

**Diagnoses specierum novarum in herbario Horti
Regii Botanici Edinburgensis cognitarum.**

DLI—DLXIX.

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SPECIES BURMANICA edit. J. M. Cowan :—

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Agapetes Bulleyana Diels var. *tenuifolia* Anth. Var. nov.

A typo ramis gracilioribus, foliis multo tenuioribus, suboppositis (vel tantum ad apices ramulorum pseudoverticillatis), margine haud recurvis recedit.

CHINA.—Yunnan. Epiphytic shrub of 3-5 feet. Flowers green. In heavy forest and on cliffs. Shweli-Salwin divide. Lat. 25° 15' N. Long. 98° 40' E. Alt. 10,000 ft. In flower, March 1931. G. Forrest 29357! (type of var.).

Enkianthus deflexus Schneid. var. *variegatus* G. Forrest. Var. nov.

Enkianthus variegatus G. Forrest, nomen in Notes R.B.G. Edin., xiv (1924), 278.

A typo foliis floribusque multo majoribus recedit.

TIBET. Shrub of 10-20 feet. Foliage dull light green veined and marbled dull yellow. Flowers dull creamy-yellow faintly veined rose. In thickets and on rocky slopes in side valleys. Salwin-Kiu-chiang divide, West of Chamatong. Lat. 28° 18' N. Long. 98° 27' E. Alt. 11-12,000 ft. In flower, June 1922. G. Forrest 21647!

This variety can easily be distinguished by the characters noted. A further difference is that the veins of the leaves are of a dull yellow colour, giving a variegated appearance to the plant. This may, however, be due to some abnormal condition. Further gatherings will be required to prove whether this latter character is constant or not.

The plant is noteworthy for the size of flower and would be well worthy of introduction to cultivation.

Gaultheria notabilis Anth. Sp. nov.

Species ex affinitate *G. nummularioides* Don a qua inflorescentia brevissime racemosa densiflora satis differt.

Suffrutex ramosissimus ad 45 cm. attingens, ramulis pilis ferrugineis dense obtectis. Folia late ovata vel ovata, 2-3.5 cm. longa, 1.5-2 cm. lata, apice abrupte acuminata, basi rotundata, margine longe rufidociliata, pagina utrinque glabra, costa nervisque infra pilosis exceptis. Petiolus setosus, brevis, 2-3 mm. longus. Inflorescentia axillaris, racemosa, 3-8-flora; rhachis crassa 5-1 cm. longa, dense bracteata,

glabra. Flores parvi, albi, pedicello 2-bracteato gracili glabro 5 mm. longo suffulti. Calyx glaber, lobis lanceolatis, 3 mm. longis. Corolla campanulata breviter 5-fida, circ. 3 mm. diam. Stamina 10, filamentis ad basim dilatatis, 1.5 mm. longis; antheris oblongis 2-locularibus, loculis biaristatis. Ovarium glabrum, stylo 3 mm. longo.

CHINA.—Yunnan. Shrub of 12-16 inches, branched from the base. Flowers white. Fruits purple-black. In dry thickets and amongst scrub. Hills north-west of Tengyueh. Lat. 25° 25' N. Long. 98° 30' E. Alt. 8,000 ft. In flower, June 1925. G. Forrest 26722! (type).

A species with the aspect of *G. nummularioides* Don but with a quite different inflorescence. In the latter the flowers are solitary and axillary but in this species the inflorescence is racemose. The flowers are small and densely crowded towards the apex of a very short axillary rhachis. By this character the species is easily recognised.

***Gaultheria sinensis* Anth. Sp. nov.**

Species affinis *G. trichophyllae* Royle, a qua foliis obovatis latioribus, antherarum loculis biaristatis inter alia differt.

Suffrutex procumbens ramosissimus usque ad 30 cm. attingens. Ramuli juniores pilis longis ferrugineis apicem versus vestiti. Folia obovata vel oblanceolata coriacea, subsessilia, 8-15 mm. longa, 4-8 mm. lata, apice mucronulata, basi attenuata, margine subcrenulata, pagina superiore atro-viridi nitida, inferiore pallidiore pilis perpaucis crassis rufidis praecipue ad costam oblecta. Flores solitarii, axillares, albi, ramulorum apices versus dispositi. Pedicelli 2-4 mm. longi, in partibus superioribus bracteolis binis lanceolatis instructi. Calyx glaber 5-fidus, lobis late ovatis. Corolla urceolata, circ. 3 mm. diam. Stamina 10; filamenta breviter, 1.5 mm. longa, ad medium late dilatata; antherae circ. 1 mm. longae, 2-loculares, loculo quoque biaristato. Ovarium globosum, 5-loculare. Fructus atro-caeruleus.

CHINA.—Yunnan. Prostrate shrub of 10-12 inches. Fruits bright blue. Open sandy moist situations. Kari Pass. Mekong-Yangtze divide. Lat. 27° 40' N. Alt. 11,000 ft. In fruit, August 1914. G. Forrest 12938!

Prostrate shrub of 2-6 inches. Fruits deep blue. On cliffs and humus covered boulders. Mekong-Salwin divide. Lat. 28° 10' N. Alt. 12,000 ft. In fruit, October 1914. G. Forrest 13428!

Matted shrub of 4-6 inches. Fruits deep clear blue. Open peaty pastures and on banks in rhododendron thickets. Mekong-Salwin divide. Lat. 28° 12' N. Alt. 12-13,000 ft. In fruit, August 1915. G. Forrest 14735!

In regione frigide temperata jugi Schondsula inter fluvios Landsung-djiang (Mekong) et Lu-djiang (Salwin). Lat. $28^{\circ} 4' N$. Alt. 3,850 m. In fruit, September 1915. Handel-Mazzetti 8243!

TIBET. Prostrate shrub of 4-6 inches. Flowers white. Stony pastures and humus covered boulders. Ka-gwr-pu, Mekong-Salwin divide. Lat. $28^{\circ} 25' N$. Alt. 12,000 ft. In flower, July 1917. G. Forrest 14216! (type).

Prostrate shrub of 1-2 inches. Fruits indigo-blue. On ledges of cliffs and humus covered boulders. Salwin-Kiu-chiang divide. Lat. $28^{\circ} 40' N$. Long. $98^{\circ} 15' E$. In fruit, October 1919. G. Forrest 19268!

Prostrate or semi-prostrate shrub of a few inches. Fruits blue. Moist alpine pastures. Salwin-Kiu-chiang divide. Lat. $28^{\circ} 24' N$. Long. $98^{\circ} 24' E$. Alt. 13,000 ft. In fruit, August 1921. G. Forrest 20040!

UPPER BURMA. A prostrate trailer in moss, on boulders and silty banks of gullies in the upper woodland zone. Flowers unknown, but the calyx round the pyrloid capsule develops from dull brown purple to a most glorious white-lined 5-lobed "flower" of brilliant lapis-lazuli blue. Chimili Woods. Alt. 10,800 ft. R. Farrer 1191!

