

DIAGNOSES

Specierum novarum

in herbario Horti Regii Botanici Edinburgensis cognitarum.

CLI-CCL.

The species described in this series are :—

SPECIES CHINENSES :—

- Abelia buddleioides, W. W. Sm., p. 75.
- Abelia buddleioides, W. W. Sm., var. *divergens*, W. W. Sm., p. 76.
- Abelia gracilentia, W. W. Sm., p. 76.
- Abelia gracilentia, W. W. Sm., var. *microphylla*, W. W. Sm., p. 77.
- Allium Purdomii, W. W. Sm., p. 77.
- Anemone Howellii, J. F. Jeff. et W. W. Sm., p. 78.
- Aster Farreri, W. W. Sm. et J. F. Jeff., p. 78.
- Aster glarearum, W. W. Sm. et Farrer, p. 79.
- Aster limitaneus, W. W. Sm. et Farrer, p. 80.
- Aster sikuensis, W. W. Sm. et Farrer, p. 80.
- Berberis Jamesiana, G. Forrest et W. W. Sm., p. 81.
- Berberis leucocarpa, W. W. Sm., p. 82.
- Berberis mekongensis, W. W. Sm., p. 82.
- Berberis sublevis, W. W. Sm., p. 83.
- Buddleia Farreri, Balf. f. et W. W. Sm., p. 84.
- Buddleia glabrescens, W. W. Sm., p. 85.
- Buddleia limitanea, W. W. Sm., p. 86.
- Buddleia Purdomii, W. W. Sm., p. 87.
- Buddleia taliensis, W. W. Sm., p. 87.
- Buxus microphylla, Sieb. et Zucc., var. *rupicola*, W. W. Sm., p. 88.
- Calamintha barosma, W. W. Sm., p. 88.
- Calamintha euosma, W. W. Sm., p. 89.
- Callianthemum Farreri, W. W. Sm., p. 90.
- Capparis subtenera, Craib et W. W. Sm., p. 90.
- Capparis yunnanensis, Craib et W. W. Sm., p. 91.
- Chelonopsis bracteata, W. W. Sm., p. 92.
- Chelonopsis lichiangensis, W. W. Sm., p. 92.
- Chelonopsis rosea, W. W. Sm., p. 93.
- Chelonopsis siccanea, W. W. Sm., p. 94.
- Chirita orbicularis, W. W. Sm., p. 94.
- Chirita Trailliana, G. Forrest et W. W. Sm., p. 95.
- Colquhounia compta, W. W. Sm., p. 96.
- Colquhounia mekongensis, W. W. Sm., p. 97.

- Corydalis atuntsuensis*, W. W. Sm., p. 97.
Corydalis benecincta, W. W. Sm., p. 98.
Corydalis eccremocarpa, W. W. Sm., p. 99.
Corydalis fluminicola, W. W. Sm., p. 99.
Corydalis Wardii, W. W. Sm., p. 100.
Cotinus nana, W. W. Sm., p. 101.
Cypripedium Bardolphianum, W. W. Sm. et Farrer, p. 101.
Cypripedium Farreri, W. W. Sm., p. 102.
Cystacanthus affinis, W. W. Sm., p. 103.
Cystacanthus yunnanensis, W. W. Sm., p. 104.
Diospyros dumetorum, W. W. Sm., p. 104.
Dracocephalum Purdomii, W. W. Sm., p. 105.
Fraxinus trifoliolata, W. W. Sm., p. 106.
Gaultheria dumicola, W. W. Sm., p. 106.
Gmelina montana, W. W. Sm., p. 107.
Indigofera calcicola, Craib, p. 108.
Indigofera dumetorum, Craib, p. 109.
Linaria yunnanensis, W. W. Sm., p. 110.
Lonicera Farreri, W. W. Sm., p. 110.
Microstylis orbicularis, W. W. Sm. et J. F. Jeff., p. 111.
Onosma album, W. W. Sm. et J. F. Jeff., p. 112.
Onosma cingulatum, W. W. Sm. et J. F. Jeff., p. 112.
Onosma Hookeri, Clarke, var. *Wardii*, W. W. Sm., p. 113.
Onosma oblongifolium, W. W. Sm. et J. F. Jeff., p. 113.
Oxyspora Howellii, J. F. Jeff. et W. W. Sm., p. 114.
Passiflora jugorum, W. W. Sm., p. 115.
Pieris bracteata, W. W. Sm., p. 116.
Pieris compta, W. W. Sm. et J. F. Jeff., p. 116.
Pieris polita, W. W. Sm. et J. F. Jeff., p. 117.
Plectranthus oresbius, W. W. Sm., p. 118.
Plectranthus tenuifolius, W. W. Sm., p. 118.
Pouzolzia elegantula, W. W. Sm. et J. F. Jeff., p. 119.
Premna acutata, W. W. Sm., p. 119.
Premna mekongensis, W. W. Sm., p. 120.
Premna mekongensis, W. W. Sm., var. *meiophylla*, W. W. Sm., p. 120.
Premna yunnanensis, W. W. Sm., p. 120.
Roscoea Humeana, Balf. f. et W. W. Sm., p. 122.
Salvia benecincta, W. W. Sm., p. 123.
Salvia grandifolia, W. W. Sm., p. 123.
Salvia lichiangensis, W. W. Sm., p. 124.
Sedum Farreri, W. W. Sm., p. 125.
Sedum orichalcum, W. W. Sm., p. 125.
Sedum Purdomii, W. W. Sm., p. 126.
Senecio glomeratus, J. F. Jeff., p. 126.
Senecio incisifolius, J. F. Jeff., p. 127.
Senecio Latouchei, J. F. Jeff., p. 128.
Senecio palmatisectus, J. F. Jeff., p. 128.
Senecio palmatisectus, J. F. Jeff., var. *pubescens*, J. F. Jeff., p. 129.
Senecio solanifolius, J. F. Jeff., p. 129.
Sterculia platanifolia, Linn., var. *major*, W. W. Sm., p. 130.
Styrax fukienensis, W. W. Sm. et J. F. Jeff., p. 130.
Syringa Adamiana, Balf. f. et W. W. Sm., p. 131.
Syringa pinetorum, W. W. Sm., p. 132.

- Syringa Wardii*, W. W. Sm., p. 132.
Tanacetum aureoglobosum, W. W. Sm. et Farrer, p. 133.
Vaccinium mekongense, W. W. Sm., p. 133.
Vaccinium salweenense, W. W. Sm., p. 134.
Vaccinium scopulorum, W. W. Sm., p. 135.
Vaccinium spicigerum, W. W. Sm., p. 135.
Viburnum adenophorum, W. W. Sm., p. 136.
Viburnum brachybotryum, Hemsl., var. *tengyuehense*, W. W. Sm., p. 137.
Viburnum Dalzielii, W. W. Sm., p. 137.
Viburnum erubescens, Wall., var. *carnosulum*, W. W. Sm., p. 138.
Viburnum erubescens, Wall., var. *limitaneum*, W. W. Sm., p. 138.
Viburnum flavescens, W. W. Sm., p. 139.
Viburnum odoratissimum, Ker, var. *conspersum*, W. W. Sm., p. 140.
Viburnum propinquum, Hemsl., var. *Mairei*, W. W. Sm., p. 140.
Viburnum thaiyongense, W. W. Sm., p. 140.
Vitex yunnanensis, W. W. Sm., p. 141.
Wendlandia subalpina, W. W. Sm., p. 142.
Ypsilandra yunnanensis, W. W. Sm. et J. F. Jeff., p. 143.

The species fall into the following natural orders :--

- ACANTHACEAE : *Cystacanthus affinis*, W. W. Sm., p. 103.
 Cystacanthus yunnanensis, W. W. Sm., p. 104.
 ANACARDIACEAE : *Cotinus nana*, W. W. Sm., p. 101.
 BERBERIDEAE : *Berberis Jamesiana*, G. Forrest et W. W. Sm., p. 81.
 Berberis leucocarpa, W. W. Sm., p. 82.
 Berberis mekongensis, W. W. Sm., p. 82.
 Berberis sublevis, W. W. Sm., p. 83.
 BORAGINEAE : *Onosma album*, W. W. Sm. et J. F. Jeff., p. 112.
 Onosma cingulatum, W. W. Sm. et J. F. Jeff., p. 112.
 Onosma Hookeri, Clarke, var. *Wardii*, W. W. Sm., p. 113.
 Onosma oblongifolium, W. W. Sm. et J. F. Jeff., p. 113.
 CAPPARIDEAE : *Capparis subtenera*, Craib et W. W. Sm., p. 90.
 Capparis yunnanensis, Craib et W. W. Sm., p. 91.
 CAPRIFOLIACEAE : *Abelia buddleioides*, W. W. Sm., p. 75.
 Abelia buddleioides, W. W. Sm., var. *divergens*, W. W. Sm., p. 76.
 Abelia gracilentia, W. W. Sm., p. 76.
 Abelia gracilentia, W. W. Sm., var. *microphylla*, W. W. Sm., p. 77.
 Lonicera Farreri, W. W. Sm., p. 110.
 Viburnum adenophorum, W. W. Sm., p. 136.
 Viburnum brachybotryum, Hemsl., var. *tengyuehense*, W. W. Sm., p. 137.
 Viburnum Dalzielii, W. W. Sm., p. 137.
 Viburnum erubescens, Wall., var. *carnosulum*, W. W. Sm., p. 138.
 Viburnum erubescens, Wall., var. *limitaneum*, W. W. Sm., p. 138.

- CAPRIFOLIACEAE: *Viburnum flavescens*, W. W. Sm., p. 139.
Viburnum odoratissimum, Ker, var. *conspersum*,
W. W. Sm., p. 140.
Viburnum propinquum, Hemsl., var. *Mairei*,
W. W. Sm., p. 140.
Viburnum thaiyongense, W. W. Sm., p. 140.
- COMPOSITAE: *Aster Farreri*, W. W. Sm. et J. F. Jeff., p. 78.
Aster glarearum, W. W. Sm. et Farrer, p. 79.
Aster limitaneus, W. W. Sm. et Farrer, p. 80.
Aster sikuensis, W. W. Sm. et Farrer, p. 80.
Senecio glomeratus, J. F. Jeff., p. 126.
Senecio incisifolius, J. F. Jeff., p. 127.
Senecio Latouchei, J. F. Jeff., p. 128.
Senecio palmatisectus, J. F. Jeff., p. 128.
Senecio palmatisectus, J. F. Jeff., var. *pubescens*,
J. F. Jeff., p. 129.
Senecio solanifolius, J. F. Jeff., p. 129.
Tanacetum aureoglobosum, W. W. Sm. et Farrer,
p. 133.
- CRASSULACEAE: *Sedum Farreri*, W. W. Sm., p. 125.
Sedum orichalcum, W. W. Sm., p. 125.
Sedum Purdomii, W. W. Sm., p. 126.
- EBENACEAE: *Diospyros dumetorum*, W. W. Sm., p. 104.
- ERICACEAE: *Gaultheria dumicola*, W. W. Sm., p. 106.
Pieris bracteata, W. W. Sm., p. 116.
Pieris compta, W. W. Sm. et J. F. Jeff., p. 116.
Pieris polita, W. W. Sm. et J. F. Jeff., p. 117.
- EUPHORBIACEAE: *Buxus microphylla*, Sieb. et Zucc., var. *rupicola*,
W. W. Sm., p. 88.
- GESNERACEAE: *Chirita orbicularis*, W. W. Sm., p. 94.
Chirita Trailliana, G. Forrest et W. W. Sm., p. 95.
- LABIATAE: *Calamintha barosma*, W. W. Sm., p. 88.
Calamintha euosma, W. W. Sm., p. 89.
Chelonopsis bracteata, W. W. Sm., p. 92.
Chelonopsis lichiangensis, W. W. Sm., p. 92.
Chelonopsis rosea, W. W. Sm., p. 93.
Chelonopsis siccania, W. W. Sm., p. 94.
Colquhounia compta, W. W. Sm., p. 96.
Colquhounia mekongensis, W. W. Sm., p. 97.
Dracocephalum Purdomii, W. W. Sm., p. 105.
Plectranthus oresbius, W. W. Sm., p. 118.
Plectranthus tenuifolius, W. W. Sm., p. 118.
Salvia benecincta, W. W. Sm., p. 123.
Salvia grandifolia, W. W. Sm., p. 123.
Salvia lichiangensis, W. W. Sm., p. 124.
- LEGUMINOSAE: *Indigofera calcicola*, Craib, p. 108.
Indigofera dumetorum, Craib, p. 109.
- LILIACEAE: *Allium Purdomii*, W. W. Sm., p. 77.
Ypsilandra yunnanensis, W. W. Sm. et J. F. Jeff., p. 143.
- LOGANIACEAE: *Buddleia Farreri*, Balf. f. et W. W. Sm., p. 84.
Buddleia glabrescens, W. W. Sm., p. 85.
Buddleia limitanea, W. W. Sm., p. 86.
Buddleia Purdomii, W. W. Sm., p. 87.
Buddleia taliensis, W. W. Sm., p. 87.
- MELASTOMACEAE: *Oxyspora Howellii*, J. F. Jeff. et W. W. Sm., p. 114.

- OLEACEAE : *Fraxinus trifoliolata*, W. W. Sm., p. 106.
Syringa Adamiana, Balf. f. et W. W. Sm., p. 131.
Syringa pinetorum, W. W. Sm., p. 132.
Syringa Wardii, W. W. Sm., p. 132.
- ORCHIDEAE : *Cypripedium Bardolphianum*, W. W. Sm. et Farrer, p. 101.
Cypripedium Farreri, W. W. Sm., p. 102.
Microstylis orbicularis, W. W. Sm. et J. F. Jeff., p. 111.
- PAPAVERACEAE : *Corydalis atuntsuensis*, W. W. Sm., p. 97.
Corydalis benecincta, W. W. Sm., p. 98.
Corydalis eccremocarpa, W. W. Sm., p. 99.
Corydalis fluminicola, W. W. Sm., p. 99.
Corydalis Wardii, W. W. Sm., p. 100.
- PASSIFLOREAE : *Passiflora jugorum*, W. W. Sm., p. 115.
- RANUNCULACEAE : *Anemone Howellii*, J. F. Jeff. et W. W. Sm., p. 78.
Callianthemum Farreri, W. W. Sm., p. 90.
- RUBIACEAE : *Wendlandia subalpina*, W. W. Sm., p. 142.
- SCITAMINEAE : *Roscoeia Humeana*, Balf. f. et W. W. Sm., p. 122.
- SCROPHULARINEAE : *Linaria yunnanensis*, W. W. Sm., p. 110.
- STERCULIACEAE : *Sterculia platanifolia*, Linn., var. *major*, W. W. Sm., p. 130.
- STYRACEAE : *Styrax fukienensis*, W. W. Sm. et J. F. Jeff., p. 130.
- URTICACEAE : *Pouzolzia elegantula*, W. W. Sm. et J. F. Jeff., p. 119.
- VACCINIACEAE : *Vaccinium mekongense*, W. W. Sm., p. 133.
Vaccinium salweenense, W. W. Sm., p. 134.
Vaccinium scopulorum, W. W. Sm., p. 135.
Vaccinium spicigerum, W. W. Sm., p. 135.
- VERBENACEAE : *Gmelina montana*, W. W. Sm., p. 107.
Premna acutata, W. W. Sm., p. 119.
Premna mekongensis, W. W. Sm., p. 120.
Premna mekongensis, W. W. Sm., var. *meiophylla*, W. W. Sm., p. 120.
Premna yunnanensis, W. W. Sm., p. 120.
Vitex yunnanensis, W. W. Sm., p. 141.

***Abelia buddleioides*, W. W. Sm. Sp. nov.**

Species sectionis *Zabeliae*, Rehder ; pedunculis pedicellisque nullis vel subnullis, floribus ad 2.8 cm. longis subcapitatis, sepalis 5, corolla extus dense reflexo-pilosa inter species alias illius sectionis conspicua.

Frutex 1-2 m. altus ; ramuli graciles juniores pilis setosis reflexis longiuscule induti virides, annotini cinerei tarde glabrescentes. Folia usque ad 3 cm. longa, 5-14 mm. lata, ovato-lanceolata vel $\pm$ anguste lanceolata, apice acuta vel subacuta basi anguste vel late cuneata in petiolum $\pm$ 2 mm. longum setosum, in sicco chartacea, margine integra, supra obscure viridia glabra pilis paucis setosis marginem versus exceptis, infra pallidiora venis inconspicuis, glabra pilis setosis ad marginem atque ad costam exceptis. Flores ad ramulorum apices

conferti; saepius inferiores 2 superiores 4-6 subcapitati; pedunculi pedicellique nulli vel subnulli; bractae lineari-subulatae $\pm$ 4 mm. longae. Ovarium 4-5 mm. longum anguste ovoideum alte sulcatum longiuscule setosum. Sepala 5, linearia, 4-5 mm. longa, vix 1 mm. lata, setoso-ciliata. Corolla tubuloso-infundibularis pallido-rosea; tubus cylindricus 2-2.1 cm. longus, basi circ. 2.5 mm. latus, supra sub ore fere ad 4 mm. (in sicco) latus, extus pilis setosis reflexis dense praeditus, intus minus dense, lobi subrotundati patentes fere 3 mm. diametro extus setosi intus puberuli. Stamina inclusa filamentis longiuscule setosis. Stylus glaber vix exsertus, staminibus longior. Fructus maturi desunt.

"Shrub of 3-6 ft. Flowers pale rose. Amongst scrub in open situations in the mountains of the Chungtien plateau, Yunnan. Lat. $27^{\circ} 30' N$. Alt. 10,000 ft. July 1914." G. Forrest. No. 12,636.

Var. *divergens*, W. W. Sm. Var. nov.

Foliis latoribus crassioribus floribus fructibusque minoribus differt; structura floris omnino quadrat.

"Shrub of 6-8 ft. Flowers rose-pink. In open scrub in the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. $27^{\circ} 45' N$. Alt. 10,000 ft. July 1913." G. Forrest. No. 10,500.

"Shrub of 6-9 ft. In fruit. In open thickets on the Lichiang Range, Yunnan. Lat. $27^{\circ} 40' N$. Alt. 10,000-11,000 ft. July 1913." G. Forrest. No. 10,290.

Abelia gracilentia, W. W. Sm. Sp. nov.

Species affinis *Abeliae Forrestii*, Diels (sub *Linnaea*) a qua tubi corollini forma, fructu puberulo nec pilosulo inter alia abunde discrepat.

Frutex $\pm$ 2 m. altus; ramuli divaricato-patentes graciles superne floriferi juniores incano-tomentelli purpureo-tincti, vetustiores cinerei decorticantes. Folia vulgo $\pm$ 2 cm. longa, $\pm$ 7 mm. lata, lanceolata apice acuta vel subacuta basi $\pm$ late cuneata in petiolum vix 1 mm. longum, in sicco chartacea, margine integra, supra obscure viridia infra pallidiora utrinque glabra vel subglabra, nonnunquam praesertim ad margines hic illic pilis minimis conspersa; nervi utrinque praeter costam inconspicui. Flores in axillis solitarii vel raro bini; pedunculi 3-7 mm. longi puberuli bracteis subulatis minimis praediti; pedicelli 1-2 mm. longi puberuli bracteis minimis ornati. Ovarium circ. 7 mm. longum cylindricum puberulum. Sepala 5 lineari-oblonga vel lineari-oblongata, 6-7 mm. longa, circ.

1.5 mm. lata nervosa puberula viridia. Corolla campanulato-infundibularis pallido-rosea; tubus circ. 2 cm. longus, dimidio inferiore anguste cylindricus basi 1 mm. latus, supra ventricosamplius ore fere 1 cm. latus (in sicco), extus pilosulus minute glandulosus intus sparse pilosulus; lobi 5 ovati vel subrotundati $\pm$ 5 mm. diametro utrinque puberuli. Stamina medium limbum attingentia antheris circ. 2 mm. longis filamentis tubum corollinum subaequantibus per omnes partes albido-patenti-pilosulis. Stylus staminibus paulo longior albido-patenti-pilosulus. Fructus maturi desunt.

"Shrub of 6-7 ft. Flowers pale rose. Amongst scrub in open dry situations on the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. $27^{\circ} 45'$ N. Alt. 9000-10,000 ft. Sept. 1913." G. Forrest. No. 11,225.

Var. *microphylla*, W. W. Sm. Var. nov.

Habitu minore, foliis $\pm$ 1 cm. longis, floribus minoribus recedens.

"Shrub of 2-4 ft. Flowers white. Open dry situations in the mountains in the N.E. of the Lichiang Range, Yunnan. Lat. $27^{\circ} 45'$ N. Alt. 10,000-11,000 ft. July 1913." G. Forrest. No. 10,310.

"Shrub of 4-5 ft. Flowers rose-pink. In open scrub in the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. $27^{\circ} 45'$ N. Alt. 10,000-11,000 ft. July 1913." G. Forrest. No. 10,348.

Allium Purdomii, W. W. Sm. Sp. nov.

Species sectionis *Rhiziridii* ex affinitate *A. cyanei*, Regel et *A. clathrati*, Ledeb.; ab hoc floribus coeruleis, ab illo foliis filiformibus differt.

Planta gracilis. Rhizomatis bulbi anguste cylindrici caule vix crassiores caespitosi; tunicae exteriores reticulato-fibrosae adpressae bulbum arcte involventes. Caulis 15-20 cm. altus folia superans vel subaequans erectus nudus basi foliatus striatulus gracillimus glaber. Folia subtereti-filiformia eis *Festucae ovinae*, Linn. forma subsimilia. Umbella pauciflora ($\pm$ 7), laxiflora, spathā albido-scariosa ut videtur univalvi, valva anguste ovata acuminata circ. 5 mm. longa, pedicellis 7-8 mm. longis erectis praedita. Perigonii phylla elliptico-oblonga obtusa circ. 4 mm. longa coerulea. Filamenta filiformia perigonio subduplo longiora integerrima. Ovarium trigono-globosum stylo filiformi filamenta paulo superante terminatum.

"Very distinct with grassy foliage and blue flowers. Only noted on Lotus Mountain in the high turf in very shallow soil on

rock at the end of August 1914; Kansu, West China. Alt. 12,000 ft. Coll. W. Purdom; ipse non vidi." Farrer and Purdom. No. 321.

Anemone Howellii, J. F. Jeff. et W. W. Sm. Sp. nov.

Species foliis longe petiolatis simplicibus ovatis acuminatis inter congeneres yunnanenses notanda; fortasse ad *A. begonii-foliam*, Lévl. appropinquat a qua ex descriptione exigua signis nonnullis discrepat.

Rhizoma repens sat crassum glabratum nec comosum. Folia ± 5 , omnia radicalia, petiolo 8–12 cm. longo sparse albopiloso praedita, 5–7.5 cm. longa, 4–5.5 cm. lata, ovata apice sensim longiuscule acuminata basi alte (fere 2 cm.) cordata ad quartam vel quintam partem lobatula subregulariter indurato-apiculato-dentata setosulo-ciliata membranacea supra atroviridia subsparse adpresse albido-setosa infra glabrata nervis $\pm$ dense adpresse albido-setosis exceptis. Scapus erectus usque ad 30 cm. altus gracilis infra sparse pilosulus supra sub foliis involucrantibus densius; folia involucrantia ad basim pedicellorum vix 5 mm. superantia ovata incisa pilosa. Pedicelli 2–3, usque ad 4 cm. longi, fructu aucti, $\pm$ pilosi. Flores mediocres fere 2 cm. lati. Sepala 5, late obovata vel suborbiculata 8–9 mm. diametro utrinque glabra. Stamina ± 5 mm. longa filamentis glabris antheris vix 1 mm. longis. Achaenia 15–20, vix matura circ. 2 mm. longa compressiuscula marginibus incrassata glabra in stylum brevissimum abeuntia.

Neighbourhood of Tengyueh, Yunnan, West China. Howell. No. 110.

Aster Farreri, W. W. Sm. et J. F. Jeff. Sp. nov.

Species affinis *A. Vilmorini*, Franch. et *A. Delavayi*, Franch. a quibus foliis multo angustioribus inter alia signa differt.

Caulis simplex ± 45 cm. altus monocephalus infra bene foliatus pilis longis albidis confervoideis conspersus supra fere nudus glabrescens vel $\pm$ sparse pilosulus. Folia inferiora 8–10 laxiuscule approximata, erecta, 10–15 cm. longa (petiolo incluso), 7–10 mm. lata, linearia vel lineari-lanceolata, acuta vel breviter acuminata, basalia sensim in petiolum alatum ± 4 cm. longum angustata, caulina sessilia semiamplexicaulia omnia margine integra, utrinque pilis sparsis albidis scaberula; folia suprema 3–4, linearia 3–5 cm. longa. Capitula longe pedunculata ampla ad 8 cm. diametro (cum ligulis). Involucri phylla 2–3-seriata perplurima herbacea linearia longiuscule acuminata ± 1.5 cm. longa, exteriora longe albido-pilosa interiora glabrescentia marginibus hyalinis. Ligulae ± 100 , 2–3-seriatae 3–3.5 cm.

longae 1.5 mm. latae lineares purpureo-caeruleae. Floris tubulosi corolla 6 mm. longa lutescens extus villosula. Receptaculum alveolatum. Achaenia (immatura) oblonga obscure quadrangula 2-3 mm. longa sparse pilosa; pappi biseriati sordide albi setae interiores circ. 6 mm. longae, exteriores 1 mm. longae.

"Very handsome and sporadic in the higher valley fields and alps of Tibet, in hay grass along with No. 173, but not ascending so high. 12th August 1914; East Tibet, near Kansu frontier." Farrer and Purdom. No. 174.

A beautiful species closely akin to *A. Delavayi*, Franch. and *A. Vilmorini*, Franch. already in cultivation. We have referred it to *Aster* rather than to *Erigeron* to keep it in company with the allies mentioned. Franchet has pointed out that these two species form a transition between the two genera.

***Aster glarearum*, W. W. Sm. et Farrer. Sp. nov.**

Species ex affinitate *A. tongolensis*, Franch., habitu simillima, involucris phyllis atque pappo inter alia divergit; haud remota ab *A. likiangensi*, Franch.

