. 72.)

Ovarium glabrum; stylus subfiliformis subterminalis. Achaenia matura nondum exstant.

"Tufted plant of 1-2½ inches. Flowers bright canary yellow, shaded darker towards base of petals. Crevices and ledges of limestone cliffs in dry situations on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 12-13,000 ft. September 1906." G. Forrest. No. 2950.

The structure and insertion of the style confirms the affinity of this remarkable species to *P. biflora*, Willd.

Potentilla stenophylla (Franch.) Diels. Comb. nov. Franch. sub tit. var. in Plant. Delavay. (1889), 214.

Rhizoma crassum, collo stipulis amplis scariosis fuscis obtectum. Folia brevissime pedunculata vel subsessilia, pinnata, 5-8 cm. longa, 1.5-2.5 cm. lata, primo sericea demum praeter marginem ciliatum et dentes sericeo-barbato glabrescentia; foliola numerosa subimbricantia, basi sessilia subcordato-rotundata, apice truncata dentibus 3 conspicuis subaequalibus ornata ceterum integra. Scapi praeter bractaeas parvas nudi 8-10 cm. longi, saepe 1-2-flori. Calyx longe pilosus, sepala 4-5 mm. longa. Petala aurantiaco-flava, suborbicularia, 10 mm. diamet. Stamina 3.5-4 mm. longa. Receptaculum pilosum, carpella numerosa, glabra, ovarium 1 mm. longum; stylus ventralis subterminalis filiformis 2.6 mm. longus.

"Plant of 3-4 inches. Flowers orange-yellow. On ledges and in crevices of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11-12,000 ft. Flow. September 1906." G. Forrest. No. 2924.

Tsang chan (Delavay!).

This pretty *Potentilla* is related to *P. peduncularis*, Don, but is easily recognised by its low habit, the nearly sessile, very narrow leaves, tridentate leaflets, and short scapes. There are often only very few flowers.

Sorbus reducta, Diels. Sp. nov.

Frutex humilis, 15-60 cm. altus. Rami adulti, cortice fusco vel cinerascente, sublucido tecti. Ramuli breves, apice folia circ. 3 atque inflorescentiam gignentes. Folia stipulis e basi lanceolata setaceis 3-4 mm. longis et petiolo 1-1.5 cm. longo praedita, rhachis pallide purpurascens anguste alata, foliola 4-6-juga, supra parce pilosa subtus glauca glaberrima, oblongo-elliptica, a medio ad apicem adpresse serrata serraturis apiculatis, 1.3-2 cm. longa, 0.5-0.7 cm. lata. Inflorescentiae parvae, 5-10-florae; pedunculus 2-2.5 cm. longus, pilosulus et glabrescens. Calycis tubus latus, 3 mm. longus, glabrescens; lobi triangulares, 1.5 mm. longi, apice purpurascens, intus et margine lanuginosi. Petala alba, ex ungue brevi suborbicularia, 3-3.5 mm. longa et lata. Stamina breviter, 2 mm. longa, filamenta anguste triangularia. Styli 5, ima basi pilosula, 2.5 mm. longa.

"Small shrub of 6-24 inches. Flowers white. Forming underscrub in dense thickets and mixed woods on the eastern flank of the Lichiang Range. Lat. 27° 10' N. Alt. 10,000 ft. Flow. June 1906." G. Forrest. No. 2238.

This species is easily recognised by its small size, small leaves, and few-flowered inflorescences.

Photinia Franchetiana, Diels. Nom. nov.

Eriobotrya Griffithii, Franch., in Plant. Delavay. p. 224 (1889), non *Photinia Griffithii*, Dcne. Mém. Pom. 142.

Foliorum petiolus circ. 2.5 cm. longus, lamina coriacea, glaberrima, subtus pallida, obovato-elliptica vel obovata, 9-12 cm. longa, 4.5-7 cm. lata.

"Valley of the Yangtse below Chi Tien. Alt. 7000 ft. Tree of 15-30 ft. Yunnan. October 1904." George Forrest. No. 487.

Forrest's plant being in fruit I have not examined the flowers; but the leaves are very glabrous and much broader than in *Photinia Griffithii*, Dcne., collected in Bhotan by Griffith. I think the latter is quite different from our Yunnan plant.

Cotoneaster verruculosa, Diels. Sp. nov.

Frutex prostratus, 0.6-1.2 m. altus. Rami cortice cinereo sublucido tecti. Ramuli ultimi brunnei dense verruculosi, saepe hispidi, stipulisque lanceolatis longius persistentibus obtecti. Folia petiolo 2-5 mm. longo praedita, subcoriacea, parce pilosa demum glabrata, supra sublucida subtus pallida,

late elliptica vel suborbicularia, parva, 0.8-1.4 cm. longa, 0.7-1.2 cm. lata, nervi subtus obsoleti. [Flores non visi]. Drupa breviter pedicellata, (sicca) rubra 0.8-1 cm. longa.

"Prostrate shrub of 2-4 ft. Flowers white. On rocks and humus-covered boulders in dry situations, side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-10,000 ft. June-July 1906." G. Forrest. No. 4427.

Habit of *C. horizontalis*, Decne, but differing in the verruculose branchlets with more persistent stipules, by the still more orbicular leaves, and the fruit being three times as large.

Cotoneaster hebeophylla, Diels. Sp. nov.

Frutex divaricato-ramosus, 1.8-3 m. altus; rami cinereo-corticati, patentes, juniores purpurei sublucidi. Ramuli foliati florigerique nonnunquam tomentelli, ad 3 cm. longi, graciles. Folia breviter petiolata, decidua, primo pilosa demum glabrescentia, subtus glauca, elliptica vel saepius obovata, obtusa vel retusa, 1-2.5 cm. longa, 0.7-1.2 cm. lata, nervi subtus haud prominentes. Corymbi 6-16-flori, pedunculi et pedicelli pilosi demum glabrati. Calyx infundibuliformis demum glabratus, dentes late triangulares apice purpurei atque barbulato-ciliati. Petala alba, unguiculata, orbiculata, 3-4 mm. diamet. Antherae violaceae. (Fructus non visus.)

"Shrub of 6-8 ft. Flowers white. Open situations at the north end of the Chung-Tien plateau on the ascent of pass leading to the Yangtse valley. Lat. 28° N. Alt. 14,000 ft. September 1904." G. Forrest. No. 283.

"Spreading shrub of 6-10 ft. Flowers white, anthers violet. Moist, open situations on banks of stream at north end of the Lichiang valley. Lat. 27° 10' N. Alt. 8500-9000 ft. May 1906." G. Forrest. No. 2110.

Allied to the *C. bacillaris*, Wall.; but the fruit being not yet known, I prefer to keep it distinct from that Western Himalayan species.

Cotoneaster insculpta, Diels. Sp. nov.

Frutex divaricato-ramosus, rami cortice atropurpurea praediti, novelli cinereo-pilosi; ramuli abbreviati foliati florigerique vix 0.5 cm. longiores. Folia breviter petiolata, persistentia, coriacea, supra glabra lucida, costa nervisque valde insculptis venisque subrugosa, subtus albo-tomentosa, margine anguste recurva, ovata, brevissime apiculata, 1.5-2.5 cm. longa, 1.2 cm. lata, nervi primarii circ. 4 utrinque a costa abeuntes. [Flores non visi.] Drupae (sicae) singulae, rubrae, 6-7 mm. diamet.

"Spreading shrub of 4-9 ft. Flowers white. On open, dry hillsides around Lu-chang, Salwin valley, Salwin-Irrawadi

divide. Lat. 26° N. Alt. 6-7000 ft. November 1903." G. Forrest. No. 800.

A similar plant was collected by Delavay (No. 2538).

Allied to *C. pannosa*, Franch., but the leaves more shining, with the nerves deeper sunk, and the flowers apparently mostly solitary.

RUBIACEAE.

Luculia gratissima, Sweet. Brit. Fl. Gard. t. 145. Hook. f. Fl. Brit. Ind. iii, p. 36 (1880).

This plant is very variable also in Yunnan. The difference between the typical species and *L. Pinccana*, Hook.f., is apparently not a specific one. Forrest collected the following forms:—

1. Inflorescence glabrous. Corolla lobes with a short erose appendage at each side close to the base.

"Spreading shrub of 4-10 ft. Flowers pale pink, corolla fleshy, deliciously fragrant, perfume same as apple blossom. Dry, open situations, slopes of the Salwin, Salwin-Irrawadi divide. Lat. $26^{\circ} 15'$ to 27° N. Alt. 5500-7000 ft. Forms a distinct belt. November 1903. The Chinese call it "Ting shan." G. Forrest. No. 967 partly ♂.

"Shrub of 6-20 ft. Flowers rose-pink, fragrant. Dry, open situations in the Lichiang valley. Lat. $27^{\circ} 10'$. Alt. 8-9000 ft. September 1906." G. Forrest. No. 2991 ♀.

"Shrub of 10-30 ft. Open situations in mixed thickets on the eastern flank of the Tali Range. Lat. $25^{\circ} 40'$ N. Alt. 6700-8000 ft. July-September 1906." G. Forrest. No. 4698 ♂.

2. Inflorescence hairy, ovary whitish-tomentose. Corolla lobes with a short erose or fimbriate appendage at each side close to the base.

"Dry, open situations, slopes of the Salwin, Salwin-Irrawadi divide. Lat. $26^{\circ} 15'$ to 27° N. Alt. 5500-7000 ft." G. Forrest. No. 967 partly ♀.

"Dry hillsides amongst scrub. Valley of the Salwin between Hsia-Ku Ti and Ya-Ko, Salwin-Irrawadi divide. Lat. $26^{\circ} 30'$. Alt. 5-7000 ft. November 1903." G. Forrest. No. 1027.

Leptodermis Forrestii, Diels. Sp. nov.

Frutex ramosus, 0.6-1.2 m. altus. Ramuli basi nudi, antrorsum foliati. Folia breviter petiolata stipulis obtusis vel truncatis glanduloso-fimbriatis praedita membranaceo-herbacea, supra sparse strigosa, subtus glabra glaucescentia, 1.5-2.5 cm. longa, 1-1.2 cm. lata. Flores ad apices ramulorum solitarii, ampli, basi stipulis foliorum 2 plerumque laminarum liberis tecti. Calycis glaberrimi tubus 2 mm. longus, segmenta lanceolata,

subrigida, acuta 2 mm. longa. Corolla colore lavendulaceo vel saturate roseo ornata; tubus glaber 13-15 mm. longus, lobi segmenta supra pilosa, eroso-dentata, 7 mm. longa et lata, expansa. Stamina 3 mm. longa. Styli 12 mm. longi, rami 2-3 dense papilloso.

"Shrub of 2-4 ft. Flowers rose-lavender, drying black. Open, shady situations on the margins of mixed forests on the eastern flank of the Lichiang Range. Lat. 27° 12'. Alt. 9500-10,000 ft. Flow. June 1906." G. Forrest. No. 2382.

"Branching shrub of 4-6 ft. Flowers pure lavender, non-fragrant. Very shady situations in a deep side valley on the eastern flank of the Lichiang Range. Lat. 27° 20'. Alt. 11,000 ft. Flow. June 1906." G. Forrest. No. 2403.

This is easily recognised in the genus by its large solitary flowers and the 2-3-branched style.

Leptodermis glauca (Franch.), Diels. Sp. nov.

Hamiltonia glauca, Franch., ms. in schedis.

Frutex 0.3-0.6 m. altus. Rami cortice brunneo obtecti, ramuli numerosi foliati floriferique breves, vix 1.5 cm. longiores. Folia ad petiolum perbreve ciliata, ceterum glabra, subtus glaucescentia, elliptica obovato-elliptica vel oblonga, nonnunquam 1.5 cm. longa, 0.7 cm. lata sed plerumque minora, obtusa vel brevissime apiculata, nervi haud prominuli; stipulae minutae. Cymae terminales, plerumque 3-florae, subsessiles. Bracteolae minutae, liberae, ciliatae, calyci appropinquatae. Calyx praeter dentes ciliatos glaber, tubus 2-2.5 mm. longus, dentes triangulares ca. 0.8 mm. longi. Corolla lavandulacea, 7-9 mm. longa, tubus gracilis, glaber, sensim ampliatus, lobi suborbiculares intus puberuli, 4 mm. longi et lati, parte mediana lanceolata apice apiculata, a partibus lateralibus tenuioribus margine subcrispata diversa.

"Shrub of 1-2 ft. Flowers lavender. Dry, stony situations on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 7-9000 ft. June-July 1906." G. Forrest. No. 4796.

Collected before in the same neighbourhood by Delavay.

The species is recognised by its glaucous leaves and the very small bractlets, which are nearly free.

Leptodermis Wilsoni, Hort. Kew ex Herb. Kew.

Frutex. Rami cortice brunneo obtecti, ramuli foliati floriferique abbreviati 4-5 cm. longi. Folia petiolo 0.3-0.5 cm. longo praedita, lamina herbacea, ovata vel obovato-elliptica, subtus pallidiora, praeter costam fere glabra, 1.5-2.5 cm. longa, 0.6-1.2 cm. lata, nervi non prominuli. Cymae ad apices ramulorum plerumque triflorae. Bracteolae 1.5-2 mm. longae, ± connatae,

apiculatae, pallidae, subscariosae. Calycis tubus ca. 2.2 mm. longus, dentes anguste triangulares, 1.2 mm. longi. Corolla lilacina, tubus 10-12 mm. longus, lobi subexpansi, suborbiculares, 4-6 mm. longi, 4-5 mm. lati, parte mediana apice calloso-apiculata puberula a lateribus tenuioribus margine undulato-erosis minus diversa.

