

Diagnoses specierum novarum in herbario Horti Regii Botanici Edinburgensis cognitarum DLXX-DC

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***Aeschynanthus Peelii* Hook. f. et Thoms. var. *oblanceolata* Anth. Var. nov.**

A typo foliis minoribus oblanceolatis, pedunculis gracilioribus recedit.
 UPPER BURMA.—G. Forrest 24933, 24980, 27080; F. K. Ward 1893, 3476.

TIBET.—G. Forrest 20099, 20124.

Aeschynanthus Peelii Hook. f. et Thoms. appears to be widely distributed throughout Yunnan, Upper Burma and Tibet, along with the closely allied *A. bracteata* Wall., with which it has been confused. These two species are, however, easily separable by the characters here enumerated:

	<i>bracteata</i> Wall.	<i>Peelii</i> Hook. f. et. Thoms.
Leaves . . .	Elliptic.	Lanceolate. Oblanceolate.
Peduncles . . .	Equal to or shorter than petiole.	Much longer than petiole.
Calyx lobes . . .	Linear-lanceolate. 1.2 cm. long. 1-1.5 mm. broad.	Lanceolate. 1.5-2 cm. long. 3-5 mm. broad.
Corolla . . .	Small and narrow up to 3 cm. long.	Much larger, 3.5-4 cm. long.

Of those specimens referable to *A. Peelii* Hook. f. et Thoms. one group from the Upper Burma-Tibetan border differs from the type which has lanceolate leaves, by the characters cited above. These are placed in the variety *oblanceolata*.

***Aeschynanthus stenosepala* Anth. Sp. nov.**

Species ex affinitate *A. tubulosae* Anth. sed calycis lobis angustissimis, corollae tubo ad basim globoso-dilatato differt.

Suffrutex ramosus ad 1 m. attingens. Rami teretes graciles. Folia opposita, lanceolata, 4-6 cm. longa, 2-3 cm. lata, coriacea, integra, longe acuminata, basi rotundata, petiolo 5 mm. longo. Flores coccinei axillares; pedunculi graciles, foliis longiores, pauciflori; pedicelli circ. 1 cm. longi. Calyx glaber 5-partitus, lobis anguste linearibus acutis, 8 mm. longis, 0.5 mm. latis. Corolla tubuloso-infundibularis, basi circa discum globoso-dilatata, leviter curvata 2.5-3 cm. longa, vix bilabiata, lobis parvis subaequalibus. Stamina 4, didynama, infra medium tubi inserta, e fauce corollae vix exserta; filamenta anteriora circ. 2 cm. longa, glabra, lateralia paululo longiora. Discus cupularis 1.5 mm. altus, apice lobatus. Ovarium lineare, 2.5 cm. longum, 1 mm. latum, glabrum, stylo breve pubescente.

UPPER BURMA.—Shrub of 2-3 ft. Flowers brilliant crimson. Pendent from rocks and ledges of cliffs in side valleys. Hills around Htawgaw Lat. 26° 10' N. Long. 98° 25' E. Alt. 7-8,000 ft. In flower, July 1924. G. Forrest 24773 (type).

Undershrub in forest shade, hanging straight down over cliffs of Naung-chaung gorges. Flowers scarlet. Alt. 4-5,000 ft. In flower, June 1914. F. K. Ward 1699.

On trees, etc., in the valley zone. A small 6-8 inch plant with scarlet flowers. Nyitadi. Alt. 6-7,500 ft. In flower, July 1920. R. Farrer 1752.

Aeschynanthus tubulosa Anth. Sp. nov.

Species ex affinitate *A. buxifoliae* Hemsl. a qua foliis tenuioribus majoribus, corollae tubo longiore angustiore fere recto haud bilabiato distinguitur.

Fruticulus ramosus, epiphyticus, circ. 1 m. altus, glaber, caulibus gracilibus, cortice manifeste verruculoso. Folia elliptica, 2-2.5 cm. longa, 1 cm. lata, supra viridia, infra pallidiora, costa utrinque conspicua, apice acuta, basi cuneata, petiolo 5 mm. longo. Flores atro-kermesini. Calyx 5-partitus, lobis lineari-lanceolatis, 6 mm. longis, 1 mm. latis, acutis, trinerviis. Corolla circ. 3.5 cm. longa, tubulosa, fere recta, ore leviter ampliata haud bilabiata; limbus aequaliter 5-lobatus, lobis rotundatis, 3 mm. longis et latis, margine ciliolatis. Stamina 4, didynama longe exserta; filamenta glabra, 3 cm. longa, ultra corollae medium inserta; antherae oblongae. Discus cupularis, 1 mm. altus, apice lobatulus. Ovarium lineare circ. 3 cm. longum, in stylum longum gracilem attenuatum, stigmatem dilatato.

UPPER BURMA.—Epiphytic shrub of 2 ft. Flowers deep scarlet-crimson. On trees in mixed forests. Descent from the Sausi gorge to Sadon. Lat. 25° 25' N. Alt. 7,000 ft. In flower, September 1912. G. Forrest 9111 (type).

Aeschynanthus tubulosa Anth. var. **angustiloba** Anth. Var. nov.

A typo foliis lanceolatis, calycis lobis angustissimis acutis recedit.

CHINA.—Yunnan. Epiphytic shrubby plant of 2-4 ft. Flowers brilliant scarlet-crimson. On rocks and trees in forests. Hills around Lung-fan. Lat. 25° 54' N. Long. 98° 33' E. Alt. 7,000 ft. In flower, August 1925. G. Forrest 27161.

Chirita Forrestii Anth. Sp. nov.

Species affinis *C. pumilae* D. Don a qua calyce altius 5-fido, lobis linearibus, filamentis superne glandulosis, ovario dense pubescente divergit.

Herba ad 30 cm. attingens. Caulis erectus, striatus, pilosus. Folia elliptica, membranacea, 4-14 cm. longa, 2-8 cm. lata, utrinque alba-pilosa, grosse serrata, obtusa, basi nunc oblique rotundata, petiolo 1-2 cm. longo piloso. Pedunculi axillares, ad 8 cm. longi, 1-4-flori; bractae 5-8 mm. longae, lanceolatae; pedicelli 1.5 cm. longi. Calyx alte 5-fidus, lobis lineari-lanceolatis, circ. 1 cm. longis pilosis. Corolla caerulea, basim versus lutea, tubuloso-infundibularis, circ. 3 cm. longa, extra pilosa. Stamina 2; filamenta circ. 1 cm. longa, apicem versus glandulosa; staminodia 2, 5 mm. longa; omnia infra medium tubi inserta. Ovarium dense pubescens, lineare, circ. 1.5 cm. longum, in stylum crassum pubescentem 8 mm. longum attenuatum; stigma bifidum.

CHINA.—Yunnan. Plant of 6-10 inches. Flowers pale blue. Clefs of cliffs and moss-covered boulders. Mountains in the north-east of the

Yangtze bend. Lat. $27^{\circ} 45' N$. Alt. 10,000 ft. In flower, September 1913. G. Forrest 11119.

Plant of 4-6 inches. Flowers deep blue-purple, base yellowish. Shady situations by streams on moss-covered rocks. Mountains east of Yungning. Lat. $27^{\circ} 50' N$. Alt. 9,000 ft. In flower, July 1918. G. Forrest 16640.

Plant of 3-4 inches. Flowers limb pale blue, tube yellowish-white. On moist humus-covered boulders by streams. Bey-ti Shan. Lat. $27^{\circ} 45' N$. Long. $100^{\circ} 18' E$. Alt. 7-8,000 ft. In flower, July 1921. G. Forrest 20564.

Plant of 1-3 inches. Flowers pale lilac-purple shaded to pale yellow at base. On moist humus-covered boulders and rocks by streams. Mountains north of Yungpeh. Lat. $26^{\circ} 30' N$. Long. $100^{\circ} 45' E$. Alt. 10,000 ft. In flower, August 1922. G. Forrest 22033.

Szechuan. Plant of 6-10 inches. Flowers pale purple-blue, yellowish towards base. Shady dry situations in ravines. Muli mountains. Lat. $28^{\circ} 12' N$. Alt. 9-10,000 ft. In flower, August 1918. G. Forrest 16818.

Plant of 5-8 inches. Flowers pale blue lined green. Moist shady banks and on rocks by streams in side valleys. Mountains south-east of Muli. Lat. $27^{\circ} 50' N$. Long. $101^{\circ} E$. Alt. 10,000 ft. In flower, September 1922. G. Forrest 22405.

Fl. pallide violacei. In regionis calide temperatae ad affluentem fluminis Yalung versus Yenyuen abruptis umbrosis inter vic. Tamuping et Niutschang $27^{\circ} 21'$. Alt. 2,200 m. In flower, September 1914. Handel-Mazzetti 5343.

This species is related to *C. pumila* D. Don, from which it is easily distinguished by the much more deeply divided calyx, the lobes of which are narrow and linear. The ovary is always densely pubescent. In Don's species it varies from glabrous to pubescent. A further point noted was that all the Chinese material referred to *C. pumila* had the leaves spotted and blotched with purple on the under side, a character which is absent from *C. Forrestii*.

Crepis Gillii Moore var. **hirsuta** Anth. Var. nov.

A typo foliis hirsutis, petiolo ciliato, involucri phyllis densissime hirsutis recedit.

CHINA.—Yunnan. Plant of 1 inch. Flowers immature. Yellow? Open screes and on stony pasture. On the Bei-ma Shan. Lat. $28^{\circ} 12' N$. Alt. 14,000 ft. In bud, July 1917. G. Forrest 14500. In flower, August 1917. G. Forrest 14516A.

Plant of 1 inch. Flowers yellow. On screes and stony pasture. Mountains north-east of Atunzte. Lat. $28^{\circ} 35' N$. Long. $99^{\circ} 10' E$. Alt. 14-15,000 ft. In flower, August 1921. G. Forrest 20059.

Plant of 1 inch. Flowers bright yellow. Open stony pasture and

screes. Mekong-Salwin divide. Lat. $27^{\circ} 30' N.$ Long. $98^{\circ} 56' E.$ Alt. 13-14,000 ft. In flower, September 1921. G. Forrest 20088.

Rosulate plant of 1 inch. Flowers dark lemon-yellow. On moist stony pasture and screes Mekong-Yangtze divide east of Yeh-cheh. Lat. $27^{\circ} 36' N.$ Long. $99^{\circ} 10' E.$ Alt. 13-14,000 ft. In flower and fruit, September 1921. G. Forrest 20367.

TIBET.—Plant of 1-2 inches. Flowers yellow. Crevices of cliffs and on screes. Salwin-Kiuchiang divide. Lat. $28^{\circ} 40' N.$ Long. $98^{\circ} 15' E.$ In flower, August 1919. G. Forrest 19054.