Caulis monocephalus erectus gracilis 12-20 cm. altus basim versus sat foliosus superne fere nudatus, pilis longiusculis albidis plus minusve dense praeditus. Folia basilaria et inferiora $\pm$ 6 approximata circ. 3 cm. longa (petiolo incluso) 5-7 mm. lata, oblanceolata obtusa in petiolum alatum sensim angustata, mediana 1-2 minora sessilia, superne unum lineare vel nullum; omnia supra pilis densis scaberula infra sparsius induta. Capitula longe pedunculata, ope radiorum circ. 4 cm. lata. Involucris phylla biseriata herbacea lanceolata acuta 5-7 mm. longa extus pilis nigris et pilis albidis intermixtis villosa. Ligulae 30-40, uniseriatae, 1.8 cm. longae, 2 mm. latae purpureo-coeruleae. Floris tubulosi corolla circ. 6 mm. longa lutea. Achaenia (immatura) 1.8 mm. longa pilis adpressis albo-sericeis conspersa; pappus sordide albus 6 mm. longus, setae exteriores brevissimae.

"High alpine shingles above Siku, 11,000-12,000 ft. 21st June 1914; Kansu, West China." Farrer and Purdom. No. 131.

A very graceful little plant recalling *Aster likiangensis*, Franch., which has been in cultivation and *A. tongolensis*, Franch., of which it might easily be taken for a variety. The latter plant, however, has reddish pappus much shorter than the achene.

Farrer and Purdom No. 492 appears to be a variety of this species; it has broader leaves (1-1.5 cm.) and larger capitula (up to 5 cm. diam.) more densely villous than those of type.

Of it Mr. Farrer says: "High alpine shingles. Locality forgotten. It was considered only a form of No. 131. But these Asters, all of them, high alpine, alpine, and lowland are infinitely puzzling."

Aster limitaneus, W. W. Sm. et Farrer. Sp. nov.

Species ex affinitate *A. tongolensis*, Franch. involucri phyllis, acheniis, pappo divergens.

Caulis simplex 25-45 cm. altus monocephalus pilis longis patentibus albis conspersus infra bene foliatus supra subnudus. Folia radicalia vel subradicalia 6-10, oblanceolata vel subspathulata, 5-8 cm. longa, 1-1.5 cm. lata, apice rotundata vel obtusa basi sensim in petiolum vix discretum alatum attenuata, caulina 5-6 remota sessilia linearia circ. 2 cm. longa, omnia margine integra longiuscule albo-ciliata, supra vulgo glabra, infra ad costam nervosque sparse longiuscule albo-pilosa. Capitula longe pedunculata ampla ope radiorum 5-6 cm. diametro. Involucri phylla 2-3-seriata perplurima herbacea oblonga subacuta 6-8 mm. longa, circ. 1.5 mm. lata, omnia per marginem totam longiuscule albo-ciliata, caetera glabra vel subglabra. Ligulae 30-45, circ. 2.5 cm. longae, 2.5 mm. latae, apice subintegrae, saturate coeruleae. Disci flores 4 mm. longi, flavi, extus sparse pilosuli. Achaenia (immatura) 2 mm. longa obovata pilosa. Pappus uniseriatus rigidus inaequalis 1.5-2 mm. longus fulvidus.

"Beautiful in the high meadows and ridges of Eastern Tibet, near Kansu frontier, up to 11,000-12,000 ft.; in flower on the grassy arêtes and passes, 7th-21st July 1914." Farrer and Purdom. No. 173.

No. 226 is a variety. "It replaces No. 131 in the highest shingles of the Tibetan alps, 12,000-13,000 ft. 14th August 1914."

Of smaller size, but otherwise not far from the typical plant.

Aster sikuensis, W. W. Sm. et Farrer. Sp. nov.

Species habitu foliisque simillima *A. holophyllo*, Hemsl. a quo acheniis pappoque multo differt.

Caulis fruticulosus ramosus gracilis striatulus bene foliatus undique molliter breviterque pilosulus; pars superior tantum visa; planta verosimiliter 30 cm. alta vel paulo elatior; basim versus defoliatus esse videtur. Folia vix petiolata anguste oblongo-lanceolata vel subelliptica vulgo $\pm$ 2 cm. longa, 5 mm. lata, apice subobtusiuscula apiculata basi late cuneata vel subrotundata, chartacea, integerrima, supra atroviridia dense minute puberula, infra dense cinerascens-tomentella; costa supra

paulo impressa infra eminens; nervi supra evanidi infra sat conspicui; folia superiora minora, suprema linearia. Ramuli floriferi 10-20 rami apicem versus laxe corymboso-aggregati 3-5 cm. longi, fere recto angulo saepe abeuntes vulgo capitulum solitarium gerentes, canescenti-puberuli; capitula vix 1 cm. alta, diametro circ. 2 cm. Involucri phylla circ. 4-seriata, interiora 4-5 mm. longa lanceolata marginibus hyalina apice villosa obtusa vel subacuta, exteriora 2-3 mm. longa ovata dorso canescentia apice roseo-rubro-tincta. Receptaculum planum alveolatum. Flores ligulati fere 2 cm. longi, 1.5 mm. lati. Flores tubulosi 4-5 mm. longi, medio tubo subito ampliati glabrescentes. Achaenia (immatura) 1.5 mm. longa 0.5 mm. lata anguste ovata paulo complanata pilosa; pappus uniseriatus 3-4 mm. longus sordide albus.

"Stony places and hot banks about Siku, Kansu, Western China. October 1914." Farrer and Purdom. No. 456.

Berberis Jamesiana, G. Forrest et W. W. Sm. Sp. nov.

Species affinis *B. Francisci-Ferdinandi*, Schneider sectionis *Tinctoriarum*; foliis obovatis vel oblanceolatis saepius integris utrinque dense papillosis recedit.

Frutex ad 2 m. altus; ramuli juniores striato-sulcati minute verruculosi glabri laete rubri, vetustiores diu rubridi; spinae plerumque simplices ad 2.5 cm. longae rubridae. Folia 2-6-fasciculata, plerumque 3-4 cm. longa, $\pm$ 2 cm. lata, obovata vel late oblanceolata, apice rotundata vel obtusissima saepe breviter apiculata, basi in petiolum $\pm$ 5 mm. longum sensim attenuata, margine integra vel dentibus minutis spinoso-denticulata, coriacea utrinque epilosa, utrinque dense papillosa, utrinque anguste et distincte elevato-reticulata, supra vix nitentia infra pallidiora opaca. Inflorescentiae racemosae usque ad 10 cm. longae (pedunculo nudo ad 2 cm. longo incluso) $\pm$ 20-florae glabrae; pedicelli $\pm$ 1 cm. longi; flores desunt. Fructus subglobosi in sicco circ. 1 cm. diametro stigmatibus sessilibus, laete scarlatini. Semina plerumque duo.

"Spinous shrub of 5 ft. In fruit. Fruits bright scarlet. Open situations amongst rocks on the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. 27° 45' N. Alt. 11,000 ft. October 1913." G. Forrest. No. 11,474.

"Shrub of 6 ft. In fruit. Fruits purplish? drying pink! Open stony pasture in the mountains of the Chungtien plateau, Yunnan. Lat. 27° 55' N. Alt. 11,000 ft. July 1913." G. Forrest. No. 10,633.

"Shrub of 4-6 ft. In fruit. Fruits bright red. Open situations amongst scrub on the Mekong-Salween divide, Yunnan.

Lat. 28° 10' N. Alt. 11,000 ft. Oct. 1914." G. Forrest. No. 13,566.

In No. 10,633 the fruits are scarcely mature; in No. 13,566 the leaves are larger than in the type-plant No. 11,474 and, while some are obovate and oblanceolate, others are elliptic to nearly orbicular. The plant is dedicated to a brother of the collector.

Berberis leucocarpa, W. W. Sm. Sp. nov.

Species affinis *B. Jamesianae*, G. Forrest et W. W. Sm. a qua foliis multo minus coriaceis, nervatione diversa, fructibus ex collectore albis divergit.

Frutex 2-3 m. altus; ramuli juniores subteretes graciles distincte verruculosi glabri laete rubri; spinae simplices vel trifidae ad 2.5 cm. longae rubridae. Folia 2-5-fasciculata, plerumque 4-8 cm. longa petiolo 1-1.5 cm. incluso, 2-3 cm. lata, obovata vel subelliptica, apice rotundata vel obtusissima saepius breviter apiculata, basi in petiolum sensim attenuata, margine dentibus minutis crebre spinoso-denticulata, tenuiter coriacea, utrinque epilosa papillosa, supra viridia haud nitentia nervis paululo elevatis subdistinctis, infra pallidiora nervis elevatis distinctis. Inflorescentiae racemosae usque ad 12 cm. longae (pedunculo nudo 3-5 cm. longo incluso) $\pm$ 20-florae glabrae; pedicelli $\pm$ 1 cm. longi; flores desunt. Fructus elliptico-globosi circ. 1 cm. longi, 7-8 mm. lati, stigmatibus sessilibus albi. Semina plerumque duo.

"Shrub of 6-8 ft. In fruit. Fruits white. Open scrub and amongst rocks on the Mekong-Yangtze divide, Yunnan. Lat. 27° 45' N. Alt. 11,000 ft. July 1914." G. Forrest. No. 12,855.

Distinguished from the preceding species by the less coriaceous leaves and the white fruit; the habit, form of inflorescence, and the red shoots are very similar.

Berberis mekongensis, W. W. Sm. Sp. nov.

Species affinis *B. brachypodae*, Maxim. et *B. dasystachyae*, Maxim. a quibus foliis subsessilibus inter alia facile dignoscitur.

Frutex circ. 2 m. altus; ramuli vetustiores striato-sulcati minute verruculosi glabri cinerei; spinae trifidae robustae ad 2.5 cm. longae. Folia (ramulorum fructiferorum) ad 7-8-fasciculata, petiolo brevissimo vix 1 mm. longo suffulta, vulgo 2-3 cm. longa, 1.2-1.7 cm. lata, obovata apice rotundata basi late cuneata, margine spinoso-dentata spinis subapproximatis 1 mm. haud superantibus, nonnunquam subintegra, siccitate membranacea, utrinque fere concoloria, vix nitentia, supra nervis obscurioribus

infra laxe reticulatis. Inflorescentiae racemosae $\pm$ 15-florae, fructu circ. 3 cm. longae, glabrae vel minute puberulae; pedicelli 5-10 mm. longi; flores desunt. Fructus ovali-oblongi $\pm$ 8 mm. longi, $\pm$ 4 mm. lati, stigmatibus sessilibus; semina 1-2.

"Spinous shrub of 6 ft. In fruit. Open situations amongst scrub on the Bei Ma Shan, Mekong-Yangtze divide, Yunnan. Lat. $28^{\circ} 20'$ N. Alt. 12,000 ft. Aug. 1914." G. Forrest. No. 13,204.

A species of the section *Vulgares*, Schneider, closely allied to the Kansu species *B. brachypoda*, Maxim. and *B. dasystachya*, Maxim. from which it is separated by the almost sessile leaves. The thick shoots are densely covered with the racemes of fruit.

***Berberis sublevis*, W. W. Sm. Sp. nov.**

Species sectionis *Wallichianae*, Schneider, affinis *B. levi*, Franch. a qua foliis lineari-lanceolatis tenuiter coriaceis subtus haud enerviis inter alia recedit.

Frutex 1-2 m. altus; ramuli juniores striato-sulcati, minute verruculosi glabri cinerei; spinae trifidae robustae ad 3 cm. longae. Folia 1-6-fasciculata, 5-7 cm. longa, 1-1.5 cm. lata, lineari-lanceolata, apice acuta spinoso-mucronata, basi in petiolum brevissimum cuneata, margine regulariter crebre spinoso-serrata, tenuiter coriacea, facie superiore hypodermate pertinente haud instructa, supra nitentia (nonnunquam obscure) subtus pallidiora nitentia nervis bene reticulatis paululo elevatis. Flores $\pm$ 12-fasciculati, saepe pauciores mediocres flavi; pedicelli graciles $\pm$ 2 cm. longi; prophylla triangulari-lanceolata. Sepala externa triangulari-ovata vix 1.5 mm. longa, interna late ovata $\pm$ 2 mm. longa. Petala late obovata apice emarginata basi breviter unguiculata nectariis elongatis praedita circ. 7 mm. longa. Ovaria ovulo solitario instructa. Fructus 6-7 mm. longi circ. 3.5 mm. lati elliptici saturate rubri stylis brevissimis.

"Spinous shrub of 5 ft. Flowers deep yellow. Open scrub on hills west of Tengyueh, Yunnan. Lat. 25° N. Alt. 6000 ft. Feb. 1913." G. Forrest. No. 9559.

"Spinous shrub of 3-5 ft. Flowers yellow. Open scrub on hills to north-west of Tengyueh. Lat. $25^{\circ} 10'$ N. Alt. 7000 ft. Feb. 1913." G. Forrest. No. 9693.

"Spinous shrub of 4-5 ft. Flowers yellow, tinged red on exterior, amongst scrub on hills to the south of Tengyueh. Lat. 25° N. Feb. 1913." G. Forrest. No. 9560.

"Spinous shrub of 3-5 ft. In fruit. Fruits deep red. Amongst scrub in side valleys in the hills to the east of

Tengyueh. Lat. 25° N. Alt. 6000 ft. May 1913." G. Forrest. No. 7621.

"Spinous shrub of 3-6 ft. In fruit. Fruit red. Open situations in and on the margins of pine forests in the hills to the west of Tengyueh. Lat. 25° N. Alt. 6000 ft. Aug. 1912." G. Forrest. No. 8635.

"Spinous shrub of 3-4 ft. Flowers dull olive-yellow. Margins of pine forests and amongst scrub in the hills around Tengyueh. Lat. 25° N. Alt. 6000 ft. March 1914." G. Forrest. No. 12,198.

This species is allied to *B. levis*, Franch. from which it is readily distinguished by the characters of the leaves—linear-lanceolate, thinly coriaceous, and with the secondary nerves on the under side distinctly visible.

Buddleia Farreri, Balf. f. et W. W. Sm. Sp. nov.

Species distinctissima ex affinitate *B. agathosmatis*, Diels; foliis hastatis subtus niveo-tomentosis, inflorescentiis late paniculatis quam folia praecocioribus inter alia conspicua.

Frutex ex collectore 1-2 m. altus ramis teretiusculis tomento stellato denso mollissimo deterrenti niveo indutis, sub tomento brunneis multistriatulis. Folia opposita petiolo 1-2 cm. longo dense niveo-tomentoso praedita, superiora (cetera non visa) 6-12 cm. longa, 3-6 cm. lata, ovato-oblonga, apice breviter acuminata vel acuta vel obtusiuscula, basi hastata vel breviter truncato-cordata, chartacea margine grosse dentata dentibus magnis parvisque subregulariter alternantibus, supra primo dense niveo-tomentosa mox subglabrescentia grisea bene reticulata nervis 6-10 paribus nervulisque impressis, subtus dense stellato-niveo-tomentosa nervis paulo elevatis. Inflorescentiae late paniculae, usque ad 20 cm. longae, ad 15 cm. latae, ramulis inferioribus fere recto angulo abeuntibus omnibus dense niveo-tomentosis, cymulis apices ramulorum versus approximatis $\pm$ 12-floris, pedunculis ultimis pedicellis brevisimis, bracteis basim cymularum versus raris linearibus 5-10 mm. longis niveo-tomentosis, floribus subcapitatis. Calyx tubulosus circ. 4 mm. longus tubo corollae adpressus, extus dense niveo-stellato-tomentosus, intus glaber dentibus 1 mm. longis oblongis obtusis. Corollae tubus circ. 8 mm. longus circ. 1.5 mm. latus glaber; lobi rotundati 1.5-2 mm. diametro. Stamina medio tubo inserta. Ovarium circ. 2 mm. longum infra glabrum supra albo-tomentellum; stylus circ. 3 mm. longus. Fructus deest.

"This noble bush of 4-6 ft., with ample boughs of huge flannelly foliage, hugs only the very hottest and driest crevices, cliffs, walls, and banks down the most arid and torrid aspects

of the Ha Shiu fang (about Siku), and the baking stony defiles of the Feng S'an Ling (S. side). It does not range northward, and the flowering specimen was gathered from a strange outlying colony at the edge of subalpine coppice below Chago, in the Satanee Valley on 8th May. These magnificent thyrses appear *before* the leaves, which afterwards unfold to hide all trace of them: they suggest a glorified *Veronica Hulkeana* on a big scale, and have the most delicious scent of raspberry ice. Kansu, West China." Farrer and Purdom. No. 44 in Herb. Edin.

This should prove a very decided acquisition to horticulture. The leaves are very beautiful, and with the ample inflorescences justify Mr. Farrer's description of this plant as a noble bush. The foliage suggests to us an affinity with *B. agathosma*, Diels, but the relationship is not close.

***Buddleia glabrescens*, W. W. Sm. Sp. nov.**

Species habitu similis *B. Davidii*, Franch. a qua aliisque affinis foliis $\pm$ remote dentatis calyce glabro vel subglabro inter alia signa dignoscitur; a *B. albiflora*, Hemsl. foliis subsessilibus inflorescentia valde diversa floribus multo majoribus differt.

Frutex ramosus 1-3 m. altus ramis robustis quadrangulatis vel subquadrangulatis primo sparse fulvo-tomentellis vel fulvopilosulis vel subglabris, omnibus cito glabris vel glabrescentibus. Folia opposita petiolo brevissimo vix 1 mm. longo suffulta vel subsessilia, vulgo 5-6 cm. longa, 2-2.5 cm. lata, ovato-lanceolata vel ovata, apice longiuscule acuminata vel acuta, basi plus minusve late cuneata, integra vel remote sinuato-denticulata vel dentata, in sicco membranacea, supra nunc sparse fulvo-tomentosa nunc sparse pilosula infra nunc dense fulvo-tomentosa nunc sparse pilosula minute glandulosa; nervi 5-6-paria in foliis glabrioribus satis conspicui. Inflorescentiae amplae; ramuli superiores elongati foliosi inflorescentia $\pm$ 12 cm. longa $\pm$ 5 cm. lata effusa terminati (cf. specimina sub n. 12,753); ramuli inferiores breves inflorescentia magis compacta $\pm$ 6 cm. longa $\pm$ 4 cm. lata onusti (cf. sub n. 12,433); cymulae pluriflorae pedunculis $\pm$ 1 cm. longis tomentellis vel subglabris suffultae; bractae bracteolaeque lineares vel subulatae; pedicelli 2-4 mm. longi graciles glabri vel sparse pilosi. Calyx anguste tubulosus circ. 4 mm. longus tubo corollae adpressus, extus viridis intervallis subscariosis glaber vel raro pilis paucis praeditus, nunquam tomentosus, intus glaber, dentibus 1 mm. longis subulatis. Corollae saturate coeruleo-lavendulaceae tubus 9-10 mm. longus circ. 1.5 mm. latus, extus parte inferiore glaber supra albido-tomentellus glandulis nitentibus conspersus, intus albido-pilosulus; lobi rotundati circ. 3 mm. diametro extus tomentelli

glandulosi intus subglabri. Stamina paulo supra medium tubum inserta. Ovarium glabrum. Fructus anguste ovoideus circ. 4 mm. longus.

"Shrub of 4-9 ft. Flowers very deep blue-lavender, throat and tube tinged rose, fragrant. Open situations amongst scrub at the north end of the Chien-Chuan Valley, Yunnan. Lat. 27° N. Alt. 8000-9000 ft. May 1914." G. Forrest. No. 12,433.

"On the Chungtien plateau, Yunnan. Lat. 27° 30' N. Alt. 10,000 ft. July 1914." G. Forrest. No. 12,753.

Buddleia limitanea, W. W. Sm. Sp. nov.

Species affinis *B. Forrestii*, Diels a quā foliis tenuiter membranaceis subtus tomentello parcissimo fere obsoleto praeditis, inflorescentiis laxis, cymis paucifloris, calyce corollaque multo minus pilosis recedit.

Frutex 1-2 m. altus ramulis gracilibus subteretibus infra glabris supra ± sparse stellato-pilosulis vel glabrescentibus. Folia superiora petiolo 2-5 mm. longo suffulta, 6-12 cm. longa, 2-3 cm. lata, lanceolata vel oblanceolata, apice acuminata vel raro paulum rotundata, basi cuneatim attenuata, margine crebre serratula serraturis calloso-apiculatis, in sicco tenuiter membranacea, supra viridia sparse scabridule puberula, subtus subolivacea tomentello exiguo vel fere deficiente praedita. Inflorescentiae laxae e cymis pedunculatis 1-3-floris compositae 5-7 cm. longae primo tomentellae mox glabrescentes. Flores pedicellis 2-3 mm. longis sparse pilosis suffulti rosei (?) Calycis 4-5 mm. longi tubus glaber vel subglaber ad trientem in dentes triangulares sinu lato separatos apice ± recurvos subcalloso-apiculatos divisus. Corolla circ. 1 cm. longa; tubus 3-3.5 mm. latus, extra glaber vel parce pilosus intus pilosus, lobi circ. 2.5 mm. diametro pilosuli vel glabrescentes. Stamina ad medium tubum affixa. Ovarium glabrum ± 3 mm. longum stylo clavato ad 4 mm. longo. Fructus maturus circ. 1 cm. longus glaber venulis sub lente conspicuis.

"Shrub of 3-4 ft. In fruit. Open scrub on the western flank of the Shweli-Salween divide, Yunnan. Lat. 25° 20' N. Alt. 7000-8000 ft. Aug. 1912." G. Forrest. No. 8962.

"Shrub of 3-6 ft. Flowers pinkish. Half shade on granite hills, Hpimaw, Northern Burma, 9000-10,000 ft. Aug. 1914." Kingdon Ward. No. 1867.

The Northern Burma plant I take to be the same as the Yunnan specimen which is in fruit. The species is closely allied to *B. Forrestii*, Diels, which is very distinct from all previously described species of this genus. The new species is a smaller weaker plant with thin leaves and sparing tomentum, and with a lax and few-flowered inflorescence.

Buddleia Purdomii, W. W. Sm. Sp. nov.

Species valde affinis *B. nanae*, W. W. Sm., speciei yunnanensi, habitu simillima, foliis obtusioribus utrinque dense tomentellis, bracteis numerosis cymulas amplexantibus, bracteolis linearibus, floribus majoribus recedit.

Fruticulus ramosus ramulis gracillimis teretiusculis primo albido-tomentellis mox pro maxima parte glabrescentibus. Folia opposita breviter (ad 2-3 mm.) petiolata, plerumque 1.5-2 cm. longa, 5-6 mm. lata, lanceolata vel oblongo-lanceolata obtusa vel subrotundata integra supra obscure viridia dense minute stellato-tomentella, nervis obscuris, infra dense albido-vel fulvido-tomentosa nervis 4-5-paribus paulo elevatis conspicuis. Inflorescentiae ramulos terminantes 6-15-florae; pedunculi pedicellique brevissimi; flores subcapitati; bractee (folia floralia) basim cymularum obtegentes numerosae ad 1 cm. longae lineares dense fulvido-tomentosae; bracteolae bracteis similes sed multo minores sub calycibus insertae. Calyx tubulosus circ. 7 mm. longus tubo corollae adpressus extus dense fulvido-stellato-tomentosus intus glaber dentibus 2.5 mm. longis anguste lanceolatis acutis. Corollae tubus 11-12 mm. longus, circ. 2 mm. latus, extus dense albido-stellato-tomentosus intus longiuscule albo-pilosus; lobi rotundati circ. 3 mm. diametro extus $\pm$ tomentosi intus glabri. Stamina medio tubo inserta. Ovarium circ. 1.5 mm. longum supra albo-pilosulum stylo ovarium aequante. Fructus deest.

"Common on very steep and torrid cliffs and banks of the most torrid loess region about Kiai chow: descending along the burning walls of the Hei Shui fang, but not extending to Siku. Fl. April 29." Kansu, West China. Farrer and Purdom. No. 14 in Herb. Edin.

This Kansu species closely resembles in habit the Yunnan species *B. nana*, W. W. Sm. The strong development of bracts and bracteoles is noteworthy.

Buddleia taliensis, W. W. Sm. Sp. nov.

Species valde affinis *Buddleiae Forrestii*, Diels a qua calyce dense stellato-tomentoso, dentibus multo brevioribus, ovario parte superiore dense tomentoso, fructu supra tomentoso differt.

Frutex 2-3 m. altus ramulis subteretibus primo incano-tomentellis deinde glabrescentibus rubidis. Folia superiora petiolo 5-10 mm. longo tomentello suffulta, 9-16 cm. longa, 2-4 cm. lata, lanceolata, apice acuminata, basi cuneata, margine crebre serrulata serraturis calloso-apiculatis, chartacea, supra pallido-viridia $\pm$ tomentella, subtus dense cinnamomeo-

tomentosa. Inflorescentiae thyrsoidae densiflorae e cymis pedunculatis compositae 4-5 cm. longae rhachi primo dense incano-tomentosa. Flores castaneo-fusci pedicellis 2-3 mm. longis sparse pilosis praediti. Calycis circ. 3 mm. longi tubus dense stellato-tomentosus, dentes $\pm$ 1 mm. longi callosio-apiculati. Corolla circ. 1.1 cm. longa; tubus circ. 3 mm. latus, extra parte mediana $\pm$ glaber, apicem versus pilosus, intus medio dense pilosus, lobi circ. 2.5 mm. diametro extra pilosi intus glabri. Stamina paulo supra medium tubum affixa. Ovarium infra glabrum supra dense albo-tomentosum $\pm$ 2 mm. longum stylo ad 4 mm. longo. Fructus vix maturus $\pm$ 5 mm. longus dimidio superiore albo-tomentosus.

"Shrub of 6-9 ft. Flowers deep maroon-crimson. In open scrub on the western flank of the Tali Range, Yunnan. Lat. 25° 40' N. Alt. 9000 ft. Aug. 1913." G. Forrest. No. 11,561.