"Shrub of 4-6 ft. Flowers soft lavender. Shady situations on the margins of mixed forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. July-August 1906." G. Forrest. No. 4789.

"Mekong-Salwin divide behind Tsekou Mission. Tibet. 1904." G. Forrest. No. 580.

"Valley of the Mekong between Yeh Chih and Bati. Alt. 6-7000 ft. Tibet. 1904." G. Forrest. No. 367.

Nearly allied to *L. glauca* (Franch.), Diels, but the leaves are larger and not so glabrous, the bracteoles larger and more connate, the corolla larger.

Leptodermis pilosa (Franchet), Diels. Sp. nov.

Hamiltonia pilosa Franchet, ms. in schedis.

Frutex 1.5-3 m. altus. Rami brunneo-corticati, juniores purpurei novelli ± puberuli. Folia remota, breviter petiolata, herbacea, in utraque facie pilosa, subtus pallida, ovata, 1.5-2.5 cm. longa, 1-1.5 cm. lata, nervi subtus prominuli; stipulae patulae subscariosae pallide fuscae, e basi lanceolata longe acutae, ca. 2.5 mm. longae. Cymae in ramulis abbreviatis axillares atque terminales confertae. Bracteolae connatae, late ovatae, scariosae, nervosae, conspicue mucronatae, 2.5 mm. longae, ciliatae calycem tegentes. Calycis tubus ca. 1 mm. longus, segmenta lata, subtruncata, ciliata, 1 mm. longa. Corolla lilacina, ± papilloso-tomentella, tubus 10 mm. longus, limbus parvus, lobi suberecti 2.5 mm. diamet. Capsula anguste ovoidea, bracteolis duplo longior, atrofusca, nitida.

"Base of hills, Hoching and Lichiang valleys, and other places. Alt. 7-10,000 ft. Shrub of 5-10 ft. Flowers lilac, sometimes white. September 1904." G. Forrest. No. 581.

"Much branched shrub of 5-8 ft. Flowers lavender, drying black. Open, dry and moist situations on the Lichiang plain along the base of the Lichiang Range. Lat. 27° N. Alt. 8500-9000 ft. August 1906." G. Forrest. No. 2731. This specimen is more glabrous than No. 581. Collected before near Tali (Delavay, No. 146).

Allied to *L. Griffithii*, Hook.f., of the Khasia Hills, but more hairy, the stipules spreading, the calyx teeth ciliate and much broader.

Rubia pallida, Diels. Sp. nov.

Caules flaccidi, ramosi, uncinato-scabri. Foliorum (superiorum) petiolus quam lamina plerumque longior 0·7–2 cm. longus scabridus, lamina ad marginem costamque scabra, ovata vel lanceolata, acuminata, 0·6–1·2 cm. longa, 0·25–0·4 cm. lata. Corymbuli axillares pedunculati, pedicelli 3–4 mm. longi. Corolla (an albida?) alte 5-loba, tubus perbrevis, segmenta subovata, acuminata, 2–2·5 mm. longa, 1 mm. lata, obsolete trinervia. Stamina brevissima. Styli 2 liberi, 0·2–0·3 mm. longi. Fructus niger, (siccus) 4 mm. diamet.

"Valley of the Yangtse between Chin Tien and Shih Ku, Yunnan. Alt. 6–7000 ft. September 1904." G. Forrest. No. 40.

Recognised by its long-petioled leaves with a small lamina, the pale flowers, the very short tube of the almost rotate corolla.

Rubia leiocaulis (Franch., sub tit. var.), Diels. Sp. nov.

Rubia cordifolia, Linn. var. *leiocaulis*, Franch., ms. in schedis.

Caules semiscandentes, 0·3–1·2 m. alti, laeves, fere glabri. Foliorum (superiorum) petiolus 1·5–2 cm. longus, lamina praeter marginem nervosque parce scabridos glabra, e basi cordata elongato-ovata, acuta, trinervis, 4–5·5 cm. longa, 2–3 cm. lata. Inflorescentiae pedunculatae axillares terminalesque foliis breviores. Corolla viridis, tubus breviter cupuliformis, 0·8 mm. altus, 3–3·5 mm. latus, segmenta limbi stellato-expansa, ovata, apice contracto-acuminata, 2·3–2·5 mm. longa. Styli 0·7 mm. longi, ad medium fere connati.

"Semi-scandent plant of 1–4 ft. Flowers green or reddish. Dry, open situations amongst scrub on eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 7–9000 ft. May–August 1906." G. Forrest. No. 4635.

Was collected before in the same neighbourhood "ad basin montis Tsang chan," by Delavay.

Allied to *R. chinensis*, Regel.

Rubia podantha, Diels. Sp. nov.

Caulis semiscandens, 0·4–1·2 m. altus, cum petiolis nervisque foliorum retrorso-scabridus. Folia 4-na, petiolus rigidus, strictus, patens, 3–5 cm. longus; lamina e basi cordata lanceolata, acuta, subtus rubescenti-glauca, nervis et margine albido-scabrida, 6–8 cm. longa, 2–2·5 cm. lata. Inflorescentia laxa, pedunculi stricti, rigidi, 2–20 mm. longi. Flos fusco-purpurea, corolla altius patelliformis, segmenta triangularia, carnosa, crassiuscula, 2·5 mm. longa, antrorsum recurva apice callosa pallida. Stylus crassus bifidus.

"Semi-scandent plant of $1\frac{1}{2}$ -4 ft. Flowers brown crimson. Dry, stony situations amongst scrub on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 10'$. Alt. 9-10,000 ft. June 1906." G. Forrest. No. 2327.

"Plant of 1-3 ft. Flowers reddish purple. Moist, shady situations amongst scrub on and at the base of cliffs on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 10'$. Alt. 9-10,500 ft. Flow. August 1906." G. Forrest. No. 2753.

This form was collected before by Delavay (No. 2591) "ad montem Hee-chan-men," and named by Franchet *R. cordifolia*, L. var. *purpurea* L. = *R. purpurea*, Decne., f. b.

Rubia yunnanensis (Franch.), Diels. Sp. nov.

Rubia sikkimensis, Kurz, var. *yunnanensis*, Franch., ms. in schedis.

Planta e basi ramosa, 7.5-20 cm. alta, rami adscendentes. Folia 4-verticillata, sessilia, crassiuscula, margine scabrida, subtus pallida, anguste ovata vel oblonga, 8-12 mm. longa, 3-4 mm. lata, inferiora vix majora, nervi 3 primarii supra immersi, subtus prominentes. Inflorescentia terminalis subpaniculata. Flores breviter pedicellati. Corolla patelliformis lutea, segmenta anguste ovata, patula, apice ipsa subcallosa incurva.

"Prostrate plant of 3-8 inches. Flowers yellow. Dry, stony, barren pastureland along the base of foothills to south of the Lichiang Range. Lat. $27^{\circ} 5' N$. Alt. 8-8500 ft. June 1906." G. Forrest. No. 2484.

"Maeulchan in collibus calcareis. Delavay! *R. sikkimensis*, Kurz, var. *yunnanensis*, Franch.

This species has a Galium-like habit. It is nearly related to *R. ustulata*, Diels, but is distinguished by its smaller size, the much more equal and smaller leaves, the cuspidate petals. It is quite different from *R. sikkimensis*, Kurz.

Rubia ustulata, Diels. Sp. nov.

Caulis suberectus vel debilis, parce ramosus, 25-30 cm. longus, fere glaber. Folia 4-verticillata subsessilia praeter basin ipsam puberulam glabra, late elliptica vel obovata, inferiora circ. 4 cm. longa, 2 mm. lata, trinervia, superiora mox decrescentia. Inflorescentia subterminali-paniculata gracilis, bracteae minutae purpurascens. Flores striolati. Corolla patelliformis, demum rotato-stellata; petala ovata, obtusiuscula, nec recurva, 1.6-2 mm. longa, sicca albidia apice ustulato-purpurascens. Styli 2, 0.6 mm. longi, graciles.

"Dry, rocky situations and pine woods in all valleys north of Talifu. Alt. from 6500-10,000 ft." G. Forrest. No. 365.

"Mekong-Salwin divide behind Tsekou Mission," G. Forrest. No. 368. Tsekou, Monbeig in Herb. Kew!

Rubia membranacea (Franch., sub tit. var.), Diels. Sp. nov.

Rubia cordifolia, Linn. var. *membranacea*, Franch., ms. in schedis.

Caulis 0.3–0.9 m. altus, sparse retrorso-scabridus. Folia 4-na, petiolo 0.5–2 m. longo praedita; lamina membranacea-herbacea, parva, basi cordata vel rotundata lanceolata, acuta vel acuminata, 1–6 cm. longa, 0.5–1.5 cm. lata. Inflorescentiae axillares et terminales, 2–3 cm. longae. Pedicelli 1–3 mm. longi. Corolla rotato-stellata, fere ad basin 5-partita; segmenta expansa haud incurva, 1.5–1.8 mm. longa, ovata, apice tenuiter acuminata, rubro-purpurascens. Styli 2 breves, stigmata capitata.

"Plant of 1–3 ft. Flowers reddish purple. Dry, stony situations on the margins of pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9–10,000 ft. Flow. August 1906." G. Forrest. No. 4639.

The same species was collected before by Delavay "in silvis montis Lan-ho-kien, 12 July 1889," and named by Franchet as "*R. cordifolia*, Linn var. *membranacea*."

Galium Forrestii, Diels. Sp. nov.

Caulis quadrangulus, strigosus-pilosus, 15–25 cm. altus, vix ramosus. Folia 4-na, brevissime petiolata vel subsessilia, ovato-elliptica, supra strigosa, subtus strigosa et glandulis flavis praedita, 8–12 mm. longa, 3–5 mm. lata uni- vel obsolete 3-nervia. Inflorescentia terminalis e corymbis laxifloris pedunculatis effecta. Flores viridulo-lutei sicci fusci, gracillime pedicellati. Receptaculum densissime setuloso-pilosum (siccum deinde albidum). Corollae segmenta subovata apiculata 1.3 mm. longa. Styli 2 divaricati apice capitati.

"Plant of 6–10 inches. Flowers greenish-yellow. Dry, stony situations in bed of stream at base of eastern flank of the Lichiang Range. Lat. 27° 10' N. Alt. 10,000 ft. Flow. June 1906." G. Forrest. No. 2363.

Allied to *G. serpylloides*, Royle, of the Western Himalaya, but stems more strict, less branched, leaves more remote, cymes longer, pedunculate and pedicels more slender.

Galium nephrostigmaticum, Diels. Sp. nov.

Caulis vix ramosus 20–40 cm. altus, quadrangulus, strigosus-pilosus. Folia 4-na, basin et apicem versus minora, subsessilia, late ovata vel obovata, obtusa, utrinque strigosus-pilosa deinde cinerascens, ad 15 mm. longa et 7.5 mm. lata, e basi trinervia. Inflorescentia terminalis e corymbis multifloris pedunculatis effecta. Flores demum breviter pedicellati viridulo-lutei. Calyx glaber vel raro scabridulus. Segmenta (nonnunquam 5) cordato-

ovata, obtusa, striolata. Styli 2 subsessiles ad stigmata subreniformia fere reducta.

"Plant of 9-16 inches. Flowers greenish-yellow. Dry pasture-land on the eastern flank of the Tali Range. Lat. $25^{\circ} 40'$ N. Alt. 8-10,000 ft. Flow. June-August 1906." G. Forrest. No. 4638.

From specimens seen in the Paris and London herbaria, this species seems to be fairly widely distributed in Yunnan.

Galium modestum, Diels. Sp. nov.

Caules graciles, debiles, ramosi 5-15 cm. longi. Folia 3-5 sessilia, anguste oblanceolata, praeter costam subtus parce scabridulam glabra, 3-5 mm. longa. Cymae ad apices caulis atque ramulorum terminales triflorae. Flores pedicellati, pedicelli deflorati conspicue elongati strictiusculi. Petala ovata obtusiuscula tenere 3-nervia alba striolata 1-1.5 mm. longa. Styli 2 subinaequales.

"Plant of 2-6 inches. Flowers white. Dry pine forests on the Namti-Shweli divide. Lat. 25° N. Alt. 7-8000 ft. March 1906. W. Yunnan." G. Forrest. No. 4978.

Very similar to *G. trifidum*, Linn., but the corolla is larger, the petals three-nerved, and the styles unequal.

RUTACEAE.

Xanthoxylum usitatum, Diels. Sp. nov.

Frutex aculeatus 18-3 m. altus. Rami nigri. Folia herbacea, ad rhachin nervosque minute aculeolata, glabra, 3-5-juga, 3-4.5 cm. longa, 2-2.5 cm. lata; rhachis haud alata. Foliola arcte sese tegentia, inferiora minora, subovata, obsolete crenata, ad crenaturas glandula ampla praedita, majora 1-1.5 cm. longa, 0.6-0.9 cm. lata. Flores ♀: Cymulae pedunculatae, 3-florae, fasciculatae, 0.8-1.5 cm. longae, ad rhachin minute puberulae. Pedicelli 2-3 mm. longi. Tepala lanceolata, acuminata, 2.5 mm. longa, 0.8 mm. lata. Gynophorum 1-1.5 mm. longum. Ovarium 1 mm. longum, styli 1-1.5 mm. longi.