Crepis tsarongensis (W. W. Sm.) Anth. Comb. nov.

Lactuca tsarongensis W. W. Sm. in Notes Roy. Bot. Gard. Edin. xii (1920), 211.

TIBET.—Tsarong: G. Forrest 16871 (type).

UPPER BURMA.—Flowers sulphur-yellow, nodding. Dotted over the grassy slopes towards the summit of the ridge, on the east flank. In black mud. Imaw Bum. Alt. 12-13,000 ft. In flower, August 1919. F. K. Ward 3585.

Common down in the marshes on the Chinese side. Flowers citron-yellow, elegantly carried. Chawchi Pass. Alt. 11,000 ft. In flower, August 1920. R. Farrer 1858.

Crepis tsarongensis (W. W. Sm.) Anth. var. **chimiliensis** (W. W. Sm.) Anth. Comb. nov.

Lactuca tsarongensis W. W. Sm. forma *chimiliensis* W. W. Sm. in Notes Roy. Bot. Gard. Edin. xii (1920), 211.

A typo habitu elatiore et robustiore, caule crasso erecto foliato superne corymboso, ramis monocephalis, foliis multo majoribus, capitulis 3-4 duplo majoribus, achaeniis 1 cm. longis basi breviter contractis ad apicem longe attenuatis et in discum pappiferum dilatatis.

UPPER BURMA.—Damp alpine meadows and marshes Chimili Alps. Alt. 11,500 ft. In flower, August 1919. R. Farrer 1180.

Plant of 4-14 inches. Flowers orange-yellow, faintly fragrant. On open stony alpine meadows western flank of the Chimili. N'Maikha-Salwin divide. Lat. $26^{\circ} 23' N.$ Long. $98^{\circ} 48' E.$ Alt. 11-12,000 ft. In flower, September 1924. G. Forrest 24936.

Plant of 12-20 inches. Flowers fragrant, clear chrome yellow. Open alpine meadows on the margins of cane brakes. Same locality. Alt. 12,000 ft. In flower and fruit, September 1924. G. Forrest 25021.

Plant of 12-18 inches. Flowers fragrant, brassy yellow. On stony meadows. Same locality. Alt. 13,000 ft. In flower, June 1925. G. Forrest 26947.

Plant of 12-16 inches. Flowers fragrant, very rich satiny golden-yellow. On alpine meadows. Same locality. Alt. 14,000 ft. In flower, September 1925. G. Forrest 27254.

Duplicate of 26947. In fruit, October 1925. G. Forrest 27306.

Without precise locality. In flower, G. Forrest 29927. In fruit, G. Forrest 30357.

Didissandra Forrestii Anth. Sp. nov.

Species affinis *D. Cooperi* Craib a qua foliis crassis supra puberulis infra albo-lanatis, floribus majoribus, calyce albo-piloso differt.

Herba nana stolonifera. Rhizoma crassum radices fibrosas emittens. Folia rosulata, lanceolata vel ovata interdum spatulata, ad 1 cm. longa, 5 mm. lata, coriacea, supra puberula nervis conspicuis impressis, infra densissime albo-lanata, crenulata, obtusa, in petiolum 3 mm. longum attenuata. Pedunculi saepissime solitarii, raro 2-3-nati, ad 4 cm. alti, parce pilosi, uniflori. Calyx alte 5-fidus, lobis lineari-lanceolatis 3 mm. longis, 1 mm. latis, acutis trinerviis extra albo-pilosis. Corolla caerulea; tubus 8 mm. longus; labium anticum 3-lobum, lobis orbicularibus circ. 5 mm. longis et latis, posticum 2-lobum, lobis oblongis obtusis, 3 mm. longis, 2 mm. latis. Stamina 4, didynama; filamenta anteriora 6 mm. longa, lateralia 4 mm. longa; staminodium 1.5 mm. longum; omnia glabra; antherae reniformes. Ovarium ovoideum 3 mm. longum in stylum 4 mm. longum attenuatum. Capsula late ovoidea 7 mm. longa, 3 mm. lata, stylo persistente coronata.

CHINA.—Yunnan. Stoloniferous plant of 1-2 inches. Limb of corolla white shaded to pale blue at base. Damp limy pasture. Divide between Chungtien and the Yangtze. Lat. 27° 50' N. Alt. 11,000 ft. In flower and fruit, August 1914. G. Forrest 13181 (type).

Stoloniferous plant of 1 inch. Flowers deep blue. Open moist limy pasture. Bei-ma Shan. Mekong-Yangtze divide. Lat. 28° 20' N. Alt. 10-11,000 ft. In flower and fruit, August 1914. G. Forrest 13186.

From *D. Cooperi* Craib, which has also one-flowered peduncles, this species is distinguished by its greater size, particularly in the flowers, which are 3-4 times larger. The leaves are puberulous above, and are densely covered with a thick white woolly tomentum beneath, even at maturity; the nerves conspicuously impressed above. In *D. Cooperi* the leaves are glabrous above, the nerves below at first are provided with a brown woolly covering, but are eventually glabrous. On both surfaces the nerves are mostly obscure.

Didissandra sericea Craib var. **alba** Anth. Var. nov.

A typo foliis orbicularibus supra laxe sericeo-pilosis, pedunculis brevioribus densifloris, floribus minoribus albis divergit.

CHINA.—Szechuan. Muli mountains. Valley of the Litang. Alt. 10,000 ft. In flower, June 1918. G. Forrest 16259.

Yunnan. Plant of 2-4 inches. Flowers white or very faintly tinged blue. On dry rocks and cliffs. Goo-du Shan. Lat. 28° 12' N. Long. 100° 12' E. Alt. 12,000 ft. In flower, July 1921. G. Forrest 20534.

Without precise locality. In flower and fruit. G. Forrest 30609, 30615.

Diospyros Forrestii Anth. Sp. nov.

Species sectionis *Ebeni* Hiern; calyce maximo cupuliforme facile distinguitur.

Frutex ad 6 m. attingens. Ramuli teretes, glabri, atro-brunnei. Folia alterna, oblongo-lanceolata, 10-15 cm. longa, 2.5-4 cm. lata, coriacea, glabra, integra, breviter acuminata, basi cuneata, petiolo vix 1 cm. longo. Flores masculi 1-5, in cymas brevissimas axillares dispositi. Pedicelli brevissimi pilosi. Calyx cupuliformis, 5-7 mm. longus, dentibus 5-7 minimis pilosis instructus. Corolla tubuloso-campanulata, 6-loba, tubo 8 mm. longo, lobis ovatis 6 mm. longis, 2.5 mm. latis. Stamina circ. 24, ad basim corollae inserta; filamenta 2 mm. longa glabra; antherae lineares 6 mm. longae. Ovarium abortivum glabrum parvum. Flores feminei non visi. Fructus (immaturus) globosus, 1.5 cm. diam., glaber, axillaris, solitarius, 5-locularis, apice stylo brevi coronatus, basi calyce 5-fido cinctus; calycis lobi orbiculares circ. 1 cm. lati, 6 mm. longi.

CHINA.—Yunnan. Shrub of 6-9 ft. Flowers deep green flushed rose, fragrant. Shady side valleys amongst scrub. Shweli-Salwin divide. Lat. 25° 20' N. Alt. 8,000 ft. In flower, July 1913. G. Forrest 11900 (type ♂).

Shrub of 20 ft. Flowers pale waxy yellow, fragrant. Amongst scrub and in thickets. Lava bed west of Tengyueh. Lat. 25° N. Alt. 4,500 ft. In flower, May 1919. G. Forrest 17880.

Shrub of 20-30 ft. Open situations in thickets. Hills to the south-east of Tengyueh. Lat. 25° N. Alt. 6,000 ft. In fruit, July 1912. G. Forrest 8659.

Evergreen (?) shrub of 20-35 ft. Flowers dark green. In open thickets by streams. Shweli-Salwin divide. Lat. 25° 30' N. Long. 98° 58' E. Alt. 8-9,000 ft. In fruit, May 1924. G. Forrest 24277.

Shrub of 25-35 ft. In open thickets. Mountains north and west of Tengyueh. Lat. 25° N. Long 98° 36' E. Alt. 6-7,000 ft. In fruit, August 1924. G. Forrest 24786 (type ♀).

Faberia lancifolia Anth. Sp. nov.

Inter congeneres omnes foliis integerrimis lanceolatis facile recognoscitur.

Planta perennis glabrescens, radice fibrisque incrassatis. Caulis ad 60 cm. altus, erectus, striatus, paucifolius. Folia basilaria lanceolata, 10-15 cm. longa, 1.5-2.5 cm. lata, integerrima, infra glaucescentia costa nervisque conspicuis, apice acutissima, basi in petiolum circ. 7 cm. longum sensim attenuata; caulina 1-4, minora, conformantia. Inflorescentia paniculata, multiflora, ramulis erecto-patentibus gracilibus. Capitula parva circ. 10-flora; pedunculi 1-2 cm. longi, per longitudinem foliis 1-5 lanceolatis minutis praediti. Involucrum phylla plus minusve triseriata; exteriora lanceolata, 3 mm. longa, 1 mm. lata; interiora oblonga, 1 cm. longa, 1 mm. lata. Corolla atro-caerulea,

circ. 1.5 cm. longa. Pappus fulvidus, circ. 6 mm. longus. Achaenia lineari-oblonga, costata, circ. 3 mm. longa, apice vix attenuata.

CHINA.—Yunnan. Plant of 1-2 feet. Flowers deep blue. Crevices and ledges of cliffs by streams. Base of the eastern flank of range dividing the Taiping and Irrawadi basins. Lat. 25° 20' N. At Hay-chiang. Alt. 7-8,000 ft. In flower, September 1912. G. Forrest 9065 (type).

This plant by its habit and floral structure is undoubtedly referable to the small genus *Faberia* Hemsl. From all the other species it can readily be distinguished by its entire lanceolate leaves. The paniculate inflorescence is larger and much more floriferous, though the individual capitula are somewhat smaller.

***Inula Forrestii* Anth. Sp. nov.**

Species ex affinitate *I. cuspidatae* Clarke a qua foliis utrinque glandulosis, capitulis multo majoribus, involucri phyllis pilosis differt.

Suffrutex ad 1 m. altus ramis lignosis glabrescentibus, junioribus pubescentibus. Folia lanceolata vel oblanceolata, 4-8 cm. longa, 1-3 cm. lata, serrulata, brevissime petiolata, utrinque glandulosa, infra pallidiora costa nervisque conspicuis brunneis pubescentibus. Inflorescentia racemosa. Capitula circ. 1 cm. diam. pedunculis albo-pilosis 3 cm. longis suffulta. Involucri phylla multiseriata, pilosa, ciliata, lineari-lanceolata, exteriora 5 mm. longa interiora 1 cm. longa. Flosculi ligulati lutei radiantes; tubulares aurei. Pappus sordide albidus circ. 6 mm. longus. Achaenia 10-costata, dense albo-pilosa, circ. 3 mm. longa.