Closely akin to *Buddleia Forrestii*, Diels, but differing in the tomentose ovary and fruit. The pilosity of leaf, calyx, and ovary is at times a very uncertain character in the genus *Buddleia*; the three species, *Forrestii*, *limitanea*, and *taliensis*, are easily separable from the characters given, yet they form a very closely allied series and intermediates between them may yet be found.

Buxus microphylla, Sieb. et Zucc., var. **rupicola**, W. W. Sm.

Var. nov.

Fruticulus $\pm$ 1 m. altus ramulis densissime fulvido-pilosulis. Folia lanceolata, apice obtusa haud emarginata, 1-1.5 cm. longa, 4-6 mm. lata, pallido-viridia supra opaca haud nitida minute furfuracea vel pilosula tandem glabra, subtus ad costam pilosula vel glabrata, margine juventute minute ciliolata, utrinque nervis siccitate obscuris; petioli densissime pilosuli.

"Shrub of 2-3 ft. Open situations amongst rocks on the Kari Pass, Mekong-Yangtze divide, Yunnan. Lat. 27° 40' N. Alt. 12,000 ft. Aug. 1914." G. Forrest. No. 13,075.

This differs from the other varieties of *B. microphylla* in the densely pilose branchlets and small lanceolate leaves; the leaf surfaces are dull and not shining, and the veins obscure on both sides.

Calamintha barosma, W. W. Sm.

Species ex affinitate *C. longicaulis*, Benth. a qua ex descriptione foliis minimis glabrescentibus, verticillastris 1-2-floris, calyce epiloso differt.

Planta diffusa multicaulis basi suffruticosa. Caules decum-

bentes vel subdecumbentes flexiles filiformes 20-40 cm. longi ramosi $\pm$ dense albo-pilosuli. Folia 4-6 mm. longa, 2-3 mm. lata, lanceolata vel oblanceolata, apice obtusiuscula, basi in petiolum pilosulum vel glabratum $\pm$ 1 mm. longum cuneata, integerrima, utrinque epilosa vel (in eodem specimine) pilosula. Inflorescentia terminalis spiciformis gracilis ex verticillastris 3-7 approximatis vulgo 1-2-floris composita 3-5 cm. longa; bracteae foliis similes; bracteolae lineares $\pm$ 2 mm. longae pedicellos pilosulos subaequantes. Calyx tubulosus circ. 9 mm. longus dentibus linearibus $\pm$ 1 mm. longis subaequalibus rectis praeditus 13-nervius epilosus nisi ad angulos dentium longiuscule albo-pilosos, nitenti-glandulosus. Corolla circ. 1.7 cm. longa laete rosea; tubus rectus longiuscule exsertus circ. 1.4 cm. longus extus dense albo-pilosulus intus sparse pilosulus; limbus bilabiatus labio postico emarginato, antico 3-fido lobis subaequalibus. Stamina vix exserta.

"Shrubby tufted plant of 9-15 inches. Powerfully aromatic. Flowers bright rose. Stony pasture and on ledges of limestone cliffs on the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. 27° 45' N. Alt. 12,000 ft. July 1913." G. Forrest. No. 10,371.

Also cultivated in the Royal Botanic Garden, Edinburgh, where it flowered September 1915.

This species is very different from any Chinese *Calamintha* and appears to be closely akin to the Nepalese *C. longicaulis*, Benth. which I have not seen. Like the latter, it has a calyx with subequal teeth; this and the entire leaves bring it near to the genus *Micromeria*.

***Calamintha euosma*, W. W. Sm. Sp. nov.**

Species valde affinis *C. barosmati*, W. W. Sm., fortasse varietas rectius aestimanda sed foliis majoribus obscure crenulatis, inflorescentiis laxioribus, cymulis plerumque 3-5-floris longiuscule pedunculatis, calyce extus patenti-pilosulo, dentibus haud aequalibus, corolla minore, tubo calycem paululo superante recedit.

Planta multicaulis basi lignosa habitu speciei supra citatae. Caules 15-30 cm. longi. Folia ad 2 cm. longa, ad 1.2 cm. lata, ovata, apice obtusa vel rotundata, basi in petiolum pilosulum $\pm$ 3 mm. longum cuneata, obscure remote crenulata, utrinque glabrata. Inflorescentia terminalis ex verticillastris 3-7 subremotis plerumque 3-5-floris composita; cymulae pedunculis $\pm$ 1 cm. longis glanduloso-pilosis suffultae; bracteae bracteolaeque speciei praecedentis. Calyx tubulosus 4-6 mm. longus dentibus linearibus $\pm$ 1 mm. longis inaequalibus praeditus 13-nervius glanduloso-pilosulus, ad angulos dentium longiuscule albo-

pilosus. Corolla ± 1 cm. longa saturate rosea; tubus rectus paululo exsertus; caeterum speciei praecedenti subsimilis.

"Tufted shrubby plant of 6-12 inches. Strongly aromatic. Flowers deep rose. Open limy pasture in the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. $27^{\circ} 45'$ N. Alt. 11,000 ft. July 1913." G. Forrest. No. 10,574.

Closely akin to the preceding species, but with several points of divergence—larger obscurely crenulate leaves, laxer inflorescence, peduncled cymes usually 3-5-flowered, pilose smaller calyx with unequal teeth and a smaller corolla.

Callianthemum Farreri, W. W. Sm. Sp. nov.

Species nana affinis *C. coriandrifolio*, Reichb. a quo foliis omnibus radicalibus petalis caeruleis inter alia signa recedit.

Rhizoma horizontale vel obliquum. Caulis solitarius tempore florendi 4-5 cm. altus, simplex uniflorus folia longe superans. Folia sub anthesin vix explicata omnia radicalia, plerumque duo, petiolo circ. 1 cm. longo vagina lata praedito suffulta; lamina ambitu ovata glabra ± 1 cm. longa, vix 1 cm. lata bipinnata pinnarum paribus 2 et extrema pinna impari; pinnulae late cuneatae trilobatae segmentis ultimis oblanceolatis obtusis. Flos 2.5-3 cm. diametro caeruleus. Sepala 5 fere 1 cm. longa obovata vel suborbicularia, siccitate pallido-viridia vel albida. Petala 8-9, anguste obovata vel oblanceolata circ. 1.5 cm. longa ad 6 mm. lata haud emarginata lineis purpureis bene notata. Carpella ± 12 glabra. Fructus desunt.

"On cool peaty ledges of the Satane range, 8000-10,000 ft. Flowers 6th-15th May. Probably the same species abounds in the high fine shingles of the Bei Ling and Thundercrown; Kansu, West China." Farrer and Purdom. No. 70.

A beautiful dwarf species akin to *Callianthemum coriandrifolium*, Reichb. and its Asiatic allies.

Capparis subtenera, Craib et W. W. Sm. Sp. nov.

Species affinis *C. tenerae*, Dalz. sub qua antehac planta posita est sed foliis majoribus crassioribus primo furfuraceo-puberulis nec glabris, aculeis variabilibus rectis vel apice paululo decurvatis nunquam omnino decurvatis, floribus numerosioribus multo majoribus supra axillam quamque usque ad 5 enatis, ovario breviter apiculato recedit; *C. disticha*, Kurz quae est affinis potius ad *C. teneram*, Dalz. quoad flores spinasque spectat.

Frutex 2-10 m. altus semiscandens ramulis primo minute puberulis tandem glabrescentibus. Folia 4-12 cm. longa, 2-5 cm. lata, ovato-oblonga vel ovato-lanceolata vel lanceolata, apice obtusiuscula vel acuta vel breviter acuminata, basi

rotundata vel late cuneata, integra papyracea utrinque primo furfuraceo-puberula, tandem glabra; petioli $\pm$ 1 cm. longi. Aculei 2-3 mm. longi recti vel apice paululo decurvati. Flores supra-axillares, plerumque 3-5 superpositi pedicellis 1.5-2 cm. longis puberulis suffulti. Sepala 4, circ. 7 mm. longa, $\pm$ 3 mm. lata, elliptica puberula, tandem deflexa. Petala 1-1.2 cm. longa, $\pm$ 3 mm. lata, lineari-oblonga obtusa $\pm$ tomentella. Stamina circ. 16 fere 3 cm. longa. Gynophorum circ. 3 cm. longum filiforme. Ovarium $\pm$ 1.5 mm. longum ovoideum breviter apiculatum glabrum. Bacca globosa $\pm$ 1 cm. diametro nigra vulgo $\pm$ 8-seminifera. *Capparis tenera*, Diels vix Dalz. in Notes R.B.G. Edin., v (1912), 90.

China:—"Semi-scandent spinous shrub of 10-20 ft. Flowers transparent purplish-white. On trees in shady open situations in the Teng-chuan-cho Valley, Yunnan. Lat. 26° N. Alt. 7000 ft. April 1906." G. Forrest. No. 2028.

"Shrub of 6-18 ft. Flowers dull transparent lavender-grey. Amongst scrub on lava-bed to west of Tengyueh. Lat. 25° N. Alt. 5000 ft. May 1912." G. Forrest. No. 7589.

"Shrub of 4-15 ft. In fruit. Amongst scrub in the Shweli Valley, Yunnan. Lat. 25° N. Alt. 5000-6000 ft. June-July 1912." G. Forrest. Nos. 8077, 8593.

"Shrub of 6-15 ft. Flowers dull bluey-grey. Open pasture and in thickets on the hills west of Tengyueh. Lat. 25° N. Alt. 5000-6000 ft. March 1913." G. Forrest. No. 9721.

Chi Yuan, Yunnan; shrub 10 ft., white flowers. Henry. No. 9124B.

Mengtze woods, 4600 ft.; shrub 5-10 ft.; black fruit. Henry. No. 9124A. Also Henry, No. 9124C, white flowers.

Valley of Lan-ngi-tsin, Yunnan; large spiny shrub with branches, spines, and persistent leaves of a shining green. E. E. Maire. No. 168 in Herb. Edin. Also Maire, Nos. 106, 593, 1708.

Burma:—"Shrub of 20-30 ft. Flowers dull, transparent white. Open situations in the Taping Valley. Lat. 24° 20' N. Alt. 2000 ft. Feb. 1913." G. Forrest. No. 9654.

Capparis yunnanensis, Craib et W. W. Sm. Sp. nov.

Species affinis *C. Roxburghii*, DC. quae alabastris glabris inter alia differt; a *C. formosana*, Hemsl. et *C. Cleghornii*, Dunn foliis diversis et floribus majoribus recedit.

Frutex alte scandens (ex Henry) ramulis dense fulvo-tomentellis. Folia (superiora tantum visa) usque ad 10 cm. longa, ad 5 cm. lata, elliptico-lanceolata, apice rotundata vel $\pm$ obtusa, basi rotundata vel late cuneata, integra papyracea, utrinque parcissime puberula siccitate supra atroviridia nervis obscuris, infra brunnea nervis 7-8-paribus paulo eminentibus, $\pm$ conspicuis;

petioli ± 1 cm. longi fulvo-tomentelli; aculei (saltem in scheda nostra) desunt. Inflorescentiae terminales atque axillares; corymbi pedunculis 5-6 cm. longis tomentellis suffulti 4-7-flori; flores inter majores pedicellis 2-4 cm. longis tomentellis praediti. Sepala 4, orbicularia, 1.5-1.7 cm. diametro, extra dense minute fulvo-tomentella. Petala late obovata fere 2 cm. longa, apicem versus circ. 1.5 cm. lata, intus tomentella. Stamina plurima. Gynophorum 3-3.5 cm. longum glabrum. Ovarium ± 3 mm. longum ovoideum breviter apiculatum glabrum. Fructus deest. *C. Roxburghii*, Dunn, vix DC. in Journ. Linn. Soc., xxix (1911), 426.

Szema, Yunnan, S.W. forests, at 4000 ft.; large climber. A. Henry. No. 12,986.

Chelonopsis bracteata, W. W. Sm. Sp. nov.

Species affinis *C. lichiangensis*, W. W. Sm.; quoad habitum foliaque valde appropinquat, quoad bracteas conspicuas, calycem, corollam distincte divergit.

Fruticulus 2-3 m. altus. Rami robusti patenti-setosi atque glanduloso-pilosuli. Folia petiolo 4-6 cm. longo robusto suffulta; lamina 10-15 cm. longa, 6-8 cm. lata, lanceolato-ovata plus minusve acuminata basi brevi-cordata crenato-serrata serraturis apice callosis chartacea supra sparse setosa ad costam albo-pilosula infra parcissime setosa, nervis 5-6-paribus siccando satis distinctis. Inflorescentiae axillares, 1-2-natae e cymulis 3-7-floris compositae; pedunculi 3-4 cm. longi; pedicelli sub anthesin breves 2-5 mm. longi setosi atque glandulosi; bracteae conspicuae usque ad 2.5 cm. longae lanceolatae foliaceae setosae virides vel rubescentes prope calycem insertae atque cymulam prima aetate velantes. Calyx circ. 1.8 cm. longus 10-nerviis setosus atque glandulosus rubescens; dentes triangulares 6-7 mm. longi subaequales apiculo 2-3 mm. longo praediti. Corolla ± 3 cm. longa, apud fauces 1-1.3 cm. lata, subglabra saturate rosea; limbus ei *C. lichiangensis* subsimilis; stamina stylusque itidem.

"Shrub of 6-9 ft. Flowers deep rose. Open situations amongst scrub on the Tong Shan in the Yangtze bend, Yunnan. Lat. 27° 20' N. Alt. 8000 ft. Sept. 1913." G. Forrest. No. 11,408.

This is readily distinguished from the allied *C. lichiangensis* by the large bracts enclosing the cymes, by the more deeply cleft calyx, and by the deep-rose, almost glabrous, corolla.

Chelonopsis lichiangensis, W. W. Sm. Sp. nov.

Species affinis *C. roseae*, W. W. Sm. sed caulibus densissime setosis, foliis majoribus, cymis longiuscule pedunculatis, floribus flavis inter alia dignoscitur.

Fruticulus 1-3 m. altus. Rami robusti dense patentifulvido-setosi atque glanduloso-pilosuli. Folia petiolo 3-5 cm. longo robusto setoso atque glanduloso-pilosulo suffulta; lamina 8-12 cm. longa, 6-7 cm. lata, ovata plus minusve acuminata basi breviter vel vix cordata grosse serrata serraturis apice callosis, chartacea supra subsparsa setosa, infra ad costam nervosque venulasque setosula atque pilosula, nervis utrinque 5-6-paribus infra eminentibus. Inflorescentiae axillares 1-2-natae e cymulis plerumque 3-floris compositae; pedunculi $\pm$ 5 cm. longi setosi atque glanduloso-pilosi, ut pedicelli in fructu ad 2.5 cm. longi; bracteae sublineares 1-2 cm. longae pilosae. Calyx $\pm$ 15 mm. longus campanulatus 10-nervius glanduloso-pilosus viridis, fructu ampliatus; dentes ovato-triangulares calloso-apiculati $\pm$ 5 mm. longi subaequales margine ciliati. Corolla $\pm$ 3 cm. longa, ad fauces $\pm$ 1 cm. lata, extus dense pilosula flava; limbi labium superius brevissime emarginatum circ. 5 mm. latum, longitudine vix 1.5 mm. superans; labii inferioris lobi laterales circ. 3 mm. longi, medianus 4-5 mm. longus breviter emarginatus. Stamina 4 filamentis pilosulis, antheris ciliatis. Stylus bifidus lobis subaequalibus.

"Shrub of 4-8 ft. Flowers yellow. In open situations in the valley of the Yangtze, east of the Lichiang Valley, Yunnan. Lat. 27° 45' N. Alt. 6000 ft. July 1913." G. Forrest. No. 10,512.

Chelonopsis rosea, W. W. Sm. Sp. nov.

Species affinis *C. odontocheilae*, Diels sed caulibus petiolisque densissime pilosis floribus saturate roseis nec flavis inter alia differt.

Fruticulus 1-2 m. altus. Rami robusti densissime pilosi. Folia petiolo 1.5-2 cm. longo robusto suffulta; lamina $\pm$ 5.5 cm. longa, $\pm$ 3.5 cm. lata ovata breviter acuminata basi cordata serrata serraturis callosis, chartacea, supra subaeque infra praesertim ad costam nervosque pilosa. Inflorescentiae axillares cymulis plerumque 3-floris compositae; pedunculi pedicelli bracteae densissime pilosi. Calyx $\pm$ 10 mm. longus campanulatus 10-nervius $\pm$ dense pilosus rubridus, fructu ampliatus; dentes triangulares apiculati $\pm$ 2 mm. longi subaequales. Corolla $\pm$ 3 cm. longa, 8-10 mm. lata, extus dense pilosa, saturate rosea; limbi brevis labium superius circ. 3 mm. longum, vix emarginatum; labii inferioris lobi laterales circ. 3 mm. diametro, medianus $\pm$ 5 mm. longus margine haud dentatus.

"Aromatic shrub of 4-6 ft. Flowers deep dull rose. Open situations amongst boulders in side valleys on the Tali Range, Yunnan. Lat. 25° 40' N. Alt. 10,000 ft. Aug. 1913." G. Forrest. No. 11,682.

Akin to *C. odontocheila*, Diels, but with shorter stouter petioles, much more pilose leaves and inflorescence, corolla dull rose and not yellow, and an entire or subentire middle lobe to the lower lip.

Chelonopsis siccanca, W. W. Sm. Sp. nov.

Species affinis *C. roseae*, W. W. Sm. et *C. bracteatae*, W. W. Sm.; ab hac bractearum magnarum absentia, calycis lobis inter alia divergit, ab illa foliis glabrioribus, petiolis longioribus glandulosis praeter alia signa dignoscitur.

Fruticulus 1-2 m. altus. Rami graciles pilosi supra capillis parvis glanduloso-capitatis $\pm$ dense praediti. Folia petiolo 2.5-4 cm. longo sparse piloso atque dense glanduloso-pilosulo suffulta; lamina 6-8 cm. longa, 3-4 cm. lata, ovata vel ovato-lanceolata apice acuminata, basi cordatula, crenato-serrata serraturis breviter calloso-apiculatis, siccando membranacea, supra sparse pilosa, ad serraturas ciliata, infra ad costam nervosque sparse pilosa, cetera glabra vel glabrescens. Inflorescentiae axillares cymulis plerumque 3-floris compositae; pedunculi ad 2.5 cm. longi glandulosi saepe sparse pilosi; pedicelli 2-3 mm. longi glandulosi; bracteae 5-10 mm. longae lineares pilosae. Calyx 1-1.5 cm. longus sparse pilosulus basi glandulosus, dentes triangulares 3-4 mm. longi breviter apiculati. Corolla $\pm$ 3 cm. longa, ad fauces in sicco circ. 1 cm. lata, infra subglabra supra pilosula saturate purpureo-rosea; limbi brevis labium superius circ. 3 mm. longum haud emarginatum; labii inferioris lobi laterales rotundati, medianus late oblongus longiuscule protrusus 1 cm. paulo superans. Stamina filamenta glabra, antherae ciliatae. Stylus bifidus glaber.

"Shrub of 4-6 ft. Flowers deep purple-rose. Dry situations amongst scrub on the Yungning-Yangtze divide, Yunnan. Lat. 27° 40' N. Alt. 9000 ft. July 1914." G. Forrest. No. 13,082.

Chirita orbicularis, W. W. Sm. Sp. nov.

Species ex affinitate *C. speciosae*, Kurz, *C. brevipedis*, C. B. Clarke et *C. Traillianae*, G. Forrest et W. W. Sm. sed foliis orbicularibus supra albo-setoso-lanatis, pedunculis elongatis unifloris ebracteatis divergit.

Planta subcaulis. Caulis repens abbreviatus pilis articulatis dense ferrugineo-hirsutus. Folia radicalia 4-5, petiolo 2-3.5 cm. longo dense fulvo- vel ferrugineo-hirsuto suffulta; lamina orbicularis vel suborbicularis 4-8 cm. diametro apice rotundata acumine nullo, basi brevissime inaequaliter cordatula margine obtuse crenato-serrata supra viridis pilis longiusculis articulatis

dense incano-pilosa infra pallidior setis albidis praesertim ad costam nervosque modice praedita, nervis 3-4-paribus vix eminentibus. Pedunculi quasi radicales 1-3, albo-setosi primo breves tandem ad 10 cm. elongati uniflori; bractae nullae. Calyx tubulosus 2 cm. longus vel paulo longior basi dense supra sparse albo-setosus nunc ad medium nunc ad quartam partem in lobos 5 triangulos vel lanceolatos glanduloso-acuminatos fissus. Corolla tubuloso-infundibularis $\pm$ 5 cm. longa extus glabra; tubus ad 4 cm. longus apice medioque in sicco 1.2-1.5 cm. latus extus basi albidus supra pallide purpureo-coeruleus, intus ad partem anteriorem flavido-lineatus; lobi rotundati circ. 1.5 cm. diametro laete purpureo-coerulei glabri. Stamina perfecta 2 raro 4 infra medium tubum inserta filamentis supra pilosulis ceteroqui ut in *C. Trailliana*. Ovarium lineare minute pilosulum. Capsula linearis ad 12 cm. longa.

"Plant of 3-9 inches. Flowers bright purplish-blue. Shady humus-covered boulders by streams in the Yang-pi Mountains, Yunnan. Lat. 26° 45' N. Alt. 9000 ft. Aug. 1913." G. Forrest. No. 10,923.

A species very closely allied to *C. Trailliana*, G. Forrest et W. W. Sm., but with different leaves, solitary flowers and no bracts on the peduncle. In the structure of the flower and its colouring it is very near its ally.

Chirita Trailliana, G. Forrest et W. W. Sm. Sp. nov.

Species valde affinis *C. speciosae*, Kurz, sed foliis apice rotundatis nec acutis subtus purpureis pedunculis paucifloris recedit.

Planta fere acaulis. Caulis repens abbreviatus pilis articulatis dense ferrugineo-hirsutus. Folia radicalia vel subradicalia opposita 3-5, in speciminibus cultis numerosa, petiolo usque ad 15 cm. longo pilis articulatis dense ferrugineo-hirsuto suffulta; lamina 8-20 cm. longa 6-15 cm. lata, late ovata vel suborbicularis apice rotundata basi subaequaliter vel valde oblique cordata margine obtusiuscule crenato-serrata supra atroviridis pilis articulatis pallidis $\pm$ densiuscule pilosa infra purpurea vel purpurascens vel purpureo-marmorata ad costam nervosque virides densissime fulvo-setoso-pilosa ceteroquin sparse pilosa, in vivo carnosula rugosa, nervis 5-8 paribus supra impressis infra valde eminentibus bene reticulatis. Pedunculi quasi radicales plerumque 2-3, dense ferrugineo-hirsuti primo breves tandem elongati 6-12 cm. longi 1-4-flori; pedicelli 1-2 cm. longi cum bracteis $\pm$ 1 cm. longis lanceolatis vel ovatis ferrugineo-hirsuti. Calyx tubulosus 1.5-2.5 cm. longus ferrugineo-hirsutus plus minusve ad medium in lobos 5 triangulares vel lanceolatos acuminatos fissus. Corolla tubuloso-infundibularis 5-6 cm.

longa extus $\pm$ crebre setaceo-pilosula; tubus ad 4.5 cm. longus apice medioque 1.5–1.7 cm. latus extus basi albidus supra pallide purpureo-coeruleus, intus ad partem anteriorem lineis flavidis circ. 3 cm. longis 1 mm. latis parallelis pulchre notatus, glaber, ad partem posteriorem hic illic pilosulus; lobi rotundati 1.2–1.5 cm. diametro anteriores paulo majores, extus albi intus laete purpureo-coerulei, margine sparse ciliolati, ceteroqui glabri. Stamina perfecta 2 infra medium tubum inserta filamentis albis glabris circ. 1.5 cm. longis medio gibboso-incrassatis torsis complanatis basi incrassatis; antherae cohaerentes circ. 5 mm. longae connectivis albo-lanatis; staminodia duo circ. 1 cm. longa filamentis albo-lanatis. Discus annularis. Ovarium lineare cum stylo fere 3.5 cm. longum nigrido-pilosulum; stigma unilaterale alte bifidum lobis subquadratis $\pm$ 4 mm. longis. Capsula linearis usque ad 9 cm. longa.

"Plant of 2–4 inches. Flowers bright purplish-blue. Moist shady situations on ledges of cliffs and humus-coloured boulders in the Shweli valley, Yunnan. Lat. 25° N. Alt. 5000–6000 ft. May 1912." G. Forrest. No. 7976.

"Plant of 6–10 inches. Flowers purplish-blue; under surface of foliage purplish-red. Ledges of cliffs and on rocks in shady situations in the hills to the south of Tengyueh, Yunnan. Lat. 25° N. Alt. 6000–7000 ft. June 1912." G. Forrest. No. 8124.

A very beautiful species with large flowers and with leaves of a fine purple below. It is now in cultivation from seeds obtained by George Forrest in Yunnan for Mr. J. C. Williams of Caerhays Castle, Cornwall. In specimens which have flowered the corolla is quite two inches long; the tube outside is a light purplish-blue, the rounded lobes are whitish outside, and a fine bright purplish-blue inside, the tube inside on the anterior side is marked with two narrow parallel lines of yellow over an inch long.

Colquhounia compta, W. W. Sm. Sp. nov.

Species affinis *C. coccineae*, Wall. a qua calyce inter alia distinguitur.

Fruticulus 1–2 m. altus, erectus ramosus. Rami subteretes primo densissime incano-tomentelli pilis stellatis simplicibusque intermixtis, vetustiores cinerascens decorticantes. Folia petiolo plerumque 1–1.5 cm. longo dense tomentoso suffulta; lamina plerumque 4–5.5 cm. longa, 3–4 cm. lata, ovata subacuta basi $\pm$ rotundata crenata chartacea supra viridis $\pm$ dense tomentosa infra densissime incano-tomentosa. Cymulae axillares pedunculis ad 1 cm. longis suffultae pauciflorae, pedicelli 2–3 mm. longi. Calyx tubuloso-campanulatus $\pm$ 1 cm. longus extus

dense stellato-tomentosus dentibus subaequalibus ± 4 mm. longis triangularibus acutis. Corolla usque ad 3 cm. longa incurva obscuro-kermesina extus puberula; tubus basi angusta supra ampliatus 2 cm. longus vel ultro; labium superius ellipticum apice rotundatum 6-7 mm. longum, inferius tripartitum segmentis subaequalibus. Stamina e tubo exserta lobos haud superantia. Styli rami parum inaequales.