"Spinous spreading shrub of 6-10 ft. Fruit a red greasy capsule $1 \times 1\frac{1}{2}$ lines, containing one or two seeds. Bitter and biting, but aromatic, and used as a condiment by the Chinese. Dry, open, stony situations in side valleys on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 12'$ N. Alt. 9-11,000 ft. May 1906." G. Forrest. No. 2103.

Allied to *X. piperitum*, DC., but the leaflets are fewer in number, not so conspicuously serrate. Another undescribed species of the same group is Wilson; No. 3310.

SALICACEAE.

Salix resecta, Diels. Sp. nov.

Frutex 1·2–1·8 m. altus. Rami cortice subnitido tecti, apice ramulosi. Folia breviter petiolata, pilosa, novella praecipue ad costam pilosa, supra subnitida, subtus valde glauca, elliptica vel oblonga, basi obtusa, apice obtusa vel breviter acuminata, e.g. 2·5 cm. longa, 1·3 cm. lata. Amenta ♀ subsessilia, densiflora (nonnisi fructifera visa). Bractea pilosa capsulae dimidium aequans apice conspicue truncata. Glandula anguste conica, 0·7–0·8 mm. longa. Capsula subsessilis, tenuiter sericea, conico-ovoida, 1·5–3 mm. longa. Styli 2 integri, circ. 1–1·2 mm. longi.

"Shrub of 4–6 ft. Flowers greenish-yellow. Moist situations on the margins of thickets on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9000 ft. July 1906." G. Forrest. No. 4602.

Allied to *S. longiflora*, Anderss., and *S. cathayana*, Diels, but the leaves are shorter and more glaucous beneath, the capsule narrower and silky, the bracts sharply truncate, the gland narrow, the styles longer.

Salix cathayana, Diels. Sp. nov.

Frutex 0·6–1·5 m. altus, ramosissimus. Rami cortice brunneo vel cinereo praediti, novelli pubescentes. Folia (nonnisi novella visa) petiolo costaque pubescentia ceterum glabra, subtus glaucescentia, oblonga, margine integra. Amenta ♀ anguste cylindrica, brevissime pedunculata, densiflora, 2–3·5 cm. longa, rhachis cinereo-pilosa. Bractea fusca, late obovata, obtusa, pilosa, 1·2 mm. longa. Glandula ovata, bractee dimidium vix aequans. Ovarium ellipsoideum, glabrescens, circ. 2 mm. longum. Styli breves apice brevissime bifidi.

"Shrub of 2–5 ft. Flowers green. Moist, rocky situations by streams in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8–9000 ft. June 1906." G. Forrest. No. 4600.

Mosoy, 4 April 1887 (Delavay, "*S. longiflora*, Anderss." Franch. in Herb. Paris).

The differences of this species from *Salix longiflora*, Anderss., of the Sikkim Himalaya, are obvious. The ♀ catkins are very dense, not pendulous, the bracts pale, the rhachis more hairy.

SAXIFRAGACEAE.

Parnassia mysorensis, Heyne, var. *aucta*, Diels. Var. nov.

Folia 1·5–2 cm. longa et lata. Caulis ad 20 cm. altus. Petala emarginata, circ. 1–1·2 cm. longa, apice 0·5–0·6 cm. lata.

"Plant of 4-7 inches. Flowers white. Moist, mountain pasture-land on the eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 5042.

A larger plant than the type, but otherwise hardly different.

Chrysosplenium Forrestii, Diels. Sp. nov.

Radicis fibri incrassati. Scapi basi squamis fuscis praedita. Folia basalia solitaria, longe (6-8 cm.) petiolata. Scapi glabri, 12-16 cm. alti, non nisi apice foliati. Folia caulina alterna petiolo 0.5-0.8 cm. longo praedita, glaberrima, orbiculari-reniformia, basi alte cordata, margine crenata crenaturis truncatis vel leviter emarginatis, nonnunquam margine callosis, 1.5-1.8 cm. longa, circ. 2.5 cm. lata; suprema decrescentia, lutescentia. Inflorescentia compacta. Flores subsessiles flavi, sepalis concavis cupuliformes. Sepala reniformia vel late elliptica, tenera, 1.5 mm. longa, 2.5-3 mm. lata. Stamina 8 perigyna.

"In moist places, on roots of trees, wet rocks, and shady situations. Alt. 9-12,000 ft. Niu Chang Pass, Yunnan. 1904." G. Forrest. No. 553.

This is a third species of the *Alternifolia*, ser. *Incisa* (of Franchet's Monograph), which differs from *C. Griffithii* by its more compact inflorescence with less divaricate branches, the much shorter lobes of the leaves which are deeply cordate, the smaller, more campanulate flowers, and the slenderer sepals, which are yellow (not green) and not spreading. From *C. nudicaule*, Bge., to which it seems to be nearest, of North-eastern Asia (and Kansu), it differs by its larger size, the smaller crenatures of leaves and the texture and colour of the sepals.

SCROPHULARIACEAE.

Veronica Forrestii, Diels. Sp. nov.

Caules decumbentes reptantes, basi ramosi atque stoloniferi, superne villosopilosi. Folia in petiolum 5 mm. longum basi rursus ad 2.5 mm. dilatatum villosopilatum angustata, subcoriacea, glabra, subtus pallidiora saepe purpurascens, anguste ovata vel oblonga, antrorsum leviter serrata vel fere subintegra, 1-2 cm. longa, 0.5-0.8 cm. lata, nervi praeter costam obsoleti. Racemi pedunculati, erecti vel adscendentes, terminales vel axillares 4-8 cm. longi; pedunculi puberuli 2-5 cm. longi, pedicelli 3-8 mm. longi, glanduloso-puberuli. Sepala oblonga vel lanceolato-oblonga, 3 mm. longa demum ad 5 mm. increscentia, glanduloso-puberula. Corolla ad 12 mm. diamet., ad faucem pilosa. Capsula oblique rhomboidea, apice emarginata, pilosula, (imatura) quam sepala brevior.

"Procumbent plant of 6-15 inches, flowers reddish. Dry, open situations amongst rocks on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-10,000 ft. W. Yunnan." G. Forrest. No. 4195.

Scrophularia Forrestii, Diels. Sp. nov.

Caulis erectus, 0.3-1.2 m. altus, pubescens, basi parce ramosus. Foliorum inferiorum petiolus pubescens, 3-4 cm. longus, lamina membranaceo-herbacea in utraque facie pilosula, late ovata argute serrato-dentata, dentibus iterum serrulatis, 4-7.5 cm. longa, 4-6 cm. lata, nervi laterales primarii circ. 3-4 utrinque a costa abeuntes. Corymbi laxiflori, in foliorum superiorum axillis orti, thyrsus elongatum angustum efficientes; pedunculus communis 7-12 mm. longus, pedicelli glanduloso-hirti 5-7 mm. longi. Sepala late ovato-vel obovato-rotundata, 3 mm. diamet. Corolla viridis; tubus 5-6 mm. longus, 4-4.5 mm. latus, labii superi 2.5-3 mm. longi, 3.5 mm. lati lobi 2 lati, labii inferi lobi circ. 1 mm. longi. Stamina reniformi-subrhombeum, 1.5 mm. latum. Stamina glanduloso-hirta, 2-2.2 mm. longa. Ovarium late ovoideum, 2.5 mm. longum et latum; stylus 2.5 mm. longus.

"Erect plant of 1-4 ft. Flowers green. Common inside the city of Teng Yueh growing in shady places. Very local. Lat. 25° N. Alt. 5600 ft. October 1905." G. Forrest. No. 990.

Allied to *S. diplodonta*, Franch., but this is more hairy, the leaves not as broad, the teeth less deep, the corolla longer.

SOLANACEAE.

Lycium chinense, Mill. var. ?

Habitu a planta typica longe recedit. Rami primarii defoliati. Folia ad nodos conferta vel in ramulis secundariis 6-8 cm. longis strictis gracilibus sparsa, quam ea plantae typicae minora atque teneriora 0.5-1.5 cm. longa. Flores typici sed minores atque lilacini.

"Spreading shrub of 2-4 ft. Flowers heliotrope. Rocky, moist situations below high-water level, banks of the Salwin, Salwin-Irrawadi divide. Only at one place, near Chong-wa. Lat. 26° 45' N. Alt. 3200 ft. November 1905." G. Forrest. No. 952.

This specimen has a very curious habit. I have never seen anything like it from other localities where *L. chinense* is known to grow. But the modification may be due to the plant being subject to periodical inundation. Forrest saw it only once (v. supra!).

TERNSTROEMACEAE.

Thea Forrestii, Diels. Sp. nov.

Frutex 1-3 m. altus. Rami graciles, novelli pubescentes. Folia breviter petiolata, chartacea, supra sublucida subtus pallidiora, praeter petiolum costamque pilosam glabra punctulata, ovata vel rarius sub lanceolata, obtuse acuminata, minute adpresse serrata, 2.5-3 cm. longa, 1.2-1.8 cm. lata, nervi subtus vix conspicui. Pedunculus brevissimus bracteolis coriaceis parvis praeditus. Sepala coriacea, late ovata, margine ciliata praeterea glabra, 2-4 mm. longa; petala ochroleuca, late elliptica, apice obtusa vel leviter emarginata, 8-9 mm. longa, 5-7 mm. lata. Stamina basi coalita ca. 6 mm. longa. Ovarium glabrum, stylus glaber, 8 mm. longus, apice in ramos 3 solutus.

"Shrub of 3-8 ft. Flowers creamy white. Wooded gullies. South end of Tsu-hsiang-fu valley. Alt. 7-8000 ft. Yunnan. February 1903." G. Forrest. No. 314.

Closely allied to *T. euryoides* (Lindl.), Booth, but different from it by thicker, broader, more glabrous leaves, more glabrous sepals and emarginate petals. Another closely allied species is *T. microphylla*, Pitard, from the Yunnanfu region; from this our species may be recognised by its nearly doubly larger leaves, which are not as thick, and do not get as yellow when dry.

Thea yunnanensis, Pitard.

Frutex 1-3 m. altus. Rami graciles, novelli pubescentes, adulti cinereo-corticati. Folia breviter petiolata, papyracea, supra fere glabra, subtus (et ad petiolum) praecipue ad costam pilosula, subtus pallidior, ovata vel ovato-lanceolata, basi rotundata vel cito angustata, apice acumine saepe subobliquo vel subcurvato praedita, serrulata, 3-5 cm. longa, 1.7-2.5 cm. lata, nervi vix conspicui. Flores breviter pedunculati (demum quidem), erecti, expansi (sicci) 5 cm. diamet. Sepala margine scariosa; petala alba, elliptica, 2-2.5 cm. longa, 1-1.3 cm. lata, haud emarginata. Stamina non nisi basi coalita, 1-1.5 cm. longa. Ovarium glabrum, styli liberi.

"Shrub of 4-8 ft. Damp places on hillsides. Head of Lang Kung valley. Alt. 9000 ft. Yunnan. 1904." G. Forrest. No. 430.

Ta long tan, 15 October 1889 (Delavay!).

In habit, this approaches *T. Greysii* or *T. rosiflora*. It is difficult to decide whether it should be included in Sect. *Euthea* or in Sect. *Camellia*.

***Thea speciosa*, Pitard.**

Frutex 1-2 m. altus. Rami novelli brunnei, adulti cinereo-corticati. Folia breviter petiolata, coriacea, in utraque facie lucida, subtus pallidiora glaberrima (sicca) punctulata, ovato-oblonga vel oblanceolata, basin versus plerumque sensim angustata, callosa-serrata, apice acuminata, 4.5-10 cm. longa, 2.5-3.5 cm. lata, nervi sicci supra magis quam subtus conspicui. Sepala rotundata, dorso dense sericea, 1-1.5 cm. longa, 1.5-2 cm. lata; petala rosea, emarginata, ad 4 cm. longa et 3.5 cm. lata. Stamina varie (usque ad $\frac{3}{2}$) coalita, ad 2.5 cm. longa. Ovarium dense pilosum, styli usque ad apicem connati, 2-2.5 cm. longi.

"Shrub of 3-6 ft. Flowers rose-pink. On dry, open, chalky hillsides from Yunnanfu to Tsu-hsiong-fu. Alt. 7-8000 ft. January 1903." G. Forrest. No. 423.

Pinfa, Kong-tchou (Cavalerie et Fortunat, No. 2261. Type, Bodinier, No. 2594).

Tchen fong chan, Yunnan, Fevrier, 1904 (Delavay, No. 4930).

Allied to *T. Sasanqua*, but larger; the stamens are connate very high up.

TILIACEAE.

***Tilia paucicostata*, Maxim., var. *yunnanensis*, Diels. Var. nov.**

Folia in axillis nervorum ferrugineo-barbata atque praeterea pilis mollibus densius vestita.

"Sides of streams, Shu Pa and Lopa valleys, Yangtse-Mekong divide, between Pung-tzu-la and Hsia Zo. Alt. 9-10,000 ft., September 1904." G. Forrest. No. 47.

THYMELAEACEAE.

***Daphne aurantiaca*, Diels. Sp. nov.**

Frutex humilis, ramosissimus, 0.6-1.2 m. altus, rami foliorum pristinorum vestigiis quasi verrucosi. Folia ad apices ramulorum conferta, parva, subchartacea, laevia, glabra, subtus pallidiora, obovata, vel elongato-obovata, acuta, margine subrecurva, 9-10 mm. longa, 4-5 mm. lata, costa supra insculpta subtus prominens, nervi ceteri inconspicui. Flores 2-4-ni terminales sessiles, glabrati, intense aurantiaci, fragrantés; tubus 10-12 mm. longus, lobi ovato-elliptici obtusi, nonnunquam inaequales, 4-5 mm. longi, 3-3.5 mm. lati. Ovarium glabrum, elongato-obovatum, 2-3 mm. longum, stylus perbrevis vix 0.5 mm. longus, stigma capitatum 0.7 mm. diamet.