Prostrate on stones amid scrub on the way up the pass, only seen at one point and not abundant. Flowers clear pink. Shing Hong Pass. Alt. 10,600 ft. R. Farrer 1622!

This species is related to the Indian *Gaultheria trichophylla* Royle. There are, however, several points which at once serve to distinguish it. The leaves are larger, much broader, obovate in shape, with eciliate margin, the under surface bearing, chiefly near the mid-rib, scattered coarse red hairs. The calyx lobes are broadly ovate and not triangular. A further constant difference is to be found in the number of horns borne on the anthers; the loculi of the Indian specimens are invariably uniaristate in contrast to the biaristate loculi of the Chinese plants. *Gaultheria cardiosepala* Hand.-Mazz., a closely related Chinese species, has anthers with biaristate loculi but differs markedly in its oblong linear leaves.

***Gaultheria sinensis* Anth. var. *nivea* Anth. Var. nov.**

A typo statura minore, foliis multo minoribus, calyce maturo niveo differt.

CHINA.—Yunnan. Prostrate shrub of 2-4 inches. Fruits white. Open ledges of cliffs, humus covered boulders and stony slopes. Mekong-Salwin divide. Lat. $28^{\circ} 10' N$. Alt. 13,000 ft. In fruit, September 1914. G. Forrest 13310!

TIBET. Plant of 1-2 inches. Flowers white. On peaty stony meadows. Salwin-Kiu-chiang divide. Lat. $28^{\circ} 40' N$. Long. $98^{\circ} 15' E$. In flower, July 1919. G. Forrest 19269! (type of var.).

Jurinea Cooperi Anth. Sp. nov.

Species affinis *J. macrocephalae* Benth. a qua foliis runcinato-pinnatifidis supra scabridis, pappo albido plumoso inter alia differt.

Herba perennis radice longa lignosa ramosa. Folia radicalia rosulata, lanceolata vel oblanceolata, runcinato-pinnatifida, lobis irregulariter denticulatis, denticulo quoque breviter mucronato, 9-15 cm. longa, 4-7 cm. lata, supra viridia scabrida, infra albo-lanuginosa costa nervisque brunneis conspicuis exceptis, petiolo hispido, 1-3 cm. longo. Capitula circ. 2 cm. diam., numerosa (4-10), sessilia, congesta. Involucri phylla circa quinquieseriata, margine et apicem versus pilis brevibus rigidis asperula, exteriora lanceolata, acuta, 1-2 cm. longa, 4 mm. lata, interiora anguste lanceolata, obtusa, 2 cm. longa, 2 mm. lata. Receptaculi paleae subulatae, 3-5 mm. longae. Flosculi purpurei circ. 2 cm. longi; corollae tubus 1.5 cm. longus, limbo 5 mm. longo. Pappus multiseriatus, fere plumosus, albidus, circ. 2 cm. longus. Antherarum caudiculi longi ciliati. Achaenium immaturum quadrangulum, 4 mm. longum.

TIBET. Sessile on ground. Flowers—several heads together. Chumbi. In flower, August 1913. R. E. Cooper 742! (type).

INDIA. — Sikkim. Flowers purple. On stony peat meadows. Chamnago. Alt. 13,000 ft. In fruit, September 1913. R. E. Cooper 948!

Stemless plant. Flowers purple. Amongst stones. In flower, August 1913. S. of Sheraothang. Alt. 15,000 ft. R. E. Cooper 617!

Without locality. Cave 722!

This species is related to *J. macrocephala* Benth. but can be recognised at once by the different shape and colouring of the leaves. The phyllaries are much shorter and less acute, the margins and upper halves being hispid. A further point of distinction is in the pappus which is whitish and plumose.

Jurinea Georgei Anth. Sp. nov.

Saussurea sp. Notes R.B.G. Edin., xiv (1924), 315 et 367.

Species affinis *J. salwinensi* Hand.-Mazz. a qua foliis lanceolatis cum bracteis utrinque glandulosis inter alia differt.

Radix crassa longa. Caulis 2-3 cm. longus monocephalus. Folia radicalia rosulata, anguste lanceolata, 5-7 cm. longa, 1.5 cm. lata, utrinque glandulosa, costa conspicua, nervis obscuris, margine sinuata rarissime obscure dentata, apice acuta, basi in petiolum latiusculum ad 5 cm. longum vaginantem contracta. Folia superiora bracteiformia, oblonga, 2-6 cm. longa, nunc capitulum vix aequantia nunc superantia semper circ. 4 mm. lata. Capitulum magnum circ. 2-2.5 cm. diam., 4 cm. longum. Receptaculum nudum. Involucri phylla apice acuta, apiculata, purpurascencia, exteriora late ovata 2 cm. longa, 9 mm.

lata, intermedia lanceolata, 2.5 cm. longa, 6 mm. lata, interiora oblonga, 3 cm. longa, 3 mm. lata. Flosculi rubro-purpurei, 3.5 cm. longi; corollae tubus 2.5 cm. longus, limbo 1 cm. longo. Pappus ut videtur uniseriatus, stramineus, barbellatus, 2.5 cm. longus. Antherarum caudiculi ciliati. Achaenium immaturum 4 mm. longum.

CHINA.—Yunnan. Plant of 2-3 inches. Flowers ruddy-purple. On very marshy pasture, some plants almost under water. On the Tong Shan in the Yangtze bend. Lat. 27° 30' N. Alt. 10,000 ft. In flower, August 1913. G. Forrest 10868! (type).

Plant of 2-2½ inches. Flowers deep ruddy purple. On open stony and very moist or boggy meadows. Chien-chuan-Mekong divide. Lat. 26° 36' N. Long. 99° 40' E. Alt. 14,000 ft. In flower, August 1922. G. Forrest 22216!

Plant of 1 inch. Moist meadows and on marshes. N.W. flank of the Lichiang Range. Lat. 27° 20' N. Long. 100° 10' E. Alt. 14,000 ft. In flower, October 1922. G. Forrest 22973!

Yangtze watershed, Prefectural district of Likiang, eastern slopes of Likiang Snow Range. In flower, May-October 1922. J. F. Rock 5982! 6138! In flower, 1923-24. 10841!

From *Jurinea salwinensis* Hand.-Mazz. near which it must be placed, this species is distinguished by its lanceolate leaves. Both surfaces of the leaves and bracts of the inflorescence appear to be covered with minute dark red spots. On microscopic examination these are seen to be small pits or depressions in each of which is a globular translucent yellow subsessile gland. Further points of difference are in the obscure venation of the leaf, the larger capitulum, the size and shape of the phyllaries and the pappus.

An additional point of interest is that this species is found growing only under very wet conditions. On each gathering this point is stressed. On all of Forrest's sheets (13238, 14350, 14647, 20024) of *J. salwinensis* Hand.-Mazz. the habitat mentioned is "open moist pasture."

***Jurinea mirabilis* Anth. Sp. nov.**

Species affinis *J. Forrestii* Diels a qua foliis lanceolatis pinnatifidis, inflorescentiae bracteis et capitulis multo majoribus satis differt.