"Shrub of 4-6 ft. Flowers dull greyish-crimson. Open dry situations amongst scrub in the Mekong Valley, Yunnan. Lat. $28^{\circ} 10'$ N. Alt. 6000-7000 ft. Sept. 1914." G. Forrest. No. 13,405.

An ally of *C. coccinea*, Wall., from which it is most easily distinguished by the calyx and its teeth.

***Colquhounia mekongensis*, W. W. Sm.**

Species peraffinis *C. compta*, W. W. Sm. a qua floribus majoribus, calycis dentibus longioribus angustioribus inter alia signa recedit.

Fruticulus 1.5-2 m. altus erectus. Rami subteretes primo densissime incano-tomentelli pilis stellatis simplicibusque intermixtis, tandem cinerascens. Folia petiolo ± 1 cm. longo dense tomentoso suffulta; lamina plerumque 3-4 cm. longa, 2.5-3 cm. lata ovata acuta vel obtusiuscula, basi $\pm$ rotundata crenata chartacea supra viridis dense pilosa infra densissime incano-tomentosa. Cymulae axillares pedunculis ± 5 mm. longis suffultae pauciflorae; pedicelli 1-2 mm. longi. Calyx tubuloso-campanulatus circ. 1.1 cm. longus extus dense stellato-tomentosus dentibus subaequalibus ± 5 mm. longis sublinearibus acutis. Corolla usque ad 3.5 cm. longa recta saturate rosea extus puberula; tubus basi angusta supra ampliatus circ. 2.3 cm. longus; labium superius ellipticum brevissime emarginatum, 1 cm. superans, inferius tripartitum segmento mediano lateralibus longiore. Stamina e tubo exserta lobos fere aequantia. Rami styli subaequales.

"Shrub of 4-5 ft. Flowers deep magenta-rose. Open dry situations in the Mekong Valley, Yunnan: Lat. 28° N. Alt. 6000 ft. Sept. 1914." G. Forrest. No. 13,265.

Very close to *C. compta*, but differing in the shape of both calyx and corolla.

***Corydalis atuntsuensis*, W. W. Sm. Sp. nov.**

Species ex affinitate *C. oxypetalae*, Franch. et *C. pachycentrae*, Franch. sed inter alia bracteis flabellato-partitis dignoscenda.

Radix e fibris fusiformibus composita eis specierum supra citatarum persimilis collo vestigiis petiolorum praeteritorum

cincta. Caules 2-3-nati usque ad 8 cm. longi debiles flexuosi decumbentes plerumque bifoliati glabri. Folia radicalia 1-2, petiolo circ. 6 cm. longo debili praedita; lamina (haud bene representata) circ. 1.5 cm. longa pinnata segmentis 5-7 linearilanceolatis integris 5-10 mm. longis glabris; folia caulina plerumque duo opposita vel subopposita paulo supra medium caulem inserta fere sessilia ceteroqui radicalibus subsimilia segmentis usque ad 1.5 cm. longis. Racemi terminales laxi circ. 4 cm. longi, 4-12-flori; bracteae ambitu obovatae 7-8 mm. longae in lobos 5-7 lineares flabellato-partitae glabrae; pedicelli bracteas subaequantur vel eis duplo longiores. Flores ex speciminibus siccis verisimiliter coerulei. Sepala squamiformia circ. 1 mm. diametro denticulata. Petalum posticum cristatum apice galeatum cum calcare fere 2 cm. longum; calcar $\pm$ 1 cm. longum limbo paululo longius modice aduncum apice obtusum; petalum anticum cristatum postico subaequale; petala interiora paululo breviora cristatula. Capsula immatura linearis.

"N.W. Yunnan. Near Atuntsu, 15,000-16,000 ft." Kingdon Ward. No. 60.

A dwarf species smaller than the allied *C. pachycentra*, Franch. from which the bracts serve at once to distinguish it.

***Corydalis benecincta*, W. W. Sm. Sp. nov.**

Species alpina optime distincta; inter species yunnanenses foliis trifoliolatis foliolis integris, bracteis praemagnis quasi-verticillatis atque involucrantibus, pedicellis longis multo complanatis, floribus subumbellatis inter alia bene notata.

Radix tuberosa crassa infra ramosa collo vestigiis exiguis petiolorum praeteritorum obsita. Caulis pars inferior fere nuda flexuosa subterranea vel inter saxa errans foliis radicalibus diu delapsis foliis inferiori-caulinis paucis squamiformibus; pars epigaea brevis 1-5 cm. longa plus minusve complanata glabra inflorescentia aequilonga terminata. Folia superiora 2-3, alterna (in situ naturali quasi-subradicalia) petiolo 5-7 cm. longo complanato glabro praedita, trifoliolata; foliola $\pm$ 3 cm. longa $\pm$ 2 cm. lata, late elliptica vel ovata vel obovata petiolulo nullo vel brevissimo in foliolo mediano nonnunquam paululo elongato praedita apice rotundata vel obtusa basi rotundata vel late cuneata integerrima carnosula utrinque glabra supra laete viridia infra pallidiora. Inflorescentiae plures densae caulem ramulosque terminantes; bracteae 4 vel plures magnae 2-4.5 cm. longae foliaceae lanceolatae vel oblanceolatae approximatae quasi involucrum formantes; flores plerumque 5-6 in quoque racemulo ita approximati ut subumbellati videantur, pedicellis usque ad 4 cm. longis multo complanatis suffulti. Sepala squamiformia ovata vel suborbicularia circ. 2 mm. diametro

denticulata. Petalum posticum apice fornicatum dorso distincte cristatum cum calcare 1.8–2.5 cm. longum; calcar usque ad 1.2 cm. longum limbum subaequans 3–7 mm. (in sicco) latum $\pm$ falcatum apice rotundatum; petalum anticum cristatum postico subaequale apicem versus usque ad 6–8 mm. latum; petala interiora apice cohaerentia circ. 9 mm. longa dorso cristata. Capsula vix matura ellipsoidea circ. 7 mm. longa circ. 3 mm. lata stylo 2–3 mm. longo coronata.

"N.W. Yunnan. Near Atuntsu, 15,000–16,000 ft. A scree plant with close tufted habit, fleshy leaves, bulbous root; July 1911." Kingdon Ward. Nos. 58, 61; "flowers crimson, Aug. 1913." No. 965.

A very peculiar species with leaves somewhat suggesting *Trifolium pratense*, Linn., with large bracts which are so approximate as to simulate an involucre, with very long and much flattened pedicels, and with an abnormally large and broad spur.

Corydalis eccremocarpa, W. W. Sm. Sp. nov.

Species affinis *C. taliensi*, Franch. a qua inter alia floribus minoribus luteis differt.

Planta 20–30 cm. alta radicibus fibrosis, diffusa e basi multicaulis. Caulis 10–20, ramosi remote foliosi. Folia basilaria et caulina similia petiolo 3–4 cm. longo suffulta, longiuscule et latiuscule vaginata; lamina ambitu oblongo-ovata 2–3 cm. longa biternatisecta segmentis ovatis obtuse lobulatis. Racemi simplices remotiflori; bracteae inferiores nonnunquam trilobatae, superiores integrae spathulatae $\pm$ 5 mm. longae pedicellos subaequantes; flores lutei apice purpureo-tincti circ. 1.5 cm. longi. Sepala ovata circ. 2 mm. longa erosa albida subsistentia. Petalum superius circ. 7 mm. longum brevissime vel vix cristatum, petalum inferius aequilongum breviter carinatum; calcar circ. 8 mm. longum gracile haud curvatum acutiusculum. Capsula fere 2 cm. longa linearis sub maturitatem pendula stylo persistente. Semina $\pm$ 12 nigra nitentia sub lente valido minute areolata.

"Plant of 9–12 inches. Flowers yellow, tipped purple. Open stony pasture on the Tong Shan in the Yangtze bend, Yunnan. Lat. 27° 20' N. Alt. 10,000 ft. Aug. 1913." G. Forrest. No. 10,839.

Corydalis fluminicola, W. W. Sm. Sp. nov.

Species alpina fere aquatica ex affinitate *C. Stracheyi*, Duthie.

Radices multae fibrosae carnosulae nec tuberosae nec incrassatae. Caulis plerumque 2–3-nati 12–20 cm. longi debiles flexuosi decumbentes sat foliosi glabri. Folia radicalia 4–6,

petiolo 5-6 cm. longo multum complanato glabro praedita; lamina ambitu oblonga 5-8 cm. longa circ. 2 cm. lata, bipinnata segmentis pinnatifidis lobulis ultimis lanceolatis acutiusculis carnosula utrinque glabra supra laete viridis infra glaucescens; folia caulina 5-6 vel plura, mediana radicalibus minora petiolo lato subvaginanti suffulta, suprema multo minora, ceteroqui omnia radicalibus subsimilia. Racemi terminales spiciformes circ. 4 cm. longi circ. 3 cm. lati floribus plurimis multo congestis; bracteae obovatae vel oblanceolatae circ. 4 mm. longae margine minutissime denticulatae glabrae; pedicelli breves bracteis breviores eisque celatae. Flores mediocres in sicco lutei, corolla apice brunnea. Sepala squamiformia ambitu suborbicularia, pro petalis in hoc genere magna, circ. 2.5 mm. diametro margine grosse irregulariterque erosa. Petalum posticum apice galeatum dorso alte cristatum cum calcare 1.7 cm. longum; calcar usque ad 7 mm. longum limbo distincte brevius multo aduncum apice obtusum; petalum anticum alte cristatum postico subaequale apicem versus circ. 3 mm. latum; petala interiora exterioribus paululo breviora cristata epidermide (brunneo-maculata in sicco) facile separabili praedita. Capsula immatura linearis.

"N.W. Yunnan. Near Atuntsu, 14,000 ft. July 1911. An aquatic alpine growing in the upper streams." Kingdon Ward. No. 59.

Corydalis Wardii, W. W. Sm. Sp. nov.

Species affinis *C. homopetalae*, Diels; foliis racemisque densifloris divergit, fructu appropinquat.

Radices multae fibrosae carnosulae vix incrassatae. Caules plerumque 2-3-nati 15-24 cm. longi flaccidi flexuosi decumbentes simplices vel parce ramosi sparse foliosi glabri. Folia radicalia 2-3, petiolo 4-5 cm. longo debili praedita; lamina ambitu ovata vel ovato-oblonga 2-3 cm. longa circ. 2 cm. lata bipinnata segmentis pinnatifidis vel lobatis lobulis ultimis anguste lanceolatis acutis $\pm$ 3 mm. longis, supra obscure viridis infra glaucescens; folia caulina 3-6 petiolo breviori suffulta ceteroqui radicalibus subsimilia, suprema multo reducta. Racemi terminales modice densiflori 4-6 cm. longi circ. 2.5 cm. lati; bracteae ambitu obovatae 4-7 mm. longae pinnatifidae vel 3-7-partitae in lobos lineares, supremae lanceolatae integrae vel subintegrae; pedicelli usque ad 5 mm. longi bracteis breviores vel subaequantes. Flores mediocres circ. 2 cm. longi flavidi (?) apice in sicco brunnei. Sepala squamiformia perlate ovata circ. 1.5 mm. longa, 2 mm. lata grosse erosa. Petalum posticum apice galeatum dorso alte cristatum crista crenulata cum calcare circ. 2 cm. longum; calcar usque ad 1.1 cm. longum limbo paulo longius gracile

modice curvatum apice obtusiusculum; petalum anticum alte cristatum postico subaequale; petala interiora paulo breviora. Capsula immatura ellipsoidea circ. 3 mm. longa; stylus 4 mm. longus.

"N.W. Yunnan. Near Atuntsu, elevation 12,000-14,000 ft. July 1911." Kingdon Ward. Nos. 63, 64.

Cotinus nana, W. W. Sm. Sp. nov.

Species affinis *C. Coggygriae*, Scop. sed habitu nano, foliis minimis coriaceis, floribus kermesinis recedit.

Fruticulus .5-1.5 m. altus ramosus; ramuli juniores teretes subglaucci vel rubescentes glabri, vetustiores cinerei. Folia alterna petiolo vix 3 mm. superante epiloso glauco suffulta; lamina usque ad 1 cm. longa, 8-9 mm. lata, suborbicularis apice basique rotundata vel obtusissima, coriacea integerrima utrinque pilosa supra viridis infra cereo-glaucula. Flores parvi in cymas compositas paniculam pro planta amplam efformantes dispositi; ramuli inflorescentiarum pernumerosi pilis glanduloso-capitatis dense induti; bracteae vix 1 mm. superantes subulatae; pedicelli 5-10 mm. longi glanduloso-pilosi. Sepala $\pm$ 1 mm. longa, triangularia acuta. Petala circ. 2 mm. longa, oblongo-elliptica ex collectore kermesina. Stamina 5 sepalis paulo longiora, antheris filamenta subaequantibus. Flores hermaproditii vel feminei desunt.

"Shrub of 1½-4 ft. Flowers crimson. Open dry situations in the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. 27° 45' N. Alt. 10,000-11,000 ft. July 1913." G. Forrest. No. 10,336.

A very beautiful little shrub, distinguished from its ally *C. Coggygria*, Scop. (*Rhus Cotinus*, Linn.) by its habit, its very small coriaceous leaves, less than half an inch in diameter, and by its crimson petals.

Cypripedium Bardolphianum, W. W. Sm. et Farrer.

Species affinis *C. micrantho*, Franch. et *C. ebracteato*, Rolfe; ab hoc floribus multo minoribus, ab illo foliis haud acuminatis, scapo haud villosa differt; ab ambobus labello mire verrucoso distinguitur.

Planta 7-8 cm. alta. Folia duo opposita circ. 6 cm. longa, circ. 3 cm. lata, late oblanceolata apice subrotundata glabra. Scapus folia vix superans gracilis uniflorus pilis confervoides sparse praeditus. Sepalum elliptico-ovatum obtusiusculum circ. 1.5 cm. longum viride; synsepalum aequilongum elliptico-ovatum apice breviter apiculatum haud bidentatum. Petala sepalum aequilonga late lanceolata $\pm$ acuta viridia. Labellum

aureum petalis paulo brevius mire verrucosum. Ovarium sparse albido-furfuraceum.

"A most curious little plant, running about with single shoots and forming wide colonies in sunny glades and mossy woodland soil of the forest zone in the enormous gorges behind Siku, at about 8000 ft., and often in company with *C. luteum*. It has a noxious aromatic scent, and the ample lip is of shining waxy gold warted and deformed with knobs and whelks and bubuckles like Bardolph. Kansu, Western China." Farrer and Purdom. No. 139.

The following note is taken from the Gardeners' Chronicle, 15th May 1915, p. 258 :—

"Among Proud Margarets' * very roots, too, sometimes wanders a strange and humble little cousin—a ramifying running *Cypripedium*, perking up a 3-inch stem here and there with a pair of leaves, and then a small green-segmented half-awake flower with a lip of brilliant waxy orange, warty and whelked and bubuckled, and with an unpleasing aromatic scent that suggests (like the whole flower) the corruptness of a *Cata-setum*."—R. F.

Cypripedium Farreri, W. W. Sm. Sp. nov.

Species affinis *C. fasciolato*, Franch. et *C. yunnanensi*, Franch.; priore multo minor, ab altero sepalis petalisque viridi-luteis ovario furfuraceo-puberulo inter alia ex descriptione differt.

Planta circ. 20 cm. alta. Folia plerumque duo, medio vel infra medium inserta, 5–7 cm. longa, 2.5–3 cm. lata, ovato-lanceolata, acuta vix acuminata, siccitate tenuiter membranacea, utrinque glabra, margine minute ciliolata; bractea 3–4 cm. longa, lanceolata vel ovato-lanceolata. Sepala et petala viridi-lutea purpureo-striata atque -maculata; sepalum superius circ. 3 cm. longum, circ. 1.2 cm. latum ovatum sensim acuminatum; synsepalum paululo longius ovato-lanceolatum apice bicuspidatum. Petala lateraliter lineari-lanceolata circ. 4 cm. longa, erga basim circ. 6 mm. lata longiuscule acuminata apicem versus torta. Labellum petalis brevius, in sicco fere globosum 2.5–3 cm. diametro, ore parvo praeditum. Ovarium circ. 1.5 cm. longum dense albido-furfuraceum.

"Rare in the deep limestone gorges above Siku, under the shadier wall of the cliffs. June. Petals, etc., greeny-yellow, lined maroon; lip of waxy cream, lined internally, pulled into a series of vandykes at the mouth and very glossy and fragrant. Kansu, West China." Farrer and Purdom. No. 155.

* *Cypripedium luteum*, Franch.

The following note is taken from the Gardeners' Chronicle, 15th May 1915, p. 258:—

"Still rarer is the last Slipper I have this year noted. That is only found in cool loose woodland soil, in steep cool banks on the shady side of deep and precipitous limestone gorges at some 8000 ft. or higher. It lives among herbage and very scanty low scrub, evidently asking its shade of cliff, not plant, and seeks its model among the far-away Slippers of America. For here we come back to the twisted moustache of *C. Calceolus*; the whole plant is similar, though much slighter in build—a dainty growth of 6-8 inches, with two or three glossy emerald-green leaves to the stem. Usually only one stem comes up from the slender crown of roots; never more than two. No stem carries more than one flower. These have their cork-screwed petals and pointed sepals of a greenish-yellow, lined regularly with maroon. The lip is the essential originality of the plant, for it is so curiously pulled in below the mouth as to present a perfect soda-water-bottle shape, and round its rim is cut into the most elegant vandykes that catch the light and shine again. For the Slipper is of the waxiest gloss, and in colour of a very bland palest cream or butter-yellow, through which dimly show the broad bands of maroon with which it is striped on the inside. Finally, the inconspicuous strange charm of the plant is justified and enhanced by its intense and penetrating perfume of Lily-of-the-Valley."—R. F.

***Cystacanthus affinis*, W. W. Sm. Sp. nov.**

Species proxima *C. yunnanensi*, W. W. Sm. a quo primo intuitu vix differre videtur; ramulis, foliis, indumento, calyce glanduloso, floris structurâ fere exacte quadrat; inflorescentia multo reducta plerumque 3-4-flora, calyce majore, corolla majore aliter colorata, stylo glabro recedit.

Suffrutex ad 2 m. altus. Inflorescentia terminalis pauciflora in speciminibus nostris 3-4-flora, paucis forsan delapsis. Calyx usque ad 2.5 cm. longus. Corolla fere 4 cm. longa extus flavida intus livide flava purpureo-striata; tubus medio circ. 2 cm. latus; lobi ad 1.5 cm. longi. Stamina 2 antheris ad 9 mm. longis. Ovarium circ. 5 mm. longum stylo 2 cm. paulo superante glabro. Fructus deest. Cetera cum specie sequenti quadrant.

"Shrub of 6 ft. Flowers exterior yellowish-grey, interior dull livid yellow, veined purple maroon. Open arid stony situations in the Fengkow Valley, Yunnan. Lat. 27° 40' N, Alt. 8000 ft. June 1914." G. Forrest. No. 12,493.

Cystacanthus yunnanensis, W. W. Sm. Sp. nov.

Species ex affinitate *C. cymosi*, T. Anders. a quo ex descriptione inflorescentia terminali ampla corollae lobis rotundatis differt.

Suffrutex erectus 1-1.5 m. altus; ramuli primo teretes dense incano- vel fulvo-villosuli tandem subtetragoni decorticantes cinerascetes. Folia 5-10 cm. longa, 3-4.5 cm. lata, ovata vel ovato-lanceolata, breviter obtusiuscule acuminata vel acuta, basi in petiolum 5-15 mm. longum attenuata, chartacea integra supra viridia dense ad nervos ceterum sparse fulvo-pilosula, infra subdense incano-villosula nervis lateralibus utrinque circiter 6 supra subobscuris infra paulo distinctioribus. Inflorescentia terminalis ampla ad 15 cm. longa anguste thyrsoido-paniculata; bracteae 5-10 mm. longae lineari-lanceolatae dense glanduloso-villosae; pedicelli 1-2 mm. longi dense glanduloso-villosi. Calyx 1.5 cm. longus vel paulo ultro 5-partitus extus densissime glanduloso-villosus intus sparse villosulus; segmenta parum inaequalia linearia circ. 2 mm. lata acuta. Corolla 3-3.5 cm. longa pallide coerulea, basi albida, extus praesertim ad lineas longitudinaliter currentes pilis glanduloso-capitatis crebre pilosa; tubus e basi brevissima subito ventricosus incurvus medio circ. 1.5 cm. latus; lobi circ. 1 cm. longi rotundati, anteriores paulo longiores. Stamina 2 filamentis circ. 1.5 cm. longis basi pilosulis, antheris oblongis circ. 6 mm. longis. Ovarium circ. 4 mm. longum villosulum; stylus vix 2 cm. longus minute bidentatus per longitudinem longiuscule sparse villosus; ovula in quoque loculo ± 6 . Fructus circ. 3.5 cm. longus circ. 5 mm. latus, subdense glanduloso-villosus; retinacula circ. 3 mm. longa; semina disciformia 2-3 mm. diametro minutissime (sub lente valido) puberula.

"Shrub of 2-4 ft. Flowers pale blue, white at base. Shady situations in thickets in the Tengchwan Valley, Yunnan. Lat. 26° 5' N. Alt. 7000 ft. May 1913." G. Forrest. No. 10,007.

Diospyros dumetorum, W. W. Sm. Sp. nov.

Species parvifolia haec affinis *D. Balfourianae*, Diels, foliis formā texturā indumento diversis dignoscitur.

Frutex ± 10 m. altus ramosus. Ramuli graciles primo dense fulvo-tomentosi. Folia petiolo ± 2 mm. longo dense fulvo-tomentoso suffulta; lamina vulgo 2-3.5 cm. longa, 1-1.3 cm. lata, lanceolata vel ovato-lanceolata vel oblanceolata, apice acuta apiculata (raro obtusa vel rotundata), basi rotundata vel late cuneata, texturā subcoriacea, supra pallido-viridis primo $\pm$ pilosula, tandem glabrescens, infra ad costam nervosque dense fulvo-pilosa, caetera sparsius; nervi supra obscuri infra

paululo distinctiores. Flores masculini in axillis superioribus 1-4-nati, numerosi approximati; pedicelli 1-4 mm. longi fulvo-tomentosi. Calyx campanulatus $\pm$ 3 mm. longus extus dense appresse pilosus ad medium vel fere ad imum in lobos lanceolatos acutos vel acuminatos divisus. Corolla olivacea 5-6 mm. longa extus glabra lineâ albo-pilosa petalo cuique medianâ excepta; lobi 4 circ. 1.5 mm. longi ovati. Stamina 16. Flores feminei fructusque desunt.

"Shrub of 30 ft. Flowers olive-green, fragrant. In open thickets on the Chungtien plateau, Yunnan. Lat. $27^{\circ} 30'$ N. Alt. 8000 ft. April 1914." G. Forrest. No. 12,399.

A small-leaved species; unfortunately female flowers and fruit are not available, but it is so distinct from the other Chinese species that I have ventured to describe it. The elevation is noteworthy.

Dracocephalum Purdomii, W. W. Sm. Sp. nov.

Species affinis *D. grandifloro*, Linn. cui quoad habitum foliaque appropinquat, floribus minoribus calyce nisi dentibus ciliolatis glabro, corolla extus dense longiuscule villosa recedit.

Planta circ. 15 cm. alta. Caules basi adscendentes deinde erecti $\pm$ sparse albo-pilosi. Folia basalia $\pm$ 6 petiolo 3-4 cm. longo sparse piloso praedita; lamina circ. 3 cm. longa, circ. 1.5 cm. lata ovato-oblonga apice $\pm$ rotundata basi truncata vel cordata, crenata chartacea utrinque sparse setosula; caulina duo paria, minora breviter vel vix petiolata ceterum basalibus subsimilia. Inflorescentia terminalis densiflora subglobosa circ. 3 cm. diametro. Bractae exteriores suborbiculares vel obovatae margine superiore irregulariter serratae serraturis apiculatis longiuscule albo-ciliatae ceterum glabrae, interiores oblanceolatae vel anguste oblongae supra $\pm$ 5-dentatae denticulis longissime aristatis vix spinosis, margine ciliatae. Calyx circ. 1.5 cm. longus; tubus rectus circ. 9 mm. longus epilosus; segmentum superius late ellipticum 3 mm. latum obtusum apiculo subspinescente praeditum margine ciliatum; 4 inferiora triangulari-lanceolata subspinescentia sparse ciliata vel subglabra. Corolla circ. 2.5 cm. longa saturate coerulea extus dense albo-villosa; tubus e basi angusta ad 7 mm. dilatatus, labium superius bilobum, inferius maculatum lobo mediano producto. Stamina paululo exserta filamentis albo-pilosis.

"Stony waysides in the alpine valleys of the Min S'an region, Kansu, West China. July 20, 1914." Farrer and Purdom. No. 180.

Closely related to *D. grandiflorum*, Linn. but with smaller flowers, an almost glabrous calyx, and a very woolly corolla.

Fraxinus trifoliolata, W. W. Sm. Sp. nov.

Species sectionis *Orni* distinctissima, foliis plerumque trifoliolatis infra densissime incano-hirsutulis conspicua.

Frutex 3-8 m. altus erectus; rami robusti subteretes vel $\pm$ complanati lenticellis parvis albidis notati glabri. Folia trifoliolata vel nonnunquam quinquefoliolata longe petiolata; petioli 5-6 cm. longi validi canaliculati, basi paulo incrassati glabri rubridi, supra $\pm$ dense incano-hirsutuli vel glabrescentes; petioluli laterales $\pm$ 1 cm. longi, medianus circ. 2 cm. longus, omnes dense incano-hirsutuli vel glabrescentes; foliola (medianum plerumque paulo majus) 8-12 cm. longa, 3.5-5 cm. lata, ovata acumine latiusculo acuminata, basi $\pm$ late cuneata, textura firme chartacea vel subcoriacea, per marginem totam regulariter serrato-denticulata denticulis induratis, supra atroviridia glabra infra densissime incano-hirsutula; nervi utrinque 12-16 supra impressi infra paulo eminentes dense incano-hirsutuli valde conspicui nervis secundariis bene reticulati. Inflorescentia terminalis ampla glabra fragrans. Calyx minutus, in fructu persistens, circ. 1 mm. longus campanulatus ad tertiam partem divisus lobis triangularibus acutiusculis. Petala 6-7 mm. longa linearia alba. Stamina petala aequantia. Fructus lineari-spathulatus circ. 3 cm. longus, apice rotundatus circ. 5 mm. latus, medio 3 mm., basi ima angustissimus.