CHINA.—Yunnan. Shrub of 4 ft. Flowers deep orange. Stony open situations amongst scrub. Mountains in the north-east of the Yangtze bend. Lat. 27° 45' N. Alt. 10,000 ft. In flower, August 1913. G. Forrest 10723 (type).

Shrub of 2-3 ft. Ray florets bright golden yellow, disc florets orange; fragrant. Open situations on ledges of cliffs. Mountains of the Chungtien plateau. Lat. 27° 30' N. Alt. 9-10,000 ft. In flower, July 1914. G. Forrest 12605.

Shrub of 1½-2½ ft. Flowers orange-yellow. Dry rocky situations. Yungning-Yangtze divide. Lat. 27° 48' N. Long. 100° 36' E. Alt. 7,000 ft. In flower, September 1921. G. Forrest 20635.

Near Ngaza, drainage basin of the Yangtze, west of Likiang. In flower, 1923. J. F. Rock 10561.

***Inula Wardii* Anth. Sp. nov.**

Species proxima *I. yunnanensi* Anth. sed foliis angustioribus sessilibus, pappo biseriato recognoscitur.

Suffrutex ad 50 cm. altus, radice lignosa crassa. Caules plures, erecti, teretes, striati, superne breviter tomentosi, ramulis gracilibus. Folia lineari-lanceolata ad 4 cm. longa, 6 mm. lata, sessilia, serrata,

supra scabrida, infra glandulosa et pilosa, apice acuta, basi rotundata. Inflorescentia corymbosa, capitulis solitariis ad apicem ramulorum enatis. Involucri phylla exteriora herbacea, linearia, pilosa, interiora 6 mm. longa, linearia acuminata. Flosculi ligulati aurei, ei disci intense aurei. Pappus biseriatus, albidus, interior circ. 6 mm. longus, exterior brevissimus. Achaenia 10-costata, pilosa, circ. 2.5 mm. longa.

CHINA.—Szechuan. Flowers orange, the disc rather darker. On shrub- and grass-clad rocky cliffs of the Litang Gorge, Mu-li. Alt. 7,000 ft. In flower, September 1921. F. K. Ward 4919 (type).

Shrub of 4 ft. Flowers yellow. On roadside. Wenchuan-hsien. In flower, July 1928. W. P. Fang 1498.

***Inula yunnanensis* Anth. Sp. nov.**

Species ex affinitate *I. nervosae* Wall. a qua foliis lanceolatis petiolatis, flosculis aureis, pappo brevi differt.

Herba perennis ad 60 cm. alta. Caulis erectus striatus foliatus pubescens. Folia lanceolata, 3–5 cm. longa, 0.5–1 cm. lata, obtusa, basi cuneata, breviter petiolata, crenato-serrata, utrinque glandulosa et pubescentia. Inflorescentia corymbosa. Capitula circ. 1.5 cm. diam., pedunculis crassis pubescentibus. Involucri phylla multiseriata, dense pilosa, lanceolata, obtusa, exteriora breviora. Flosculi ligulati aurei lucentes, ei disci cylindrici aurei. Pappus albidus acheniis brevior. Achaenia 5-angulata, 10-costata, circ. 3 mm. longa, hirtella.

CHINA.—Yunnan. Plant of 9–24 in. Ray florets bright orange, disc florets dull orange. Dry open pastures. Hills round Tengyueh. Lat. 25° N. Alt. 7–8,000 ft. In flower, November 1912. G. Forrest 9307 (type).

Between Tengyueh and Lungling. In flower, October–November 1922. J. F. Rock 7074.

On grassy hills. Flowers yellow. Mengtze. Alt. 5,000 ft. A. Henry 9145.

Kwang-tung. A mountain valley, sixty miles west from the Port of Swatow, surrounded by hills reaching 1,000 ft., and intersected by glens richly wooded. Alt. 2,000 ft. In flower, July 1901. Dr. J. M. Dalziel sine no.

***Lactuca Cooperi* Anth. Sp. nov.**

Species affinis *L. Souliei* Franch. a qua foliis orbicularibus, floribus luteis, acheniis apice valde contractis inter alia bene distincta.

Planta perennis rhizomate longo lignoso. Caulis subnullus. Folia omnia radicalia rosulata orbicularia glabrescentia, integra vel minute et remote callosa-denticulata, circ. 2 cm. longa et lata; petiolus latiusculus basi vagina praeditus, circ. 2 cm. longus. Capitula 10-flora numerosa congesta breviter pedunculata, cylindrica, circ. 1.5 cm. longa. Involucri phylla circ. 6, lineari-oblonga, circ. 1.4 cm. longa, 2 mm. lata, pallido-viridia, margine membranacea, intus glabra, carinata dorso

pilosa, apice minute albo-ciliata. Receptaculum nudum. Flosculi lutei. Achaenia compressa, 6 mm. longa, 9-costata, basi angustata, apicem versus hispida, in collum manifeste contracta; discus papiferus cupuliformis; pappus albus, nitidus, barbellulatus, circ. 1 cm. longus.

SIKKIM.—Tufted habit. Yellow. 4 in. diameter. Kapup. Alt. 13,000 ft. In flower and fruit, September 1913. R. E. Cooper 793 (type).

Same locality. Alt. 15,000 ft. In flower, August 1913. R. E. Cooper 630.

The nearest ally of this species is *L. Souliei* Franch., from which it can be easily separated by its long-petioled entire (sometimes obscurely and minutely toothed), orbicular leaves, its yellow flowers, and by the differently shaped achenes which towards the apex, besides being somewhat hispid, are much more definitely contracted, thus having a distinct neck.

***Loxostigma begoniifolia* (Lévl.) Anth. Comb. nov.**

Didissandra begoniifolia Lévl. in Fedde, Repert. xi (1913), 495.

In his review of the genus *Didissandra*,* Craib limited the genus to plants of the rosette type, and described several new genera to receive those species which were thus excluded. Léveillé's plant must then be transferred, and the above combination is therefore made.

***Loxostigma Forrestii* Anth. Sp. nov.**

Species habitu *L. Griffithii* Clarke sed caule dense brunneo-piloso, foliis ovatis crassioribus, floribus albis purpureo-suffusis differt.

Planta ad 60 cm. alta, pilis longis brunneis dense vestita. Caulis crassus striatus. Folia opposita, ovata vel ovato-lanceolata, asymmetrica, ad 10 cm. longa, 6 cm. lata, serrata, ciliata, acuminata, utrinque hispida, venis numerosis conspicuis; petiolus circ. 2 cm. longus. Inflorescentiae axillares, cymosae; pedunculi 8 cm. longi, multiflori; pedicelli 2 cm. longi basi bibracteati. Calyx alte quinque-partitus, lobis lanceolatis circ. 8 mm. longis. Corolla alba purpureo-tincta ore maculata 3.5 cm. longa. Stamina 4, didynama. Ovarium glabrum; stigma bilobum; stylus pilosus.

CHINA.—Yunnan. Plant of 1½–2 ft. Flowers white flushed purple. On damp rocks and cliffs in side valleys. Hills around Htawgaw. Lat. 26° N. Long. 98° 25' E. Alt. 7,000 ft. In flower, October 1925. G. Forrest 27362.

This new species resembles in habit *L. Griffithii* Clarke, which has, however, yellow flowers and membranous leaves. *L. Forrestii* is easily separated by the hispid thicker leaves and white flowers. *L. begoniifolia* (Lévl.) Anth. is recognised by the dense velvety tomentum, and rose-coloured flowers which have membranous oblanceolate sepals.

* Notes, Roy. Bot. Gard., Edin. xi (1919), 255.

Oreocharis cinnamomea Anth. Sp. nov.

Species subgeneris *Stomactin* Clarke affinis *O. aurantiacae* Franch. a qua foliis multo majoribus, supra laxe strigosis, calycis lobis lineari-oblongis acutis differt.

Herba perennis, rhizomate lignoso radices fibrosas emittente. Folia rosulata, lanceolata, ad 15 cm. longa, 4 cm. lata, supra laxe scabrida, infra molliter et dense ferrugineo-lanata, irregulariter serrata, acuta, basi cuneata, costa nervisque utrinque conspicuis supra albidis infra atro-brunneis, petiolo 4-8 cm. longo dense ferrugineo. Pedunculi numerosi, circ. 15, sub anthesi dense pilosi post anthesin glabrescentes, ad 20 cm. alti, apice bracteis binis linearibus oppositis instructi, cymas laxas umbelliformes 6-16-floras gerentes. Pedicelli graciles pilosi. Calyx alte 5-fidus, 2.5 mm. longus, glanduloso-pilosus, lobis lineari-oblongis trinerviis. Corolla in sicco lutea; tubus 8 mm. longus, extra glanduloso-puberulus; limbus leviter bi-labiatus, 5-lobus, erecto-patens; lobi subaequales, circ. 4 mm. longi, oblongi obtusi. Stamina 4, didynama, staminodium unicum parvum, omnia inclusa; filamenta glabra, 4 mm. longa; antherae liberae, 1 mm. longae. Discus cupularis, apice 5-lobatus, 2 mm. altus. Pistillum oblongo-ovoideum, 3 mm. longum, glabrum; stylus brevis; stigma patelliforme. Capsula oblonga circ. 3 cm. longa.

CHINA.—Yunnan. Plant of 3-6 in. Flowers green-yellow. On dry shady rocks and boulders. Mountains of the Chungtien plateau. Lat. 27° 55' N. Alt. 11,000 ft. In flower and fruit, July 1913. G. Forrest 10668 (type). In fruit, September 1917. G. Forrest 15325.

Plant of 6-9 in. Flowers deep orange. On branches of trees and humus-covered boulders. Mekong valley. Lat. 27° 40' N. Alt. 8,000 ft. In flower, August 1914. G. Forrest 13062.

A near ally of *O. aurantiaca* Franch., this species is a much larger, more robust plant. From the rosette of leaves numerous (12-20) peduncles arise, each many-flowered. The lanceolate leaves are light green in colour. The upper surface is sparsely provided with short coarse white hairs, the lower by a covering of brown hairs, very dense on the veins, which are thus made conspicuous. The calyx lobes are longer with an acute apex. The stamens are much shorter than the corolla tube. In *O. aurantiaca* Franch. the upper surface of the leaf is densely covered with fine setulous hairs, while the under side is uniformly covered with a light brown mass of woolly hairs. The veins are not noticeable. The calyx lobes are short and obtuse. The stamens equal the corolla tube in length. From the rosette of leaves there are but 2-6 few-flowered peduncles.

Oreocharis elliptica Anth. Sp. nov.