Radix crassissima lignosa. Folia radicalia rosulata, ambitu lanceolata irregulariter pinnatifida, lobis mucronulato-dentatis, 25-30 cm. longa, 10-15 cm. lata, supra scabridula, costa prominula brunnea, infra laxe arachnoideo-tomentosa, costa latiuscula nervisque conspicuis, apice acuta, basi in petiolum brunneo-pilosum, 3-10 cm. longum, 1-1.5 cm. latum attenuata. Capitula numerosa (circ. 12) magna, 3-3.5 cm. diam., 4-5 cm. longa, pedunculo 3 cm. longo, folio unico bracteiformi conspicuo, 20 cm. longo, 10 cm. lato, inflorescentiam multo superanti insidentia. Involucri phylla coriacea, valde acum-

inata, apicem versus purpurascens, exteriora lanceolata purpureo-marginata, circ. 2 cm. longa, 6 mm. lata, intermedia sensim diminuentia, interiora anguste lineari-lanceolata, 4 cm. longa, 2 mm. lata. Receptaculum nudum. Flosculi purpurei circ. 3 cm. longi; corollae tubus 2.5 cm. longus, limbo alte quinquefido 8 mm. longo. Pappus multiseriatus, fulvidus, rigidus, barbellatus, setis exterioribus reflexis, achaenium circumstantibus. Antherarum caudiculi elongati, ciliati. Achaenium 8 mm. longum, glabrum, quadristriatum.

CHINA.—Yunnan. Without precise locality. In flower and fruit, 1931. G. Forrest 28791! (type).

A very remarkable plant of striking appearance on account of the large cluster of heads borne centrally in a wide rosette of leaves about 60 cm. diameter. On the outer side of each head there arises a large leaf similar in appearance to the basal leaf but slightly smaller. The leaves recall those of *J. edulis* Franch. but the habit of the plant is very different. It must be placed along with *J. Forrestii* Diels. Its much larger size, the shape of the leaves, bracts and the larger heads serve at once to distinguish it from that species.

Jurinea taraxacifolia Anth. Sp. nov.

Species affinis *J. salwinensis* Hand.-Mazz. a qua foliis runcinatis, inflorescentiae bracteis subintegris tenuibus multo majoribus differt.

Radix lignosa longa. Caulis subnullus. Folia rosulata, lanceolata, runcinata, 10-15 cm. longa, 3-5 cm. lata, utrinque scabrida, margine mucronulato-dentata, petiolo ad 2 cm. longo vel subnullo. Folia superiora bracteiformia lanceolata, 5-8 cm. longa, 2-4 cm. lata, tenuia, utrinque glabrescentia, margine mucronulato-dentata, capitulum obvallantia. Capitulum sessile, circ. 3 cm. diam. Involucri phylla apice acuta, apiculata, exteriora ovato-lanceolata, 1.5 cm. longa, 6 mm. lata, interiora lanceolata, 2.5 cm. longa, 4 mm. lata. Receptaculum nudum. Flosculi rubro-purpurei circ. 2.4 cm. longi; corollae tubus 1.6 cm. longus, limbo 8 mm. longo. Pappus uniseriatus, rigidus, barbellatus, circ. 2 cm. longus, inferne stramineus, superne rubescens. Antherarum caudiculi ciliati. Achaenium immaturum 5 mm. longum.

N.E. UPPER BURMA. Plant of 1-1½ inches. Flowers crimson purple. On open stony moorland. W. flank of the N'Maikha-Salwin divide. Lat. 26° 35' N. Long. 98° 48' E. Alt. 14,000 ft. In flower, October 1925. G. Forrest 27441! (type).

Plant of 2 inches. Flowers blue-purple. On open alpine meadows. Western flank of the Chimili, N'Maikha-Salwin divide. Lat. 26° 23' N. Long. 98° 48' E. Alt. 12,000 ft. In flower, September 1924. G. Forrest 25102!

This plant is related to *Jurinea salwinensis* Hand.-Mazz., but is easily recognised by its larger size, runcinate leaves and large thin almost membraneous bracts clustered round the sessile capitulum.

Ribes himalayense Decne. var. **salwinense** Anth. Var. nov.

A typo ramulis et petiolis et foliis utrinque dense tomentosis, racemis longioribus differt.

CHINA.—Yunnan. Shrub of 6-9 feet. Fruits black. In open thickets by streams. Mekong-Salwin divide. Lat. $28^{\circ} 12' N$. Alt. 11,000 ft. In fruit, September 1917. G. Forrest 14957!

TIBET. Doker-la, Mekong-Salwin divide. Lat. $28^{\circ} 20' N$. In fruit, October 1917. G. Forrest 14985!

UPPER BURMA. Shrub of 4-5 feet. Fruits red, bitter. Amongst scrub on open rocky slopes. Western flank of the Chimili, N'Maikha-Salwin divide. Lat. $26^{\circ} 23' N$. Long. $98^{\circ} 48' E$. Alt. 11,000 ft. In fruit, September 1924. G. Forrest 24913!

SAXIFRAGA Linn.

Sect. I. BORAPHILA Engl.

§4. MELANOCENTRAE Engl. et Irmsch.

Saxifraga pallida Wall. var. α **typica** Engl. et Irmsch. forma **geoides** Anth. Forma nova.

Caules floriferi complures, 10 cm. longi, multiflori corymbosopaniculati. Folia basalia orbiculata vel suborbiculata vel ovalia, pagina inferiore saepissime purpurascens, margine crenato-serrata; petiolus lamina triplo longior.

CHINA.—Yunnan. Plant of 3-6 inches. Flowers dull white, spotted yellow at base, anthers orange-red. Open stony pasture. Western flank of the Shweli-Salwin divide. Lat. $25^{\circ} 20' N$. Alt. 10-11,000 ft. In flower, August 1912. G. Forrest 8907! (type of forma).

Plant of 6 inches. Flowers white, petals yellowish at base, filaments petaloid, gynaecium reddish green. Open stony pasture and on rocks. Same locality. Alt. 10,000 ft. In flower and fruit, August 1912. G. Forrest 8946!

These plants are undoubtedly referable to *S. pallida* Wall. Among the numerous forms of this very variable species the present form is readily distinguished by its orbicular leaves tinged deep purple beneath.

Saxifraga paludosa Anth. Sp. nov.

Species affinis *S. Dungbooi* Engl. et Irmsch. sed caule humili unifloro distinguenda.

Planta parva caespitosa, caule florifero erecto, circ. 5 cm. longo, atro-purpureo unifloro. Folia basalia rosulata, ascendens, lanceolata, integra; lamina circ. 7 cm. longa, 3 mm. lata, basi in petiolum aequilongum attenuata. Flores erecti. Sepala sub initio patentia, demum reflexa, ovata, obtusa, circ. 4 mm. longa, 2 mm. lata. Petala obovata, obtusa, breviter unguiculata, 5 mm. longa, 3 mm. lata, alba.

Staminum filamenta subulata, dimidium petalorum superantia; antherae corallinae. Ovarium ovoideum in stylos erectos breves contractum.