"Shrub of 8-12 ft. In fruit. In thickets on the Yung-pi Mountains, Yunnan, West China. Lat. 26° 45' N. Alt. 11,000 ft. Sept. 1913." G. Forrest. No. 11,054.

"Shrub of 10-25 ft. Flowers fragrant, creamy white. Anthers brown. Open dry situations amongst rocks and on ledges of cliffs in the Yangtze Valley at Fengkow, Yunnan. Lat. 27° 40' N. Alt. 8000-9000 ft. June 1914." G. Forrest. No. 12,501.

A very distinct species of Ash. The trifoliolate leaves with the underside densely and finely hirsute are sufficient to mark it off from its allies—the nearest of which are *F. malacophylla*, Hemsl. and *F. ferruginea*, Lingelsh., both Yunnan species. The flowering specimens under No. 12,501 show more irregularity in the number of leaflets and have also more glabrous petioles.

Gaultheria dumicola, W. W. Sm. Sp. nov.

Species foliis magnis basi late rotundatis, inflorescentiis multo contractis vix ad sextam partem folii axillantibus pertinentibus, calycis lobis subulato-acuminatis inter species chinenses indicasque (quarum nulli arcte propinqua) conspicua.

Frutex 1-3 m. altus ramulis glabris mox cinerascentibus. Folia petiolo 3-5 mm. longo glabro suffulta; lamina 8-17 cm.

longa, 4-9 cm. lata, $\pm$ late ovata, apice modice acuminata, calloso-apiculata, basi rotundata rarius late cuneata, dimidio superiore levissime serrulata, maturitate coriacea utrinque glabra nervis utraque facie conspicuis bene reticulatis; nervi laterales primarii tantum duo, prope basim orientes ad apicem arcuatim ascendentes. Inflorescentiae axillares contracto-racemosae vel corymbosae vel pseudo-umbellatae 3-4-multi-florae $\pm$ 1 cm. longae, in fructu ad 2 cm. auctae glabrae vel minute pilosulae; bracteae bracteolaeque 3-4 mm. longae lanceolatae vel subulato-lanceolatae ad basim inflorescentiae plerumque $\pm$ confertae glabrae vel glanduloso-ciliatae; bracteolae basim pedicelli versus affixae; pedicelli 3-5 mm. longi, fere ad 1 cm. aucti. Calyx purpureus circ. 3 mm. longus lobis triangulari-ovatis acutis glabris. Corolla calyce paulo longior, urceolata, ex collectore rubrido-viridis, glabra intus cerosa lobis $\pm$ 1 mm. longis triangularibus acutis. Stamina circ. 2 mm. longa filamentis minute pilosulis antheris apice biaristatis. Fructus maturus 5-6 mm. diametro loculicide apice 5-valvis seminibus numerosis angulatis castaneis.

"Shrub of 3-5 ft. Flowers ruddy green, anthers orange. Amongst scrub and rock on the hills to the west of Tengyueh, Yunnan. Lat. 25° N. Alt. 6000 ft. July 1912." G. Forrest. No. 8573.

"Shrub of 3-5 ft. In fruit. Open situations amongst scrub in the hills to the north of Tengyueh. Lat. 25° 15' N. Alt. 7000 ft. May 1912." G. Forrest. No. 7730.

"Shrub of 6-10 ft. In fruit. Dry open situations in the Machang-Kai Valley, north of Tengyueh. Lat. 25° 20' N. Alt. 6000-7000 ft. Feb. 1913." G. Forrest. No. 9568.

This is a very distinct plant not closely related to any of the Indian or Chinese species of *Gaultheria*.

Gmelina montana, W. W. Sm. Sp. nov.

Species haec inter congeneres chinenses calycis lobis magnis, corollae tubo flavo, limbo bilabiato coeruleo-purpureo facile dignoscitur.

Frutex 1-3 m. altus; ramuli graciles flexuosi primo minute pubescentes glandulosi. Folia (superiora tantum visa) petiolo 5-10 mm. longo gracili minute glanduloso suffulta; lamina 2.5-3.5 cm. longa, 1.5-2.5 cm. lata, ovata vel subrhomboidea, apice acuta, basi plus minusve late cuneata, siccitate tenuiter chartacea, integra, supra viridis glabra, infra glauca dense minute glandulosa ad costam sparse pilosula nervis $\pm$ conspicuis. Inflorescentia anguste cymoso-paniculata; panicula 10-20 cm. longa racemiformis e cymulis remotis 1-7-floris composita; bracteae lineares vel lanceolatae ad 1 cm. longae foliaceae;

pedunculi $\pm$ 1 cm. longi, pilosuli atque minute glandulosi, ut pedicelli breves. Calyx 7-8 mm. longus, campanulatus parvisissime pilosulus minute glandulosus; lobi 5 ovati circ. 3 mm. longi. Corolla 3.5-4 cm. longa extus sparse puberula; tubus flavus fere 2 cm. longus supra ventricose ampliatus; lobi 5 purpureo-coerulei rotundati, lobo antico caeteris multo majore fere 2 cm. longo. Stamina inclusa filamentis sparse minute capitato-glandulosi. Stylus glaber. Fructus deest.

"Shrub of 4-9 ft. Flowers—limb purplish-blue, tube yellow. Open situations amongst rocks on the western flank of the Tali Range, Yunnan. Lat. $25^{\circ} 40'$ N. Alt. 10,000 ft. Aug. 1913." G. Forrest. No. 11,662.

A slender floriferous species, growing at an altitude remarkable for the genus.

Indigofera calcicola, Craib. Sp. nov.

Species nana lignosa ob folia brevina pilis argenteis arcte adpressis oblecta facile distinguenda.

Frutex nana, 0.3-1.2 m. altus (ex Forrest); ramuli primo pilis albis interdum etiam brunneis medifixis dense tecti, mox glabri, brunneo- vel fusco-brunneo-corticati, laterales breves, cicatricibus prominentibus satis approximatis conspicue instructi; rami glabri, lenticellati, cortice mox transverse dissiliente tecti. Folia 5-9-foliolata, 8-13 mm. longa, petiolo circiter 3 mm. longo suffulta, pilis argenteis medifixis adpressis omnino tecta, cum racemis ad apices ramulorum terminalium et lateralium brevium gesta; stipulae minutae; foliola elliptica, rotundata vel fere obcordata, apice rotundata vel parum retusa mucronata, basi late cuneata rotundatave, circa 4 mm. longa et 2.5 mm. lata, satis crassa, nervis lateralibus obscuris, petiolulo plerumque circiter 0.5 mm. longo suffulta; stipellae minutae. Racemi in ramulo quoque 1-3, foliis breviores vel ea paulo superantes; bractae parvae rigidae fugaces; pedicelli 1 mm. longi, interdum paulo breviores. Calyx vix 2 mm. longus, lobis inter se parum inaequalibus ovato-oblongis acutiusculis obtusisve 0.75 mm. longis ciliatis saepius glanduloso-fimbriatis. Vexillum elliptico-oblongum vel ovato-oblongum, sessile, retusiusculum, 7 mm. longum, 5.25-5.5 mm. latum; alae oblongae, 7.5 mm. longae, 1.5 mm. latae; carina 7 mm. longa, 2.5 mm. lata. Legumen vix maturum, teres, dense crispatis hirsutulum.

Yunnan:—Mountains in the N.E. of the Yangtze bend. Shrub of 3-4 ft. Dry stony situations, 10,000 ft. G. Forrest. No. 10,350.

Yunnan:—Mountains in the N.E. of the Yangtze bend. Dwarf shrub of 1-2 ft. Flowers dull rose. Open situations on limestone rocks, 11,000 ft. G. Forrest. No. 10,505.

Indigofera dumetorum, Craib. Sp. nov.

Inter species grandifloras ab affiniorebus *I. Duclouxii*, Craib et *I. Pampaniniana*, Craib, foliis 5-9-foliolatis distinguenda.

Frutex 1.4-4.2-metralis (ex Forrest); ramuli juventute pilis ferrugineis vel griseis divergentibus densius tecti, basi squamis paucis fusco-brunneis instructi; rami plus minusve glabrescentes, saepe flexuosi, teretes parumve angulati, lenticellati, cortice rubro-brunneo vel cinereo obtecti. Folia 5-9-foliolata, ad 13 cm. longa, petiolo communi saepius 1-1.5 cm. longo suffulta, rhachi petiolo communi et petiolulis indumento ut ramulis tectis; stipulae cito deciduae, 5-6 mm. longae, basi 1-2 mm. latae; foliola lateralia oblongo-elliptica, elliptica vel rarius ovata, basi rotundata, late cuneata vel interdum subtruncata, ad 5 mm. longa et 3 mm. lata, petiolulis circa 2 mm. longis suffulta, terminalia a lateralibus usque ad 2 cm. distantia, saepius obovata vel late elliptica, rarius orbicularia vel ovata, usque ad 5 cm. longa et fere 5 cm. lata, omnia chartacea, subtus pallidiora, pagina superiore demum parcius inferiore densius pilis albis plus minusve crispatis ad costam marginesque interdum ferrugineis tecta, nervis lateralibus utrinsecus 8-10 supra subconspicuis subtus, saltem in foliis maturis, prominentibus saepissime rectis vel subrectis; stipellae obsoletae. Racemi in ramulo quoque saepissime 3, ex axillis inferioribus orti, circa 10 cm. longi, pedunculo communi 1.5-2 cm. longo suffulti, rhachi, pedunculo pedicellisque indumento ei ramulorum simili tectis; alabastra omnino pubescentia, juventute haud dense aggregata, reflexa, floribus expansis plus minusve patulis, pedicellis iterum post anthesin decurvatis; bractae alabastra haud aequantes, cito deciduae; pedicelli 3 mm. longi. Calyx 4.5 mm. longus, lobo longissimo tubo subaequilongo. Vexillum oblongum, 15 mm. longum, 7 mm. latum, emarginatum, apiculatum, subsessile; alae 12 mm. longae, 2.5 mm. latae; carina vexillo subaequilonga, unguiculata. Legumina 6.5 cm. longa, lateribus rotundata, pallide brunnea vel cinereo-brunnea, breviter crispatis albobubescentia.

Yunnan:—Mountains in the N.E. of the Yangtze bend. Shrub of 8-10 ft. Flowers pale yellow. Open situations in side valleys. 8000-9000 ft. G. Forrest. No. 10,734.

Yunnan:—Fengkow Valley. Shrub of 8-12 ft. Flowers pale lemon-yellow, alae rose-purple. Open dry situations among scrub. 7000 ft. G. Forrest. No. 12,494.

Yunnan:—On the Tong Shan in the Yangtze bend. Shrub of 4-5 ft. Open dry situations amongst scrub. 10,000 ft. G. Forrest. No. 11,018.

Linaria yunnanensis, W. W. Sm. Sp. nov.

Species affinis *L. thibeticae*, Franch. a qua foliis latis, inflorescentiis densis, calcare minimo inter alia signa recedit.

Planta annua 45-75 cm. alta erecta. Caulis sat robustus subteres glaucus infra fere nudus supra bene foliatus, glaber vel subglaber regione inflorescentiae villosulae excepta. Folia sessilia alterna late lanceolata vel late oblanceolata vel subelliptica, vulgo 4-6 cm. longa, 1.5-3.5 cm. lata, basi $\pm$ late cuneata apice breviter acutata, integra carnosula glabra supra laete viridia infra glauca. Inflorescentia simplex vel ramosa; rami (usque 7) elongati 10-20 cm. longi erecto-fastigiati apice tantum floriferi, pilis confervoideis fulvis $\pm$ dense induti. Flores in racemos densos $\pm$ 20-floros 4-5 cm. longos (in fructu ad 10 cm. auctos) dispositi; bracteae lanceolatae vel ovatae $\pm$ 5 mm. longae confervoideo-pilosae; pedicelli $\pm$ 2 mm. longi floribus breviores pilosae. Calycis 7-8 mm. longi lobi lineari-oblongi praesertim ad margines dense confervoideo-pilosi. Corolla lutea $\pm$ 12 mm. longa; calcar 4 mm. longum aduncum gracile; tubus circ. 6 mm. longus, basi $\pm$ 5 mm. latus; labium anticum ad palatum villosulum. Capsula globosa seminibus discoideis $\pm$ 100 nigridis $\pm$ 1.5 mm. diametro ala lata cinctis disco muriculato praeditis.

"Plant of 18-30 inches. Flowers yellow. In fruit. Open stony pasture on the Chungtien plateau, Yunnan. Lat. 27° 55' N. Alt. 9000-10,000 ft. Sept. 1913." G. Forrest. No. 11,001.

Also cultivated (from seeds collected by George Forrest) and flowering in August, 1915.

Lonicera Farreri, W. W. Sm. Sp. nov.

Species ex affinitate *L. serpyllifoliae*, Rehder et *L. aemulantis*, Rehder a quibus foliis glaberrimis inter alia differt; haud procul a *L. obovata*, Royle, specie himalaica.

Fruticulus gracilis circiter metralis ramulis junioribus rubridis glabris vetustioribus griseis. Folia decidua floribus subcoetanea atque una cum eis prima aetate apicem ramulorum versus approximata, usque ad 1 cm. longa, 2-3 mm. lata, oblanceolata vel anguste obovata apice rotundata vel obtusissima, basi in petiolum vix 1 mm. superantem cuneata, textura tenuia supra laete viridia glaberrima infra pallidiora in parte inferiore ad costam squamis lunatis albidis seriatim praedita cetera glabra; nervi bene reticulati pellucidi. Flores bini pedunculis gracilibus erectis circ. 4 mm. longis glabris suffulti; bracteae lineari-lanceolatae vel subulatae glabrae circ. 4 mm. longae ovariis longiores; bracteolae minutae circ. 0.5 mm. longae ovatae ad medium vel ultro connatae glabrae. Ovaria fere ex toto connata

vix 2 mm. longa, glabra ut margo calycis brevis denticulata. Corolla gracilis tubulosa 12-13 mm. longa extus glabra intus basi sparse albo-villosa roseo-purpurea; tubus $\pm$ 1 cm. longus gracillimus basi gibbosus; lobi suborbiculares erecti subaequales. Stamina medio tubo inserta, corollae lobos paululo superantia filamentis glabris. Stylus exsertus, stamina paulo superans in parte inferiore sparse albo-villosus. Fructus desunt.

"A little frail bush of 3 feet or so, with *flattened* outspread sprays from which the rosy bugles hang—a plant of unique charm. There are larger and coarse approximations to this, in the lower Alpine coppice of the Satanee Range, from 7000-8000 ft.; but of this form I have only seen two certain plants—one just above Chago by the pathside, and the other on a cliff above a torrent in a deep ghyll behind Ga-hoba. 6th May, 10th May 1914. Kansu, West China." Farrer and Purdom. No. 46.

This new species will occupy in Rehder's Synopsis of the Genus *Lonicera* (Miss. Bot. Gard. Rep., 1903, p. 53) a place next to *L. aemulans*, Rehd.; or if the very small bractlets are given importance, it must be placed next to *L. obovata*, Royle. In habit it is not unlike *L. microphylla*, Willd., from which its long slender corolla with short lobes is a sufficient mark of distinction.

***Microstylis orbicularis*, W. W. Sm. et J. F. Jeff. Sp. nov.**

Species ex affinitate *M. acutangulae*, Hook. f.; habitu floribusque valde similis; floribus purpureis minoribus labelli auriculis diversis inter alia signa minora divergit; ab omnibus speciebus chinensibus adhuc descriptis satis remota.

Planta terrestris erecta 30-50 cm. alta, rhizomate brevi, bulbo subterraneo ovoideo vaginis membranaceis circumdato. Folia 2-3, erecto-patentia, petiolo scapum basi alte vaginante, usque ad 15 cm. longa ad 4 cm. lata, late lanceolata acuta siccando tenuiter membranacea utrinque glabra. Scapus erectus strictus folia multo superans glaber basi longe nudus, medio atque superne bracteis lineari-lanceolatis 6-8 mm. longis deflexis crebre ornatus; racemus subaxe multiflorus pedicellis cum ovariis gracilibus $\pm$ 5 mm. longis. Flores siccitate atro-purpurei illis *M. acutangulae* forma subsimiles; sepala libera patentia, lateralia $\pm$ 5 mm. longa elliptica obtusa, posticum angustius $\pm$ 6 mm. longum 3-nerviū. Petala sepalum posticum vix aequantia linearia; labellum sessile latissimum ambitu fere orbiculare $\pm$ 8 mm. diametro lamina denticulis $\pm$ 20 alte pectinata auriculis laminam $\pm$ aequantibus columnam amplexantibus apice subrotundatis basi lamina haud discretis. Columna brevis; ovarium anguste clavatum glabrum.

In the neighbourhood of Tengyueh, Yunnan, 1912. Howell. No. 334.

Microstylis acutangula, Hook. f., from the Malay Peninsula, appears to be the nearest akin to the above species (see Hook. Ic. Plant. tab. 1835); the structure of the flower is very similar, though there are differences in the colour and in the labellum. The specific name refers to the orbicular outline of the labellum and its auricles.

Onosma album, W. W. Sm. et J. F. Jeff. Sp. nov.

Species affinis *O. exserto*, Hemsl.; habitu minore, foliis linearibus, calyce aliter setoso, corolla alba inter alia signa recedit.

Planta 60 cm. alta erecta. Caulis ut videtur solitarius e radice crassa ortus, infra inflorescentiam simplex sat foliosus setis longiusculis patentibus basi tuberculatis atque setulis albidis densissime vestitus. Folia basalia, ut caulina, linearia, 8-10 cm. longa, 7-8 mm. lata, acuta, basi paulo attenuata, sessilia, crassiuscula, supra viridia dense setosa atque setosula infra incana densissime setosula setis longiusculis paucis intermixtis; costa supra immersa infra eminens setosa. Inflorescentia terminalis ad 30 cm. longa e cymis scorpioideis paucifloris racemose dispositis composita; bracteae primariae 2-4 cm. longae ovato-lanceolatae ceterum foliis similes, supra sensim magnitudine decrescentes; bracteae secundariae multo minores; pedunculi graciles patentes sub anthesin $\pm$ 6 cm. longi, circ. 5-flori, cum pedicellis 1-2 cm. longis dense setosi atque setosuli. Calyx circ. 1.3 cm. longus ad basim in lobos quinque lineares partitus dense strigoso-setosus. Corolla calyce paululo longior, circ. 1.4 cm. longa, tubulosa supra paulo ampliata, ore $\pm$ 5 mm. lata, extus dense setosulo-incana, alba, lobis circ. 2 mm. longis triangularibus erectis vel apice breviter revolutis. Stamina ad $\pm$ 5 mm. exserta filamentis glabris, antheris cohaerentibus $\pm$ 1 cm. longis. Stylus circ. 2 cm. longus filiformis erga basim sparse pilosulus. Fructus deest.

"Plant of 2 ft. Flowers pure white. Open, dry, stony pasture on the Yung-pi Mountains, Yunnan. Lat. 26° 45' N. Alt. 10,000 ft. Sept. 1913." G. Forrest. No. 11,188.

Onosma cingulatum, W. W. Sm. et J. F. Jeff. Sp. nov.

Species affinis *O. Forrestii*, W. W. Sm. speciei haud bene cognitae; foliorum forma atque indumento, corolla intus glabra annulo capillorum alborum basilari excepto inter alia divergit.

Planta usque ad 1.5 m. alta erecta. Caulis robustus setis

setulisque fulvis vel albidis dense vestitus. Folia basalia et inferiora non visa; caulina superiora 6-8 cm. longa, 1.5-2 cm. lata, lanceolata vel oblongo-lanceolata, apice $\pm$ acuta, basi attenuata vix petiolata, siccitate crassiuscula, supra viridia setis tuberculatis dense vestita, infra praesertim ad costam setis setulisque abunde praedita. Inflorescentia ramosa, cymis racemiformibus in paniculam terminalem 30-60 cm. longam dispositis; rami $\pm$ patentes 10-15 cm. longi dense fulvo-setosi atque setulosi, ut pedicelli $\pm$ 1 cm. longi; bracteae inferiores foliis similes sed minores, superne sensim decrescentes, supremas breves lineares. Calyx $\pm$ 1 cm. longus ad basim in lobos lineares partitus dense fulvo-setosus atque setulosus. Corolla $\pm$ 1 cm. longa calycem aequans tubulosa supra staminum insertionem sensim dilatata ad fauces in sicco $\pm$ 6 mm. lata, extus dense setuloso-incana, intus glabra annulo capillorum alborum sub insertionem staminum posito excepto, rosea, lobis brevissimis vix 1 mm. longis, 3 mm. latis obtusis saepe apiculatis. Stamina inclusa filamentis circ. 4 mm. longis glabris, antheris basi levissime cohaerentibus $\pm$ 4 mm. longis. Stylus calycem $\pm$ aequans glaber. Nuculae ovoideae laeves glabrae $\pm$ 2 mm. longae.

Yunnan:—In pastures on plateaux near Tcha-ho. Alt. 2800 m. Flowers rose. E. E. Maire. Nos. 296 (anno 1914), 892 (anno 1906) in Herb. Edin.

The annulus of white hairs near the base of the corolla-tube brings this species near to *O. Forrestii*, W. W. Sm., and distinguishes it easily from the other Chinese species.

Onosma Hookeri, Clarke, var. ***Wardii***, W. W. Sm. Var. nov.

A planta typica sikkimensi habitu elatiore caule flexuoso folioso, foliis latioribus, inflorescentia laxiore, floribus paulo majoribus, calyce 1.5 cm. longo, corolla $\pm$ 2 cm. longa, aliquantulum recedit. In speciminibus cultis corolla purpureo-coerulea, ore rubra.

N.W. Yunnan:—At Ka-gwr-pw near the Tibetan frontier, at an elevation of 13,000 ft. July 1913. F. K. Ward. No. 902. Grown also from seed by Bees, Ltd.

Onosma oblongifolium, W. W. Sm. et J. F. Jeff. Sp. nov.

Inter species sinenses himalaicasque haec foliis magnis oblongis latissimis distinguitur.

Planta 60-75 cm. alta erecta. Caulis ut videtur solitarius robustus e radice crassa ortus infra inflorescentiam simplex sat foliosus setis tuberculatis setulisque hispidus. Folia basalia delapsa; caulina 8-12 cm. longa, 3-4 cm. lata, oblonga apice

obtusa basi rotundata vix attenuata, sessilia insertione lata, crassiuscula, supra viridia setis tuberculatis setulisque scabrida infra pallidiora dense setosula; costa infra eminens setosula setis longiusculis paucis intermixtis; folia suprema $\pm$ ovato-oblonga sensim decrescentia. Inflorescentia ramosa cymis racemiformibus in paniculam terminalem usque ad 25 cm. longam dispositis; rami subfastigiati 10-20 cm. longi dense setuloso-hispidi; pedicelli $\pm$ 1 cm. longi setulosi; bracteae inferiores foliis similes sed ovatae minores, superne sensim decrescentes, supremae breves lineares. Calyx $\pm$ 1 cm. longus ad basim in lobos lineares partitus patenti-setosus atque dense setuloso-hispidus. Corolla circ. 1-5 cm. longa tubulosa supra staminum insertionem sensim dilatata ad fauces 7-8 mm. lata, extus dense setuloso-incana, intus parce setulosa, coerulesco-rosea, lobis brevissimis vix 1 mm. longis, 3 mm. latis obtusis. Stamina inclusa filamentis circ. 7 mm. longis pilosulis, antheris cohaerentibus $\pm$ 7 mm. longis. Stylus circ. 1.8 cm. longus sparse pilosulus. Nuculae ovoideae apiculatae tuberculatae sub lente lepidotae.

"Plant of 2-2½ ft. Flowers bluish-rose. Open stony pasture in the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. 27° 45' N. Alt. 10,000 ft. Sept. 1913." G. Forrest. No. 11,198.

The broad oblong leaves distinguish this species well. The tuberculate finely lepidote seeds are also noteworthy.

Oxyspora Howellii, J. F. Jeff. et W. W. Sm. Sp. nov.

Species ex affinitate *Oxysporae vagantis*, Wall.; primo intuitu ramulis petiolis pedunculis dense ferrugineo-hirsutis, inflorescentia angustiore recedit; ab *Oxyspora serrulata*, Diels, inflorescentia ferrugineo-hirsuta vel -furfuracea differt.

Frutex ramosus altitudinis non notae; rami cortice brunneo praediti; novelli dense ferrugineo-hirsuti atque ferrugineo-furfuracei. Folia petiolo 2-3 cm. longo dense ferrugineo-hirsuto praedita; lamina 8-12 cm. longa, 4-6 cm. lata, late lanceolata vel elliptico-lanceolata, basi late cuneata, apice longiuscule acuminata, membranacea, serraturis setosis serratula, supra laete viridis glabra vel subglabra, subtus pallidior in costa venisque densiuscule ferrugineo-hirsuta atque furfuracea, cetera sparsius furfuracea; nervi primarii 3 secundariis transversis parallelis conjuncti; secundarii marginales sursum arcuati in nervos intramarginales duos primariis multo indistinctiores conjuncti. Panicula terminalis 30-50-flora, 10 cm. longa vel ultra; pedunculi infra ferrugineo-hirsuti, supra cum petiolis 3-5 mm. longis furfuracei; bracteae subulatae vix 1 mm. longae. Receptaculum circ. 4 mm. longum, ore circ. 3 mm. latum, clavato-campanulatum, sparsius furfuraceum; lobi brevissimi

triangulares. Petala circ. 4 mm. longa, late ovata, in sicco purpurea. Stamina 8, subsimilia flava, longiora 8-9 mm. longa. Stylus filiformis stamina subaequans. Fructus deest.