Species sectionis *Euoreocharis* Clarke affinis *O. Delavayi* Franch. a qua foliis ellipticis, nervis infra albido-strigosis, corolla fauce ampliata, staminibus longo exsertis differt.

Herba perennis, rhizomate lignoso recto radices numerosas fibrosas emittente. Folia rosulata, elliptica, ad 6 cm. longa, 3 cm. lata, supra inter nervos albedo-setulosa, infra nervis omnibus pilis albidis brevibus strigosis, costa nervisque secundariis longe rufo-pilosis, alte et regulariter crenata, obtusa, basi rotundata, petiolo 5-10 cm. longo longe rufo-piloso. Pedunculi 3-10, circ. 12 cm. alti, laxe glanduloso-pilosi, 2-6-flori: pedicelli glandulosi. Calyx alte 5-fidus, submembranaceus, indumento pilis et longis rufis et brevibus albidis glandulosis composito tectus; lobi 3 mm. longi, 1 mm. lati, trinervi, lineari-lanceolati. Corolla lutea hypocrateriformis; tubus 8 mm. longus, fauce ampliatus: limbus tubo aequilongus, obscure bilabiatus, 5-lobus, lobis erecto-patentibus subaequalibus orbicularibus: labium anticum 3-lobum, posticum 2-lobum minus. Stamina 4, didynama, longe exserta, staminodium 1; filamenta circ. 1.3 cm. longa pilosa; antherae liberae, 1 mm. longae, loculis parallelis. Discus breviter cylindricus, 1 mm. altus. Pistillum glabrum lineari-oblongum, 8 mm. longum; stylus distinctus; stigma obscure bilobum. Capsula 3-4 cm. longa oblonga.

TIBET.—Tsarong. Plant of 4-7 in. Flowers clear yellow. Shady situations by streams. On rocks and trunks of trees. On Ka-gwr-pu. Mekong-Salwin divide. Lat. 28° 40' N. Alt. 10,000 ft. In flower and fruit, July 1918. G. Forrest 16672 (type).

On moss-covered boulders in shady rhododendron forest in side valleys of the Mekong, Mekong-Salwin divide. Lat. 27° 30' N. Alt. 7-9,000 ft. In flower, July 1905. G. Forrest 5096.

CHINA.—Yunnan. Duplicate of No. 16672. In fruit, October 1918. G. Forrest 17270.

Plant of 6-8 in. Flowers orange-yellow. On trees and rocks in dry situations. Mekong-Salwin divide. Lat. 27° 36' N. Long. 98° 56' E. Alt. 9-10,000 ft. In flower, July 1921. G. Forrest 19850.

Plant of 4-6 in. On shady banks and rocks in side valleys. Mountains north-east of Atuntze. Lat. 28° 35' N. Long. 99° 10' E. Alt. 10-11,000 ft. In fruit, September 1921. G. Forrest 20178.

Plant of 3-4 in. On shady rocks. Western flank of Tali Range. Lat. 25° 40' N. Alt. 10,000 ft. Foliage only, September 1917. G. Forrest 15560.

Among all the species of the genus the present one can at once be recognised by the shape of the leaves, which are deeply and regularly crenate. From *O. Delavayi* it further differs in that the upper surface of the leaf is setulose; on the under surface the mid-rib and secondary nerves are sparsely provided with long red hairs, while all the veins are densely strigose with short white hairs. The calyx has pubescence of two types. The tube of the corolla is widened at the throat and the stamens protrude about half their length. In *O. Delavayi* Franch. the leaves are broadly ovate, deeply and unequally dentate. The calyx is glandular, the corolla scarcely widened at the throat, and the stamens but little exerted.

Oreocharis Georgei Anth. Sp. nov.

Oreocharis Delavayi vel aff., Notes Roy. Bot. Gard. Edin. xiv (1924), 371, non Franch.

Species sectionis *Stomactin* Clarke affinis *O. aurantiacae* Franch. a qua indumento et foliorum et pedunculorum longe rufo-piloso, floribus minoribus, staminibus inclusis tubo corollae multo brevioribus facile distinguenda.

Herba perennis, rhizomate brevi radices numerosas fibrosas emittente. Folia rosulata, lanceolata, 5-8 cm. longa, 2-2.5 cm. lata, supra atroviridia inter nervos pilis longis albis transverse septatis laxè tecta, infra praesertim ad nervos longe rufo-pilosa, crenato-serrata, ciliata, acuta, basi cuneata, petiolo circ. 5 cm. longo indumento ei foliorum paginae inferioris simili tecto. Pedunculi numerosi 6-15, longe rufo-pilosi, post anthesin glabrescentes, flores 2-6 cymoso-umbellatos gerentes; pedicelli graciles pilosi. Calyx rubescens, alte 5-fidus lobis lineari-lanceolatis, 4 mm. longis, 1 mm. latis, rufo-pilosis trinerviis acutis. Corolla in sicco aurantiaca, extra glandulosa; tubus 1 cm. longus basi postice leviter saccatus ore constricto; limbus subbilabiatus, 5-lobus erecto-patens; labium anticum 3-lobum, lobis 4 mm. longis oblanceolatis, posticum 2-lobum lobis angustioribus 3 mm. longis. Stamina 4, didynama, tubo multo breviora, ut staminodium inclusa; filamenta prope basin corollae tubi inserta, 4 mm. longa, glabra; antherae liberae, 1 mm. longae, ovatae, loculis subparallelis. Discus cylindricus, glaber, 5-lobatus, 2 mm. altus. Pistillum glabrum 5 mm. longum; stylus brevis; stigma patelliforme. Capsula oblonga, 3-3.5 cm. longa, basi calyce persistente cincta, apice stylum gerens.

CHINA.—Yunnan. Plant of 2-3 in. Flowers deep orange. On moist shady rocks and trees in side valleys. Chien-chuan-Mekong divide. Lat. 26° 40' N. Long. 99° 40' E. Alt. 9-10,000 ft. In flower and fruit, July 1922. G. Forrest 23035.

Without precise locality. In flower and fruit, 1931. G. Forrest 30612 (type).

Szechuan. Plant of 4-6 in. On trees in forests. Around Muli. Lat. 28° 12' N. Long. 101° E. Alt. 10,000 ft. In fruit, August 1930. G. Forrest 28370.

Muli Kingdom. In flower and fruit, June 1922. J. F. Rock 5591.

Near to *O. aurantiaca* Franch., this species can be readily separated by the dark green coloured leaves. On the upper surface between the secondary veins there is a sparse covering of long coarse white hairs with transverse septa; the under surface is clothed, chiefly on the veins, with very long brown hairs. This type of hair is also found on the calyx. The flowers are smaller and the stamens much shorter than the corolla tube.

Petrodixa Anth. Gen. nov.

Genus affine *Petrocosmeae* Oliv. a qua staminibus fertilibus 4, capsula lineari-oblonga differt.

Calyx alte 5-fidus obliquus, lobis subaequalibus persistentibus. Corolla bilabiata; tubus brevis; labium anterius 3-lobum erecto-patens, lobis orbicularibus, posterius leviter bifidum multo brevius. Stamina 4, didynama; filamenta breviter prope basim corollae tubi inserta, lateralia recta, anteriora apicem versus inflexa; antherae ovoideo-cordatae, per paria cohaerentia, conniventes, loculis subparallelis. Pistillum liberum ovoideum obliquum glabrum in stylum longum attenuatum, stigmate parvo inconspicue diviso. Capsula oblongo-ovoidea calyce multo longior, stylo persistente coronata.

Herbae acaules perennes pilosae. Folia omnia basalia rosulata longe petiolata. Pedunculi plures umbellati.

Species 2 asiaticae.

This genus is akin to *Petrocosmea* Oliv. It has the oblique corolla of the section *Anisochilus* Hemsl. of that genus, but the upper lip is much smaller, somewhat bifid and not erect. The androecium in *Petrodixa* consists of four fertile stamens (inserted near the base of the corolla) and in this respect differs markedly from *Petrocosmea*. The filaments of the anterior pair are bent at right angles near the apex, while those of the lateral pair are almost straight. The anthers are all borne at the same level and cohere. The ovary is glabrous and the capsule linear-oblong. In *Petrocosmea* the ovary is hirsute and the capsule ovoid.

Petrodixa argentea Anth. Sp. nov.

Species affinis *P. cordifoliae* Anth. a qua foliis ellipticis, petiolo lamina brevior, calyce dense albido-piloso, indumento compacto inter alia differt.

Herba perennis, rhizomate radices fibrosas emittente. Folia rosulata elliptica vel ovato-elliptica, 4-6 cm. longa, 3-4 cm. lata, utrinque pilis albidis brevibus appressis transverse septatis vestita, supra atro-viridia, infra argentea, crenato-serrata, obtusa, basi rotundata, petiolo dense appresso-piloso plerumque lamina brevior vel nunc subaequale. Pedunculi 1-3, ad 8 cm. alti, pilosi, 1-3-flori; bracteae binae lanceolatae, 5 mm. longae, pilosae; pedicelli crassi pilosi vix 1 cm. longi. Calyx alte 5-lobus, obliquus, lobis lanceolatis, 4 mm. longis, 1.5 mm. latis, dense pilosis. Corolla caerulea bilabiata; tubus 5 mm. longus fauce ampliatus; labium anterius 3-lobum, lobis orbicularibus, 6 mm. longis et latis, patentibus, posterius 2-lobum multo brevius. Stamina cum staminodio ut in *P. cordifolia*. Ovarium ovoideum parvum glabrum in stylum 3 mm. longum attenuatum.

CHINA.—Yunnan. Flowers blue. Forests south-east of Mengtze. Alt. 6,000 ft. In flower. A. Henry 10960 (type).

Petrododox cordifolia Anth. Sp. nov.

Herba perennis rhizomate longo lignoso radices numerosas fibrosas emittente. Folia ovata, 4-7 cm. longa, 2.5-5 cm. lata, supra pilis appressis albidis transverse septatis tecta, infra longe pilosa, costa cum nervis conspicuis strigosa, grosse serrata, ciliata, acuta, basi cordata, petiolo dense rufo-piloso 5-10 cm. longo. Pedunculi 2-6, circ. 10 cm. alti, inferne longe et dense pilosi, superne glabrescentes, 3-6-flori; bracteae binae orbiculares circ. 4 mm. et longae et latae, apicem versus ciliatae. Pedicelli crassi vix 1 cm. longi glabrescentes. Calyx subaequaliter 5-lobus, lobis elliptico-lanceolatis, 6 mm. longis, 2 mm. latis, plurinerviis, apice acutis ciliatis. Corolla bilabiata; tubus circ. 5 mm. longus fauce amplius; labium anterius 3-lobum, lobis patentibus orbicularibus, 6 mm. et longis et latis, posterius subtruncatum rectum breviter bifidum lobis 2 mm. longis. Stamina 4, didynama; filamenta circ. 3 mm. longa, lateraliter recta, anteriora inflexa; antherae ovoideo-cordatae circ. 1.5 mm. longae, omnes conniventes; staminodium parvum. Ovarium ovoideum obliquum glabrum, circ. 2 mm. longum, in stylum longum flexuosum attenuatum; stigma obscure bifidum. Capsula lineari-oblonga, 1.5-2 cm. longa, stylo persistente coronata.