CHINA.—Yunnan. Petals white, with two pale yellow spots at the base of each. Anthers coral red. In boggy places. Glacier lake camp. Lat. $28^{\circ} 5' N$. Long. $100^{\circ} 45' E$. Alt. 13-14,000 ft. In flower, July 1921. F. K. Ward 4641! (type).

In the sub-section *Melanocentrae* this species and *S. Dungbooi* Engl. et Irmsch. are alone in having entire leaves and subulate filaments. From the latter *S. paludosa* is distinguished by its much smaller size and one-flowered scape.

Sect. 2. HIRCULUS (Haw.) Tausch.

§ 1. DENSIFOLIATAE Engl. et Irmsch.

Saxifraga brachyphylla Franch. Pl. Delav. (1890), 337.

Saxifraga swertiaeflora Lévl. in Fedde, Repert., xiii (1914), 341.

CHINA.—Yunnan. Plante aquatique annuelle. fl. jaunes. Marécages de Lou-pou. Alt. 3,000 m. In flower, October 1913. E. E. Maire!

The species described by Mgr. Léveillé, cited by Engler and Irmscher as "Species dubiae sectionis *Hirculus*, loci incerti," is referable to *S. brachyphylla* Franch.

§ 2. TURFOSAE Engl. et Irmsch.

Saxifraga cardiophylla Franch. in Nouv. Arch. Mus. Paris, sér. 2, viii, ii (1886), 230, et Pl. David. ii (1888), 47.

Saxifraga Moorcroftiana Engl. et Irmsch. in Notes R.B.G. Edin., v (1912), 135, et in Das Pflanzenreich, Saxifrag. (1916), 100, non Wall.

CHINA.—Yunnan. G. Forrest 5058! 6367! 6942! 11707!

The specimen Forrest 6367 from Yunnan quoted by Engler and Irmscher as *S. Moorcroftiana* Wall. is unquestionably referable to this species. The distributional area of *S. Moorcroftiana* Wall. is therefore confined to the Himalayan area.

§ 3. STELLARIIFOLIAE Engl. et Irmsch.

Saxifraga hastigera Lévl. in Fedde, Repert., viii (1914), 257. Descr. emend. Anth.

Species affinis *S. stellariifoliae* Franch. sed caulibus plurifloris, foliis lanceolatis, sepalis petalisque lanceolatis differt.

Planta caespitosa, caulibus erectis, ad 20 cm. altis, foliatis, rubescentibus, praeter nodos longe pilosos glabris. Folia basalia sub anthesi nulla, caulina anguste lanceolata, circ. 1 cm. longa, 3 mm. lata, margine ciliata, petiolo 5-6 mm. longo. Inflorescentia corymbosa, 3-8-flora; pedicelli graciles, 5 mm. longi. Sepala lanceolata, 3-4 mm.

longa, 1 mm. lata, obtusa. Petala lanceolata, 6 mm. longa, 2.5 mm. lata, distincte unguiculata, trinervia, lutea. Stamina calycem superantia. Ovarium ex hypanthio fere omnino liberum, ovoideum in stylos erectos vix 1 mm. longos exiens.

CHINA.—Yunnan. Rochers de Je-na-Tchouan. Alt. 3,200 m. In flower, August 1912. E. E. Maire!

As the type of this species named by Lévêille is now in the Edinburgh Herbarium, it appears advisable to indicate here its relationship within the genus, and as the original description is somewhat brief, the present emended one is added. Curiously enough, though earlier and later published descriptions of Lévêille's species of *Saxifraga* from the same volume (Fedde, Repert. xiii) are noted in "Das Pflanzenreich: Saxifraga" no mention is made of the present species, which is, in addition, figured in the "Plantes du Yunnan" (1915-17), 257, f. 64.

S. hastigera Lévl. is most nearly related to *S. stellariifolia* Franch. but can at once be recognised by its markedly narrow lanceolate petiolate leaves. Further points of difference are to be found in the inflorescence which is many-flowered and in the shape of the sepals and petals which are lanceolate.

§ 4. HIRCULOIDEAE Engl. et Irmsh.

***Saxifraga montana* H. Sm. var. *speciosa* Anth. Var. nov.**

Saxifraga Hirculus Linn. var. *typica* Hook. f. forma *minor* Engl. et Irmsh. in Das Pflanzenreich, Saxifrag. (1916), iii.

A typo caulibus semper unifloris, floribus majoribus, petalis brevioribus et multo latioribus recedit.

CHINA.—Yunnan. Matted plant of 3-4 inches. Flowers deep yellow. Open stony pasture. Mountains in the N.E. of the Yangtze bend. Lat. 27° 45' N. Alt. 14,000 ft. In flower, September 1913. G. Forrest 11214! (type of var).

Tufted plant of 4-5 inches. Flowers deep golden yellow. Open moist stony pastures. Kari pass, Mekong-Yangtze divide. Lat. 27° 40' N. Alt. 12-14,000 ft. In flower, August 1914. G. Forrest 12973!

Tufted plant of 3-5 inches. Flowers golden-yellow. Open stony moist pastures. Mekong-Salwin divide. Lat. 28° N. Alt. 14,000 ft. In flower, August 1917. G. Forrest 14504A!

Plant of 2-4 inches. Flowers bright orange yellow. On ledges of cliffs and stony alpine pasture. Yangtze-Yungning divide. Lat. 27° 48' N. Long. 100° 36' E. Alt. 11-12,000 ft. In flower, August 1921. G. Forrest 20575!

Szechuan. Flowers bright golden yellow with orange spots at the base of the petals. On rocks and cliffs towards the summits of the

ridge. Muli. Alt. 13-14,000 ft. In flower, July 1921. F. Kingdon Ward 4627!

Flowers yellow. On rocky pass. Mount Konka, Risonquemba, Konkaling. Alt. 5,250 metres. In flower, August 1928. J. F. Rock 16810!

TIBET. Cushion plant of 2-3 inches. Flowers deep orange. Open moist stony peaty pastures. Salwin-Kiu-chiang divide. Lat. 28° 40' N. Long. 98° 15' E. In flower, August 1919. G. Forrest 19107!

Saxifraga atosanguinea Anth. Sp. nov.

Saxifraga sp. aff. *pratensis* Engl. et Irmsch. Notes R.B.G. Edin., xiv. (1924), 184 et 333.

Species affinis *S. diversifoliae* Wall. sed foliis basalibus ellipticis nunquam cordatis, breviter petiolatis recedit.

Planta haud caespitosa rosulata, 20-50 cm. alta. Caulis florifer, erectus, paucifolius, inferne glaber purpureus, superne pallidior nigro-glandulosus. Folia basalia elliptica, 4-8 cm. longa, 2-3 cm. lata, 3-5-nervia, infra glaucescentia, apice obtusa, basi in petiolum brevem late alatum, circ. 1 cm. longum, 2 mm. latum, attenuata; caulina oblongo-elliptica vel elliptica, sessilia, inferiora glabra, superiora margine laxe glandulosa. Inflorescentia corymboso-paniculata, pluriflora, ramosa, ramis longis ascendentibus 1-2-floris; bractae oblongo-lineares, circ. 1 cm. longae, 3 mm. latae, margine glandulosae. Sepala patentia, demum reflexa, oblongo-lanceolata, circ. 5 mm. longa, 2 mm. lata, obtusa, breviter et dense glanduloso-pilosa, viridia nisi ad marginem purpurascentem. Petala oblongo-ovata, sepalis longiora, atosanguinea. Stamina petalis subaequilonga. Ovarium late ovatum, atosanguineum in stylos brevissimos contractum.