"Dwarf shrub of 2-4 ft. Flowers bright orange yellow,

fragrant. In crevices of limestone cliffs on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 15'$ N. Alt. 10-12,000 ft. May 1906." G. Forrest. No. 2115.

A very distinct species, apparently not much allied to any other *Daphne* of the region.

Wikstroemia holosericea, Diels. Sp. nov.

Frutex 0.3-1 m. altus, ramosissimus, ramuli apice dense foliati. Folia sessilia, utrinque dense sericeo-pilosa, albido-nitentia, linearia vel oblanceolato-linearia, margine revoluta, 1-1.5 cm. longa, 1.5-2.5 mm. lata. Flores terminales, complures, sessiles, inter folia summa occulti, lutei. Perianthium 5-merum, extus densissime sericeum, intus glabrum; tubus 4-5 mm. longus, 2 mm. latus, limbi lobi 5, subovati vel triangulares, 2 mm. longi. Antherae 0.7 mm. longae. Ovarium anguste conico-ovatum, apicem versus pilosum, 2.5 mm. longum, stigma glabrum. Discus nullus. Seminis testa aterrima nitida.

"Descent of the Yangtse from Chung Tien, between Tang Tui and Chiao Tou. Dry, hilly country. Alt. 10,000 ft. Yunnan. September 1904." G. Forrest. No. 13.

Easily recognised in the genus by its silky tomentum.

Wikstroemia dolichantha, Diels. Sp. nov.

Frutex 0.6 m. altus ramosus, rami adulti purpurascens, juniores cinereo-sericei. Folia brevissime petiolata, subherbacea, glaucescentia, subtus pallidiora, parce pilosa, oblonga vel oblanceolato-oblonga, breviter acuminata, 2.5-3 cm. longa, 0.8-1 cm. lata. Spicae pedunculatae, sericeo-pubescentes, paniculam gracilem formantes. Flores subsessiles, lutei, tubus anguste cylindricus, extus sericeo-pubescens, 8-9 mm. longus, limbi lobi 5 circ. 1.2-2 mm. longi. Squama disci unica lineari-lanceolata margine incisa 2-2.5 mm. longa. Ovarium subclavatum, 3-4 mm. longum antrorsum pilosulum, stigma capitatum.

"Shrub of 2 ft. high. Flowers yellow. Rocky hillsides, Chien chuan and Hoching valleys. Alt. 7-9000 ft. Yunnan. September 1904." G. Forrest. No. 133.

In habit, this is similar to *W. Chamaedaphne*, Meissn., but the flowers are much more slender. Also *W. linoides*, Hemsl., is allied to it, but is a much weaker plant, with glabrous flowers.

Wikstroemia scytophylla, Diels. Sp. nov.

Habitu praecedenti similis, sed rami foliaque glaberrima. Folia superiora saepe opposita, coriacea, oblanceolata, brevissime acuminata, 3-6 cm. longa, 1-1.2 cm. lata, nervi a costa angulo acuto abeuntes, subtus (sicci) obsoleti. Spicae (an semper?) solitariae, haud paniculatae. Flores breviter pedicellati, glabri,

lutei, tubus ad 10 mm. longus, limbi lobi 5 nonnunquam minute denticulati, 1.5–2 mm. longi. Squama disci unica linearis. Ovarium praecedentis.

"Dry, limestone hills between Tang Tui and Chiao Tou, Yunnan. Alt. 7–9000 ft. September 1904." G. Forrest. No. 44.

UMBELLIFERAE.

Carum coloratum, Diels. Sp. nov.

Rhizoma incrassatum. Caules solitarii vel plures, cum vaginis atque pedunculis intense purpurei, glabri, 7–25 cm. longi. Folia basilaria et inferiora cum petiolo laminam fere aequante 5–14 cm. longa, 1–3 cm. lata, composita vel bicomposita, pinnae primariae circ. 4–5 utrinque patentes, secundariae inferae alte trifidae, superae integrae oblanceolato-lineares. Foliorum superiorum vagina magis conspicua, petiolus nullus, lamina decrescens. Involucrum et involucella decidua vel saepius nulla. Umbellae radii 6–12, 1–2.5 cm. longi. Calycis segmenta obsoleta. Petala alba unguiculata, late ovata saepius leviter triloba, ca. 2 mm. longa, 1.5–1.8 mm. lata. Stylopodia purpurea, lata; styli 0.5 mm. longi.

"Plant of 3–6 inches. Flowers white, gynaecium green, stem purple. Dry ledges of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 12–13,000 ft. August 1906." G. Forrest. No. 2874.

"Plant of 4–10 inches. Corolla pure white, gynaecium green. Grassy ledges of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11–12,000 ft. September 1906." G. Forrest. No. 3060.

Allied to *C. acronemaefolium*, Clarke.

Carum dolichopodum, Diels. Sp. nov.

Caulis basi longe nudus, nodosus; epigaeus foliatus, 5–10 cm. longus, purpurascens. Folia infera basi vagina 2 mm. longa, petiolo 2.5–3.5 cm. longo et lamina ambitu late triangulari, glabra, bicomposita, 6–7 cm. longa, (basi) 8–9 cm. lata praedita. Pinnae primariae 2–4-jugae, secundariae ambitu late triangulari-ovatae, iterum alte sectae, segmenta ultima saepe late cuneato-obovata, trifida vel tridentata. Involucrum nullum. Umbellae radii 5–6. Involucelli phylla pauca, oblanceolata, integra vel tridentata. Umbellulae 10–12-florae. Flores illis *C. colorati* similes nonnunquam paulo majores.

"Plant of 2–4 inches. Petals white, gynaecium dark green. Shady ledges on and at the base of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11–12,000 ft. August 1906." G. Forrest. No. 2872.

This is very close to *C. coloratum*, Diels, but differing in the long hypogaeous portion of the stem, its stouter habit, the much broader leaf, the broader leaf-segments, which are more closely set.

Carum ? pityophilum, Diels. Sp. nov.

Caulis 0.4-0.75 m. altus, strictus, basi foliis delapsis nodosa, parce foliata. Folia infera vagina latissima inflata subcoriacea nervosa 2.5-3 cm. longa, ca. 2-2.5 cm. lata praedita, deinde breviter petiolata; lamina ambitu triangularis, ca. 6 cm. longa, 8-9 cm. lata, tricomposita, pinnae primariae patentēs, 2-4 utrinque abeuntes, segmenta ultima anguste linearia 2-3 mm. longa; folia summa fere ad vaginam reducta. Involucrum et involucella nulla vel mox decidua. Umbellae radii 10-20, umbellulae 12-15-florae, pedicelli 3-5 mm. longi. Sepala obsoleta. Petala inaequalia, exteriora radiantia, majora 2-2.2 mm. longa, 1.5 mm. lata, interiora 1.6 mm. longa, omnia late elliptica subrotunda. Ovarium glabrum basi subcordatum, stylopodium pulvinatum, styli brevissimi.

"Plant of 1½-2½ ft. Flowers white. Open, dry situations in pine scrub on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10-11,000 ft. October 1906." G. Forrest. No. 3078.

As the fruit is unknown, I am not certain as to the generic place of this species.

Angelica ? rivulorum, Diels. Sp. nov.

Caulis 0.3-0.9 m. altus, striatus, glaber. Folia basalia ad 30 cm. longa, e basi vaginante longius (7-8 cm.) petiolata, simpliciter pinnata, foliola 2-juga, longe petiolulata (petiolulo jugi inferi ca. 5 cm. longo), e basi cordata ovata crenato-dentata, praeter nervos 7-9-palmatos scabrido-pilosos in utraque facie glabra, 7-8 cm. longa, 5-6 cm. lata. Folia superiora mox reducta, trifoliolata. Involucri phylla pauca, linearia, flaccida. Umbellae radii 16-18, superne pilosuli. Involucelli phylla ca. 6-8, oblanceolata vel anguste oblonga, utrinque acuta, apice acutissima, margine pallida, 1-2 cm. longa, 1-2.5 mm. lata. Umbellulae ca. 20-florae, pedicelli 6-8 mm. longi. Calyx obsoletus. Petala obcordata pallide olivaceo-brunnea. Stylopodia crassa, elevata, styli ovario paulo breviores. (Fructus non visus.)

"Plant of 1-3 ft. Flowers pale olive-brown. Whole plant strongly aromatic. Gravelly, boggy ground in running water on mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11-12,000 ft. August 1906." G. Forrest. No. 2849.

The fruit being unknown, the generic position of this species is not certain. In the inflorescence, it resembles some

Pleurospermum (e.g. *P. decurrens*), but the foliage is very different.

***Angelica Forrestii*, Diels. Sp. nov.**

Caulis striatus, glaber. Folia herbacea, inferiora vagina 5-6 cm. longa, petiolo 6-7 cm. longo praedita, ipsa triternato-partita, ampla, supra glabra, subtus ad nervos parce pilosula, segmenta ultima inaequaliter argute serrata; superiorum vagina supra petiolum foliaceo-producta, 6 cm. longa atque lata, lamina decrescens. Involucri phylla lanceolata vel linearia, flaccida, inaequalia, deflexa, mox decidua. Umbellae radii 18-26. Involucelli phylla linearia, flores subaequantia, 5-8 mm. longa. Umbellulae 20-30-florae. Sepala minuta, concavo-triangularia. Petala obovata, apice inflexa, 1.5-2.5 mm. longa, 1.2-1.5 mm. lata. Stamina 2-3 mm. longa. Styli brevissimi.

"Plant of 2-3 ft. Flowers green. Whole plant fragrant with a fennel-like odour. Shady, open situations on margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11,000 ft. July 1906. Yunnan, W. China." G. Forrest. No. 2580.

A very similar plant is Wilson, No. 3688.

***Ligusticum modestum*, Diels. Sp. nov.**

Rhizoma colle rudimentis pristinis fibrosis cinctum. Caules complures, 20-30 cm. alti, straminei. Folia basi vaginata, inferiora petiolata, ambitu anguste ovata, bicomposita, pinnae primariae circ. 3-7-jugae remotae, secundariae iterum fere ad rhachin partitae, segmenta tertiaria linearia, acuta, 2-4 mm. longa, vix 0.5 mm. lata; folium totum cum petiolo ca. 18 cm. longum, 6 cm. latum; superiora mox valde decrescentia. Umbellae longe pedunculatae, basi radiorum dense puberulae. Involucrum nullum. Umbellae radii 8-10. Involucelli phylla in segmenta subfiliformia subfalcata pinnatipartita, 7-8 mm. longa, flores superantia. Umbellulae 10-12-florae. Sepala triangularia stylopodii dimidium subaequantia. Petala obcordata, costata, apice longe inflexa, 1-1.5 mm. longa, 0.8-1 mm. lata. Ovarium ca. 1.5 mm. longum, styli 0.5 mm. longi.

"Plant of 9-12 inches. Flowers greenish-white. Grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 2856.

An ally of *L. brachylobum*, Franch., but a considerably smaller plant, having much narrower segments of the pinnules and less conspicuous sheaths at the base of the leaves.

Peucedanum olivaceum, Diels. Sp. nov.

Caulis basi fibris petiolorum pristinorum cinctus, glaber, 0.3-0.6 m. altus. Folia firme papyracea, glabra subtus glauca venis reticulata, 7-9 cm. longa, 8-11 cm. lata; infera vagina inflata latissime obovata ca. 4 cm. longa, 2 cm. lata praedita, bicomposita, pinnae primariae petiolulatae 2-3-jugae, secundariae sessiles ambitu late obovatae altius 3-5-incisae lobis mucronulatis; summa reducta integra lanceolata. Umbellae paucae longe pedunculatae. Involucrum atque involucella nulla. Umbellae radii ca. 5-8, umbellulae 10-12-florae; flores nonnulli hermaphroditi, alii $\pm$ masculi. Sepala parva, triangularia, persistentia, 0.5-0.8 mm. longa. Petala obscure olivaceo-viridia, anguste obovata apice longius inflexa, 2.5-3 mm. longa, 1.2-2.5 mm. lata. Stamina 2.5-3 mm. longa. Ovarium florum $\varnothing$ circ. 2 mm. longum. Stylopodia rufofusca pulviniformia 0.5 mm. alta, styli breves. Fructus ambitu ellipticus 1-1.2 cm. longus, 0.6-0.7 cm. latus coriaceus, valde compressus, late alatus; vittae solitariae; carpophorum bipartitum.

"Plant of 1-2 ft. Flowers dark olive green. Dry situations in shady pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 9-10,000 ft. May 1906." G. Forrest. No. 2250.

A very distinct species.

Trachydium chloroleucum, Diels. Sp. nov.

Rhizoma crassum. Caules solitarii vel complures, glabri, 10-30 cm. longi. Folia glabra, basalia petiolo basi vaginante 5-7 cm. longo praedita, lamina ambitu ovata, 5-7 cm. longa, bicomposita; pinnae primariae ca. 3-5-jugae, pinnae secundariae subflabelliformes, argute inciso-dentatae, inferae circ. 0.5 cm. longae et latae. Folia superiora petiolo destituta, latius vaginata, minora. Involucri phylla 4-6, pinnatipartita segmentis integris vel iterum ternatis, 1-1.5 cm. longa. Umbellae radii 6-7, 2.5-3 cm. longi, sub apice puberuli, ceterum glabri. Involucelli phylla basi pallida, lata, apice trifida segmentis angustis acutis, 7-8 mm. longa, flores subaequantia. Umbellulae multiflorae, pedicelli scabriusculi. Calycis lobi anguste ovati, ovarii tertiam fere partem attingentes. Petala viridi-alba, late obcordata vel rotunda, apice inflexo. Stylopodia elevata, styli ad 1 mm. longi.