In the neighbourhood of Tengyueh, Yunnan, at an altitude unknown. Howell. No. 125 in Herb. Edin.

The nearest ally is the Khasian *Oxyspora vagans*, Wall. We do not find that the stamens are differentiated into four purple and four yellow, but possibly the flowers are not developed sufficiently far for the purple colour to become manifest.

Passiflora (§ **Decaloba-Polyanthea**) **jugorum**, W. W. Sm.
Sp. nov.

Inter species chinenses ad *P. Henryi*, Hemsl. spectat quae ramis glabris floribus fasciculatis minoribus corona fauciali duplici differt; haud procul a *P. Leschenaultii*, DC. quae floribus solitariis inter alia divergit; a *P. cupiformi*, Mast. floribus majoribus corona fauciali simplici dignoscitur; *P. perpera*, Mast. valde affinis ramis glabris discriminatur.

Frutex scandens ad 2-3 m. pertinens ramis floriferis gracilibus sulcatis dense albido-patenti-pilosis. Folia vulgo 4-6.6 cm. longa 4-6.6 cm. lata, forma eis *P. Leschenaultii*, DC. subsimilia, truncata, margine inferiore rotundata, margine superiore trilobata lobis apiculatis lateralibus triangularibus acutis paululo patentibus intermedio multo minore, tenuiter papyracea supra glabra nisi ad nervos marginesque pilosulos, infra subdense molliter albido-pilosa; nervi basi orientes 5, exteriores nonnunquam minus distincti; petioli ad 2.5 cm. longi dense patenti-pilosi sub medio glandulis duabus sessilibus ornati. Cirrhi simplices graciles. Flores circ. 3 cm. diametro cymosi; cymae saepius in foliorum axillis binae vulgo 3-7-florae petiolos vix superantes ramulis pilosis; pedunculi articulati 1-1.3 cm. longi glabri. Sepala et petala subsimilia circ. 1.5 cm. longa ovato-oblonga obtusa. Corona faucialis simplex; filamenta filiformia petalis triente breviora; corona interior erecta plicata. Ovarium globosum glabrum gynophoro circ. 6 mm. longo suffultum. Fructus deest.

"Scandent shrubby plant of 6-9 ft. Flowers pale creamy-white and purple. On scrub in open situations on the Shweli-Salween divide, Yunnan. Lat. 25° N. Alt. 8000 ft. April 1914." G. Forrest. No. 12,330.

A much more pilose plant than its nearest Chinese allies. As in the allied *P. Henryi*, the leaves show much variation, truncate and non-truncate leaves appearing on the same shoot. Such a variety is exemplified in the sheet quoted below.

"Scandent shrubby plant of 6-9 ft. Flowers creamy-yellow, with purplish centre. On scrub and rock in lava-bed west of

Tengyueh, Yunnan. Lat. 25° N. Alt. 5000 ft. May 1913." G. Forrest. No. 11,941.

Pieris bracteata, W. W. Sm. Sp. nov.

Species affinis *P. japonicae*, D. Don a qua habitu, racemis longebracteatis, calyce lobato nec partito, lobis omnino diversis, ovario semi-supero inter alia signa recognoscitur.

Frutex 1-2 m. altus erectus ramulis robustis strictis glabris. Folia superiora tantum visa circ. 4.5 cm. longa, 1-1.5 cm. lata, subsessilia, lanceolata, apice acuminata, basi cuneata, coriacea margine serrulata utrinque glabra, supra atroviridia, infra olivacea, nervis supra obscuris infra paulo conspicuis. Inflorescentiae in axillis foliorum terminalium orientes $\pm$ approximatae racemosae; racemi 3-5, erecti stricti $\pm$ 15 cm. longi laxiflori glabri; bracteae conspicuissimae 1-2 cm. longae, 3-5 mm. latae, lanceolatae acuminatae glanduloso-serrulatae olivaceae subpersistentes; bracteolae lineares; pedicelli 3-4 mm. longi. Flores $\pm$ nutantes albi roseo-tincti fragrant. Calyx circ. 2.5 mm. longus glaber; pars inferior semiglobosa ovario adhaerens; lobi $\pm$ 1 mm. longi ovati apice obtusi vel acuti saepe-subfimbriati. Corollae $\pm$ 1 cm. longae tubus cylindricus 3-4 mm. latus glaber vel subglaber; lobi 5 triangulares 1.5-2 mm. longi. Stamina circ. 6 mm. longa filamentis ad 3 mm. longis longiuscule albo-pilosis apice biaristatis, antheris tubulis brevioribus. Ovarium semisuperum glabrum; stylus circ. 9 mm. longus. Fructus deest.

"Shrub of 3-5 ft. Flowers white, tinged deep-rose. Fragrant. Open situations amongst scrub in the hills to the east of Tengyueh, Yunnan. Lat. 25° N. Alt. 6000-7000 ft. Nov. 1912." G. Forrest. No. 9255.

This is a peculiar species of *Pieris*, akin in its foliage to *P. japonica*, D. Don, in its flower to *P. ovalifolia*, D. Don. The semi-superior ovary and the calyx-lobes, along with the very conspicuous bracts, serve to distinguish it readily from its congeners.

Pieris compta, W. W. Sm. et J. F. Jeff. Sp. nov.

Species yunnanensis foliis parvis ellipticis integris obtusis haud acuminatis subtus pulchre reticulatis, corolla extus albo-pilosula bene conspicua.

Frutex sempervirens ramis teretibus gracilibus primo minute pubescentibus cito glabrescentibus. Folia 1.5-2.5 cm. longa 5-15 mm. lata latiuscule vel anguste elliptica apice rotundata vel obtusa minute indurato-apiculata basi rotundata vel subrotundata, integra paululo revoluta corneo-marginata valde

coriacea supra olivacea glabra costa inconspicua nervis obscuris infra pallidiora glabra vel subglabra (basim ipsam versus nonnunquam pilosa) glandulis minutis nigris conspersa pulchre reticulata costa nervisque elevatis; petiolus 1-2 mm. longus pilosulus vel subglaber; folia regionis floralis minora subbracteiformia. Racemi apicem ramulorum versus 5-6-approximati axillares 10-15 cm. longi simplices graciles multiflori fere ad basim floriferi minute puberuli; flores nutantes dimidio inflorescentiae inferiore distantes (1-1.5 cm.) in axillis foliorum caulinis similium orientes, supra magis approximati bracteis lanceolatis vel oblanceolatis 3-5 mm. longis praediti; pedicelli $\pm$ 5 mm. longi arcuati puberuli basi bracteolis duabus subulatis ornati, in fructu ad 1 cm. aucti. Calycis sparse pilosuli lobi circ. 2 mm. longi ovato-lanceolati acutiusculi coriacei glandulis minutis nigris conspersi. Corolla urceolaris alba 5-6 mm. longa extus $\pm$ dense appresse albo-pilosula lobulis brevibus triangularibus erectis. Stamina 10 inclusa; filamenta basi corollae cohaerentia infra complanata medio geniculatim flexa; antherae conspicue biaristatae. Ovarium depresso-globosum sericeo-pilosulum. Fructus globosus circ. 3.5 mm. diametro; semina delapsa.

Yunnan:—In the vicinity of Yunnansen. Shrub of moist valleys. Flowers milky white. E. E. Maire. No. 1071 (anno 1906) in Herb. Edin. Moist places in the mountains. Maire. No. 1874 (anno 1906) in Herb. Edin.

A graceful shrub with very distinctive foliage. The flowers are borne in slender racemes somewhat distant, subtended below by foliage leaves which diminish gradually until in the upper part of the inflorescence they are replaced by small bracts less than half the length of the pedicels.

Pieris polita, W. W. Sm. et J. F. Jeff. Sp. nov.

Species ex affinitate *P. japonicae*, D. Don a qua inflorescentiis elongatis simplicibus gracilioribus substrictis, calyce triente longiore inter alia recedit.

Frutex sempervirens ramis teretibus eis socii supra citati similibus. Folia 7-12 cm. longa, 1.5-3 cm. lata lanceolata vel lineari-lanceolata vel oblanceolata apice acuta vel eodem specimine rotundata, basi in petiolum 5-8 mm. longum glabrum cuneata, apice tantum minute serrulata coriacea supra atroviridia glabra costa paulo elevata minute glanduloso-puberula excepta, infra pallidiora glabra costa straminea eminente, utrinque glandulis minutis nigris raris conspersa, nervis venulisque supra sat conspicuis infra saepe indistinctis. Racemi 5-10 apicem rami versus aggregati axillares 8-12 cm. longi simplices graciles substricti multiflori fere ad basim floriferi

minute glanduloso-puberuli; bracteae 2-3 mm. longae subulatae glabrae; pedicelli $\pm$ 5 mm. longi minute puberuli medio bracteolis duabus subulatis praediti. Calycis lobi circ. 4 mm. longi ovato-lanceolati acuti coriacei glandulis minutis nigris conspersi. Corolla urceolaris, ut videtur alba, 7-8 mm. longa ore circ. 3 mm. diametro lobulis brevissimis erectis rotundatis. Stamina 10 inclusa eis *P. japonicae* subsimilia. Ovarium depresso-globosum stylo gracili corollam aequante. Fructus deest.

In the N.W. of the Province of Fukien. 1914. Coll. J. de la Touche. No. 68.

A species closely allied to *Pieris japonica*, D. Don, but with a very distinct inflorescence of long substrict racemes, much slenderer than those of its ally and without branching.

Plectranthus oresbius, W. W. Sm. Sp. nov.

Species valde affinis *P. rugoso*, Wall. a quo habitu ramosissimo foliis minoribus utrinque incano-tomentosis floribus lavandulaceis inter alia discrepat.

Fruticulus usque ad 60 cm. altus ramosissimus ramis vetustioribus defoliatis decorticanibus, junioribus bene foliatis densissime incano-stellato-tomentellis. Folia petiolo $\pm$ 3 mm. longo tomentello suffulta, ovata apice obtusa basi rotundata vel cordatula, regulariter crenulata, crassiuscula, 8-13 mm. longa, 5-9 mm. lata, supra dense incano-stellato-tomentella, infra densissime niveo-tomentella, utrinque rugosula. Racemus foliatus; cymae ex axillis foliorum superne decrescentium ortae plerumque 4-5-florae; pedunculi ad 5 mm. longi tomentelli. Calyx $\pm$ 3 mm. longus fulvo-tomentellus usque ad medium in dentes 4-5 subaequales triangulares acutos fissus. Corolla lavendulacea extus pilosula; tubus paululo calyce exsertus basi gibbus; limbus tubo subaequalis labio postico 4-fido vix 3 mm. longo.

"Shrub of 2 ft. Flowers pale soft lavender, fragrant. Open dry situations amongst rocks on the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. 27° 45' N. Alt. 11,000 ft. Sept. 1913." G. Forrest. No. 11,154.

Plectranthus tenuifolius, W. W. Sm. Sp. nov.

Species ex affinitate *P. rugosi*, Wall. et *P. oresbii*, W. W. Sm. foliis minimis haud stellato-tomentosis inter alia divergit; structura floris ad *P. glaucocalycem*, Maxim. spectat.

Fruticulus usque ad 60 cm. altus ramosissimus ramis vetustioribus griseis, junioribus elongatis gracillimis dense incano-tomentellis. Folia petiolo $\pm$ 1 mm. longo tomentello

suffulta, lanceolata vel ovato-lanceolata apice acuta vel acutiuscula basi $\pm$ cuneata vel subrotundata, integra siccitate chartacea 8-10 mm. longa, 4-5 mm. lata, supra viridia dense minute pilosula infra densissime incano-tomentella. Racemus foliatus ad 20 cm. longus cymulis remotis plerumque 4-5-floris ex axillis foliorum superne decrescentium ortis; pedunculi 2-5 mm. longi et pedicelli tomentelli. Calyx circ. 2 mm. longus (fructu fere ad 4 mm. auctus) incano-tomentellus ad trientem in dentes subaequales triangulares acutos fissus. Corolla pallido-coerulea extus pilosula; tubus vix exsertus basi cylindricus; limbus tubo paululo longior limbo postico 4-fido. Filamenta parte inferiore pilosula. Semina brunnea.

"Shrub of 2 ft. Flowers pale blue. Open situations in the Yangtze Valley at Pung-tzu-la, Yunnan. Lat. $27^{\circ} 50'$ N. Alt. 6000 ft. August 1914." G. Forrest. No. 13,184.

Pouzolzia elegantula, W. W. Sm. et J. F. Jeff. Sp. nov.

Species valde affinis *P. eleganti*, Wedd. a qua foliis minoribus rhomboideis grossius incisus inter alia differt.

Fruticulus metralis ramulis patulis teretibus dense hispidulis. Folia alterna $\pm$ 1 cm. longa, $\pm$ 1 cm. lata, rhomboidea, apice ipso acuta, basi late cuneata, in parte inferiore integra, supra grosse serrata serraturis utrinque 3-4, utraque facie subcinerascens adpresse strigosula; petiolus $\pm$ 1 mm. longus; stipulae parvae ovatae acuminatae. Inflorescentiae ex axillis omnibus ortae 2-3 mm. latae floribus femineis masculisque intermixtis. Calycis segmenta 4 acuminata extra hispidula. Stamina ovarium achaenium eis *P. elegantis*, Wedd. subsimilia.

"Shrub of 3 ft. Flowers brown. Dry rocky situations on the Tong Shan, Yunnan. Lat. $27^{\circ} 20'$ N. Alt. 8000 ft. July 1914." G. Forrest. No. 12,723.

A dwarf shrub differing from the Formosan plant *P. elegans*, Wedd. in the small rhomboid leaves, which are deeply incised in proportion to their size. Forrest No. 12,590, from the Chungtien plateau, agrees with Hancock's No. 326 referred in Journ. Linn. Soc. xxvi, 489, to *P. elegans*, Wedd.

Premna acutata, W. W. Sm. Sp. nov.

Species valde affinis *P. yunnanensi*, W. W. Sm. a qua foliis ad 10 cm. longis, 5 cm. latis, lanceolatis vel ovato-lanceolatis longiuscule acuminatis basi late cuneatis argute serratis utrinque sparse pilosulis vel subglabris, calyce altius fissis divergit.

"Shrub of 3-5 ft. In fruit. Open scrub on the Tong Shan

in the Yangtze bend, Yunnan. Lat. $27^{\circ} 20'$ N. Alt. 9000 ft. Sept. 1913." G. Forrest. No. 11,058.

"Shrub of 6-9 ft. Fruits black. July 1914." G. Forrest. No. 12,739.

***Premna mekongensis*, W. W. Sm. Sp. nov.**

Species valde affinis *P. yunnanensi*, W. W. Sm. a qua foliis pilosioribus calyce altius fisso lobis angustioribus, corolla longiore flavida inter alia divergit.

Fruticulus 60-90 cm. altus erectus ramosus; rami teretes juniores tomento incano crispato dense tecti. Folia siccitate chartacea vulgo 3-5 cm. longa, 2-3 cm. lata, ovata, apice acuta vel subobtusata, vix acuminata, basi rotundata, crenato-serrata, supra modice incano-pilosula, infra breviter incano-tomentosa nervis utrinque 4-5 supra obscuris infra sat conspicuis; petioli ± 1 cm. longi incano-tomentosi. Cymae terminales subglobosae circ. 1 cm. diametro densiflorae 6-12-florae pedunculis pedicellis brevisimis incano-pilosis bracteis bracteolisque linearibus dense pilosis. Calyx campanulatus 6-7 mm. longus infra medium in lobos quinque subaequales lineari-lanceolatos fissus dense incano-patenti-pilosus glandulis circularibus sparse punctatus. Corolla calyce paullo longior circ. 8 mm. longa flavida; tubus vix exsertus extus glaber intus ad fauces albopilosus; limbus bilabiatus; labium superum rotundatum circ. 2 mm. diametro emarginatum purpureo-tinctum extus glanduloso-punctatum atque villosulum, inferum 3-lobum basi sparse glandulosum pilis paucis conspersum. Stamina 4 inclusa filamentis glabris. Ovarium obovoideum glabrum stylo gracili 5 mm. longo, stigmatibus capitato. Drupa circ. 4 mm. longa siccitate nigra glabra bilocularis.

"Shrub of 2-3 ft. Flowers dull yellow. Open dry situations amongst rocks in the Mekong Valley, Yunnan. Lat. $27^{\circ} 40'$ N. Alt. 9000 ft. Aug. 1914." G. Forrest. No. 13,071.

Var. *meiophylla*, W. W. Sm. Var. nov.

Ramis gracilioribus, foliis multo minoribus inflorescentiis paucifloris recedit.

"Shrub of 2-3 ft. In fruit. Dry stony pastures in the Yangtze Valley at Taku, Yunnan. Lat. $27^{\circ} 30'$ N. Alt. 7000-8000 ft. Aug. 1914." G. Forrest. No. 13,049.

***Premna yunnanensis*, W. W. Sm. Sp. nov.**

Species ex affinitate *P. nanae*, Coll. et Hemsl. a qua inter alia calyce infra medium fisso differt.

Fruticulus usque ad 2 m. altus erectus ramosus; rami

juniores dense incano-crispato-villosuli, tandem glabri cinerascetes. Folia siccando chartacea, vulgo 4-6 cm. longa, 1.5-3 cm. lata, ovata, apice obtusa vel breviter obtusiuscule acuminata, basi rotundata, crenato-serrata (nonnunquam irregulariter vel obscure), supra atro-viridia sparse pilosula, utrinque minute glandulosa, infra incano-pilosula, ad costam nervosque densius; nervi utrinque 4-5 infra subconspicui; petioli $\pm$ 1 cm. longi dense incano-villosuli. Cymae terminales subglobosae 1-2 cm. diametro densiflorae $\pm$ 12-florae pedunculis pedicellisque brevibus pilosis, bracteis bracteolisque linearibus 2-3 mm. longis. Calyx campanulatus $\pm$ 4 mm. longus infra medium in lobos quinque subaequales anguste triangulares vel sublineares fissus $\pm$ pilosus minute glandulosus. Corolla circ. 6 cm. longa pallide rosea; tubus vix exsertus extus subglaber intus ad fauces capillis confervoideis subfusco-villosus; limbus bilabiatus; labium superum rotundatum circ. 4 mm. diametro extus glanduloso-punctatum atque villosulum, inferum 3-lobum. Stamina 4 inclusa filamentis supra glabris basi ipsa fusco-villosis. Ovarium obovoideum glabrum. Drupa vix matura circ. 4 mm. longa saepe bilocularis nigra glabra apice pilosulo excepto.

"Shrub of 4-5 ft. Flowers pale rose. Open dry situations amongst rocks on the Tong Shan in the Yangtze bend, Yunnan. Lat. 27° 20' N. Alt. 9000-10,000 ft. Sept. 1913." G. Forrest. No. 11,240.

I take the following two sheets to represent the same species; the leaves are smaller and the flowers not well developed:—

"Shrub of 4-6 ft. Flowers pale yellow. In open situations on the margins of thickets in the mountains of the Chungtien plateau, S.E. of Chungtien, Yunnan. Lat. 27° 45' N. Alt. 10,000 ft. July 1913." G. Forrest. No. 10,527.

"Shrub of 4-5 ft. Flowers dull green. In open scrub in the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. 27° 45' N. Alt. 10,000-11,000 ft. July 1913." G. Forrest. No. 10,351.

The calyx with lobes longer than the tube is rather remarkable for the genus. Closely allied are two other species from the same province. The calyx and fruit are much alike in all three, but there are considerable differences in the leaves and corolla. *P. mekongensis*, W. W. Sm. differs from *P. yunnanensis* in the more pilose leaves, deeper-cut calyx, and longer narrower corolla of a yellow colour. Its leaves are much affected by disease, and that may have had some influence on the hairiness. The third species, *P. acutata*, W. W. Sm., differs from the other two in the acuminate sharply-serrate leaves with a cuneate base and almost glabrous on both surfaces. Unfortunately flowers are lacking. The brief diagnosis above distinguishes it from *P. yunnanensis*.

Roscoea Humeana,* Balf. f. et W. W. Sm. Sp. nov.

Species affinis *R. Chamaeleoni*, Gagnep. sed habitu minus praecociore, floribus permagnis, labello lobis corollae lateralibus brevioribus inter alia signa divergit.

Herba perennis pro genere robusta ad 20 cm. alta. Radices fusiformes plurimae fasciculatae. Vaginae epigaeae 2-3 virides glabrae. Folia sub anthesi $\pm$ evoluta, nonnunquam paulo seriora, 4-6, late lanceolata vel ovato-lanceolata sessilia arcte imbricata basi longe vaginantia caulem omnino celantia, subacuta haud acuminata utrinque glabra 10-20 cm. longa usque ad 6 cm. lata. Spica 2-8-flora folia summa haud superans, sessilis nec ope pedunculi elevata; bractae lanceolatae subcutae virides foliaceae glabrae ad 6 cm. longae. Flores violaceo-purpurei maximi. Calyx usque ad 10 cm. longus anguste tubulosus apice bilobulatus tenuiter membranaceus glaber. Corollae tubus nunc calycem aequans nunc triente longior; lobus posticus $\pm$ 4 cm. longus medio 3 cm. latus basi $\pm$ 8 mm. latus, erectus concavus apice rotundatus apiculatus; lobi laterales oblanceolati 4-4.5 cm. longi medio 1.5 cm. lati obtusiusculi; labelli limbus ad 2.5 cm. longus, circ. 3 cm. latus ambitu irregulariter subquadratus usque ad unguem rigidum 1.5 cm. longum fissus. Staminodia lateralia 1.7 cm. longa asymmetrice oblanceolata alba purpureo-tincta; filamentum erectum circ. 5 mm. longum $\pm$ 3 mm. latum canaliculatum; anthera $\pm$ 1.2 cm. longa basi in duo calcaria parallela 5 mm. longa viridi-lutea protracta. Stigma turbinatum pilosum; stylus ad 10 cm. longus; ovarium cylindricum glabrum circ. 1 cm. longum. Typi ex horto exsiccati in Herb. Edin. conservati.

West China:—Province of Yunnan. Cultivated in the Royal Botanic Garden from seeds secured by Mr. George Forrest. It flowered freely in June 1912, 1913, 1914, and 1915. It is the finest species as yet known in the genus, and apparently quite hardy. Its large flowers are of a beautiful violet to bluish-purple, and occur in compact spikes of 4-8 flowers at the same time as the leaves, occasionally to some extent precocious. The affinity of this plant is undoubtedly with *R. Chamaeleon*, Gagnep.; it differs from the plant described by Gagnepain in the less precocious habit, in the much larger flowers, and in the lateral lobes of the corolla exceeding the labellum, which has lobes oblique reniform and not lanceolate. K. Schumann in his Monograph of the Zingiberaceae (Engler's Das Pflanzenreich, 1904), p. 122, gives additional notes on the dimensions of Gagnepain's plant—calyx

* The specific name is given to keep in memory Private David Hume, 1st Batt. The Royal Scots, a young gardener of the staff of the Royal Botanic Garden, Edinburgh, who fell in action during the retreat from Mons on 26th August 1914.

3.5-4 cm. long, posterior lobe of corolla 1-1.2 cm. broad; the corresponding dimensions in *R. Humeana* are two to three times as great.

***Salvia benecincta*, W. W. Sm. Sp. nov.**

Inter species chinenses haec in vicinitatem *S. hiantis*, Royle ponenda; inflorescentiis prima aetate strobiloideis bracteis imbricatis fere celatis, postea bracteis conspicuis ornatis notanda.

Herba perennis 40-60 cm. alta. Caulis robustus $\pm$ dense fulvo-tomentellus. Folia basalia non visa; caulina superiora remota petiolo 4-10 cm. longo fulvo-tomentello suffulta; lamina 9-18 cm. longa, 4-10 cm. lata, ovato-lanceolata vel oblongo-lanceolata, apice obtusiuscula, basi subhastata vel cordatula, siccando papyracea, margine irregulariter crenata, supra $\pm$ pilosula, infra ad costam nervosque fulvo-tomentella, cetera minute pilosula. Inflorescentiae terminales et axillares 12 cm. longae vel paulo ultro pedunculo $\pm$ 12 cm. longo praeditae, racemiformes verticillastris 7-10 approximatis $\pm$ 4-floris compositae, prima aetate strobiloideae bracteis arcte imbricatis vestitae; rhachis dense fulvo-villosa; bractae ad 2.5 cm. longae lanceolatae vel $\pm$ late ovatae, fulvo-pilosae atque ciliatae calycem semi-celantes; pedicelli $\pm$ 5 mm. longi dense pilosi. Calyx circ. 1.5 cm. longus campanulatus ad nervos dense glanduloso-pilosus; dentes inferiores $\pm$ 3 mm. longi triangulares apiculati, superiores in unum coaliti. Corolla $\pm$ 3 cm. longa ex collectore rubrida; tubus rectus calyce fere duplo longior dimidio inferiore cylindricus supra subabrupte ampliatus extus $\pm$ pilosulus; labium superius concavum circ. 5 mm. longum extus glanduloso-pilosum, inferius aequilongum trilobum lobis lateralibus parvis, mediano reniformi emarginato utrinque fere glabro. Stamina 2 tubo paululo exserta. Stylus inaequaliter bifidus.

Yunnan:—Mountain pastures near Lan-ngi-tsin. Alt. 10,000 ft. Flowers red. August. E. E. Maire. In Herb. Edin., No. 109 (anno 1914).

This species is readily distinguished from the Chinese members of the genus by the prominent bracts enclosing the young inflorescence and later more or less concealing the calyx.

***Salvia grandifolia*, W. W. Sm. Sp. nov.**

Species affinis *S. campanulatae*, Wall. a qua foliis multo majoribus, petiolis brevioribus dense ferrugineo-tomentosis, inflorescentiis late ramosis, floribus basi flavidis supra saturate purpureis inter alia differt.