CHINA.—Yunnan. Plant of 9-12 inches. Flowers deep crimson. On open rocky slopes and stony meadows in side valleys. Chien-chuan-Mekong divide. Lat. 26° 40' N. Long. 99° 40' E. Alt. 12,000 ft. In flower, September 1922. G. Forrest 22379! (type).

Plant of 6-13 inches. Flowers deep crimson exterior, deep dull orange marbled deep crimson interior. Gynaecium black-crimson. Open stony alpine meadows. Yangtze Yungning divide. Lat. 27° 48' N. Long. 100° 36' E. Alt. 12,000 ft. In flower, August 1921. G. Forrest 20576!

Szechuan. Flowers deep crimson. Mountains around Muli. Lat. 28° 12' N. Long. 101° E. Alt. 13,000 ft. In flower, July 1930. G. Forrest 28383!

Flowers maroon red or bright chocolate. On shaded shrub clad slopes of broken limestone along the edge of the forest. Muli. Alt. 9,000 ft. In flower, September 1921. F. Kingdon Ward 4904!

§ 5. LYCHNITIDEAE Engl. et Irmsch.

Saxifraga oresbia Anth. Sp. nov.

Species affinis *S. Lychnitidi* Hook. f. et Thoms. a qua statura majore caulibus paucifloris inter alia differt.

Planta dense caespitosa, caudiculis brevissimis dense et rosulatum foliatis, caulibus erectis per longitudinem densiuscule foliatis, 10-15 cm. longis, 1-3-floris, cum foliis et calyce ubique dense rufo-pilosis parte superiore pilis glanduliferis numerosis intermixtis. Folia basalia orbicularia, circ. 4 mm. longa et lata, in petiolum aequilongum abrupte angustata; caulina erecta, adpressa, late lanceolata, 1.0-1.5 cm. longa, 5-6 mm. lata. Sepala oblonga, erecta, acutiuscula, circ. 6 mm. longa, 2 mm. lata, trinervia. Petala late obovata, 1.2 cm. longa, 4 mm. lata, basim versus longissime attenuata, trinervia, lutea. Stamina filiformia calycem aequantia. Ovarium ovoideum usque ad tertiam partem in hypanthio immersum in stylos erectos exiens.

CHINA.—Szechuan. Flowers yellow. On hilltops, Litang-Yaling divide. Alt. 14,000 ft. In flower, September 1921. F. K. Ward 4939! (type).

§ 9. SEDIFORMES Engl. et Irmsch.

Saxifraga hispidula Don var. **Doniana** Engl. Mon. Gatt. Sax. (1872), 222.

Saxifraga potentillaeflora Lévl. in Fedde, Repert., xiii (1914), 341.

CHINA.—Yunnan. Petite plante vivace en touffes étalée. fl. jaunes. Rochers du Io-chan. Alt. 3,300 m. In flower, August 1913. E. E. Maire!

The species described by Léveillé is referable without question to the above.

Saxifraga rupinarum Anth. Sp. nov.

Species affinis *S. flexili* W. W. Sm. a qua caulibus dense foliatis, pedicellis brevioribus, floribus minoribus, sepalis patentibus nec reflexis differt.

Planta glabra radice lignosa. Caules numerosi, suberecti, circ. 10 cm. longi, inferne dense superne remote foliati. Folia caulina oblanceolata, 10 mm. longa, 1.5 mm. lata, obtusa. Inflorescentia subcorymbosa 2-4-flora; pedicelli gracillimi, 1-2 cm. longi. Sepala patentia, ovata, circ. 3 mm. longa, 2 mm. lata, trinervia. Petala oblongo-ovata, circ. 6 mm. longa, 3 mm. lata, breviter unguiculata, trinervia, lutea. Stamina dimidium petalorum superantia. Ovarium ovoideum in stylos erectos exiens.

CHINA.—Szechuan. Flowers bright yellow with a few slightly darker spots. On scree slopes and cliffs facing north. Glacier Lake Camp. Lat. 28° 5' N. Long. 100° 45' E. Alt. 13,000 ft. In flower, July 1921. F. Kingdon Ward 4668! (type).

Saxifraga filifolia Anth. Sp. nov.

Species affinis *S. chrysanthoides* Engl. et Irmsch. sed caulibus duplo longioribus gracillimis, foliis filiformibus differt.

Planta caespitosa, caudiculis brevibus, caulibus floriferis circ. 5 cm. longis, unifloris, inferne dense foliatis, superne remote paucifoliatis, glabris vel pilis brevibus nigro-glandulosis parcissime vestitis. Caudiculorum folia oblongo-lanceolata, circ. 5 mm. longa, 1 mm. lata, margine ciliata. Folia caulina linearia, acuta, circ. 4 mm. longa, 5 mm. lata, glabra. Sepala ovata, obtusa, circ. 2.5 mm. longa, 1.5 mm. lata, trinervia nervis sub apice confluentibus. Petala lanceolata, manifeste unguiculata, trinervia circ. 7 mm. longa, 2 mm. lata, lutea. Stamina dimidium petalorum aequantia. Ovarium ovoideum in stylis brevissimos exiens.

TIBET.—Tsarong. Plant of 1-2½ inches. Flowers bright golden yellow. On cliffs and dry mossy banks. On Ka-gwr-pu, Mekong-Salwin divide. Lat. 28° 30' N. Alt. 12-13,000 ft. In flower, August 1917. G. Forrest 14651! (type).

CHINA.—Yunnan. On screes. Flowers orange. Doker La. Alt. 14,000 ft. In flower, September 1913. F. Kingdon Ward 1121!

UPPER BURMA. Flowers brilliant yellow, the petals speckled all over with orange spots. Grows in big clumps from a bed of mossy leaves—a pretty plant. Amongst boulders in the couloirs in sheltered nooks and crevices on the granite slabs of the eastern flank. Imaw Bum. Alt. 12-13,000 ft. In flower, September 1919. F. Kingdon Ward 3611!

Damp granite rocks and rill sides belonging to the high alpine zone, but descending the ravines to 10,000 ft. Flowers rich orange. Chimili Valley. Alt. 10-13,000 ft. In flower, July 1919. R. Farrer 1126!

From *Saxifraga chrysanthoides* Engl. et Irmsch. to which it is closely allied this species is at once distinguished by its taller, slender glabrous flowering stems bearing on the lower half a few scattered filiform leaves, the upper half being without leaves. The flower is different, the sepals being shorter, while the petals are longer and narrower. Of the specimens cited Forrest 14651 and Ward 1121 are identical and entirely glabrous. Ward 3611 and Farrer 1126, gatherings from Upper Burma, are alike, but differ from the former pair in that the stems are sparingly provided with scattered black glands, while the lowest part is densely foliated.