"Plant of 4-7 inches. Flowers greenish-white. Stony, mountain pastureland on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11-12,000 ft. August 1906." G. Forrest. No. 2873.

"Plant of 6-12 inches. Petals greenish-white, gynaecium dark

green. Grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 25' N$. Alt. 11–12,000 ft. September 1906." G. Forrest. No. 2886.

Recognised by its broad, fan-like, deeply-toothed leaflets and segments.

Trachydium Forrestii, Diels. Sp. nov.

Caulis ad basin rudimentis paucis fuscis obsessus, 22–125 cm. altus, striatus. Folia plurima ex imo caule orti, petiolo basi conspicue vaginante circ. 6–8 cm. longo praedita, praeter marginem nervosque principales minute scabridos glabra; lamina 4–5 cm. longa et lata, ambitu late triangularis, pinnatipartita, segmenta utrinque circ. 3–4 basi cuneata, iterum alte incisopartita, segmenta ultima lanceolato-lineararia apice purpureo-ustulata; infima minus partita, summa petiolo excluso vaginae insidentia. Involucri phylla foliacea, basi late cuneata, integra, apice trifida, segmentis iterum incisis, 1.5–2.5 cm. longa. Umbellae radii 10–14, inaequales sub anthesi 3–8 cm. longi. Involucelli phylla anguste oblonga, integra vel pauci-incisa, purpureo-marginata, flores superantia, 0.5–1 cm. longa. Sepala inconspicua. Petala viridulo-alba, purpureo-marginata, spathulato-obovata, apice integra in unguem angustata, circ. 1.5 mm. longa. Ovarium nitenti-atroviride, styli brevissimi.

"Plant of 9–24 inches. Petals greenish-white, gynaecium glistening dark olive-green. Shady, grassy openings in pine forests on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20' N$. Alt. 10–11,000 ft. August 1906." G. Forrest. No. 2855.

The leaves are larger and finer cut than those of *Trachydium obtusiusculum*, C. B. Clarke, of the Eastern Himalaya; otherwise the plants are similar. From *T. rubrinerve*, Franch., our species differs by longer phylla of the involucre and a different foliage.

Heracleum stenopterum, Diels. Sp. nov.

Caulis 0.9–1.2 m. altus, hispidulus. Folia inferiora herbacea, in utraque facie scabrido-pilosa subtus pallida, ca. 30 cm. longa, 45 cm. lata, vagina purpurascente subinflata amplexante 6–7 cm. longa atque petiolo communi brevi, ca. 2 cm. longo praedita, biternato-partita, segmentis primariis basin versus longe cuneatis iterum partitis lobis lanceolatis, cum partibus basali atque intersegmentariis serratis, apice longe acuminatis, 4–6 cm. longis. Folia summa vaginata, non petiolata, 3–5-pinnatipartita, segmentis iterum incisis, ultimis serratis acuminatis. Umbellae pedunculis 22–28 cm. longis praeditae. Involucrum phyllis paucis reductis mox deciduis effectum vel nullum. Umbellae radii hispidi, 30–40. Involucelli phylla pauca, anguste lineararia, umbellulam vix aequantia. Umbellulae ca. 30–40-florae, pedicelli 0.5–1 cm.

longi. Sepala ovarium pilosum subaequantia, lanceolata, acuta. Petala viridulo-lutea, exteriora radiantia.

"Plant of 3-4 ft. Flowers greenish-yellow. Open, shady situations in shady pine forests on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10-11,000 ft. August 1906." G. Forrest. No. 2847.

In foliage not unlike *H. rotundatum*, Wall., of Nepal. From *H. acuminatum*, Franch., of the Tali neighbourhood, it differs by the hairy leaves with the segments being even more acute, the more numerous rays of umbels and umbellules, and the greenish-yellow petals.

URTICACEAE.

Laportea Forrestii, Diels. Sp. nov.

Caulis superne subflexuosus, pilosulus et stimulis praeditus. Foliorum petiolus 3-6 cm. longus, stimulis armatus; lamina herbacea, hispida nec non stimulis conspersa, suborbicularis vel late ovata, grosse et alte dentata dentibus triangularibus ca. 0.5-1 cm. longis, anguste longeque acuminata, 7-9 cm. longa, 5-7.5 cm. lata. Pseudoracemi axillares, angustissimi elongati, 15-20 cm. longi. Flores ♀ fasciculati, breviter pedicellati. Tepala pilosula. Fructus valde compressus, latissime ovatus inaequilateralis, ca. 1.5 mm. longus, stylus decurvus.

"Valleys of Mekong and Yangtse, common in places. Alt. 5-7000 ft. Yunnan. September 1904." G. Forrest. No. 520.

In habit very similar to *L. grosse-dentata*, Wright, but different by having stinging hairs.

Pilea peperomioides, Diels. Sp. nov.

Caulis (an hypogaeus?) elongatus crassus, glaber, cinereofuscus, foliorum pristinorum cicatricibus confertis notatus. Folia ad apicem caulis conferta carnosa; petiolus laminae peltatae trans basin insertus, 3-6 cm. longus; stipulae scariosae, fuscae, ovatae vel lanceolatae acuminatae acutae, 0.5-1.8 cm. longae, persistentes; lamina late elliptica vel fere orbicularis, 4-4.5 cm. longa, 4-5 cm. lata, obsolete undulato-repanda vel integerima, cystolithis minutis fusiformibus densissime farcta, nervi 5-7-ni (sicci) obsoleti. Inflorescentiae efoliatae, pedunculo 5-7 cm. longo praeditae, paniculatae, rami subflexuosi, primarii 5-7 cm. longi, glomeruli ultimi conferti. Bractee scariosae, ± fissae. Inflorescentiae ♂ quam ♀ maiores. Flores ♂ quam ♀ multo majores, sessiles; perianthium trans medium 4-partitum, ad 3 mm. longum, segmenta purpurascens; stamina 4, filamenta 2 mm. longa, antherae latae. Flores ♀ virides minutissimi; perianthii

segmenta 3 inaequalia, vix 0.5 mm. longa; 1 maius cucullato-cymbiforme, 2 minora; ovarium compresso-ovoideum subinaequilaterale, stigma sessile, breve, penicillatum; staminodia nulla.

"Plant of 3-4 inches. Flowers green, minute, foliage succulent. Shady situations on humus-covered boulders on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-9000 ft. July-August 1906." G. Forrest. No. 4667.

"Plant of 3-9 inches. Foliage succulent, flowers pale, yellowish-green. On ledges of cliffs and humus-covered boulders. Extremely local. One of the side valleys of the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 7-8000 ft. July 1910." G. Forrest. No. 7190.

This is widely different from the only other species with peltate leaves, *P. peltata*, Hance, from the West-River, prov. Canton, by its stouter habit, the persistent stipules, the succulent entire leaves, the long peduncled inflorescence.

Morus longistylus, Diels. Sp. nov.

Frutex 1.5-3.5 m. altus. Rami cortice cinereo-fusco praediti, ramulos in tempore florendi breves gignentis. Folia (nondum matura) petiolata, supra brevissime puberula subtus praecipue ad nervos pilosula, oblique ovata, acuminata, serrata serraturis saepe mucronulatis. Stipulae pallide fuscae dorso puberulae lanceolatae. Spicae ♂ pedunculo circ. 1 cm. longo praeditae, ipsae 1-2 cm. longae; sepala late elliptica, extus pilosa vel glabrescentia, concava, marginibus involuta, 2.5-3 mm. longa; stamina 3.5-4 mm. longa. Spicae ♀ breves subcapitiformes, pedunculo circ. 0.5 cm. longo praeditae, tepala 4 late ovata vel suborbicularia, valde concava, subglabra 1.5 mm. longa. Styli glabri longe (3-3.5 mm.) connati, superne (circ. 2 mm.) liberi papilloso.

"Shrub of 5-12 ft. Flowers yellowish-green. Moist, open situations amongst scrub in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 7-8000 ft. August 1906." G. Forrest. No. 4672.

Allied to *Morus indica*, Linn., but distinct by the less acuminate leaves, which are very slightly hairy. The tepals of the ♂ are broadly elliptical, those of the ♀ not carinate, the styles not hairy as in *M. indica*.

A similar plant, having the foliage more developed and the ♂ spikes larger, is represented in the ♂ state only.

"Shrub of 8-20 ft. Flowers yellowish-green. Shady thickets of side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8-9000 ft. June-July 1906." G. Forrest. No. 4669.

VACCINIACEAE.

Agapetes Bulleyana, Diels. Sp. nov.

Frutex patulus, 1.2-2.5 m. altus. Rami lenticellati. Folia pseudoverticillato-conferta, subsessilia, coriacea, in utraque facie glabra, supra rugosa subtus pallida, margine recurvato cartilagineo calloso-denticulata, oblonga vel oblanceolato-oblonga, acuta, basin versus angustata basi ipsa saepe rotundata, 4-8 cm. longa, 1.5-3.5 cm. lata; nervi supra alte insculpti, subtus prominentes. Racemi a ramis orti, pedunculati, bracteis parvis praediti cum pedunculo parce piloso 1.5-2 cm. longi; flores subcorymboso-conferti, pedicelli 0.3-1 cm. longi (inferioribus longioribus) sub ovario articulati, colorati, glabri. Dentes calycini triangulares, uninerves, circ. 2.5 mm. longi. Corolla conico-cylindrica, apice angustior, breviter 5-dentata glabra, viridulo-lutea, 8 mm. longa, circ. 4 mm. lata, limbi dentes 0.5 mm. longi. Filamenta 1.5 mm. longa, antherae longe cornutae, 4 mm. longae. Stylus 7 mm. longus.

"Spreading shrub of 4-8 ft. Flowers greenish-yellow. Shady situations in the Ku-tan-ho valley, Salwen-Irrawadi divide. Lat. 25° 55'. Alt. 7-9000 ft. North-west Yunnan. Flow. December 1905." G. Forrest. No. 1069.

This very distinct species seems to be related to *Agapetes glabra* (Griff.), Clarke, which has no spurs on the anthers, and shows many other differences in foliage and inflorescences. At the same time, in looking remarkably like *Pentapterygium rugosum*, the new species shows the close affinity of that small genus to *Agapetes*.

Vaccinium Forrestii, Diels. Sp. nov.

Frutex 1-1.5 m. altus. Ramuli rufidulo-brunnei glabri. Folia petiolo crassiusculo 5-7 mm. longo basi articulado praedita, coriacea, utrinque glabra, subtus pallida (sicca tempore florendi pallide cuprea), oblonga, utrinque angustata, apice acuminata, margine serrulato-repanda, 6-10 cm. longa, 3-3.5 cm. lata; nervi supra obsoleti, subtus prominuli, nervuli obsoleti. Racemi axillares, bracteis basalibus fuscis dorso puberulis persistentibus, superioribus tenuioribus scariosis purpureis ciliolatis deciduis praediti, 3-5 cm. longi; pedicelli brevissimi, purpurei, 1-1.5 mm. longi, bracteolis 2 scariosis purpurascensibus deciduis suffulti. Calycis tubus hemisphaericus, segmenta triangularia, apice puberulo-ciliata. Corolla cylindrica, utrinque constricta, 5-6 mm. longa, lobi triangulares breves, intus papilloso.

"Shady thickets on the hills west of Yunnanfu. Lat. 25° 5'. Alt. 7-8000 ft. February 1903." G. Forrest. No. 454.

According to a note on the sheet, this is the same as Henry, No. 10,552, No. 10,552a, No. 13,298, and Ducloux, No. 814, which I have not seen.

Closely allied to *V. mandarinorum*, Diels, of Central China, which differs by its broader leaves, shorter petiole, longer pedicels, and longer corolla.

VALERIANACEAE.

Valeriana barbulate, Diels. Sp. nov.

Rhizoma radices fibrosas longissimas emittens. Caulis 7-15 cm. altus, praeter nodos albido-barbato fere glaber. Folia infima nonnunquam indivisa, cetera 1-2-jugo-pinnata, 2-3 cm. longa, ad petiolum marginesque pinnarum hispidula, ceterum glabra; foliola infima saepe minuta, media ovata integra vel $\pm$ serrata, 4-9 mm. longa; terminale multo majus, ovatum, serratum, 1.5-2 cm. longum, 1-1.3 cm. latum. Corymbus parvus, densiflorus, 1 cm. longus, 1.5-2.5 cm. latus; bractae pallidae vel roseo-suffusae, lanceolatae, obtusiusculae, basi barbatae, 3-5 mm. longae, ovarium superantes. Ovarium glabrum, 2 mm. longum, demum longius. Corollae roseo-albidae tubus 2.5 mm. longus; limbus brevis, vix 1 mm. longus, 2.5 mm. latus.

"Plant of 3-6 inches. Flowers pinkish-white. Moist, grassy situations in pine scrub on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 10-11,000 ft. September 1906." G. Forrest. No. 2885.

"Plant of 3-6 inches. Flowers pink. Boggy mountain pasture on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. July 1906." G. Forrest. No. 4645.

In habit, this species reminds of *V. pyrolifolia*, Dcne., and *V. flagellifera*, Batal. (Kansu); it is different from the Kansu species by the more entire leaves and composite inflorescences.

Valeriana stenoptera, Diels. Sp. nov.