UPPER BURMA.—Plant of 2½-6 in. Flowers rose-pink shaded to light crimson at base. On humus-covered boulders and ledges of cliffs in shady gullies. On Htawgaw Bum. North of Htawgaw. Lat. 26° 10' N. Long. 98° 25' E. Alt. 7,000 ft. In flower, June 1924. G. Forrest 24549 (type).

Plant of 3-6 in. Flowers creamy-yellow flushed purple-blue. On shady rocks amongst scrub in side valleys. Hills south-east of Htawgaw. Lat. 26° N. Long. 98° 30' E. Alt. 6-7,000 ft. In flower, June 1925. G. Forrest 26840. In fruit, October 1925. G. Forrest 27354.

Very pretty. Only on both sides of the Chang Wang beck, hanging massed on damp sandstone rocks and overhung mossy banks. Flowers white, faintly scented and very faintly tinged with lilac, produced in great freedom. While still in light bud the plant is at once taken for a *Primula*. Two days later I came on a flowerless *Primula* that I at once took for this, till I saw fat hairy footstalks. Chang Wang. Alt. 5,000 ft. In flower, April 1920. R. Farrer 1507.

Abundant in the lower woods of all this region away to the Shung-rup-Chet and beyond, looking very *Primuloid* when out of flower. Blossoms pale lilac-purple like *Haberlea*'s. Moku-ji woods. Alt. 7-9,000 ft. In flower, July 1920. R. Farrer 1761.

Randia Forrestii Anth. Sp. nov.

Species aspectu *R. yunnanensis* Hutch. sed ob ramulos spinosos atque inflorescentias cymosas in sectionem *Oxyceros* Hook. f. ponenda.

Frutex ad 3 m. altus ramulis glabris junioribus pubescentibus, cortice cinereo. Folia elliptico-lanceolata, circ. 7 cm. longa, 3 cm. lata, acumin-

ata, supra glabrescentia, infra costa nervisque brunneo-pubescentibus conspicuis; petioli pubescens vix 1 cm. longus. Stipulae caducae triangulares anguste et longe acuminatae. Spinae rectae circ. 1 cm. longae. Inflorescentiae axillares cymosae. Pedicelli 1 mm. longi basi bracteati. Calyx 2-3 mm. longus extra hirsutus lobis triangularibus. Corolla hypocrateriformis; tubus 5 mm. longus fauce pubescens, lobis lanceolatis 5 mm. longis. Antherae fere sessiles 5 mm. longae exsertae. Ovarium biloculare multiovulatum, stylo clavato-bilobo, 1 cm. longo.

CHINA.—Yunnan. Spinous semi-scandent shrub of 9-15 ft. Flowers white, fragrant. In thickets and scrub in side valleys. Hills east of Sha-Yang. Lat. 25° 20' N. Long. 99° 40' E. Alt. 7-8,000 ft. In flower, April 1921. G. Forrest 19367 (type).

Shrub of 8-10 ft. Flowers greenish-white. In thickets by streams. Salwin Valley. Lat. 25° 3' N. Long. 98° 57' E. Alt. 2,500-3,000 ft. In flower, April 1922. G. Forrest 21099.

***Randia shweliensis* Anth. Sp. nov.**

Species ex affinitate *R. longifoliae* Lamk. a qua calycis lobis longis acutissimis inter alia facile distinguitur.

Frutex ad 10 m. altus. Ramuli inermes pallido-brunnei, hornotini villosi, annotini glabrescentes. Folia elliptica vel oblongo-lanceolata, ad 12 cm. longa, 4 cm. lata, supra glabra, infra venis pubescentibus, apice abrupte acuminata, basi cuneata, petiolo circ. 5 mm. longo. Stipulae triangulares acutissimae. Inflorescentiae axillares, cymosae, pubescentes. Flores albidii (in sicco atri), carnosii; pedicelli crassi, 6 mm. longi. Calyx cupuliformis, 7 mm. longus, 5-lobus, lobis triangularibus acutissimis, 5 mm. longis, 2-5 mm. latis, extra glaber, intus inter lobos villosus. Corollae tubus angustus, cylindricus, 2 cm. longus; lobi patentes 1-5 cm. longi, 5 mm. lati. Stamina inclusa, filamentis brevibus, antheris 8 mm. longis. Ovarium 2-loculare, multiovulatum; stylus crassiusculus, 2 cm. longus, stigmate clavato-bilobo.

CHINA.—Yunnan. Shrub of 20-30 ft. Flowers fleshy, creamy-white. In open thickets in side valleys. Shweli-Salwin divide. Lat. 25° 40' N. Alt. 7-8,000 ft. In flower, June 1919. G. Forrest 18064 (type). In bud, November 1919. G. Forrest 18852.

***Saussurea Delavayi* Franch. forma *hirsuta* Anth. Form. nov.**

A typo foliis inferioribus supra albidipilosis, superioribus supra dense lanatis recedit.

CHINA.—Yunnan. Lotueshan, mountains of Labako, west of the Yangtze bend at Shiku. In flower, 1923. J. F. Rock 9522.

***Saussurea centiloba* Hand.-Mazz. in Anz. Akad. Wiss. Wien, lviii (1920), 144.**

Saussurea Vanioti Lévl. in Bull. Géogr. Bot. xxv (1915), 19, non in Fedde, Repert. viii (1910), 359.

CHINA.—Yunnan. Handel-Mazzetti 4648 (type). G. Forrest 10454, 12812, 20550, 28834. Rock 5322. E. E. Maire sine no. (type of *S. Vanioti* Lévl.).

In 1910 Lévillé described a plant from Corea as *S. Vanioti*. Later, in 1915, he described another species from a quite different plant occurring in Yunnan, and this he also called *S. Vanioti*. For the latter species this name is invalid. The plant, however, is *S. centiloba* Hand.-Mazz., and so the name (the second *S. Vanioti*) becomes a synonym.

Saussurea denticulata Wall. Cat. n. 2917.

Saussurea Forrestii Diels in Notes Roy. Bot. Gard. Edin. v (1912), 198.

CHINA.—Yunnan. G. Forrest 2940 (type of *S. Forrestii* Diels), 6525.

The species described by Diels is undoubtedly referable to *S. denticulata* Wall.

Saussurea dumetorum Anth. Sp. nov.

Species sectionis *Corymbiferarum* Hook. f. ob folia longissima distincta.

Herba perennis 40–70 cm. alta. Radix lignosa ad collum foliorum pristinorum reliquiis nigris oblecta. Caulis erectus, crassus, striatus, densifoliatus, inferne glabrescens, superne arachnoideo-lanatus. Folia anguste oblongo-lanceolata, sessilia, utrinque glabrescentia, apice acuta, basi longissime attenuata, margine apiculato-denticulata, inferiora circ. 40 cm. longa, 4 cm. lata, superiora diminuentia semiamplexicaulia. Inflorescentia dense corymbosa. Capitula parva, circ. 7 mm. diam., numerosa (ad 20). Involucry phylla 4–5-seriata, coriacea, apice atropurpurea sparse pilosa ceterum glabra, exteriora ovato-lanceolata, interiora oblonga. Receptaculi paleae subulatae numerosae acheniis duplo longiores. Pappus biseriatus, fulvidus, exterior setaceus, 4 mm. longus, interior plumosus, 8 mm. longus. Flosculi circ. 1 cm. longi, roseo-purpurei, corollae tubo quam limbus brevior. Antherarum caudae dense fimbriatae.

CHINA.—Yunnan. Plant of 24–30 in. Flowers rosy-purple. Margins of thickets. Goo-du Shan. Lat. 28° 12' N. Long. 100° 12' E. Alt. 11,000 ft. In flower, July 1921. G. Forrest 20549 (type).

Between Likiang, Tungshan, Tuinaoko and Tsilikiang, dry Yangtze drainage basin. In flower, May 1923. J. F. Rock 9748.

Saussurea fistulosa Anth. Sp. nov.

Species ex affinitate *S. Delavayi* Franch. et *S. atratae* W. E. Ev. a quibus caule glabrescente, foliis tenuissimis infra glabrescentibus inter alia satis differt.

Planta perennis caespitosa, rhizomate crasso ramoso ad collum foliorum pristinorum reliquiis brunneis densissime obsito. Caulis erectus, 10 cm. altus, 1 cm. diam., fistulosus, araneosus, apice dense

foliatus. Folia inferiora anguste oblonda, 6-10 cm. longa, 0.5-1 cm. lata, supra brevissime pilosa, infra glabrescentia, margine irregulariter serrulata mucronulata, apice acutissima, in petiolum longum basi subdilatatum abeuntia; caulina minora basi dilatata breviter decurrentia; suprema numerosa lanceolata, supra basim versus praecipue ad costam dense albopilosa, sub capitulis dense aggregata et inflorescentiam stellatim circumcingentia. Capitula parva numerosa sessilia densissime congesta. Involucri phylla quadriseriata, 1-1.3 cm. longa, 2-3 mm. lata, exteriora lanceolata acutissima extra dense pilosa, interiora oblanceolata valde acuminata, acumine utrinque atro-viridi longe piloso. Receptaculi paleae subulatae, numerosae, circ. 2 mm. longae. Flosculi circ. 8 mm. longi rubro-purpurei, corollae tubo limbum aequante. Pappus biseriatus fulvidus, exterior setulosus 3 mm. longus, interior plumosus 6 mm. longus. Antherarum caudae fulvidae lanatae.

CHINA.—Yunnan. Tufted plant of 4-5 in. Flowers ruddy purple. On open stony moorland. Mekong-Salwin divide. Lat. 27° 30' N. Long. 98° 56' E. Alt. 14,000 ft. In flower, September 1921. G. Forrest 20709 (type).

Mount Peimashan, Mekong-Yangtze divide between Atuntze and Pungtzer. In bud, 1923. J. F. Rock 10360.

This plant is related to *S. Delavayi* Franch. and *S. atrata* W. E. Ev., somewhat resembling the latter. From both it is easily distinguished by its almost glabrous stem, its much smaller, very thin, leaves, the under sides of which are glabrescent and not woolly.

Saussurea Georgei Anth. Sp. nov.

Species affinis *S. trullifoliae* W. W. Sm. a qua foliis lanceolatis atroviridibus, involucri phyllis omnibus lanceolatis, pappo fulvido, indumento facile distinguenda.