Saxifraga tsarongensis Anth. Sp. nov.

Saxifraga chrysanthoides Notes R.B.G. Edin., xvii (1929), 84, 93, 254 et 363, non Engl. et Irmsch.

Saxifraga finitima W. W. Sm. vel. aff. l.c. xiv (1924), 359.

Species affinis *S. finitimae* W. W. Sm. a qua pedicellis efoliatis longioribus gracilioribus inter alia signa facile distinguenda.

Planta dense caespitosa, caudiculis dense foliatis, caulibus floriferis laxe glanduloso-pilosis unifloris. Caudiculorum folia dense et rosulatum conferta, sessilia, oblonga, obtusa, circ. 3 mm. longa, 1 mm. lata, margine glanduloso-ciliata. Pedicelli gracillimi, 5 cm. longi, laxe glandulosi. Sepala reflexa, oblonga, obtusiuscula, glabra nunc margine parcius glanduloso-pilosa, circ. 3 mm. longa, 1 mm. lata, trinervia nervis sub apice confluentibus. Petala erecto-patentia, lanceolata, 5-7 mm. longa, 2 mm. lata, longe unguiculata, trinervia, lutea. Stamina filiformia ad duas partes petalorum attingentia. Ovarium ovoideum in stylos breves divergentes exiens.

TIBET.—Tsarong. Cushion plant of 4-6 inches diameter, 1-2 inches in height. Flowers yellow. Open stony meadows and on cliffs and screes. Salwin-Kiu-chiang divide. N.W. of Si-chi-to. Lat. 28° 48' N. Long. 98° 15' E. Alt. 15,000 ft. In flower, October 1922. G. Forrest 22795! (type).

Cushion plant of 1-2½ inches. Flowers orange yellow. On cliffs and open screes. On Ka-gwr-pu Mekong-Salwin divide. Lat. 28° 35' N. Alt. 14-15,000 ft. In flower, September 1918. G. Forrest 17251!

Cushion plant of 2 inches. Flowers orange yellow. On humus covered boulders and moist stony pastures. Salwin-Kiu-chiang divide. Lat. 28° 40' N. In flower, July 1919. G. Forrest 18872!

Tufted plant of 1-2 inches. Flowers golden yellow. On cliffs and humus covered boulders. On Doker-La, Mekong-Salwin divide. Lat. 28° 20' N. Alt. 13,000 ft. In flower, August 1917. G. Forrest 14628!

CHINA.—Yunnan. Cushion plant of 4-6 inches diameter. Pedicels 1-2 inches. Flowers bright yellow. On open cliffs and boulders. On the Bei-ma-Shan. Lat. 28° 12' N. Alt. 13,000 ft. In flower, August 1917. G. Forrest 14733!

This species is closely related to *Saxifraga finitima* W. W. Sm. but is easily distinguished by its more compact habit. The leaves and pedicels are only sparingly glandular, while the sepals are glabrous except that very occasionally a few glandular hairs are found towards the tip. The pedicels are much longer and very slender. The petals are quite distinct, being lanceolate with a long claw and invariably 3-nerved.

Saxifraga atuntsiensis W. W. Sm. in Notes R.B.G. Edin., viii (1913), 132.

Saxifraga crassulifolia Engl. in Fedde, Repert. Beih. xii (1922), 399.

CHINA.—Yunnan. Atuntsi. Alt. 15,000 ft. F. K. Ward 43! (type) 994!

Szechuan. Dongrergo. Alt. 4,800-5,000 m. H. Smith 3343! (det. *S. crassifolia* Engl. by H. Sm.).

TIBET. On Ka-gwr-pu. Mekong-Salwin divide. Alt. 14,500 ft. G. Forrest 14538!

From the description of *S. crassulifolia* Engl. and examination of the specimen determined by H. Smith it is apparent that this species is synonymous with *S. atuntsiensis* W. W. Sm.

Saxifraga glacialis H. Sm. var. **rubra** Anth. Var. nov.

A typo statura duplo majore, caulibus laxe foliatis, foliis lineari-lanceolatis, floribus majoribus differt.

W. CHINA.—Yunnan. Matted plant of 2-3 inches. Corolla interior deep yellow, exterior crimson. On ledges of cliffs and limestone screes. Kari Pass. Mekong-Yangtze divide. Lat. 27° 40' N. Alt. 14,000 ft. In flower, August 1914. G. Forrest 13127! (type of var.).

Saxifraga uninervia Anth. Sp. nov.

Species ex affinitate *S. glacialis* H. Sm. sed caulibus ad apicem foliatis, petalis uninerviis bene notata.

Planta caespitosa, glabra, caulibus ad apicem dense foliatis, circ. 5 cm. altis, 1-4-floris. Caudiculorum folia obovata, circ. 5 mm. longa, 1 mm. lata. Folia caulina oblanceolata, circ. 10 mm. longa, 1.5 mm. lata, obtusa. Sepala patentia, ovata, circ. 3 mm. longa, 1.5 mm. lata, glabra, trinervia. Petala elliptica, breviter unguiculata, circ. 5 mm. longa, 3 mm. lata, uninervia, lutea. Stamina dimidium petalorum aequantia. Ovarium ovoideum in stylos divaricatos exiens.

CHINA.—Yunnan. A-tun-tsi. Rocks and precipices. Alt. 16,000 ft. In flower, August 1913. F. Kingdon Ward 1017! (type).

From all allied species this is easily recognised by the petals which have only one unbranched central nerve.

§ 10. FLAGELLARES Engl. et Irmsch.

Saxifraga loripes Anth. Sp. nov.

Saxifraga sp. aff. *flagellaris* Willd. Notes R.B.G. Edin., xvii (1930) 228.

Species affinis *S. flagellari* Willd. sed sepalis majoribus glabris, petalis sepala vix superantibus differt.

Planta caespitosa, caulibus 5-10 cm. longis, glabris, inferne rosulatis superne plus minusve aequaliter foliatis, 1-3-floris. Stolones filiformes ad 20 cm. longi, glabri. Folia basalia lanceolata, 10 mm. longa, 2 mm. lata, apice acuta, glabra margine glanduloso-pilosa excepta; caulina lanceolata, 8 mm. longa, 1.5 mm. lata, margine ciliata, ceterum glabra. Pedicelli glandulosi, circ. 1 cm. longi. Sepala erecta, oblongo-ovata, obtusa, glabra, circ. 5 mm. longa, 2 mm. lata, trinervia nervis sub apice confluentibus. Petala obovata, circ. 7 mm. longa, 3 mm. lata, basi in unguiculum abrupte contracta, trinervia nervis lateralibus bifidis, lutea. Stamina calycem aequantia. Ovarium liberum, late ovoideum, in stylos erectos exiens.