Rhizoma (an semper breve?) radices fibrosas numerosas demittens. Caulis 15-50 cm. altus basi puberulus, superne praeter nodos subbarbato glabratus. Folia infima longe petiolata, late ovata, serrata evanida, cetera sessilia, alte pinnatipartita, fere glabra, 5-8 cm. longa, segmentis linearibus integris vel hinc inde incisis, nonnunquam subcurvatis, apicem versus longe attenuatis, 1.5-2 cm. longis. Corymbus simplex vel tripartitus, cymae densiflorae; bractae lineares apice tenues subcallosae. Ovarium glabrum, 1.5-2 cm. longum. Corolla rosea vel roseo-alba; tubus limbo brevior basi ipsa subito unilateraliter constrictus ideoque gibbus, circ. 2 mm. longus; limbi lobi subelliptici, obtusi, 2.5 mm. longi, 1.5 mm. lati.

"Plant of 6-18 inches. Flowers pinkish-white. Ledges and crevices of cliffs and on limestone drift on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 25'$ N. Alt. 11-12,000 ft. August 1906." G. Forrest. No. 2705.

"Plant of 9 inches. Flowers pink. Growing on humus-covered boulders, same locality. Alt. 10,000 ft." G. Forrest. No. 2758.

Easily recognised by the narrowly cut leaves, the short gibbous tube of the corolla, and the glabrous ovary.

VERBENACEAE.

Caryopteris Forrestii, Diels. Sp. nov.

Suffruticosus, saepe procumbens, 0.3-1.2 m. altus, omnibus partibus albedo-velutinellus. Foliorum petiolus 0.5-1 cm. longus, lamina herbacea, supra viridis, molliter puberula subtus albotomentella, subovata vel oblonga, basin versus angustata, apice obtusiuscula, 2-5 cm. longa, 0.5-2.5 cm. lata, nervi primarii subtus prominentes. Inflorescentiae corymbosae et in axillis foliorum superiorum ortae et terminales, conspicue pedunculatae, albedo-velutinellae. Flores pedicellati. Calyx subaequaliter 5-fidus, tubus circ. 1.5 mm. longus, rotundatus, segmenta anguste lanceolata, crassiuscula, obtusa, 2-2.5 mm. longa, intus tomentoso-marginata. Corolla viridi-alba, extus velutinella; tubus rectus, haud gibbus, circ. 2.5 mm. longus, intus ad insertiones staminum barbatus, segmenta 4 superiora subaequalia ovata obtusa circ. 1.5 mm. longa, 1.2 mm. lata, inferius longius (3-4 mm.) concavum, apice dentibus 3 alte trifidis ornatum. Stamina libera exserta, circ. 5 mm. longa. Stylus apice minute bilobus, discus ovarii dimidium subaequans. Calyx fructifer ad 4-5 mm. ampliatus, nuculae semiobovatae dorso puberulae margine subalatae ventre planae 2-2.5 mm. longae.

"A shrub of 3-4 ft. Flowers greenish-white. Dry, stony ground at head of the Teng chuan valley. Elev. 8000 ft. Flow. September 1904." G. Forrest. No. 79.

"Shrubby plant of 1-2 ft., usually prostrate. Valley of the Yangtse below Pung tzu la. Dry, limestone country. Elev. 9000 ft. Fruit, September 1904." G. Forrest. No. 100.

The Pung tzu la specimen is more xerophytic, having more spreading branches and considerably smaller leaves.

Allied to *C. mongolica*, Maxim., but the leaves are larger and the flowers very much smaller.

MONOCOTYLEDONES.

COMMELINACEAE.

Aneilema stenothyrsa, Diels. Sp. nov.

Caules complures basi procumbentes, adscendentes, fere glabri, 15–30 cm. longi, foliati. Folia ad vaginam amplectentem et laminae basin pilosa ceterum glabra, vagina 1–1.5 cm. longa, lamina anguste ovata vel sub lanceolata 3–5 cm. longa, 7–12 mm. lata, margine minute scaberula apice apiculo atropurpureo plerumque praedita. Panicula angusta e cymis paucifloris breviter pedunculatis vel subsessilibus composita, 2.5–3 cm. longa, 1.5–2 cm. lata. Florum alabastra nutantia. Sepala sicca hyalino-albida, elliptica, 5 mm. longa, 3 mm. lata. Petala (an semper?) sepalis minora, coerulea. Stamina fertilia 2–3, filamenta barbata; staminodia 3. Fructus circ. 6 mm. longus, trilocularis, loculi monospermi.

"Plant of 6–12 inches. Flowers white. Boggy situations along the base of the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 6700–8000 ft. June–July 1906." G. Forrest. No. 4847.

Sect. *Dictyospermum*, Clarke; easily recognised by the small narrow panicle.

LILIACEAE.

Smilax tortuosus, Diels. Sp. nov.

Frutex 1.2–1.8 m. altus, rami valde flexuoso-intricati, hinc inde aculeati, vaginis induratis truncatis dense obtecti, internodia 5–8 mm. longa. Folia ecirrhopa; vaginae circ. 2 mm. longae auriculatae; lamina sessilis, elliptica vel ovato-elliptica, demum subcoriacea, 3–3.5 cm. longa, 1–1.5 cm. lata, nervi demum in utraque facie prominuli. Umbellae ♂ pedunculatae, in ramis novellis ex axilla inferiori ortae folio breviores. Pedicelli 3–4 mm. longi. (Planta ♀ non visa.)

"Shrub of 4–6 ft. Flowers green. Open, grassy situations on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11–12,000 ft. October 1906." G. Forrest. No. 3099.

In the shape of the leaf *S. tortuosus* is not unlike *S. parvifolia*, Wall.; but the sheaths and flowers are different.

Polygonatum uncinatum, Diels. Sp. nov.

Rhizoma repens. Caulis 25 cm. altus, glaber, basi nudus. Folia 4–5–nerv. verticillata, glabra, lanceolata, margine anguste revoluta, apice uncinata, 5–6 cm. longa, 1–1.4 cm. lata. Flores

bini vel solitarii fasciculati, penduli, pedicelli 1-1.3 cm. longi. Perigonium album 1.5-1.8 cm. longum, 0.3-0.5 cm. latum, lobi 0.3-0.4 cm. longi, viriduli, apice barbulati. Antherae 6 mm. longae. Ovarium ovoideum, 4-5 mm. longum, sensim in stylum 10 mm. longum angustatum.

"Plant of 1-3 ft. Flowers white, tinged purplish. In pine forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9-10,000 ft. July-August 1906." G. Forrest. No. 4839.

Polygonatum Stewartianum, Diels. Sp. nov.

Rhizoma repens, incrassatum. Caulis erectus, 30-60 cm. altus, longe nudus, glaber, minute purpureo-maculatus. Folia terna verticillata vel opposita, subtus glauca, ad nervos scabriuscula, anguste vel latius lanceolata, apice uncinata, 7-8 cm. longa, 1-1.6 cm. lata. Flores pedicellati, solitarii vel bini in axillis fasciculati, decurvi penduli, 10-12 mm. longi. Perigonium viridulo-purpurascens, e basi ca. 4 mm. lata sub limbo ad 3 mm. constrictum, limbo iterum ampliatum; limbi lobi exteriores 3 mm. longi, quam interiores ovati longiores et angustiores. Antherae 2 mm. longi. Ovarium late ovoideum, 3 mm. longum; stylus 2 mm. longus, stigma subcapitatum.

"Plant of 1-1½ ft. Flowers pale greenish purple. Dry, shady situations amongst scrub and in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 9-10,000 ft. May 1906." G. Forrest. No. 2185.

"Erect plant of 18-24 inches. Flowers greenish-crimson. In shadypine forests on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 10-11,000 ft. May 1906." G. Forrest. No. 2239.

As to the leaves, this species is similar to *Polygonatum erythrocarpum*, Hua; in the flower, it resembles *P. Delavayi*, Hua. In foliage, *P. Stewartianum* forms a transition from the *Oppositifoliae* group to the *Verticillatae*.

Hemerocallis Forrestii, Diels. Sp. nov.

Planta 30-45 cm. alta. Caulis basi residuis foliorum pristinorum fibrosis dense cincta. Folia 20-35 cm. longa, 1.3-1.7 cm. lata, obtuse-acuminata. Corymbus 8-10-florus, pedicelli 1.5-2 cm. longi, bractae ovatae vel lanceolatae. Flores rubicundo-aurantiaci, inodori; tubus brevis 1-1.5 cm. longus, sensim in limbum dilatatus; segmenta exteriora oblanceolata, 5.5-6 cm. longa, 1-1.5 cm. lata (sicca), praesertim apicem versus fusciscentia, interiora aequilonga latiora tenuiora.

"Plant of 12-18 inches. Flowers deep reddish-orange, non-fragrant. Dry clefts and ledges of cliffs in side valleys on the eastern flank of the Lichiang Range. Lat. 27° 12' N. Alt. 9-10,000 ft. June 1906." G. Forrest. No. 2512.

This species is allied to *H. fulva*, Linn., which is cultivated by the natives of Yunnan, and also growing wild (as var. *β angustifolia*, Bak.) in the mountains of the Lichiang district. The new species is different from it in its narrow perianth with a remarkably short tube, the leaves are much broader than those of *H. fulva*, var. *β angustifolia*, which are only 0.4–0.8 cm. wide in the specimens collected near Talifu by Forrest.

Diuranthera minor, C. H. Wright ex Hemsl. in Hook. Icon. Pl. t. 2734.

Folia linearia, 12–20 cm. longa, 0.4–0.6 cm. lata, subrigida, stricta. Antherarum appendices submutici, circ. 1.5 mm. longi. Flores albi, extus roseo-striati. Antherae flavae.

"Plant of 14 inches. Root fleshy; flowers white, exterior marked rose, stamens yellow. Shady situations amongst rocks on mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 10–11,000 ft. September 1906." G. Forrest. No. 2979.

"Plant of 1–2 ft. Flowers watery white, anthers orange. Dry, stony slopes on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 9–10,000 ft. June–July 1906." G. Forrest. No. 4830.

Diuranthera major, Hemsl. in Hook. Icon. Pl. t. 2734.

Folia latilinear, ad 1.6 cm. lata, magis herbacea, undulata. Antherarum appendices acutiores circ. 3 mm. longi.

"Plant of 1–1½ ft. Flowers white, anthers orange. In scrub and on the margins of thickets on the eastern flank of the Tali Range. Lat. 25° 40'. Alt. 8–9000 ft. June 1906." G. Forrest. No. 4831.

It is doubtful if these two species are really distinct.

Chlorophytum platystemon, Diels. Sp. nov.

Rhizoma fibris radicalibus crasse carnis praeditum. Folia stricta linearia, basi hyalina alternata, apice acuta, 12–15 cm. longa, 0.3–0.4 cm. lata. Scapus 20–30 cm. altus, simplex vel apice furcato-biramosus. Racemus remotiflorus laxis; bracteae minutae, quam pedunculus primo erectus demum patens vel decurvatus infra medium articulatus 0.4–0.9 cm. longus multo breviores. Perianthii segmenta rotato-expansa, subelliptica vel oblonga, alba, in mediano flava, 9 mm. longa, 4 mm. lata. Stamina filamentis brevi dense papilloso utrinque constricto ceterum conspicue dilatato 2.5 mm. longo atque anthera aurantiaca 5 mm. longa praedita. Ovarium subglobosum 1.5 mm. diamet., stylus 8 mm. longus.

"Plant of 9–12 inches. Perianth white with a line of yellow

up the centre of each segment, stamens orange. Dry, stony slopes on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 15' N$. Alt. 10-11,000 ft. July 1906." G. Forrest. No. 2698.

Allium polyastrum, Diels. Sp. nov.

Caules plerumque solitarii, robusti, 0.3-0.6 m. alti, basi paulo bulboso-incrassati. Vaginae exteriores subfibrosae, ceterae hyalinae apice saepius fissae vel lacerae. Folia basi longius vaginantia, late linearia, caule breviora, 30-40 cm. longa, 0.5-1.8 cm. lata. Bracteae mox marcescentes. Flores numerosi (ca. 30-60); pedicelli stricti, 2-3 cm. longi. Perianthium varie roseum; segmenta mox stellato-expansa vel demum reflexa, anguste oblanceolato- vel spathulato-linearia, uninervia, 6-8 mm. longa, 2-2.5 mm. lata. Stamina libera, edentata, basi paulo dilatata, ca. 10 mm. longa. Ovarium breviter lateque obovatum vel obcordatum, 2-4 mm. longum; stylus 2-6 mm. longus.

" Chung Tien plateau. Alt. 12-13,000 ft. Plant of 1-2 ft. Flowers pale rose. September 1904." G. Forrest. No. 254.

" Plant of 12-30 inches. Flowers bright rose. Grassy slopes on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20' N$. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 3066.

" Plant of $1\frac{1}{2}$ -2 ft. Flowers bright rose-magenta. Moist, grassy slopes on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20' N$. Alt. 11-12,000 ft. October 1906." G. Forrest. No. 3088.

" Plant of 1-2 ft. Flowers deep magenta-rose. Moist, rocky grassland on the eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 8-10,000 ft. August 1906." G. Forrest. No. 5080.

This fine *Allium* is allied to *A. tuberosum*, Roxb., but the flowers are more numerous and the stamens not shorter than the perianth. From *A. Wallichii*, Kunth., it differs by the outer scales often being fibrous, the margins of the leaves not erose, the flowers more numerous, the petals rose.

Allium polyastrum, Diels, var. **platyphyllum**, Diels. Var. nov.