Herba perennis $\pm$ 1 m. alta. Caulis robustus $\pm$ dense

glanduloso-hispidus. Folia permagna petiolo 4-7 cm. longo ad canaliculum dense ferrugineo-tomentoso petiolata (pro lamina breviter); lamina ad 35 cm. longa, ad 25 cm. lata, ambitu late ovata, apice rotundata, basi subrotundata vel late cuneata, margine remote sinuato-lobatula lobis rotundatis $\pm$ 4 cm. latis, papyracea, utrinque sparse paleaceo-pilosa; caulina remota multo minora suborbicularia vel obovata, $\pm$ integra, sessilia vel fere sessilia. Inflorescentiae terminales 50 cm. longae vel ultro late paniculatae; rami ramulique dense fulvido-pilosi atque glandulosi; verticillastri remoti pauciflori saepe biflori; bracteae $\pm$ 5 mm. longae ovatae vel lanceolatae pilosae; pedicelli 1-2 mm. longi glanduloso-pilosi. Calyx $\pm$ 1.7 cm. longus campanulatus membranaceus dense glanduloso-pilosus; dentes triangulares acuminati, anteriores circ. 4 mm. longi posteriores 3, circ. 2 mm. longi. Corolla fere 3 cm. longa basi flavida supra saturate purpurea; tubus rectus calyce breviter exsertus superne sensim ampliatus infra glaber supra sparse glanduloso-pilosulus; labium superius circ. 1.3 cm. longum concavum apice rotundatum extus dense glanduloso-pilosulum, inferius superiori $\pm$ aequilongum trilobum lobis rotundatis glabris vel extus sparse pilosulis. Stamina 2 exserta filamentis glabris, antheris 5 mm. longis. Nuculae ovoideae circ. 4 mm. longae brunneae.

"Plant of 2½-3½ ft. Flowers—base dull yellow, apex deep purple-maroon. Open pasture on the margins of thickets in the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. 27° 45' N. Alt. 10,000-11,000 ft. Sept. 1913." G. Forrest. No. 11,150.

This species is distinguished from its Chinese allies by the huge leaves with comparatively short petioles and the broad, much-branched inflorescence.

***Salvia lichiangensis*, W. W. Sm. Sp. nov.**

Species ex affinitate *S. glutinosae*, Linn. a qua foliis multo majoribus ovalibus basi haud truncatis floribus pallido-purpureis inter alia valde divergit.

Herba perennis 50-60 cm. alta. Caulis robustus pilis longiusculis paleaceis articulatis dense vestitus. Folia basalia petiolo piloso 7-18 cm. longo suffulta; lamina $\pm$ 20 cm. longa, 10-11 cm. lata, circumscriptione ovalis, apice basique $\pm$ rotundata, margine irregulariter crenata vel bicrenata, papyracea, utrinque sparse paleaceo-pilosa; caulina remota plerumque 1-2 paria, minora, saepe cordatula, suprema nonnunquam sessilia. Inflorescentiae terminales ad 20 cm. longae racemiformes verticillastris $\pm$ 7 remotulis 4-8-floris compositae; axis ut pedicelli $\pm$ 1 cm. longi, ut bracteae foliaceae $\pm$ 5 mm. longae,

ut calyx, pilis articulatis fulvidis dense obsita. Calyx 1-1.5 cm. longus campanulatus membranaceus fere ad medium bilabiatus fructu hians; dentes inferiores triangulares $\pm$ 3 mm. longi, superiores in unum biapiculatum connati. Corolla $\pm$ 3 cm. longa pallido-purpurea; tubus rectus calyce duplo longior superne sensim ampliatus subglaber; labium superius paululo concavum extus dense longiuscule villosum, inferius aequilongum trilobum lobis lateralibus extus villosis mediano majore rotundato emarginato glabro. Stamina 2 tubo paulo exserta. Stylus bifidus. Nuculae ovoideae $\pm$ 3 mm. longae brunneae.

"Plant of 20-24 inches. Flowers pale purple. In open pine forests in the Lichiang Range, Yunnan. Lat. 27° 35' N. Alt. 11,000 ft. June 1913." G. Forrest. No. 10,302.

Sedum Farreri, W. W. Sm. Sp. nov.

Species affinis *S. algido*, Ledeb. sed petalis acuminatis flagellato-apiculatis margine erosulis differt; valde proxima *S. varifloro*, N. E. Br. quod floribus laxissimis, sepalis patulis recedit, petalis subsimilibus gaudet.

Planta perennis radice crassa, caulibus numerosis annuis ascendentibus $\pm$ 12 cm. longis circ. 2 mm. latis glabris inflorescentia congesta terminatis. Folia alterna $\pm$ 1.5 cm. longa, circ. 3 mm. lata, linearia acuta glabra. Pedicelli circ. 3 mm. longi glabri. Flores conferti 6-10. Bractee foliis similes, sed minores. Sepala 5 libera 7-8 mm. longa linearia acuta glabra. Petala 5 libera erecta $\pm$ 1.1 cm. longa, circ. 4 mm. lata, ovato-lanceolata acuminata flagellato-apiculata, in sicco tenuiter membranacea quasi-scariosa, margine erosula. Stamina 10, circ. 7 mm. longa. Carpella erecta staminibus subaequilongia.

"In the limestone screes at great elevations only, from the Min S'an Alps down to Thundercrown, at 12,000-14,000 ft. Kansu, West China. 28th Aug. 1914." Farrer and Purdom. No. 238.

This species is very closely allied to *S. variflorum*, N. E. Br., which was obtained at 9000 ft. elevation in Chihli and described from a living plant sent to Kew in 1914. The petals in form suggest strongly the acuminate serrulate leaves of many mosses.

Sedum orichalcum, W. W. Sm. Sp. nov.

Species foliis dense rosulatis ut in *Sempervivo*, inflorescentiis ramosis arcuato-cymosis, inter species chinenses distincta.

Planta 10-18 cm. alta rhizomate crasso radicibus multis fibrosis praedito. Caules 2-4 basi ascendentes mox erecti vel suberecti foliosi glabri. Folia basalia dense rosulata majora

3-4.5 cm. longa, ± 1 cm. lata, lanceolata vel ovato-lanceolata acuta basi rotundata sessilia, margine anguste scariosa nonnunquam minute erosula carnosae, siccitate plana, glabra; caulina laxae imbricatae 1.5-2 cm. longa, lanceolata vel oblanceolata, sub insertionem in appendiculam rotundatam fere 2 mm. longam producta, ceterum basalibus subsimilia. Inflorescentiae plerumque tri-ramosae, saepe pluri-ramosae; ramuli multo arcuati 3-4 cm. longi complanati glabri floribus breviter pedicellatis fere continuo praediti; bracteae conspicuae 5-10 mm. longae, lanceolatae vel oblongae foliis caulinis haud dissimiles atque eodem modo basi appendiculatae; pedicelli 1-2 mm. longi. Flores flavi; sepala 5 lanceolato-deltoides circ. 2-5 mm. longa. Petala lanceolata circ. 5-6 mm. longa apice acuta subindurata; stamina 10; squamulae minutae lineares; carpella 5-6. Fructus maturus deest.

"Plant of 4-7 inches. Flowers brassy yellow. Foliage succulent. On ledges of limestone cliffs in dry situations on the mountains in the N.E. of the Yangtze bend. Lat. 27° 45' N. Alt. 10,000 ft. Sept. 1913." G. Forrest. No. 11,443.

A very distinct plant among Chinese and Himalayan species of *Sedum*; with the flowers of a *Sedum*, it has the habit of a *Sempervivum*; its strongly arcuate inflorescences are very striking.

***Sedum Purdomii*, W. W. Sm. Sp. nov.**

Species haec nana ex affinitate *S. Roborowskii*, Maxim. esse videtur.

Planta annua erecta humilis 4.5-5.5 cm. alta a basi ramosa vel simplex glabra. Folia sparsa carnosae laxae imbricatae vel remotiuscula linearia ± 5 mm. longa vix 1 mm. lata obtusa. Bracteae foliis subsimiles. Inflorescentia trifida; cymulae 3-5-florae; pedicelli 1-4 mm. longi. Sepala basi libera ± 2 mm. longa oblonga obtusa viridia. Petala ± 5 mm. longa anguste oblanceolata obtusiuscula flava. Stamina petalis paululo breviora. Carpella infra connata staminibus paulo breviora.

"High alpine screes. 11,000-12,000 ft. Kansu, West China. Early August 1914." Farrer and Purdom. No. 238.

A dwarf floriferous annual. Of the N.E. Asiatic species the nearest affinity appears to be *S. Roborowskii*, Maxim. The material is unfortunately scanty, but does not match any species recorded from China or N.E. Asia.

***Senecio glomeratus*, J. F. Jeff. Sp. nov.**

Species valde affinis *S. glumaceo*, Dunn, qui foliis ovatis capitulis unifloris pappo rubrido separatur; a *S. triligulato*, Ham. absentia ligulorum inter alia recedit; haud procul a

S. diantho, Franch. qui forma texturaeque foliorum satis discrepat.

Planta verisimiliter usque ad 1 m. alta; pars superior tantum adest. Caulis erectus flexuosus gracilis striatus sat foliosus tomento fulvo praesertim in parte suprema $\pm$ dense vestitus. Folia 6–24 cm. longa, 1.5–6 cm. lata, petiolo 1–2 cm. longo $\pm$ fulvo-tomentoso suffulta, late lanceolata acuminata basi cuneata margine crenato-serratula serraturis indurato-apiculatis, tenuiter membranacea supra sparse puberula vel scabridula infra pallidiora fere glabra nervis utrinque 8–9, subtus prominulis nervulis bene reticulatis. Inflorescentia ampla ramosa paniculata glomerulis contracto-corymbosis pedunculatis composita; glomeruli 1.5–2 cm. diametro 20–25 capitula gerentes, saepe 2–3 arcte compacti ramulos terminantes; pedunculi primarii $\pm$ 10 cm. longi, secundarii 5–15 mm. longi omnes fulvo-tomentosi; bracteae inflorescentiarum inferiores foliis similes sed minores. Capitula subsessilia 4–5-flora. Involucri tubulosi 3 mm. longi phylla majora 5 ovata subacuta brunnea marginibus subscariosis sparse puberula, basi phylla multo minora 5 subulata. Flores ligulati nulli; flores tubulosi 5–8 mm. longi aurantiaci (?). Achaenia 1.5 mm. longa linearia glabra pappo 4 mm. longo fragili albo praedita.

Near Tengyueh, Yunnan, 1911. Howell. No. 141.

***Senecio incisifolius*, J. F. Jeff. Sp. nov.**

Species sectionis *Jacobaeae*, affinis *S. chrysanthemoidi*, DC.; habitu *S. nikoense*, Miq. revocat; foliis pinnatisectis segmentis acutissimis conspicua.

Planta erecta gracilis circ. 75 cm. alta radicibus fibrosis praedita; caulis simplex striatus glaber supra sat foliosus infra defolius. Folia 9–10 cm. longa, 4–6 cm. lata, pinnatisecta jugis 3–4, segmentis $\pm$ oblongis acuminatis 2–3 cm. longis grosse dentatis, dentibus plerumque quinque, tenuiter membranacea utrinque glabra vel subglabra costa subtus sparse albo-pilosa excepta. Inflorescentia terminalis 5–7 cm. longa capitulis 15–30 mediocribus subumbellatim corymbosis composita; pedunculi 1.5–3 cm. longi fulvo-villosuli; bracteae inferiores foliis subsimiles sed multo minores, supra multo reductae lineares $\pm$ 1 cm. longae. Capitula (floribus radii inclusis) vix 1.5 cm. diametro; involucri phylla $\pm$ 5 mm. longa oblonga acuta vel subacuta libera paulo imbricata brunneo-scariosa glabra; flores radii 7–8, 6 mm. longi, 1 mm. lati, aurantiaci. Achaenia 1.5 mm. longa, oblonga sericeo-pubescentia pappo albo $\pm$ 5 mm. longo praedita.

Neighbourhood of Tengyueh, Yunnan, 1911. Howell. No. 17.

"Plant of $2\frac{1}{2}$ ft. Flowers golden-yellow. Open moist pasture on the margins of thickets. Flanks of the Mingkwong Valley, Yunnan. Lat. $25^{\circ} 20'$ N. Alt. 7000-8000 ft. Oct. 1912." G. Forrest. No. 9292.

The inflorescence of this new species is very like that of *S. acerifolius*, C. Winkl., but the plants have very different leaves.

Senecio Latouchei, J. F. Jeff. Sp. nov.

Species affinis *S. Oldhamiano*, Maxim. a quo rhizomate crasso perenni, foliis fere omnibus radicalibus suborbicularibus, inflorescentiis haud amplis inter alia differt.

Planta erecta vel suberecta flaccida 12-30 cm. alta rhizomate crasso apicem versus tomento flocculoso fulvo induto. Caulis gracillimus flexuosus striatulus infra primo $\pm$ dense fulvo-flocculoso-tomentosus supra sparse fulvo- vel albedo-tomentellus mox glabrescens. Folia basalia plura ambitu suborbicularia basi cordata 1-3 cm. diametro margine (pro magnitudine grossius) dentata (fere sublobatula) dentibus indurato-apiculatis chartacea supra pilis multicellularibus adpressis fulvis subdense villosa infra tomento denso albedo induta; nervi primarii 5-7 basi divergentes; petiolus 2-4 cm. longus $\pm$ dense fulvo-villosus; folia caulina superiora 1-2 suborbicularia vel rhomboidea 1.5-2 cm. diametro, petiolo 1-1.5 cm. longo auricula orbiculari caulem amplectante 3-7 mm. diametro praedita, cetera foliis basalibus subsimilia; in parte inferiore caulis plerumque folium solitarium auricula multo minore vel fere deficiente praeditum, cetera foliis basalibus simile. Inflorescentia corymbosa capitulis paucis 3-4, pro planta majusculis 2-2.5 cm. diametro; bracteae plures lineares vel subulatae circ. 5 mm. longae, raro majores specie magnitudineque in folia superiora transeuntes; involucri phylla 12-13, biseriata oblanceolata acuta vel subacuta 6-7 mm. longa 2 mm. lata pubescentia brunnea. Flores ligulati 11-13, flavidi, 1 cm. longi, 3 mm. lati; flores disci 30-35; corolla circ. 4 mm. longa; antherae ecaudatae. Achaenia 1 mm. longa compressiuscula puberula; pappus 3 mm. longus setosulus fragilis albus.

Province of Fukien, from Foochow to N.W. Fukien. J. de la Touche. No. 34.

Senecio palmatisectus, J. F. Jeff. Sp. nov.

Species sectionis *Cacaliae*, affinis *S. taliensi*, Franch., *S. cyclotho*, Bur. et Franch., *S. Souliei*, Franch. quae omnes foliis valde recedunt; folia speciei novae eis *S. aconitifolii*, Turcz. simillima, flores omnino dissimiles.

Planta perennis 60-100 cm. alta rhizomate sat crasso radicibus numerosis fibrosis tomento fulvo plus minusve indutis. Caulis erectus teres striatulus glaber vel rarius sparse villosulus simplex nisi in regione inflorescentiae. Folia palmatisecta, ambitu perlate ovata, 5-10 cm. longa petiolo excluso, 7-12 cm. lata, basi cordata membranacea undique glabra vel rarius parce pubescentia; segmenta 5 angusta circ. 1 cm. lata acuta indurato-apiculata lobulis 2-4 fere angulo recto abeuntibus 2-4 cm. longis circ. 1 cm. latis; petiolus 1-5 cm. longus gracilis. Inflorescentia laxe paniculato-racemosa vel racemosa 15-30 cm. longa; capitula inter se remotiuscula 1.5 cm. longa, pedicellis 2-3 mm. longis bibracteolatis glabris, bracteolis 1-3 mm. longis linearibus. Involucri tubuloso-cylindrici circ. 8 mm. longi phylla 3-4, oblongo-linearia subobtusata glabra vel pubescentia marginibus angustis scariosis. Flores ligulati nulli; flores tubulosi 3-4 flavi circ. 8 mm. longi. Achaenia linearia 4-5 mm. longa striata glabra pappo 5-7 mm. longo fragili albo praedita.

N.W. Yunnan, 1907. Monbeig. No. 151.

Tsekou, N.W. Yunnan, 1912. Monbeig. No. 53.

Yunnan. On rocks in mountains near Lan-ngi-tsin. Alt. 9500 ft. Oct. 1914. E. E. Maire. No. 206.

Var. *pubescens*, J. F. Jeff. Var. nov.

Typo foliis subtus pilis albidis crispatis $\pm$ parce praeditis.

Near Atuntsu, Mekong-Salween divide, Yunnan. In shady forest. 11,000-12,000 ft. July 1913. Kingdon Ward. No. 862.

Senecio solanifolius, J. F. Jeff. Sp. nov.

Species sectionis *Jacobaeae*; speciei nulli chinensi illius sectionis propinqua est, sed foliis eis *Solani nigri*, Linn. sub-similibus facile recognoscitur.

Planta saltem 30 cm. alta; pars superior tantum visa. Caulis erectus teres gracilis circ. 2 mm. diametro strictus glaber sat foliosus supra parce ramosus ramulis pubescentibus. Folia 5-8 cm. longa petiolo excluso, 3-5 cm. lata, triangulari-vel ovato-lanceolata, acuta vel (suprema) acuminata basi truncatula, margine subobscure sinuato-dentata, in sicco membranacea, supra atroviridis glabra infra pallidiora ad costam sparse puberula nervis supra obscuris infra paulo distinctis; petiolus 1-2 cm. longus. Inflorescentia terminalis corymbosa capitulis 3-4 composita; axis inflorescentiae 3-5 cm. longus fulvo-puberulus; pedunculi 1-1.5 cm. longi, basi bractea lineari 3-4 mm. longa praediti. Capitula 1.5 cm. longa, 2.5 cm. lata; involucri phylla majora circ. 13, uniseriata 6-7 mm. longa lanceolata acuta glabra trinervia marginibus membranaceis,

basi ipsa phylla minora $\pm$ 8 subulata, 2-3 mm. longa. Flores radii 7-8, circ. 1 cm. longi oblongi apice subobtusiusculi obscure trifidi 4-5-nervi flavi; flores disci perplurimi 7 mm. longi pappo 6 mm. longo molli albo praediti. Antherarum cellulae ecaudatae. Achaenia lineari-oblonga circ. 3 mm. longa paulo complanata striis hirsutulis praedita.

Province of Fukien between Foochow and N.W. Fukien. 1914. J. de la Touche. No. 126.

Sterculia platanifolia, Linn. var. **major**, W. W. Sm. Var. nov.

A typo foliis subtus dense molliterque tomentosis, fructibus multo majoribus ad 13 cm. longis ad 4.5 cm. latis, seminibus $\pm$ 1.3 cm. longis recedit.

"Shrub of 25-30 ft. In fruit. In thickets on the Tong Shan in the Yangtze bend, Yunnan. Lat. 27° 20' N. Alt. 9000-10,000 ft. Aug. 1913." G. Forrest. No. 10,820.

Styrax fukienensis, W. W. Sm. et J. F. Jeff. Sp. nov.

Species ex affinitate *S. philadelphoidis*, Perk. et *S. confusi*, Hemsl.

Frutex?; ramuli teretes, juniores dense fulvo-stellato-tomentosi demum glabrescentes. Folia alterna petiolo 3-5 mm. longo dense fulvo-stellato-tomentoso petiolata, oblonga vel ovato-oblonga, 6-8 cm. longa, 2.5-3.5 cm. lata, apice breviter acuminata vel acuta vel subobtusiuscula, basi subrotundata vix cuneata margine minute indurato-denticulata, tenuiter coriacea supra sparse fulvo-stellato-tomentosa, ad costam dense, subtus vix densius quam supra, nervis 5-6-paribus supra paulo eminentibus sat conspicue reticulatis subtus manifeste prominentibus. Flores in racemum 5-6 cm. longum, 5-6-florum terminalem dispositi atque in foliorum axillis 1-2-fasciculati; rhachis inflorescentiae dense fulvo-stellato-tomentosa; bractae 2-3 mm. longae lineares; flores circ. 1.6 cm. longi pedicello 7-9 mm. longo dense stellato-tomentoso suffulti. Calyx cupuliformis papyraceus 6-7 mm. altus, ore in sicco complanatus circ. 6 mm. latus, extus dense fulvo-stellato-tomentosus intus glaber margine truncato hic illic glandulis capitatis ornato, denticulis 5 distinctis praeditus. Corolla 5-partita, tubo circ. 3.5 mm. alto extus tomentoso basi ipsa excepta, intus glabro, lobis in aestivatione valvatis 12 mm. longis 2.5-3 mm. latis extus dense albido-tomentosis intus glabris apice tomentello excepto. Stamina 10, filamentis parte libera ad 3 mm. longis basi lanato-tomentosis apice glabris, antheris 6-7 mm. longis margine pilis stellatis conspersis. Ovarium superum ovoideum multiovulatum dense longiuscule albo-pilosum; stylus glaber quam corollae lobi paululo longior.

In the north-west of the Province of Fukien. Coll. J. de la Touche. No. 149.

The species is closely allied to *S. confusus*, Hemsl. and to *S. philadelphoides*, Perk., but agrees with neither of them as represented by type sheets at Kew. In the details of their floral structure the three species are very much alike.

***Syringa Adamiana*,* Balf. f. et W. W. Sm. Sp. nov.**

Species ex affinitate *S. villosae*, Vahl a qua inflorescentiis crebre hirsutulis, floribus pallido-roseis ore albis, calycibus truncatis vix denticulatis recedit; valde affinis *S. villosae*, Vahl, var. *hirsutae*, C. Schn., plantae koreano-mandschuricae; apud plantas szechwanenses haud procul a *S. Wilsonii*, Schn. quae ramulis inflorescentiisque glabris inter alia divergit.

Frutex in cultura 2-3-metralis. Ramuli annotini rotundati sat crassi olivacei crebre patenti-hirsutuli, lenticellis multis parvis pustulosis notati, hornotini cinerascetes glabri. Folia plerumque 7-12 cm. longa, 3-6 cm. lata, elliptico-lanceolata vel elliptico-oblonga, apice acuta vel modice acuminata, basi $\pm$ rotundata vel late cuneata, textura ut in *S. villosa*, supra saturate viridia glabra, margine ciliolata, infra pallidiora ad costam nervosque longiuscule hirsuta, caetera glabra; petioli 1-1.5 cm longi sparse hirsuti vel glabrescentes. Inflorescentiae mediocres (adhuc in cultura) 12-15 cm. longae 7-8 cm. latae, subsimiles eis *S. Wilsonii*, Schn., ramulis densiuscule hirsutulis. Flores suaveolentes pallido-rosei, ore albi. Calyx 2 mm. longus sparse pilosulus truncatus vix denticulatus viridis apicem versus pellucidus roseo-suffusus. Corollae tubus 8-9 mm. longus apicem versus paulo dilatatus, laciniae ovatae obtusiusculae 2 mm. vix. superantes erectae serissime patentes. Antherae faucem haud attingentes flavidae. Stylus circ. 2.5 mm. longus. Fructus non visus.

West China:—Province of Szechwan. Cultivated in the Royal Botanic Garden, Edinburgh, from seed collected by Mr. C. M. Watson near Tatsienlu. Types taken from the garden specimens are preserved in the Herbarium of the Royal Botanic Garden. It flowered freely in June 1915. A graceful species and of value for its late flowering. It belongs to the group *Villosae* and is closely akin to *S. villosa*, Vahl, especially to the Corean and Manchurian variety of that species known as var. *hirsuta*, Schn. In habit and appearance

* By the specific name it is desired to hold in memory Private Thomas Adam, 2nd Scots Guards, a gardener of the staff of the Royal Botanic Garden, Edinburgh, who fell in action in Flanders on 16th May 1915.

it resembles *S. Wilsonii*, Schn., which differs in the glabrous inflorescence and in the size and shape of the corolla-lobes.

***Syringa pinetorum*, W. W. Sm. Sp. nov.**

Species foliis parvis ex affinitate *S. microphyllae*, Diels; petiolis brevioribus calyce longiuscule dentato glabro dentibus ciliolatis exceptis inter alia recedit.

Frutex 1-3 m. altus; ramuli juniores dense patenti-incanopilosi, vetustiores sero glabrescentes grisei. Folia 2-3.5 cm. longa 1-1.5 cm. lata, ovata, rarius lanceolato-ovata vel subelliptica, apice acuta rarius obtusa, basi plus minusve rotundata, supra sparse pilosa vel glabra, margine ciliolata, subtus pallidiora, ad costam nervosque longiuscule albo-pilosa, caeterum glabra; nervi 3-4 paria subtus conspicui bene reticulati; petioli 2-5 mm. longi pilosi. Inflorescentiae 10-18 cm. longae, 7-8 cm. latae, erectae subaxiflorae $\pm$ dense albo-pilosae; pedicelli brevissimi circ. 1 mm. longi vel fere nulli; flores pallido-lavendulaceo-rosei ex collectore. Calyx circ. 2 mm. longus ad tertiam vel quartam partem in dentes triangulares divisus glaber dentibus ciliolatis exceptis. Corollae tubus 8-9 mm. longus apicem versus paullulo dilatatus; laciniae oblongae obtusiusculae 3 mm. longae. Antherae parte superiori tubi insertae sed corollae fauces vix attingentes. Fructus deest.

"Shrub of 4-8 ft. Flowers pale lavender-rose. In open pine forests on the Lichiang Range, Yunnan. Lat. 27° 40' N. Alt. 10,000-11,000 ft. June 1914." G. Forrest. No. 12,472.

***Syringa Wardii*, W. W. Sm. Sp. nov.**

Species ex affinitate *S. oblatae*, Lindl. et *S. affinis*, Henry; ab ambabus foliis multo minoribus apice vulgo rotundatis inter alia discrepat.