Rhizoma crassum longum foliorum vestigiis dense obsitum. Caulis ad 5 cm. altus, dense foliatus lanuginosus. Folia lanceolata, 3-4 cm. longa, 1-1.5 cm. lata, crenato-dentata, supra basim versus arachnoidea, infra glabrescentia, in petiolum 3-4 cm. longum subulatum lanuginosum attenuata. Capitula numerosa cylindrica sessilia circ. 6 mm. diam., conferta, e foliis paulo protrusa. Involucri phylla exteriora anguste lanceolata, 2.5 cm. longa, 0.5 cm. lata, lanuginosa, interiora oblongo-lineararia, 1.5 cm. longa, 2-3 mm. lata, glabrescentia, acuta, nitida straminea, apice rubescente excepto. Receptaculi paleae setosae achaenia aequantes. Corolla 1.3 cm. longa, purpurea. Antherae exsertae. Pappus uniseriatus plumosus, 1.2 cm. longus, fulvidus. Achaenia glabra 4-5 mm. longa.

CHINA.—Szechuan. Plant of 3-6 in. Flowers bright purple and crimson. Open dry pastures and on screes. Muli mountains. Lat. 28° 12' N. Alt. 14-14,500 ft. In flower, August 1918. G. Forrest 16844.

On steep limestone screes where a few scattered plants occur. Litang River divide. Alt. 14,000 ft. In bud, June 1921. F. K. Ward 4036.

Yunnan: Without precise locality. In flower, 1931. G. Forrest 30816 (type).

The closely related *S. trullifolia* W. W. Sm., *S. chionophora* Hand-Mazz., and the present species may readily be separated by their different tomenta. *S. trullifolia*, which has very broadly obovate inconspicuously veined leaves, outer involucre bracts lanceolate and acuminate, the inner ones oblanceolate, and a white pappus of one row of bristles, is densely covered with long white hairs.

Handel-Mazzetti's species has all the involucre bracts lanceolate, a black pappus of two rows of bristles, and has the under side of the lanceolate or oblanceolate leaves clothed with a dense compact short-haired tomentum except the veins, which, being glabrous, are conspicuous. In *S. Georgei* the lanceolate leaves are dark green, glabrescent beneath, sparsely covered by long hairs on the upper surface chiefly towards the base, while the yellow pappus is composed of only one row of bristles.

Saussurea Kunthiana Clarke, Comp. Ind. (1876), 225.

Saussurea Bodinieri Lévl. in Bull. Geogr. Bot. xxv (1915), 19.
Léveillé's type specimen is referable to *S. Kunthiana* Clarke.

Saussurea montana Anth. Sp. nov.

Saussurea spatulifolia vel. aff. Notes Roy. Bot. Gard. Edin. xiv (1923), 304, non Franch.

Species affinis *S. spatulifoliae* Franch. sed foliis duplo majoribus utrinque pallido-viridibus haud albo-tomentosis differt.

Planta perennis caespitosa acaulis. Rhizoma lignosum apicem versus foliorum vestigiis dense obsitum. Folia rosulata ascendente elliptica, usque ad 3 cm. longa, 0.9 cm. lata, integra subacuta, utrinque longe albipilosa, in petiolum brevem rubescentem subvaginantem sensim attenuata. Caulis subnullus monocephalus. Capitulum circ. 1 cm. diam. Receptaculum 5 mm. diam. subconvexum, paleis subulatis brevibus circ. 1.5 mm. longis sparsim praeditum. Involucri phylla numerosa, exteriora late lanceolata, circ. 7 mm. longa, 4 mm. lata, interiora lanceolata vel oblonga, 1-1.5 cm. longa, 2-3 mm. lata, acuminata, apicem versus rubescentia, pilis albidis rarissime brunneis pilosa, intus argentea nitida glabra. Flosculi numerosi coccinei. Antherae atro-caeruleae, 7 mm. longae basi piloso-fimbriatae. Pappus uniseriatus albus 1.5 cm. longus plumosus. Achaenia subcompressa laevia 4 mm. longa.

CHINA.—Yunnan. Tufted plant of 1-2 in. Flowers purple and crimson. On humus-covered boulders and limy, stony pasture. Mountains in the north-east of the Yangtze bend. Lat. 27° 45' N. Alt. 12,000 ft. In flower, September 1913. G. Forrest 11061 (type).

Matted plant of 1 in. Flowers deep rose. Anthers deep blue. On limy pasture and ledges of limestone cliffs. Same locality. Alt. 14,000 ft. In flower, September 1913. G. Forrest 11210.

Without precise locality. In flower 1931. G. Forrest 28632.

Szechuan. Plant of 1 in. Flowers crimson and purple. On open alpine moorland. Mountains south-east of Muli. Lat. $27^{\circ} 50' N$. Long. $101^{\circ} E$. Alt. 14-15,000 ft. In flower, August 1922. G. Forrest 22118.

From *S. spatulifolia* Franch., to which it is allied, this species is at once distinguished by the leaves, which are pale green on both sides. This character also separates it from the neighbouring species *S. melanotricha* Hand.-Mazz. and *S. xanthotricha* Hand.-Mazz. The pubescence on the involucre bracts is normally of white hairs, but very occasionally the hairs on the inner bracts towards the tip are dark brown.

Saussurea polypodioides Anth. Sp. nov.

Saussurea Kunthiana Notes Roy. Bot. Gard. Edin. vii (1912), 180, 201, 397, non Clarke.

Species affinis *S. Kunthianae* Clarke sed involucri phyllis lineari-lanceolatis, receptaculi paleis achaenia superantibus differt.

Planta caespitosa rhizomate lignoso fibris brunneis circumdato. Caules erecti, 10-20 cm. alti, striati paucifoliati graciles villosi rubescentes monocephali. Folia radicalia plurima et caulina inferiora ambitu oblongo-lanceolata, 10-15 cm. longa, 2-3 cm. lata, pinnatipartita, 10-15-juga, lobis oblongis obtusis apiculatis suboppositis integris vel subintegris, supra scabridula, infra niveo-tomentosa, petiolo longo vaginante; suprema linearia. Capitulum infundibuliforme 2 cm. longum. Involucri phylla quadriseriata lineari-lanceolata, acuminata, uninervia, basi rubescentia, apice viridia, exteriora 1.4 cm. longa, 1 mm. lata, interiora 2 cm. longa, 2 mm. lata. Receptaculi paleae setaceae achaenia paulo superantes. Flosculi roseo-purpurei. Pappus biseriatus fulvidus, interior plumosus 1.4 cm. longus, exterior scabridus 4 mm. longus. Antherarum caudae lanatae. Achaenia muricata 3 mm. longa.

CHINA.—Yunnan. Plant of 5-8 in. Flowers rose-purple. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20' N$. Alt. 12-13,000 ft. In flower, September 1906. G. Forrest 2966 (type).

Plant of 2-6 in. Flowers deep purplish-rose. Mountain meadows on the eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 11-12,000 ft. In flower, September 1906. G. Forrest 4028.

Plant of 6-10 in. Flowers purplish-crimson. Open stony pasture. Same locality and altitude. In flower, August 1910. G. Forrest 6877.

This species is near to *S. Kunthiana* Clarke, but can easily be separated by the very different involucre bracts. These are linear-lanceolate,

green in colour, with a prominent red nerve on the back. The bristles of the receptacle are longer than the achenes; in *S. Kunthiana* Clarke they are shorter.

***Saussurea pratensis* Anth. Sp. nov.**

Species affinis *S. longifoliae* Franch. a qua foliis inferioribus multo angustioribus sinuatis, superioribus haud membranaceis, capitulo minore, involucri phyllis angustioribus, achaeniis rugulosis differt.

Rhizoma tenue lignosum ad apicem foliorum vestigiis brunneis dense obtectum. Caulis erectus, gracilis, striatus, foliatus, longe pilosus, ad 40 cm. altus. Folia radicalia angustissime lanceolata circ. 35 cm. longa, 3 cm. lata, utrinque villosa, costa conspicua, margine sinuato-dentata dentibus apiculatis, ciliata, basi in petiolum alatum vaginantem longissime attenuata; caulina lanceolata, minora, sessilia semi-amplexicaulia. Capitulum solitarium parvum infundibuliforme. Involucri phylla quadriseriata violacea, exteriora lanceolata glabra, 1.2 cm. longa, 3 mm. lata; interiora linearia laxe pilosa, 1.6 cm. longa, 2 mm. lata. Receptaculi paleae subulatae achaenia superantes. Flosculi intense caeruleo-purpurei, circ. 1.8 cm. longi; corollae tubus 9 mm. longus limbo 3 mm. longo. Pappus uniseriatus, plumosus, 1.2 cm. longus, rufescens. Antherarum caudiculi longe pilosi. Achaenium circ. 4 mm. longum transverse rugulosum.

CHINA.—Yunnan. Plant of 16–20 in. Florets deep blue-purple. Open stony pasture on the margins of pine forests. Western flank of the Lichiang Range. Lat. 27° 30' N. Alt. 11,000 ft. In flower, September 1914. G. Forrest 13402.

Plant of 2 ft. Flowers deep blue-purple. Open stony pasture. Western flank of the Tali Range. Lat. 25° 40' N. Alt. 11,000 ft. In flower, August 1914. G. Forrest 13460 (type).

This species belongs to the sub-section *Villosae* Franch. and is probably nearest to *S. longifolia* Franch. From that species it can be distinguished by its much taller stem, longer and narrower leaves, villose not silky indumentum, upper leaves not coloured and membranaceous, and capitulum much smaller and funnel-shaped. The narrow lanceolate involucre bracts are almost black; the pappus is composed of only one series of pale reddish hairs. The achenes are very different, being transversely wrinkled.

***Saussurea quercifolia* W. W. Sm. var. *major* Anth. Var. nov.**

A typo statura duplo majore, foliis anguste lanceolatis ad 10 cm. longis, petiolo longo alato recedit.

CHINA.—Yunnan. Plant of 6–9 in. Flowers deep rose-purple. Open screes and on rocky pasture. Mekong-Salwin divide. Lat. 28° 10' N. Alt. 14,000 ft. In flower, September 1914. G. Forrest 13300.

Plant of 6 in. Flowers crimson and blue-purple. Open alpine

pastures. Bei-ma Shan. Lat. 28° 20' N. Alt. 14,000 ft. In flower, October 1914. G. Forrest 13535.

Plant of 2-5 in. Flowers rosy-purple. On screes and stony moorland. Mountains north-east of Atuntze. Lat. 28° 35' N. Long. 99° 10' E. Alt. 15,000 ft. In flower, August 1921. G. Forrest 20072.

Mount Peimashan. Mekong-Yangtze divide between Atuntze and Pungtzera. In flower, 1923. J. F. Rock 9930.