Caulis basi longius nudus. Folia in caule medio conferta, latiora atque breviora, oblonga vel lanceolata, 15-19 cm. longa, 1.5-3 cm. lata. Pedunculi bini. Flores illis typi simillimi.

" Plant of 12-18 inches. Flowers deep magenta. Grassy openings amongst rocks on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 25' N$. Alt. 10-11,000 ft. September 1906." G. Forrest. No. 2994.

The habit of this plant is very different from the type, the lower leaves being extraordinarily short and broad. But the flowers being the same, I think it is a local modification only.

Allium Bulleyanum, Diels. Sp. nov.

Bulbi vix evoluti; caulis basi incrassatus, vaginis foliorum pristinorum exterioribus subfibrosis interioribus scariosis varie fissis obtectus. Folia linearia, 20–35 cm. longa, 3–9 mm. lata. Scapus 0.3–0.75 m. altus. Umbella multiflora, spatha mox decidua, pedicelli graciles 2.5–3 cm. longi. Perianthium saturate kermesinum; segmenta anguste elliptica, circ. 6 mm. longa, 2.5 lata. Stamina basin versus dilatata, edentata, ima basi annulari-connata; filamenta 4–5 mm. longa, antherae 2–3 mm. longae. Ovarium obcordatum, stylus quam ipsum dimidio brevior.

"Plant of 1½–2½ ft. Flowers maroon-purple. Moist, rocky, shady situations on the western slopes of the Tsan shan Range. Lat. 25° 40' N. Alt. 9–10,000 ft. September 1903." G. Forrest. No. 1052.

"Plant of 1–2½ ft. Flowers very deep crimson. Damp, shady situations amongst scrub in side valleys on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9–10,000 ft. September 1906." G. Forrest. No. 5079.

"Plant of 1–2 ft. Flowers deep magenta-rose. Moist, rocky grassland on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 8–10,000 ft. August 1906." G. Forrest. No. 5080.

This species is allied to *A. Wallichii*, differing in the fewer flowered inflorescence, and deep crimson flowers, which are getting darker, not paler, when dried. A similar form is known from Sikkim.

Allium yunnanense, Diels. Sp. nov.

Caules complures caespitosi, basi paulum bulboso-incrassati, vaginae exteriores fibrosae. Folia filiformi-linearia, scapo plerumque breviora, 13–25 cm. longa. Scapi 10–40 cm. longi. Bracteae hyalinae vel purpurascens, mox marcescentes. Flores umbellae valde inaequaliter evoluti: interioribus nonnisi novellis exterioribus jam perfectis; pedicelli papilloso, 15–20 mm. longi. Perigonium anguste infundibuliformi-campaniforme, albidum vel roseum, segmenta suberecta, oblanceolata-vel oblongo-linearia apice nonnunquam plicata recurvata, 10–12 mm. longa, 1.5 mm. lata. Stamina basi ad 1 mm. connata, ceterum libera 5–6 mm. longa basin versus vix dilatata. Ovarium e basi angustata ovoideum 2–3 mm. longum, 2 mm. latum. Stylus 1.5–3 mm. longus.

"Plant of 6–12 inches. Flowers pink. Shady, shrubby

situations on the western slopes of the Tsan shan range near the head of the Yang-pi pass. Lat. $25^{\circ} 40'$. Alt. 9-10,500 ft. September 1905." G. Forrest. No. 914.

"Plant of 6-9 inches. Flowers white veining rose. Crevices of cliffs and dry, shady situations in pine forests on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20' N$. Alt. 9-10,500 ft. July-August 1906." G. Forrest. No. 2871.

"Plant of 4-12 inches. Flowers bright purplish-rose. Dry situations in and on the margins of pine forests on the eastern flank of the Tali Range. Alt. 8-9000 ft. June 1906." G. Forrest. No. 4833.

"Plant of 4-9 inches. Flowers bright rose. Dry, rocky situations amongst scrub on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 25' N$. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 3049.

Also Möng tse (Herb. Kew!).

This species is easily recognised by its very narrow bulbs, narrow leaves, and unequal development of the inflorescence. The flowers are narrow, the segments hardly spreading.

Allium rhynchogynum, Diels. Sp. nov.

Planta basi vestigiis foliorum pristinorum fibrosis obtectum. Folia late linearia, loriformia, 10-20 cm. longa, 8-10 mm. lata. Scapus 16-22 cm. longus. Umbella 6-10-flora; spatha longe persistens, late ovata, scariosa, circ. 1.5 cm. longa, pedicelli 1-2.5 cm. longi. Perianthium roseum, segmenta anguste lanceolata, acuminata, 10-12 mm. longa, 2.5-3 mm. lata. Stamina breviora 5-6 mm. longa, basin versus sensim dilatata, basi ipsa connata. Ovarium gynophoro brevi insertum, late obovatum, 4-5 mm. longum, carpella apice longiuscule rostrata, stylus fere totus inter rostra occultus.

"Cliffs in the valley of the Yangtse between Chu Tien and Shih ku. Alt. 6-7000 ft. 1904." G. Forrest. No. 267.

Allium rhynchogynum is allied to *A. yunnanense*, Diels, but readily recognised by its much broader leaves and the beaked carpels.

Allium Forrestii, Diels. Sp. nov.

Rhizoma elongatum, vestigiis foliorum pristinorum dense fibrosis obtectum. Folia pauca, teretia vel anguste linearia, scapo breviora, 10-12 cm. longa. Scapus 15-25 cm. altus. Umbella 3-5-flora; pedicelli 3-6 mm. longi, spathae caducae. Flores ampli (demum cernui?), obscure purpurei, in mediano segmentorum intensissime colorati; perianthii campanulati segmenta elliptico-obovata, obtusa, circ. 8 mm. longa, 4.5 cm. lata. Stamina basi ipsa dilatata, connata, circ. 5 mm. longa. Stylus

quam ovarium 3 mm. longum dimidio brevior, apice brevissime trifidum.

"Plant of 6-9 inches. Flowers deep claret-red, darkest on the mid-rib of each segment. Crevices and grassy ledges of cliffs on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11-12,000 ft. September 1906." G. Forrest. No. 3038.

This is a small species remarkable by its large flowers, resembling small specimens of the *A. narcissiflorum*, Vill., of the European Alps, more than any other species.

Lloydia Forrestii, Diels. Sp. nov.

Folia linearia, ca. 4, scapum florentem superantes, 8-15 cm. longa. Scapus 4-11 cm. longus, apice curvatus, ideoque flores penduli; bracteae bracteolaeque foliaceae erectae, suprema flori appropinquata. Flores 1-2. Perianthii sepala angusta, spathulato-linearia, flava, basi aurantiaca, 15-16 mm. longa, 2.5-3 mm. lata. Filamenta pilosa, stamina 10 mm. longa. Ovarium cylindricum, 5-6 mm. longum; stylus 4 mm. longus, stigma capitatum.

"Plant of 4-6 inches. Flowers yellow, base of perianth orange. Open, grassy situations on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10-11,000 ft. August-September 1906." G. Forrest. No. 1892.

This seems to be allied to *L. oxycarpa*, Franchet, but the leaves are longer than the scape, the bracts exceed the flower, and the perianth is nodding.

Veratrum stenophyllum, Diels. Sp. nov.

Caulis 0.3-0.8 m. altus, basi vaginarum foliorum pristinorum fibris atrofusis cinctus, praecipue superne densius pubescens, apice nonnunquam subtomentellus. Folia lanceolato-linearia vel oblanceolato-linearia, nonnunquam subfalcato-curvata, 15-45 cm. longa, 1.5-5 cm. lata. Bracteae inferiores lanceolatae dimidium ramorum fere aequantes, superiores decrescentes. Flores ♂ minores quam ceteri, perianthii segmenta basi magis contracta, aurea, extus viridia. Flores subhermaphroditi mediores, stamina 3.5-4 mm. longa, carpella 3-3.5 mm. longa. Flores ♀ majores, perianthii segmenta anguste ovata, 8-9 mm. longa, 4 mm. lata, viridia. Staminodia 3-3.5 mm. longa, carpella lata 2-2.5 mm. longa. Capsula sepala fere duplo superans.

♀ "Plant of 1-2½ ft. Flowers green. Mountain meadows on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 9500-11,000 ft. July 1906. N. W. Yunnan, China." G. Forrest. No. 2635.

♂ "Plant of 1½-3 ft. Flowers green. Grassy, shady openings

in and on the margins of pine and mixed forests on the eastern flank of the Tali Range. Lat. $25^{\circ} 40'$ N. Alt. 8–10,000 ft. June–August 1906." G. Forrest. No. 4663.

"Plant of $1\frac{1}{2}$ –3 ft. Flowers golden yellow, exterior veined green. Open, grassy situations in pine forests on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20'$ N. Alt. 10–12,000 ft. September 1906." G. Forrest. No. 3039.

Although the classification of *Veratrum* is very unsatisfactory, I think Forrest's plants may be considered a new species, recognised by its very narrow leaves and bracts. It is allied to *V. dahuricum*, Turcz. There are several other forms of the genus in Western China.

SCITAMINEAE.

Hedychium Forrestii, Diels. Sp. nov.

Caulis 0.6–1.2 m. altus, glaber. Folia (summa): vagina ca. 15 cm. longa, petiolo brevi, lamina anguste lanceolata, glabra, apice tenuissime acuta, circ. 50 cm. longa, 6–6.5 cm. lata. Spica cylindrica, 20–25 cm. longa. Bracteae anguste ovatae sed margine inflexosublineares angulo acuto patulae, 4–5 cm. longae, 2–3-florae. Calyx bractea brevior. Corollae tubus 4–5.5 cm. longus, lobi sublineares (torquati?) 4 cm. longa, 0.3–0.6 cm. lati. Stamina late elliptica alba 3–3.5 cm. longa, 1.2–1.5 cm. lata. Labellum eis simile, sublatius (?). Stamina 3 cm. longa.

"Plant of 2–4 ft. Flowers white. Open, moist situations in the Tali valley. Lat. $25^{\circ} 40'$ N. Alt. 6700 ft. July 1906." G. Forrest. No. 4812.

A similar plant seems to be Hancock, No. 387, from Red River, Southern Yunnan, in Herb. Kew; I have not dissected its flower.

This species is different from *H. coronarium* by its narrower spreading bracts, the narrower segments of the corolla and broader stamens. I could not find out some of the details of the flower without destroying the specimen. The description must be completed from living specimens.

Index to Species.

Described in Dr. Diels' Account of New and Imperfectly Known Species.

	PAGE		PAGE
<i>Acer Forrestii</i> , Diels	165	<i>Artemisia codonocephala</i> , Diels	186
<i>Aconitum acaule</i> (Fin. et Gagnep. sub tit. var.), Diels	270	<i>Artemisia yunnanensis</i> , J. F. Jeffrey	187
<i>Aconitum brachypodium</i> , Diels	268	<i>Aster Bulleyanus</i> , J. F. Jeffrey	184
<i>Aconitum brevicarcaratum</i> (Fin. et Gagnep. sub tit. var.), Diels	267	<i>Aster Harrowianus</i> , Diels	184
<i>Aconitum Bulleyanum</i> , Diels	267	<i>Aster Harrowianus</i> , Diels, var. glabratus, Diels	184
<i>Aconitum jucundum</i> , Diels	266	<i>Aster Jeffreyanus</i> , Diels	185
<i>Aconitum Souliei</i> , Fin. et Gagnep.	268	<i>Astragalus coelestis</i> , Diels	244
<i>Aconitum transsectum</i> , Diels	268	<i>Astragalus dolichochaete</i> , Diels	245
<i>Aconitum venatorium</i> , Diels	269	<i>Begonia Harrowiana</i> , Diels	166
<i>Adenophora Bulleyana</i> , Diels	175	<i>Berberis centiflora</i> , Diels	167
<i>Adenophora coelestis</i> , Diels	173	<i>Berberis leptoclada</i> , Diels	167
<i>Adenophora diplodonta</i> , Diels	176	<i>Boea arachnoidea</i> , Diels	225
<i>Adenophora Forrestii</i> , Diels	174	<i>Buddleia adenantha</i> , Diels	248
<i>Adenophora leptosepala</i> , Diels	175	<i>Buddleia agathosma</i> , Diels	248
<i>Adenophora megalantha</i> , Diels	175	<i>Buddleia brachystachya</i> , Diels	249
<i>Adenophora ornata</i> , Diels	174	<i>Buddleia Forrestii</i> , Diels	249
<i>Adenophora pachyrhiza</i> , Diels	176	<i>Buddleia myriantha</i> , Diels	250
<i>Agapetes Bulleyana</i> , Diels	294	<i>Calamintha chinensis</i> , Bth.	233
<i>Ajuga campylantha</i> , Diels	243	<i>Calamintha chinensis</i> , Bth., var. <i>megalantha</i> , Diels	233
<i>Ajuga Forrestii</i> , Diels	242	<i>Calamintha discolor</i> , Diels	232
<i>Ajuga lupulina</i> , Maxim., var. major, Diels	243	<i>Caltha palustris</i> , Linn., var. umbrosa, Diels	264
<i>Allium Bulleyanum</i> , Diels	301	<i>Cardamine Franchetiana</i> , Diels	205
<i>Allium Forrestii</i> , Diels	302	<i>Cardamine</i> (<i>Dentaria</i>) <i>granu-</i> <i>lifera</i> (Franch.), Diels	204
<i>Allium polyastrum</i> , Diels	300	<i>Cardamine</i> (<i>Dentaria</i>) <i>repens</i> , Franch.	204
<i>Allium polyastrum</i> , Diels, var. platyphyllum, Diels	300	<i>Carum coloratum</i> , Diels	287
<i>Allium rhynchogynum</i> , Diels	302	<i>Carum dolichopodium</i> , Diels	287
<i>Allium yunnanense</i> , Diels	301	<i>Carum</i> ? <i>pityophilum</i> , Diels	288
<i>Alstonia yunnanensis</i> , Diels	165	<i>Caryopteris Forrestii</i> , Diels	296
<i>Anaphalis chlamydophylla</i> , Diels	188	<i>Chelonopsis odontochila</i> , Diels	240
<i>Anaphalis Franchetiana</i> , Diels	189	<i>Chlorophytum platystemon</i> , Diels	299
<i>Anailema stenothyrsa</i> , Diels	297	<i>Chrysosplenium Forrestii</i> , Diels	282
<i>Anemone obtusiloba</i> , Don, var. <i>coerulea</i> , Ulbrich	264	<i>Clematis Delavayi</i> , Franch., var. <i>spinescens</i> , Balf. f.	262
<i>Anemone trullifolia</i> , Hook. f. et Thom., var. <i>holophylla</i> , Diels	263	<i>Cnicus Forrestii</i> , Diels	196
<i>Angelica Forrestii</i> , Diels	289	<i>Cnicus taliensis</i> , J. F. Jeffrey	196
<i>Angelica</i> ? <i>rivulorum</i> , Diels	288	<i>Codonopsis Bulleyana</i> , G. Forrest	171
<i>Arenaria Forrestii</i> , Diels	181		
<i>Arenaria ionandra</i> , Diels	182		
<i>Arenaria longistyla</i> , Franch., var. <i>pleurogynoides</i> , Diels	182		
<i>Arenaria napuligera</i> , Franch..	182		