CHINA.—Szechuan. Plant of 2-4 inches. Flowers orange. On cliffs and humus covered boulders. Muli mountains. Lat. 28° 12' N.

Alt. 12-13,000 ft. In flower, August 1918. G. Forrest 16814 (type)!

This species is near to *S. flagellaris* Willd. but is separated by numerous differences. The stems and leaves are glabrous, the pedicels are, however, sparingly pilose. The flowers are very different, the sepals being comparatively large and glabrous, while the petals are $1\frac{1}{2}$ times as long as the sepals.

Saxifraga consanguinea W. W. Sm. in Notes R.B.G. Edin., viii (1913), 132.

Saxifraga muliensis Hand.-Mazz. in Anz. Akad. Wiss. Wien, Math.-Nat. lix (1922), 138.

CHINA.—Yunnan. Atuntsi. F. K. Ward 44! (type), 756! 990!

On the Bei-ma-shan. G. Forrest 14447!

Mountains N.E. of Chungtien. G. Forrest 16930!

Szechuan. Glacier Lake Camp. F. K. Ward 4652!

Mount Mitzuga, west of Muli Gombu. J. F. Rock 16552!

In Montis Gonschiga. Handel-Mazzetti 7249! (type of *S. Muliensis* Hand.-Mazz.)

TIBET. — Tsarong. On Ka-gwr-pu. Mekong-Salwin divide. G. Forrest 14437!

From an examination of the species cited above there can be no doubt that the species described by Dr. Handel-Mazzetti is synonymous with *S. consanguinea* W. W. Sm.

§ II. HEMISPHERICA Engl. et. Irmsch.

Saxifraga hemisphaerica Hook. f. et Thoms. in Journ. Linn. Soc., ii (1857), 62.

TIBET. Philé La. Alt. 15,000 ft. In flower, July 1914. R. E. Cooper 1765!

On these plants collected by Cooper all the flowers are male. As only female flowers are described by Drs. Engler and Irmscher in their monograph a description of the male flower is added here.

Flores masculi solitarii, pedicellis brevibus, circ. 4 mm. longis, parce glandulosis suffulti. Sepala erecta, oblongo-obovata, 2 mm. longa, 1 mm. lata, margine basin versus glanduloso-pilosa ad apicem valde fimbriata, trinervia nervis sub apice confluentibus. Stamina sepalis subduplo-longiora. Ovarium abortivum ovoideum, parvum, vix sepala superans, in stylos brevissimos exiens.

Sect. 12. KABSCHIA Engl.

§ 4. MARGINATAE Engl. et Irmsch.

Saxifraga calcicola Anth. Sp. nov.

Species valde affinis *S. unguipetalae* Engl. et Irmsch. a qua caulibus floriferis brevioribus, dense foliatis, floribus minoribus differt.

Planta caespitosa, caudiculis ramosissimis dense foliatis, caulibus floriferis circ. 1 cm. longis, unifloris. Caudiculorum folia oblongo-lineararia, glabra, circ. 4 mm. longa, 1 mm. lata, infra carinata, prope apicem 3-5-foveolata. Folia caulina 7-9 erecte patentia lineararia, rubro-viridia, 4 mm. longa, 1 mm. lata, supra glabra, pagina inferiore et margine glanduloso-pilosa, apice 1-3-foveolata. Flores solitarii. Sepala ovata, 3 mm. longa, 2 mm. lata, obtusa, infra et margine dense glandulosa, trinervia, rubra. Petala late obovata vel late obtriangularia, circ. 7 mm. longa, 4 mm. lata, trinervia nervis lateralibus bifidis, alba. Stamina filiformia calycem superantia. Ovarium ovoideum, in stylos longos erectos exiens.

CHINA.—Yunnan. Cushion plant of 2 inches. Flowers large, pure white. Crevices of limestone cliffs. Lichiang Range. Lat. 27° 80' N. Alt. 11-12,000 ft. In flower, May 1913. G. Forrest 10119! (type).

Small cushion plant of 1-1½ inches. Flowers yellowish white. On limestone cliffs in shade. Mountains of the Chungtien plateau. Lat. 27° 30' N. Alt. 12,000 ft. In flower, April 1914. G. Forrest 12421!

Saxifraga Georgei Anth. Sp. nov.

Saxifraga likiangensis Notes R.B.G. Edin., xiv (1924) 174, non Franch.

Species affinis *S. quadrifariae* Engl. et Irmsch. sed floribus sessilibus inter alia recedit.

Planta pulvinato-caespitosa, ramosissima ramulis crassis dense quadrifario-foliatis. Caudiculorum folia opposita late ovata, crassiuscula, glabra, circ. 3 mm. longa, 2 mm. lata, apice fovea unica terminali profunda (apud os squama calcarea oblecta) instructa. Flores sessiles terminales. Sepala erecta, ovata, obtusa, circ. 2 mm. longa et lata, infra et margine parce glanduloso-pilosa, trinervia nervis non confluentibus. Petala obovata, unguiculata, 5 mm. longa, 3 mm. lata, 3-5-nervia, alba. Stamina calycem aequantia. Ovarium ovoideum in stylos longos contractum.

CHINA.—Szechuan. Cushion plant of several inches in diameter. Flowers white. On ledges and in crevices of limestone cliffs. Mountains east of Muli. Lat. 28° 12' N. Long. 100° 50' E. Alt. 12-13,000 ft. In flower, June 1921. G. Forrest 20472! (type).

A species related to *S. quadrifaria* Engl. et Irmsch. but a larger and more robust plant. A further difference is that the flowers are sessile and not stalked as in that species.

Sect. 14. TETRAMERIDIUM Engl.

Saxifraga decussata Anth. Sp. nov.

Species affinis *S. octandrae* H. Sm. a qua habitu elatiore, foliis oblongis 3-foveolatis, floribus breviter pedunculatis differt.

Planta pulvinato-caespitosa, caudiculis ramosissimis, dense et imbricatim quadrifario-foliatis. Folia opposita, sessilia, oblonga, circ. 3 mm. longa, 2 mm. lata, glabra, apice obtusa abrupte apiculata, basi connata, margine subcartilaginea, uninervia, 3-foveolata foveolis calcem excernentibus. Caules floriferi brevissimi, rufo-pilosi, circ. 4 mm. longi, 2-foliati, foliis lineari-lanceolatis acutis apiculatis unifooveolatis, margine laxe glanduloso-pilosis. Flores solitarii. Sepala 4, suberecta, late ovata, apiculata, circ. 2 mm. longa, 1.5 mm. lata, margine laxe ciliata, trinervia nervis sub apice in foveolam confluentibus. Petala 4, obovata, 3-4 mm. longa, 2.5 mm. lata, basi breviter unguiculata, trinervia nervis lateralibus ramosis, alba. Stamina 8; exteriora interioribus longiora, filamentis filiformibus. Carpella 2, ovoidea, erecta, basi ipsa connata, in stylos erectos breves exeuntia.