Saussurea Rockii Anth. Sp. nov.

Species ex affinitate *S. poophyllae* Diels sed caule glabrescente rubro, foliis lineari-lanceolatis sat distincta.

Planta caespitosa rhizomate crasso ramoso foliorum vestigiis brunneis dense obsito. Caulis erectus, circ. 6 cm. altus, ruber, foliosus, monocephalus, inferne glabrescens, superne albo-lanuginosus. Folia omnia anguste lineari-lanceolata ad 10 cm. longa, 5 mm. lata, supra viridia laxa pilosa, infra praeter costam glabram sericeo-tomentosa, margine remote et obscure mucronulata, apice acuta, basim versus longe attenuata ibique dilatata subvaginantia, suprema minora sub capitulo congesta in phylla involucris sensim transeuntia. Capitulum campanulatum, circ. 1 cm. diam. Involucris phylla quadriseriata, exteriora lanceolata utrinsecus pilosa, 3 cm. longa, 3 mm. lata, costa media prominula, interiora elliptico-oblonga, 1-2 cm. longa, 2 mm. lata, omnia apice rubro-viridia utrinque pilosa sensim longissime acuminata. Receptaculi paleae lineares, circ. 6 mm. longae. Flosculi roseo-purpurei, circ. 9 mm. longi, corollae tubo quam limbus paululo brevior. Pappus biseriatus, fulvidus, exterior setulosus 3 mm. longus, interior plumosus circ. 7 mm. longus.

CHINA.—Yunnan. Yangtze watershed, Prefectural District of Likiang, eastern slopes of Likiang snow range. In flower, May-October 1922. J. F. Rock 5732 (type).

This species is related to *S. poophylla* Diels. It can be distinguished by its narrowly lanceolate leaves, which are shorter and broader and obscurely toothed on the margin. The stem is reddish and but sparingly woolly towards the apex.

Saussurea salwinensis Anth. Sp. nov.

Saussurea sp. Notes Roy. Bot. Gard. Edin. xiv (1924), 168 et xvii (1929), 54, 76, 106.

Species affinis *S. likiangensis* Franch. a qua habitu humile, capitulis numerosissimis breviter pedunculatis inter alia differt.

Planta perennis pulvinato-caespitosa, rhizomate crasso ramoso foliorum pristinorum vestigiis nigrescentibus dense circumdato. Caulis erectus brevis, 1-4 cm. altus, glaber, basi rosulato-foliatus superne densifoliatus. Folia omnia lineari-oblonga, circ. 6 cm. longa, 5 mm. lata, sinuato-dentata, mucronulata, supra scabridula viridia, infra albo-lanuginosa costa glabra excepta, apice acuta, basi sensim at-

tenuata subvaginantia. Inflorescentia terminalis corymbosa, capitulis numerosis dense aggregatis ovoideis circ. 6 mm. diam., brevissime pedunculatis. Involucri phylla quadriseriata lanceolata, circ. 1 cm. longa, 3 mm. lata, longe acuminata, apice rubescentia breviter pilosa. Receptaculi paleae, circ. 5 mm. longae, subulatae. Flosculi intense purpurei, circ. 1 cm. longi. Pappus fulvidus uniseriatus plumosus, 8 mm. longus. Antherarum caudae lanatae. Achaenia glabra, 2 mm. longa.

TIBET.—Stemless plant of 1 in. Flowers immature. Open stony pasture. On Ka-gwr-pu. Mekong-Salwin divide. Lat. 28° 25' N. Alt. 13–14,000 ft. In bud, July 1917. G. Forrest 14250.

Plant of 1 in. Flowers deep purple. On open stony pasture. Same locality. Alt. 13,000 ft. In flower, August 1917. G. Forrest 14530 (type).

CHINA.—Yunnan. Cushion plant of 1–2 in. Flowers deep purple-blue. Open rocky slopes and ledges of cliffs. On the Bei-ma Shan. Lat. 28° 12' N. Alt. 12–13,000 ft. In flower, September 1917. G. Forrest 14933.

Tufted plant of 1–2 in. Flowers deep ruddy purple. On open alpine meadows and ledges of cliffs. Mekong-Salwin divide. Lat. 27° 35' N. Long. 98° 56' E. Alt. 14,500 ft. In flower, September 1921. G. Forrest 20393.

Mountains of Moting, north-east of the Yangtze-Mekong watershed. In flower, June 1923. J. F. Rock 10347.

Saussurea superba Anth. Sp. nov.

Saussurea villosa Notes Roy. Bot. Gard. Edin. xiv (1924), 105, 152 et 348 non Franch.

Species affinis *S. nobili* Franch. a qua foliis glabrescentibus, involucris phyllis glabris, receptaculi paleis longis inter alia differt.

Rhizoma lignosum crassum ad collum foliorum vestigiis brunneis dense obtectum. Caulis erectus, ad 25 cm. altus, striatus, longe pilosus, foliatus, monocephalus. Folia radicalia oblanceolata vel elliptica, 8–15 cm. longa, 3–5 cm. lata, utrinque glabrescentia vel sparse villosa, costa infra strigoso-pilosa excepta, margine minute et remote denticulata dense ciliata, apice acuta mucronulata, basi in petiolum brevem alatum vaginantem sensim attenuata, caulina minora anguste lanceolata. Capitulum conspicuum circ. 3 cm. diam. 4 cm. longum. Involucris phylla quadriseriata acuta glabra violacea vel nunc albescentia violaceo-marginata, exteriora lanceolata, 1.5 cm. longa, 0.5 cm. lata, interiora linearia 2.5 cm. longa, 0.2 cm. lata. Receptaculi paleae subulatae, 6–7 mm. longae. Flosculi intense purpurei circ. 2.5 cm. longi; corollae tubus 1.5 cm. longus, limbo alte quinquefido. Pappus biseriatus, albidus, exterior setaceus 4–5 mm. longus, interior plumosus 2 cm. longus. Antherarum caudiculi lanati. Achaenium immaturum glabrum 4 mm. longum.

CHINA.—Yunnan. Plant of 10-16 in. Flowers deep ruddy blue. Stony pasture. North-west flank of the Lichiang range. Lat. 27° 30' N. Alt. 12,000 ft. In flower, July 1914. G. Forrest 12803 (type).

Plant of 2-2.5 in. Flowers rosy purple. On open stony alpine meadows. Chienchuan-Mekong divide. Lat. 26° 40' N. Long. 99° 40' E. Alt. 13,000 ft. In flower, September 1922. G. Forrest 22532.

Without precise locality. In flower, 1930. G. Forrest 30800.

Forma *pygmaea* Anth. Form. nov.

A typo habitu humile, caule 1-6 cm. alto, foliis ellipticis, 3-5 cm. longis, 1.5-2.5 cm. latis, capitulis minoribus recedit.

CHINA.—Yunnan. Plant of 1-2 in. Flowers deep crimson and pale purplish-blue. Phyllaries black crimson. Fragrant. Open alpine pasture. Bei-ma Shan, Mekong-Yangtze divide. Lat. 28° 20' N. Alt. 15,000 ft. In flower, August 1914. G. Forrest 13227.

Plant of 1-2 in. Florets deep purple-crimson. Open stony pasture. Same locality and altitude. In flower, July 1917. G. Forrest 14423.

Plant of 1.5-2.5 in. Flowers deep purplish-blue and crimson. Stony alpine meadows. Haw-pu Shan, Mekong-Yangtze divide. Lat. 28° 18' N. Long. 99° E. Alt. 14-14,500 ft. In flower, September 1921. G. Forrest 20206.

Without precise locality. In flower, 1930. G. Forrest 30820.

Plant of 3-5 in. Flowers deep purplish-blue. Ledges of cliffs and limestone screes. Mekong-Yangtze divide. Lat. 27° 36' N. Long. 99° 10' E. Alt. 12,000 ft. In flower, July 1921. G. Forrest 19652.

Jsu-ssu valley. Atuntze. Alt. 14,000 ft. In flower, July 1922. Sladen Trust Expedition 1922. J. W. and C. J. Gregory sine no. (Brit. Mus.).

This handsome species belongs to the group *Villosae* Franch. and is close to *S. nobilis* Franch., from which it can be distinguished by its narrower oblanceolate leaves sparsely villose or nearly glabrous, but with the mid-rib on the under side markedly strigose. The leaves are not white-woolly below as in Franchet's species. The involucre bracts are glabrous and in colour deep violet. Moreover, the bristles of the receptacles are twice the length of the achenes; in *S. nobilis* they only equal one-half the length of the achenes.

The series of specimens cited fall naturally into two groups. The first comprise the taller plants—the typical form. These were gathered at altitudes between 12,000 and 13,000 ft. The second group are dwarf, low-growing herbs, but are not specifically different from the first group. Their habitat is found at a higher elevation, 14,000 to 15,000 ft. This is the forma *pygmaea*.

Saussurea trullifolia W. W. Sm. var. *pinnatibracteata* Anth. Var. nov.

A typo foliis cuneatis, involucri phyllis pinnatifidis differt.

TIBET.—Plant of 4–8 in. Flowers deep crimson-maroon. Open screes and stony pasture. On Ka-gwr-pu, Mekong-Salwin divide. Lat. $28^{\circ} 30' N$. Alt. 14,500 ft. In flower, August 1917. G. Forrest 14545.

CHINA.—Yunnan. Mount Peimashan, Mekong-Yangtze divide between Atuntze and Pungtzera. In flower, 1923. J. F. Rock 10017.

Plant of 3–5 in. Flowers purplish-rose. Ledges of cliffs and on screes. Mountains north-east of Atuntze. Lat. $28^{\circ} 35' N$. Long. $98^{\circ} 56' E$. Alt. 14–15,000 ft. In flower, July 1921. G. Forrest 19767.

Plant of 2–3 in. Flowers crimson and purple. On screes and ledges of cliffs. Mountains north-east of Atuntze. Lat. $28^{\circ} 35' N$. Long. $99^{\circ} 10' E$. Alt. 14–15,000 ft. In flower, September 1921. G. Forrest 20091.

Plant of 3–5 in. Flowers crimson and purple. On limestone screes and cliffs. Bei-ma Shan. Lat. $28^{\circ} 18' N$. Long. $99^{\circ} 10' E$. Alt. 15,000 ft. In flower, September 1921. G. Forrest 20113.

Saussurea tsarongensis Anth. Sp. nov.

Species affinis *S. iodostegiae* Hance sed capitulis minoribus plurimis sessilibus congestis inter alia differt.