	PAGE		PAGE
Codonopsis Forrestii, Diels . . .	171	Hemerocallis Forrestii, Diels . . .	298
Codonopsis macrocalyx, Diels . . .	170	Hemigraphis drymophila, Diels . . .	161
Codonopsis meleagris, Diels . . .	172	Hemsleya amabilis, Diels . . .	206
Coleus wulfenoides, Diels . . .	231	Heracleum stenopterum, Diels . . .	291
Colquhounia decora, Diels . . .	240	Hibiscus Forrestii, Diels . . .	252
Corydalis Balfouriana, Diels . . .	254		
Corydalis Bulleyana, Diels . . .	256	Indigofera leptosepala, Diels . . .	245
Corydalis heterocentra, Diels . . .	255	Ipomaea caloxantha, Diels . . .	203
Corydalis homopetala, Diels . . .	254		
Corydalis yunnanensis, Franch., var. megalantha, Diels . . .	255	Jasminum Beesianum, G. Forrest et Diels . . .	253
Corylopsis yunnanensis, Diels . . .	226	Jurinea berardioidea, Franch. (sub tit. var.) . . .	199
Cotoneaster hebeophylla, Diels . . .	273	Jurinea edulis, Franch., f. caulescens, Franch. . .	199
Cotoneaster insculpta, Diels . . .	273	Jurinea Forrestii, Diels . . .	200
Cotoneaster verruculosa, Diels . . .	272		
Cremanthodium Forrestii, J. F. Jeffrey . . .	191	Lactuca Beesiana, Diels . . .	201
Cremanthodium rhodocephalum, Diels . . .	190	Laportea Forrestii, Diels . . .	292
Crepis paleacea, Diels . . .	202	Leontopodium caespitosum, Diels . . .	189
Crepis rigescens, Diels . . .	202	Leptodermis Forrestii, Diels . . .	274
Crepis rosularis, Diels . . .	201	Leptodermis glauca (Franch.), Diels . . .	275
Cyananthus formosus, Diels . . .	172	Leptodermis pilosa (Franch.), Diels . . .	276
Cyananthus Forrestii, Diels . . .	173	Leptodermis Wilsoni, Hort. Kew . . .	275
Cynoglossum ? Dunnianum, Diels . . .	168	Ligusticum modestum, Diels . . .	289
Cynoglossum triste, Diels . . .	169	Ligustrum ionandrum, Diels . . .	252
		Linnaea brachystemon, Diels . . .	178
Daphne aurantiaca, Diels . . .	285	Linnaea Forrestii, Diels . . .	178
Delphinium Bulleyanum, G. Forrest . . .	265	Litsea Forrestii, Diels . . .	244
Delphinium Forrestii, Diels . . .	265	Lloydia Forrestii, Diels . . .	303
Diapensia Bulleyana, Forrest . . .	207	Lobelia pleotricha, Diels . . .	170
Didissandra amabilis, Diels . . .	224	Lobelia taliensis, Diels . . .	170
Didissandra muscicola, Diels . . .	225	Lonicera xerocalyx, Diels . . .	177
Diospyros Balfouriana, Diels . . .	209	Loranthus Balfourianus, Diels . . .	250
Diuranthera major, Hemsl. . .	299	Loranthus calareas, Diels . . .	251
Diuranthera minor, C. H. Wright . . .	299	Luculia gratissima, Sweet . . .	274
Dracocephalum bullatum, Forrest . . .	238	Lycium chinense, Mill. var. ? . . .	283
Dumasia Forrestii, Diels . . .	247		
		Machilus mekongensis, Diels . . .	244
Elsholtzia heterophylla, Diels . . .	231	Millettia Harrowiana, Diels . . .	246
Elsholtzia luteola, Diels . . .	232	Morina Bulleyana, G. Forrest et Diels . . .	208
Epilobium Forrestii, Diels . . .	254	Morina chlorantha, Diels . . .	208
Erigeron patentisquama, J. F. Jeffrey . . .	185	Morus longistylus, Diels . . .	293
Euphorbia Bulleyana, Diels . . .	219	Mucuna montana, Diels . . .	247
Euphorbia bupleuroides, Diels . . .	218		
Euphorbia glaucopoda, Diels . . .	219	Nepeta Stewartiana, Diels . . .	237
Euphorbia megistopoda, Diels . . .	218	Nepeta tenuiflora, Diels . . .	238
Galium Forrestii, Diels . . .	279	Omphalodes Forrestii, Diels . . .	169
Galium modestum, Diels . . .	280	Oxalis leucolepis, Diels . . .	223
Galium nephrostigmaticum, Diels . . .	279	Oxyspora serrata, Diels . . .	252
Gaultheria Forrestii, Diels . . .	210		
Gentiana asterocalyx, Diels . . .	220	Paracaryum brachytubum, Diels . . .	168
Gentiana decorata, Diels . . .	220	Parnassia mysorensis, Heyne, var. aucta, Diels . . .	281
Gentiana Georgei, Diels . . .	221	Pertya phyllicoides, J. F. Jeffrey . . .	200
Gentiana Harrowiana, Diels . . .	221		
Hedychium Forrestii, Diels . . .	304		

INDEX TO SPECIES.

307

	PAGE		PAGE
Peucedanum olivaceum, Diels	290	Rhododendron Beesianum,	
Phlomis betonicoides, Diels	241	Diels	214
Phlomis Forrestii, Diels	241	Rhododendron chartophyllum	
Phlomis Franchetiana, Diels	242	Franch.	217
Phlomis melanantha, Diels	242	Rhododendron chartophyl-	
Photinia Franchetiana, Diels	272	lum, Franch., f. praecox	217
Pilea peperomoides, Diels	292	Rhododendron chasmanthum,	
Plectranthus adenanthus, Diels	228	Diels	212
Plectranthus Bulleyanus,		Rhododendron dichroanthum,	
Diels	229	Diels	212
Plectranthus Forrestii, Diels	229	Rhododendron Forrestii, Balf.	
Plectranthus irroratus, G.		f. descr. Diels	211
Forrest	228	Rhododendron gymnanthum,	
Plectranthus leucanthus,		Diels	211
Diels	230	Rhododendron lacteum,	
Plectranthus megathyrsus,		Franch.	215
Diels	230	Rhododendron lacteum,	
Plectranthus oreophilus, Diels	227	Franch., var. macrophyl-	
Plectranthus phyllopodus,		lum, Franch.	215
Diels	227	Rhododendron Souliei, Franch.	217
Plectranthus phyllostachys,		Rhododendron Stewartianum,	
Diels	230	Diels	211
Plectranthus pleiophyllus,		Rhododendron taliense,	
Diels	228	Franch.	216
Pleurogyne oreocharis, Diels	222	Rhododendron uvarifolium,	
Pluchea Bulleyana, J. F.		Diels	213
Jeffrey	183	Roettlera Forrestii, Diels	224
Polygonatum Stewartianum,		Rubia leiocaulis, (Franch. sub	
Diels	298	tit. var.), Diels	277
Polygonatum uncinatum,		Rubia membranacea (Franch.	
Diels	297	sub tit. var.), Diels	279
Polygonum calostachyum,		Rubia pallida, Diels	277
Diels	261	Rubia podantha, Diels	277
Polygonum cyanandrum,		Rubia ustulata, Diels	278
Diels	257	Rubia yunnanensis (Franch.),	
Polygonum delicatulum,		Diels	278
Meissn.	258	Salix cathayana, Diels	281
Polygonum Emodi, Maxim.,		Salix resecta, Diels	281
var. dependens, Diels	256	Salvia Bulleyana, Diels	233
Polygonum Forrestii, Diels	258	Salvia castanea, Diels	233
Polygonum jucundum, Diels	257	Salvia digitaloides, Diels	234
Polygonum leptopodum,		Salvia flava, G. Forrest	235
Diels	260	Salvia flava, G. Forrest, var.	
Polygonum oliganthum,		megalantha, Diels	236
Diels	260	Salvia Forrestii, Diels	235
Polygonum radicans, Hemsl.	258	Salvia hylocharis, Diels	236
Polygonum subscaposum,		Salvia trijuga, Diels	237
Diels	261	Saussurea euodonta, Diels	198
Polygonum suffultum, Maxim.	259	Saussurea Forrestii, Diels	198
Potentilla articulata, Franch.	271	Saussurea gossypiphora, Don.	197
Potentilla stenophylla		Saussurea leucoma, Diels	197
(Franch.), Diels	271	Scrophularia Forrestii, Diels	283
Prenanthes yakoensis, J. F.		Scutellaria Forrestii, Diels	239
Jeffrey	203	Scutellaria likiangensis, Diels	239
Rheum Forrestii, Diels	262	Senecio Bulleyanus, Diels	195
Rhinacanthus Beesianus,		Senecio caloxanthus, Diels	194
Diels	164	Senecio cymatocrepis, Diels	192
Rhododendron adenogynum,		Senecio Jeffreyanus, Diels	192
Diels	216	Senecio oryzetorum, Diels	194
Rhododendron anthosphae-		Senecio pleopteris, Diels	191
rum, Diels	215	Senecio saluenensis, Diels	193
Rhododendron Balfourianum,		Senecio scytophyllum, Diels	193
Diels	214	Senecio yakoensis, J. F. Jeffrey	195

	PAGE		PAGE
<i>Sibiraea tomentosa</i> , Diels . . .	270	<i>Thea yunnanensis</i> , Pitard . . .	284
<i>Silene atrocastanea</i> , Diels . . .	181	<i>Thlaspi yunnanense</i> , Franch.,	
<i>Silene cryptantha</i> , Diels . . .	180	var. <i>dentata</i> , Diels . . .	204
<i>Silene Stewartiana</i> , Diels . . .	180	<i>Tilia paucicostata</i> , Maxim.,	
<i>Smilax tortuosus</i> , Diels . . .	297	var. <i>yunnanensis</i> , Diels . . .	285
<i>Solms-Laubachia pulcherrima</i> ,		<i>Trachydium chloroleucum</i> ,	
Muschler . . .	206	Diels . . .	290
<i>Sorbus reducta</i> , Diels . . .	272	<i>Trachydium Forrestii</i> , Diels . .	291
<i>Strobilanthes cyphantha</i> , Diels	162	<i>Triplostegia Delavayi</i> , Franch.	209
<i>Strobilanthes Forrestii</i> , Diels	162		
<i>Strobilanthes versicolor</i> , Diels	163	<i>Vaccinium Forrestii</i> , Diels . . .	294
<i>Strobilanthes yunnanensis</i> ,		<i>Valeriana barbulata</i> , Diels . .	295
Diels . . .	164	<i>Valeriana stenoptera</i> , Diels . .	295
<i>Strobilanthes xanthantha</i> ,		<i>Veratrum stenophyllum</i> , Diels	303
Diels . . .	163	<i>Veronica Forrestii</i> , Diels . . .	282
<i>Swertia calicina</i> , Franch., var.		<i>Viburnum atrocyaneum</i> , C.	
major, Diels . . .	223	B. Clarke . . .	179
<i>Swertia (Ophelia) hyperi-</i>		<i>Vicia dichroantha</i> , Diels . . .	246
coides, Diels . . .	222		
<i>Tanacetum adenanthum</i> ,		<i>Wikstroemia dolichantha</i> ,	
Diels . . .	187	Diels . . .	286
<i>Tanacetum yunnanense</i> , J. F.		<i>Wikstroemia holosericea</i> ,	
Jeffrey . . .	188	Diels . . .	286
<i>Thalictrum tofieldioides</i> ,		<i>Wikstroemia scytophylla</i> ,	
Diels . . .	263	Diels . . .	286
<i>Thea Forrestii</i> , Diels . . .	284		
<i>Thea speciosa</i> , Pitard . . .	285	<i>Xanthoxylum usitatum</i> , Diels	280