CHINA.—Yunnan. Cushion plant of 2 inches. Flowers white. On limestone rocks and cliffs. Mountains of the Chungtien plateau. Lat. 27° 30' N. Alt. 14,000 ft. In flower, July 1914. G. Forrest 12640! (type)

The section *Tetrameridium* distinguished by Engler and Irmsher as having tetramerous apetalous flowers was formed in 1883 by Engler when he described *S. nana* from Kansu. A second species *S. octandra* H. Sm. from Szechuan was added in 1924. It is described as apetalous. An examination of the co-type in the Edinburgh Herbarium showed that one flower had still one petal adhering while a second had four petals. It would appear, therefore, that the petals are early deciduous. The present species, in which the flowers have 4 petals, is related to *S. octandra* H. Sm. but is larger, the leaves are 3-foveolate and the flowers are borne on a short 2-leaved stalk.

Schizophragma crassa Hand.-Mazz. var. ***elliptica*** Anth. Var. nov.

A typo foliis ellipticis vel late lanceolatis, 13-25 cm. longis, 5-10 cm. latis, longissime petiolatis, petiolo 4-8 cm. longo recedit.

CHINA.—Yunnan. Without precise locality. In fruit, 1929. G. Forrest 29029! (type of var.).

Vaccinium pubicalyx Franch. var. ***anomalum*** Anth. Var. nov.

A typo calycis lobis glabris margine dense ciliata excepta recedit.

CHINA.—Yunnan. Shrub of 3-6 feet. Fruits dull crimson. In open thickets and on the margins of forests amongst rock. Chien-chuan-Mekong divide. Lat. 26° 36' N. Long. 99° 40' E. Alt. 8-9,000 ft. In fruit, July 1922. G. Forrest 21460!

Same locality. Alt. 10-11,000 ft. In fruit, September 1922. G. Forrest 22265!

Shrub of 3-5 feet. Flowers white flushed rose. Amongst dwarf scrub on dry rocky hillsides. Chien-chuan-Mekong divide. Lat. 26° 25' N. Long. 99° 20' E. Alt. 8,000 ft. In flower, August 1923. G. Forrest 23562! (type of var.).

Vernonia Forrestii Anth. Sp. nov.

Species ex affinitate *V. Henryi* Dunn a qua capitulis solitariis multo majoribus, involucri phyllis lanceolatis acuminatis glabris flosculos superantibus, achaeniis dense sericeis differt.

Frutex ad 3 m. altus. Rami prominente striati, glaucescentes, interdum ad apices tomentosi. Folia alterna, ovata, 4-5 cm. longa, 1.5-2.5 cm. lata, integerrima, trinervia, acuminata, infra glaucescentia, utrinque glandulis sessilibus luteis nitentibus conspersa, petiolo circ. 1.5 cm. longo. Capitula solitaria, terminalia, campanulata, multiflora (circ. 80), 1-2 cm. diam. Involucri phylla multiseriata, omnia coriacea, lanceolata, acuminata, ad 1.5 cm. longa, 2 mm. lata, glabrescentia, exteriora nonnunquam lanuginosa. Flosculi aurei, fragrantés, 8 mm. longi, extrinsecus glandulosi. Pappus albidus corolla paulo longior. Achaenia (immatura) obconica, 3 mm. longa, dense sericeo-pilosa.

CHINA.—Yunnan. Shrubby plant of 6 feet. Dry open situations amongst scrub in side valleys. Mountains in the N.E. of the Yangtze bend. Lat. 27° 45' N. Alt. 9,000 ft. In fruit, August 1913. G. Forrest 10714!

Shrub of 6-10 feet. Flowers deep golden yellow. Open dry situations amongst scrub. Fengkou valley. Lat. 27° 40' N. Alt. 7,000 ft. In flower, June 1914. G. Forrest 12475! In flower, October 1914. G. Forrest 13415!

Composée vivace en touffes dressées. Fl. jaunes. Rives du fleuve Bleu, à Mong-Kou. Alt. 400 m. In flower, September 1912. E. E. Maire 437! (No. in Herb. Edin.) In flower, November 1912. E. E. Maire sine no.!

Frutex 1-2 m. Flor. flavis. Saxis Lai-tsai-ty, prope Pe Yen-tsin. In flower, October 1915. Siméon Ten 15!

Szechuan. Shrub of 6-9 feet. Flowers orange-yellow, fragrant. Dry open situations amongst scrub. Muli mountains. Lat. 28° 12' N. Alt. 9,000 ft. In flower, September 1918. G. Forrest 16972!

Between Likiang, Youngning, and Youngpei, en route to Mili. In fruit, May 1922. J. F. Rock 5146!

This species in its vegetative characters recalls *V. Henryi* Dunn. The shoots, however, are almost glabrous; the leaves are smaller, glabrescent, paler and glaucous underneath, but on both surfaces, as in *V. Henryi*, there are sessile shining yellow glands. Similar glands are found on the outside of the corollas. In this species the capitula are large, solitary, terminal on the branches, while in the other the inflorescence is corymbose and composed of several small capitula. The involucre bracts are coriaceous, glabrescent, acuminate and much longer than the florets. The achenes are shorter, narrowed toward the base and densely covered with silky hairs.

Of the specimens cited Simeon Ten 15 varies from the type in that the veins on the underside of the leaf are clothed with short coarse hairs. As the shoots appear to be of abnormal growth and the floral characters agree it is included here.

Agapetes corallina Cowan. Sp. nov.

Species ob inflorescentiam racemosam, ob antherarum tubulos partem polliniferam aequantes e fauce corollae longissime exsertos distincta.

Frutex epiphyticus; ramuli hornotini subquadrangulares pallidi, cortice plus minusve plicato; annotini teretes rubiginosi lenticulis cinerascensibus notati. Folia lanceolata vel elliptico-lanceolata, integra, margine revoluta, 7-9 cm. longa, 2-3 cm. lata, apice acuminata basi attenuata, coriacea, glabra vel nunc supra rarissime pilosa viridia nitentia, infra pallidiora opaca, nervis supra impressis infra prominentibus intra marginem anastomosantibus, costa utrinque elevata; petiolus robustus vix 5 mm. longus. Inflorescentiae axillares racemosae, 20-30-florae; pedunculus 4-6 cm. longus; pedicelli glabri, circa 1 cm. longi, sursum sensim dilatati; bractee circa 1 mm. longae triangulari-ovatae acuminatae margine glandulis praeditae. Receptaculum 2 mm. longum et latum rubridum glabrum. Calycis lobi acute triangulares 3 mm. longi. Corolla corallina 2.5 cm. longa, anguste tubulosa, supra basin paululum constricta, in lobos longe lanceolatos deinde recurvatos usque ad medium fissa. Stamina 10 conniventia, filamentis 3 mm. longis glabris, antheris elongatis circa 2.5 mm. longis, tubulis partem polliniferam aequantibus, calcaribus nullis. Stylus filiformis stamina paulo superans. Fructus deest.

BURMA. Myitkyina district, Htawgaw Hill. Alt. 4,600 ft. Coll. Sukoe No. 34!

I am indebted to Mr. C. E. Parkinson, Forest Botanist, Maymyo, for specimens of this plant.