Caulis simplex, ad 20 cm. altus, foliatus, fistulosus, crassus, laxe pilosus. Folia radicalia lanceolata, circ. 10 cm. longa, 2 cm. lata, serrata, supra nitida sparse pilosa, infra arachnoidea, basi in petiolum brevem vaginantem attenuata; caulina inferiora sessilia ceterum conformantia, summa ovata, integra bracteiformia, submembranacea, inflorescentiam semi-includentia. Capitula parva, numerosa, sessilia, dense congesta. Involucri phylla apice atra, albo-pilosa, exteriora lanceolata 1 cm. longa, 4 mm. lata, interiora anguste lanceolata, 1.3 cm. longa, 3 mm. lata. Receptaculi paleae setaceae 8 mm. longae. Flosculi purpureo-rosei. Pappus albidus biseriatus, interior plumosus, 1 cm. longus, exterior scabridus 2 mm. longus.

TIBET.—Plant of 2–4 in. Flowers purple rose. On open stony pasture. On Doker-la, Mekong-Salwin divide. Lat. $28^{\circ} 20' N$. Alt. 13,000 ft. In flower, August 1917. G. Forrest 14654.

Plant of 2–3 in. Flowers rosy purple. Pappus white. Stony moist pastures. Salwin-Kiu-Chiang divide. Lat. $28^{\circ} 24' N$. Long. $98^{\circ} 24' E$. Alt. 14,000 ft. In flower, September 1921. G. Forrest 20154.

Plant of 10–12 in. Flowers purple-rose. On open alpine moorland. Same locality and altitude. In flower, September 1921. G. Forrest 20400 (type).

This species is a less robust plant than the allied *S. iodostegia* Hance. In addition to the characters already mentioned, it differs in having lanceolate bracts and a white pappus, while the much smaller leaves are densely covered with silky hairs. *S. iodostegia* has larger peduncled capitula, involucre bracts which are elliptic or ovate and obtuse, a brown pappus, and scabrid leaves.

Saussurea uniflora Wall. var **sinensis** Anth. Var. nov.

A typo involucri phyllis apice obtusis recedit.

CHINA.—Yunnan. Plant of 12–16 in. Flowers ruddy purple. On open stony alpine meadows. Doker-la, Mekong-Salwin divide. Lat. 28° 25' N. Long. 98° 40' E. Alt. 12,000 ft. In flower, October 1921. G. Forrest 20990.

Szechuan. Plant of 10–16 in. Flowers deep bluish-purple. On open stony alpine meadows. Mountains south-east of Muli. Lat. 27° 50' N. Long. 101° E. Alt. 12–13,000 ft. In flower, August 1922. G. Forrest 22178.

TIBET.—Plant of 9–12 in. Flowers deep ruddy purple. On open pasture. On the Ka-gwr-pu, Mekong-Salwin divide. Lat. 28° 30' N. Alt. 12,000 ft. In flower, August 1917. G. Forrest 14555.

Saussurea villosa Franch. in Journ. de Bot. ii (1888), 353.

Saussurea Leveilleana Maire ex Lévl. in Bull. Geogr. Bot. xxv (1915), 19.

CHINA.—Yunnan. Delavay 54 (type of *S. villosa* Franch.). E. E. Maire (type of *S. Leveilleana* Maire). Forrest 2735, 6605, 6339A. Rock 5785.

Kansu. Ching 873.

After a comparison of the type specimens of these two species it is evident that *S. Leveilleana* Maire is the same as *S. villosa* Franch. In his description Franchet describes the leaves as “integerrima”; Maire as “integris breviter sed dense ciliatis.” The leaves in both types are similar, but, like those in all the cited specimens, are not entire, the margin being remotely but distinctly toothed and ciliate.

Saussurea vittifolia Anth. Sp. nov.

Species affinis *S. dumetorum* Anth. sed foliis angustioribus et brevioribus, capitulis ovoideis minoribus breviter pedunculatis, inflorescentiae bracteis anguste linearibus differt.

Herba ad 1 m. alta. Radix crassa lignosa. Caulis erectus, striato-sulcatus, foliatus, inferne glabrescens, superne arachnoideus, basi foliorum vestigiis brunneis dense obtectus. Folia inferiora linearia circ. 20 cm. longa, 1 cm. lata, utrinque viridia glabrescentia, margine minute et obscure mucronulato-denticulata, apice acutissima, basi longissime attenuata subvaginantia; caulina minora basi subauriculata, superiora angustissima, 5–8 cm. longa, 2–3 mm. lata. Inflorescentia corymbosa, capitulis ovoideis, 6 mm. diam., numerosis (10–15), congestis breviter pedunculatis. Involucri phylla quadriseriata, omnia apice viridia tomentosa, exteriora foliacea, lanceolata, acuminata, circ. 1–2 cm. longa, 2 mm. lata, interiora ovata, acuta, 7 mm. longa, 3 mm. lata, intima oblonga 7 mm. longa, 2 mm. lata. Receptaculi paleae lineares circ. 6 mm. longae. Flosculi roseo-purpurei circ. 1.2 cm. longi, corollae tubo quam limbus paululo longiore. Pappus biseriatus,

fulvidus, exterior setulosus 2 mm. longus, interior plumosus 8 mm. longus. Antherarum caudiculi lanati.

CHINA.—Yunnan. Plant of 2-3 ft. Flowers rose-purple. Open heavy stony pasture. Mountains of the Chungtien plateau. Lat. 27° 55' N. Alt. 10,000 ft. In flower, July 1913. G. Forrest 10603 (type).

Eastern slopes of Mount Dyinaloko, northern peak of the Likiang Snow Range. In flower, 1923. J. F. Rock 10432.

Saussurea Wardii Anth. Sp. nov.

Species affinis *S. lingulatae* Franch. et *S. taraxacifoliae* Wall. a quibus habitu elatiore, caule crasso multifoliato differt; ab hac involucri phyllis herbaceis atro-violaceis recedit; ab illa capitulo majore ovoideo phyllis pilosis distinguitur.

Planta caespitosa rhizomate ramoso crasso lignoso foliorum vestigiis atro-brunneis oblecto. Caulis ad 30 cm. altus, foliatus, inferne rubescens, superne albo-tomentosus, monocephalus. Folia radicalia rosulata, lanceolata, runcinata, lobis integris vel paucidenticulatis, circ. 12 cm. longa, 1.5 cm. lata, supra viridia glabrescentia, infra praeter costam glabram brunneam albo-tomentosa, petiolo alato vaginante; caulina minora sessilia, summa linearia integra. Capitulum late ovoideum, circ. 2.5 cm. diam. Involucri phylla quinquieseriata, atro-violacea, albo-pilosa, anguste lanceolata, acuminata 1-1.5 cm. longa, 2-3 mm. lata. Receptaculi paleae setaceae circ. 7 mm. longae. Flosculi atro-violacei. Pappus fulvidus, biseriatus, interior plumosus 1 cm. longus, exterior scabridus 2 mm. longus.

CHINA.—Szechuan. Flowers dusky violet. On steep rocky rhododendron-clad ridges. Shaded. Glacier Lake Camp. Lat. 28° 5' N. Long. 100° 45' E. Alt. 13,000 ft. In flower, July 1921. F. K. Ward 4669 (type).

Yunnan. Without precise locality. In flower, 1930. G. Forrest 28504.

This species belongs to the sub-group *Taraxacifoliae* Franch. It is a tall tufted plant with a very stout leafy stem. By its habit and the different involucre bracts (much narrower and almost black in colour) it is separated from *S. taraxacifolia* Wall. From *S. lingulata* Franch. it is distinguished by its large ovoid head and pilose involucre bracts. In appearance it resembles *S. likiangensis* Franch., which, however, has numerous capitula.

Saussurea yunnanensis Franch. var. **integrifolia** Franch. in Journ. de Bot. ii (1888), 340.

Saussurea Mairei Lévl. in Fedde, Repert. xi (1913), 493.

CHINA.—Yunnan. G. Forrest 10828, 11405, 15492. J. F. Rock 5333. E. E. Maire 442, 743, Montagne derrière Pau-Long-Si (type of *S. Mairei* Lévl.). Ducloux 1563. Yen 50.

Szechuan. F. K. Ward 4834.

Var. *sessilifolia* Anth. Var. nov.

Folia anguste lanceolata circ. 7 cm. longa, 1 cm. lata, inferiora runcinata, lobis parvis, in petiolum brevissimum attenuata, superiora integra sessilia. Capitulum magnum late ovatum; involucri phylla lanata.

CHINA.—Yunnan. Plant of 4-9 in. Flowers purplish-rose. Dry stony pasture. Hills forming the eastern boundary of the Lichiang valley. Lat. 27° 15' N. Alt. 10,000 ft. In flower, July 1913. G. Forrest 10450.

Between Likiang, Yungning, and Yung-pei en route to Mi-li. In flower, June 1922. J. F. Rock 5305.

ADDENDUM.

Saxifraga Blinii Lévl. in Bull. Geogr. Bot. xxv (1915), 43, is *Saxifraga clavistaminea* Engl. et Irmisch. in Notes Roy. Bot. Gard. Edin. v. (1912), 124.

Saxifraga cernua Lévl. in Fl. de Kouy-Tchéou (1915), 389 non Linn. et in Mem. Acad. Barcelona Sér. iii, xii (1916), 561 non Linn., is *Androsace saxifragifolia* Bunge Enum. Pl. Chin. Bor. (1831), 53.

Saxifraga Chaffanjonii Lévl. in Fedde, Repert. ix (1911), 452 et Fl. de Kouy-Tchéou (1915), 389, is *Saxifraga sarmentosa* Linn. f. Suppl. (1781), 240.

Saxifraga Chaffanjonii Lévl. Cat. Pl. Yunnan (1917), 256 non in Fedde, Repert. l.c. et Fl. de Kouy-Tchéou, l.c. Two specimens in Herb. Lévillé, one is *Saxifraga imparilis* Balf. f. in Trans. Bot. Soc. Edin. xxvii (1916), 73; the other is *Saxifraga rufescens* Balf. f. l.c., p. 74.

Saxifraga echinophora Lévl. in Le Monde des Plantes xviii (1916), 28, is *Saxifraga strigosa* Wall. Cat. (1828), 448.

Saxifraga Gasterosteus Lévl. in Le Monde des Plantes xviii (1916), 28, is *Saxifraga gemmipara* Franch. in Journ. de Bot. x (1896), 262.

Saxifraga iochanensis Lévl. Sertum yunnanense (1916), 2, is *Saxifraga dumetorum* Balf. f. in Trans. Bot. Soc. Edin. xxvii (1916), 71.

Saxifraga Martini Lévl. et Vant. in Fl. de Kouy-Tchéou (1915), 389, is *Saxifraga sarmentosa* Linn. f. Suppl. (1781), 240.

Saxifraga Martini Lévl. et Vant. Cat. Pl. Yunnan (1917), 259 (nomen), is *Saxifraga imparilis* Balf. f. in Trans. Bot. Soc. Edin. xxvii (1916), 73.