Arbuscula vel frutex 3-5 m. altus; ramuli juniores dense incano-pubescentes vetustiores glabrescentes grisei. Folia ramulorum floriferorum 1-2 cm. longa 1-2 cm. lata, suborbicularia vel perlate ovata, apice rotundata vel obtusa, basi $\pm$ rotundata supra atroviridia glabra subtus pallidiora glabra vel subglabra nervis gracilibus bene reticulatis; petioli 2-3 mm. longi minute pubescentes vel glabrescentes. Inflorescentiae circ. 10 cm. longae circ. 7 cm. latae erectae subaxiflorae dense albo-pubescentes minute glandulosae; pedicelli 1-3 mm. longi pubescentes minute nitenti-glandulosi; flores siccitate pallidi. Calyx circ. 2 mm. longus glaber vel subglaber sparse minute glandulosus ore truncato dentibus minutis vel fere nullis. Corollae tubus 9-13 mm. longus supra medium dilatatus; laciniae ovatae obtusae $\pm$ 4 mm. longae. Antherae paulo supra medium

tubum insertae apicibus 2-3 mm. a faucibus corollae remotis. Fructus deest.

"Small tree or shrub of 10-15 ft. At Tungchuling, Yunnan, in the arid region at 10,000 ft." Kingdon Ward. No. 312.

The collector notes that the same plant is found in the Mekong Valley and near Atuntsu at 12,000 ft.

Tanacetum aureoglobosum, W. W. Sm. et Farrer. Sp. nov.

Species affinis *Tanaceto nubigeno*, Wall., a quo habitu nano ramosissimo foliis capitulisque minoribus valde recedit.

Planta nana globoso-caespitosa vix 8 cm. superans, radicibus multis crassis ramosis intertextis praedita. Caules perplurimi ramosi infra defoliati supra sat foliosi in massam globosam conferti undique minute incano-tomentelli. Folia parva $\pm$ 5 mm. longa incano-tomentella petiolo 2-3 mm. longo suffulta pinnatim dissecta segmentis primariis 2-3-jugis in lobulos vulgo tres lineares subteretes $\pm$ 1 mm. longos divis. Capitula folia paululo superantia apices ramulorum versus 5-6-aggregata, pedunculis 2-3 mm. longis incanis suffulta, circ. 3 mm. longa; involucri phylla $\pm$ 15 lanceolata vel oblonga $\pm$ 2 mm. longa tenuiter membranacea margine scariosa incano-pilosa. Flores flavi in capitulo 15-20, minimi heterogami 3-4 mm. longi extus sparse pilosuli glandulosi. Achaenia (immatura) oblonga minute pilosula vel glabra 1 mm. longa pappo deficiente.

"A charming wee dome of fine grey, turning a solid ball of gold in Oct.-Nov. From the same aspects and regions as No. 103, usually on slopes of harder caky loess loam less charged with shingle. Kansu, West China." Farrer and Purdom. No. 320.

A very distinct little species.

Vaccinium mekongense, W. W. Sm. Sp. nov.

Species affinis *V. salweenensi*, W. W. Sm. a quo foliis minoribus, inflorescentiis brevioribus, bracteis conspicuis, calycis lobis triangularibus acutis, corolla globosiore discriminatur.

Frutex .6-1.6 m. altus ramosus ramulis primum glanduloso-pilosis tandem glabrescentibus cinerascentibus. Folia petiolo $\pm$ 2 mm. longo pilosulo suffulta; lamina 2-3 cm. longa, $\pm$ 1 cm. lata, oblongo-lanceolata vel subelliptica, apice acuta vel raro (in eodem specimine) obtusa, callosa-apiculata, basi $\pm$ late cuneata vel subrotundata, margine crebre callosa-serrulata, papyracea, paginis fere concoloribus olivaceis superiore ad costam parce pilosula, inferiore sparse albo-pilosa vel glabrescente, nervis utrinque visibilibus sed haud conspicuis. Inflorescentiae axillares racemosae numerosae subdensiflorae 3-5 cm. longae pilis glanduloso-capitatis mediocriter vestitae;

bracteae bracteolaeque 3-5 mm. longae lanceolatae vel lineari-lanceolatae inter flores apertos conspicuae glabrae vel ciliolatae rubridae; pedicelli ± 1 mm. longi. Calyx purpureus; tubus cum ovario glaber vel sparsissime pilosulus ± 1 mm. longus, lobi ± 1 mm. longi triangulares acuti glabri vel pilis minimis parce conspersi. Corolla circ. 4 mm. longa urceolata albida roseo-striata extra glabra intus albido-pilosa lobis brevibus recurvis. Stamina circ. 2 mm. longa filamentis dense pilosulis antheris exaristatis. Fructus deest.

"Shrub of 2-5 ft. Flowers creamy-white, striped rose. Open situations on the Yungchang-Mekong divide, Yunnan. Lat. $25^{\circ} 15'$ N. Alt. 7000-8000 ft. May 1913." G. Forrest. No. 9887.

Vaccinium salweenense, W. W. Sm. Sp. nov.

Species affinis *V. Doniano*, Wight a quo habitu humiliore ramulis haud glabris foliis minoribus lanceolatis antheris exaristatis differt; ab *V. exaristato*, Kurz habitu, foliis minoribus textura tenuioribus, floribus saturate roseis recedit; ab *V. fragili*, Franch. ramulis foliisque multo minus pilosis, calycis tubo glabro, filamentis brevioribus antheris exaristatis inter alia signa distinguenda.

Frutex ± 1 m. altus ramulis substrictis gracilibus primo $\pm$ dense fulvido-pilosulis mox sparsim, tandem glabrescentibus. Folia petiolo 2-3 mm. longo pilosulo mox glabrescente suffulta; lamina ± 3.5 cm. longa, 1.2-1.5 cm. lata, lanceolata, apice acuta vel breviter acuminata, basi $\pm$ late cuneata vel subrotundata, margine regulariter calloso-serrulata, tenuiter papyracea, supra atroviridis ad costam minute pilosula vel glabrescens, infra pallidior ad costam nervosque sparse pilosa tandem fere glabra, nervis siccitate utrinque subconspicuis. Inflorescentiae axillares racemosae numerosae laxiflorae 5-7 cm. longae mediocriter pilosae; bracteae bracteolaeque 2-4 mm. longae lanceolatae vel lineari-lanceolatae tempore florendi inconspicuae pilosulae vel glabrae rubridae; pedicelli ± 2 mm. longi. Calyx purpureus; tubus cum ovario glaber ± 1 mm. longus, lobi ± 1 mm. longi ovato-triangulares apiculati margine ciliolati. Corolla 4-5 mm. longa urceolata saturate rosea extra glabra, intus albido-pilosa lobis brevibus erectiusculis. Stamina circ. 2.5 mm. longa filamentis dense pilosulis antheris exaristatis. Fructus deest.

"Shrub of 2-4 ft. Flowers deep rose. Open grassland on the Salween-Yungchang divide above Pu-piao, Yunnan. Lat. $25^{\circ} 10'$ N. Alt. 7000-8000 ft. May 1913." G. Forrest. No. 9867.

Vaccinium scopulorum, W. W. Sm. Sp. nov.

Species affinis *V. serrato*, Wight, a quo habitu graciliore, ramulis dense hispidis, foliis minoribus nunquam verticillatis, inflorescentiis axillaribus per caulem distributis nec apicem versus congestis, staminum filamentis pilosulis inter alia signa minora divergit.

Frutex 1-1.5 m. altus ramulis elongatis gracilibus primo dense setoso-hispidis. Folia subsessilia 3-4 cm. longa, 1-1.5 cm. lata, lanceolata vel ovato-lanceolata vel elliptico-lanceolata, apice acuta callosio-apiculata, basi cuneata, margine remote serrulata, utrinque glabra, supra atroviridia infra olivacea, nervis utrinque subconspicuis. Inflorescentiae axillares racemosae numerosae per caulem distributae effusiores $\pm$ 5 cm. longae, 10-20-florae glabrae; bractae $\pm$ 1 mm. longae linearilanceolatae glanduloso-ciliatae, erga basim racemorum aggregatae imbricatae, supra remotae; pedicelli 1-2 cm. longi patentes. Calycis lobi triangulares circ. 1.5 mm. longi, purpurei glabri vel subglabri; ovarium circ. 1.5 mm. longum. Corolla circ. 5 mm. longa suburceolata extra minute puberula viridi-flava vel viridi-albida apice kermesina; lobi parvi recurvi. Stamina persimilia eis *V. serrati*, sed filamentis pilosulis praedita. Fructus vix maturus globosus 4-5 mm. diametro, in scheda niger.

"Shrub of 5 ft. Flowers greenish-white tipped crimson, fragrant. On shady rocks and cliffs on the hills to the northwest of Tengyueh, Yunnan. Lat. 25° 10' N. Alt. 6000 ft. March 1913." G. Forrest. No. 9788.

"Shrub of 2-5 ft. In seed. On cliffs amongst scrub on hills west of Tengyueh. Lat. 25° N. Alt. 6000 ft. May 1912." G. Forrest. No. 7559. June 1912. No. 8073.

"Evergreen shrub of 2-3 ft. Flowers yellowish-green, tipped crimson-maroon. Open situations amongst scrub and on humus-covered boulders on the Shweli-Salween divide. Lat. 25° N. Alt. 9000 ft. April 1914." G. Forrest. No. 12,313.

A near ally of the Himalayan and Khasian *V. serratum*, Wight; at first sight very distinct, but in the structure of the flower approaching very closely.

Vaccinium spicigerum, W. W. Sm. Sp. nov.

Species affinis *V. fragili*, Franch. a quo habitu diverso, ramulis dense fulvido-tomentosis, petiolis longioribus, foliis ad 6 cm. longis lanceolatis longiuscule acuminatis, inflorescentiis spiciformibus bracteis inconspicuis, calyce incano-tomentoso discriminatur; quoad floris structuram valde appropinquat.

Frutex 1-5 m. altus ramosus ramulis patentibus primum dense fulvido-tomentosis tandem glabrescentibus. Folia petiolo

ad 5 mm. longo $\pm$ tomentoso praedita; lamina vulgo 4-6 cm. longa, 1.5-2 cm. lata, lanceolata, apice longiuscule acuminata callosa-apiculata, basi cuneata, margine crebre serrulata serraturis minute apiculatis, papyracea, paginis siccitate subconcoloribus glabris costa minute pilosula excepta. Inflorescentiae axillares vel pseudo-terminales foliis ramulorum floriferorum nonnunquam omnino delapsis spiciformiter racemosae numerosae $\pm$ 3 cm. longae dense incano- vel fulvido-tomentellae; bracteae bracteolaeque 1-3 mm. longae $\pm$ lineares inconspicuae tomentellae; pedicelli $\pm$ 1 mm. longi incani. Calyx vix 2 mm. longus dense incano-tomentosus; lobi ovati $\pm$ acuti fere 1 mm. longi. Corolla circ. 5 mm. longa urceolata alba, saepe roseo-suffusa, glabra lobis brevibus recurvis. Stamina circ. 3 mm. longa eis *V. fragilis* similia, filamentis pilosulis, antheris dorso breviter biaristatis. Fructus deest.

"Shrub of 10-15 ft. Flowers pure white, fragrant. Amongst scrub on the hills at the north end of the Tengyueh Valley, Yunnan. Lat. 25° N. Alt. 7000 ft. May 1912." G. Forrest. No. 7637.

"Shrub of 2-4 ft. Flowers white, tinged rose. Amongst scrub on the divide between the Shweli (Lungchiang) and Tengyueh Valleys, Yunnan. Lat. 25° N. Alt. 6000-7000 ft. May 1912." G. Forrest. No. 7841.

"Shrub of 3-4 ft. Flowers white flushed rose. Open dry situations on the margins of thickets on the Shweli-Salween divide. Lat. 25° 20' N. Alt. 9000 ft. June 1913." G. Forrest. No. 12,060.

Small tree; among scrub in mountains near Kiao-mé-ti, Yunnan. Alt. 10,000 ft. Maire. No. 671 in Herb. Edin. (anno 1914).

This new species shows close relationship with the less hairy forms of *V. fragile*, Franch., such as the variety known as *myrtifolia*, but the points of difference are too many to permit of its being attached to that species as a variety.

***Viburnum adenophorum*, W. W. Sm. Sp. nov.**

Species affinis *V. Mullahae*, Ham. et *V. hirtulo*, Rehder sed foliis subtus glanduligeris, inflorescentiis tomento denso fulvo indutis inter alia signa recedit.

Frutex erectus ramulis primo fulvo-tomentosis atque sparse setosis. Folia petiolo $\pm$ 1 cm. longo tomentoso atque setoso praedita; lamina late ovata, 6-8 cm. longa, 3-5.5 cm. lata, basi $\pm$ rotundata, apice acuminata, margine serrata, membranacea, supra atro-viridis pilis furcatis sparse praedita subtus pallidior ad costam nervosque sparse pilosula glandulis minutis rotundatis nitentibus conspersa; nervi utrinque 7-8 subparalleli usque

ad dentes stricte excurrentes; stipulae nullae. Inflorescentiae corymbosae 5-8 cm. diametro ubique tomento denso fulvo indutae pedunculis $\pm$ 2 cm. longis, radiis primariis plerumque 7. Calycis lobi triangulares vix 0.5 mm. longi dense tomentosi. Corolla alba rotata circ. 5 mm. diametro, $\pm$ 2.5 mm. alta, extra tomentosa intra glabra, sub medium in lobos orbiculares fissa. Stamina corollam paulo superantia. Ovarium circ. 2 mm. longum setulis fasciculatis dense tomentosum. Fructus deest.

Shrub with caducous foliage, white flowers, among scrub on hills near Long-ky, Yunnan. Alt. 2300 ft. June. Maire. No. 94 in Herb. Edin.

A species of the group *Odontotinus* and closely allied to *V. Mullaha*, Ham. (= *V. stellulatum*, Wall.) and *V. hirtulum*, Rehder. It is easily distinguished by the minute shining glands on the under surface of the leaf, and by the smooth fulvous tomentum of the inflorescence.

***Viburnum brachybotryum*, Hemsl. var. *tengyuehense*, W. Sm. Var. nov.**

A typo recedit petiolis stellato-puberulis, foliis subtus ad axillas venarum albo-tomentellis, inflorescentiis fructiferis $\pm$ effusis, stylo brevi calycis lobos haud superante.

"Shrub of 6-12 ft. In fruit. Amongst scrub in open situations on the divide between the Shweli and Tengyueh Valleys. Lat. 25° N. Alt. 7000 ft. June 1912." G. Forrest. No. 8216.

"Shrub of 4-5 ft. In fruit. Open situations amongst scrub in the hills to the north-east of Tengyueh, Yunnan. Lat. 25° 10' N. Alt. 6000-7000 ft. July 1912." G. Forrest. Nos. 8756, 8770.

Very near the Hupeh plant, but differing in the more hirsute shoots, the stellately pubescent petioles, in the tufts of hairs in the axils of the veins, and in the short style.

***Viburnum Dalzielii*, W. W. Sm. Sp. nov.**

Species affinis *V. hirtulo*, Rehder, a quo foliis subcoriaceis acuminatis cordatulis 7-10 cm. longis, nervis 6-12 paribus, corymbis subsessilibus inter alia differt.

Frutex ramulis primo dense fulvo-setosis tandem glabris cinereis. Folia petiolo $\pm$ 1 cm. longo dense fulvo-setoso suffulta; lamina ovato-lanceolata, 8-10 cm. longa, 3-4 cm. lata, basi cordatula, apice breviter acuminata, margine remote atque minute denticulata, supra atroviridis parce pilosula vel glabrescens nisi ad costam nervosque impressos fulvo-setosulos,

infra pallidior minute punctulata glabra nisi ad costam nervosque eminentes longiuscule fulvo-setosos; nervi utrinque 6-12 ad marginem excurrentes; stipulae nullae. Corymbus $\pm$ 5 cm. diametro, subsessilis, pedicello 1 cm. haud superante dense fulvo-setosulo, radiis primariis plerumque 5; flores e radiis ordinis tertii vel quarti nati. Calycis lobi triangulares 0.5 mm. longi cum ovario fulvo-setosuli. Corolla albida rotata 4-5 mm. diametro, extra setosula, ad duas partes in lobos suborbiculares fissa. Stamina corollam paulo superantia. Stylus brevis calycis lobis brevior. Fructus circ. 8 mm. longus, circ. 6 mm. latus, multo compressus apice hirsutulus.

"Near Thaiyong, a mountain valley sixty miles west from the port of Swatow, China." Coll. Dr. J. M. Dalziel. Nos. 170, 171 in Herb. Edin.

The nearest affinity of this plant appears to be *Viburnum hirtulum*, Rehder. The much-compressed fruit with one side slightly concave suggests that of *V. sempervirens*, C. Koch.

***Viburnum erubescens*, Wall. var. *carnosulum*, W. W. Sm.**
Var. nov.

A typo recedit foliis carnosulis haud membranaceis apice basique plerumque cuneatis, nervis obscurioribus, pedunculis brevioribus, inflorescentiis magis congestis.

"Shrub of 1-5 ft. Flowers pale shell pink, fragrant. Dry stony situations on the divide between the Sha-yang and Chutong Valleys, Yunnan. Lat. 25° 20' N. Alt. 6700 ft. April 1910." G. Forrest. No. 5520.

"Shrub of 8-20 ft. In fruit. Open situations amongst scrub in side valleys on the hills to the east of Tengyueh, Yunnan. Lat. 25° N. Alt. 6000 ft. May 1912." G. Forrest. No. 7955.

"Shrub of 6-10 ft. Flowers white, faintly flushed dull crimson on exterior, fragrant. Open scrub on the hills west of Tengyueh. Lat. 25° N. Alt. 7000 ft. March 1913." G. Forrest. No. 9808.

"Shrub of 3-6 ft. Flowers white, rose exterior, fragrant. Amongst scrub on the Shweli-Salween divide, Yunnan. Lat. 25° 5' N. Alt. 6000 ft. May 1913." G. Forrest. No. 9864.

Another form of this most variable species which has a range from Ceylon through the Deccan to the Himalaya, Burma, and Western China.

***Viburnum erubescens*, Wall. var. *limitaneum*, W. W. Sm.**
Var. nov.

A typo recedit foliis ovalibus apice $\pm$ rotundatis nec acuminatis nec acutis, pedunculis gracilibus, inflorescentiis paucifloris congestis.

"Shrub of 6-12 ft. In fruit; fruit dull red. In thickets on the outskirts of the lava-bed west of Tengyueh, Yunnan. Lat. 25° N. Alt. 5000 ft. May 1912." G. Forrest. No. 7753.

"Bushy shrub of 5-8 ft., growing by stream in the open or in shade of bamboo thickets. Flowers pink in bud, white when open. Alt. 8000 ft. June 1914. Feng-shiu-ling Camp, Upper Burma, near the Chinese frontier." Kingdon Ward. No. 1658.

Viburnum flavescens, W. W. Sm. Sp. nov.

Species affinis *V. ovatifolio*, Rehder, ejusque sociis; foliis breviter stipulatis utrinque pubescentibus plerumque medio latissimis, petiolo 1-1.5 cm. longo, floribus flavidis, ovario $\pm$ sparse stellato-pubescente glanduloso dignoscenda.

Frutex 2-7 m. altus ramulis stellato-puberulis tandem glabris cinerascentibus. Folia petiolo 1-1.5 cm. longo sparse stellato-puberulo suffulta; lamina 4-8 cm. longa, 3-5 cm. lata, rhomboidea vel rhombico-ovata vel latiuscule ovata, medio latissima, basi $\pm$ rotundata, apice acuminata, serrata, in sicco membranacea, supra pilis furcatis bene conspersa, subtus ad costam nervosque sparse pilosula, ad axillas nervorum albotomentella, caeterum glabra vel subglabra; nervi utrinque 5-7 subparalleli, ad dentes excurrentes; stipulae minimae subulatae. Corymbus terminalis 5-6 cm. diametro, pedunculo 1-1.5 cm. longo sparse puberulo suffultus, radiis primariis 5-7 minute stellato-puberulis atque glandulosis, floribus e radiis ordinis tertii vel quarti natis. Calycis lobi circ. 0.75 mm. longi triangulares cum ovario 3 mm. longo oblongo sparse stellato-pubescentes. Corolla rotata circ. 7 mm. diametro ad duas partes in lobos ovatos obtusos divisa utrinque glabra flavida. Stamina corollam dimidio superantia fere 5 mm. longa. Drupa deest.

"Shrub of 6-10 ft. Flowers deep creamy-yellow, faintly fragrant. Dry open situations amongst scrub on the eastern flank of the Lichiang Range. Lat. 27° 10' N. Alt. 9000-10,000 ft. May 1910." G. Forrest. No. 5551.

"Shrub of 10-20 ft. Flowers creamy-yellow. In thickets and mixed forests on the eastern flank of the Lichiang Range. Lat. 27° 15' N. Alt. 10,000-11,000 ft. June 1910." G. Forrest. No. 5789.

This species is distinguished from *V. ovatifolium*, Rehder, by the shape of the leaf and the long stamens, from *V. betulifolium* Batal. and *V. lobophyllum*, Graebn. by the leaves pubescent on both sides and of different shape; from *V. dasyanthum*, Rehder, and *V. hupehense*, Rehder, by the glabrous corolla. The leaves suggest those of *V. dilatatum*, Thunb.

Viburnum odoratissimum, Ker, var. *conspersum*, W. W. Sm.
Var. nov.

A typo recedit ramulis inflorescentiisque sparse stellato-puberulis, foliis ovalibus apice plerumque rotundatis utrinque primo ad costam sparse fulvo-stellato-puberulis, petiolis primo densiuscule stellato-puberulis mox glabrescentibus.

"At Thaiyong, a mountain valley, 2000 ft. elevation, sixty miles west from the port of Swatow, surrounded by hills and intersected by glens richly wooded. Sept. 1898." Coll. Dr. J. M. Dalziel. No. 174.

Viburnum propinquum, Hemsl. var. *Mairei*, W. W. Sm. Var. nov.

A typo clare differt foliis multo minoribus 3-4.5 cm. longis, multo angustioribus, 1-1.2 cm. latis, lineari-lanceolatis, apice acutis nec acuminatis, basi anguste cuneatis, inflorescentiis minoribus 2-4 cm. latis, fructibus 3-4 mm. vix superantibus.

This plant differs very much from the typical plant as seen in specimens from the province of Hupeh. The species is, however, very variable, and a small-leaved form with short globose fruits has been described from Szechwan—*V. propinquum*, Hemsl., var. *parvifolium*, Graebner. In this variety the leaves do not exceed 4 cm. and the fruit is about 3 mm. long; it differs, however, from var. *Mairei* in the ovate acuminate leaves.

Viburnum thaiyongense, W. W. Sm. Sp. nov.

Species ex affinitate *V. Mullahae*, Ham., *V. brevipedis*, Rehder, *V. Fordiae*, Hance, et *V. hirtuli*, Rehder; petiolis brevissimis, foliis ellipticis apice basique $\pm$ rotundatis utrinque $\pm$ pilosulis recedit.

Frutex ramulis primo pilis fasciculatis dense fulvo-tomentosis tarde glabrescentibus. Folia petiolo 3-5 mm. longo dense tomentoso suffulta; lamina 4-5 cm. longa, 3-3.5 cm. lata, $\pm$ late elliptica, basi rotundata, apice rotundata vel obtusa, margine remote atque irregulariter dentata vel denticulata, crasse papyracea, supra atroviridis pilis furcatis vel fasciculatis conspersa, ad costam impressam nervosque fulvo-setosula, infra pilis fasciculatis $\pm$ dense fulvo-tomentosa; nervi utrinque plerumque 5 subparalleli ad dentes excurrentes; stipulae nullae; nonnunquam folium parvum quasi stipulare e gemma axillari enatum. Corymbus terminalis circ. 5 cm. diametro, pedunculo 1-1.5 cm. longo tomentoso suffultus, radiis primariis 5-6 fulvo-tomentosis, floribus e radiis ordinis tertii vel quarti natis; radii secundarii ad ultimos longiuscule pilosi bracteis linearibus

pilosis praediti. Calycis lobi 0.5 mm. longi triangulares extra longiuscule pilosi. Corolla rotata 4 mm. diametro ad duas partes in lobos suborbiculares divisa glabra vel extra parce pilosula. Stamina 3 mm. longa corollam paululo superantia. Stylus brevis calycis lobos subaequans. Ovarium longe pilosum. Fructus deest.

"At Thaiyong, a mountain valley, 2000 ft. elevation, sixty miles west of the port of Swatow, China. Aug. 1897." Coll. Dr. J. M. Dalziel. No. 172.

Vitex yunnanensis, W. W. Sm. Sp. nov.

Species ex affinitate *V. vestitae*, Wall. a qua foliis parvis brevissime petiolulatis, floribus multo majoribus inter alia facile dignoscitur.

Frutex 1-5 m. altus ramulis primo tomentellis flavo-glandulosis tandem glabrescentibus cinereis. Folia 3-foliolata, rarius 5-foliolata, petiolo 1.5-3 cm. longo fulvo-tomentello suffulta; foliola inaequalia, terminale saepius majus petiolulo 2 mm. longo praeditum, lateralia brevissime petiolulata, inferiora dum adsint minima, majora 3-4 cm. longa, $\pm$ 2 cm. lata, ovata apice obtusiuscula basi late cuneata vel rotundata, papyracea margine integra ciliolata supra atroviridia ad nervos sparse pilosula, glandulis flavis nitentibus conspersa, infra fulva, ad costam nervosque dense albo-pilosa caetera subepilosa glandulosa. Inflorescentiae axillares e cymulis 3-7-floris compositae; pedunculi ad 1 cm. longi, pedicelli 2-3 mm. longi, bractae lineares vix 1 mm. longae, omnes albo-pilosi atque dense glandulosi. Calyx circ. 3 mm. longus campanulatus albo-pilosus glandulosus dentibus 5 vix 0.5 mm. longis late triangularibus obtusiusculis. Corolla ad 1.7 cm. longa alba vel roseo-suffusa; tubus fere 1 cm. longus leviter incurvus supra paululo dilatatus extus puberulus intus ad insertionem staminum dense albo-pilosus; lobi inaequales rotundati, extus glandulosi intus glabri, anticus circ. 7 mm. longus. Filamenta basi albo-pilosa supra glabra. Ovarium 2-4 locale. Drupa globosa calyce fere ad 1 cm. diametro aucto suffulta, ipsa $\pm$ 1 cm. diametro, endocarpio osseo praedita.

"Shrub of 6-9 ft. Flowers white or flushed rose. Open dry situations in the Fengkow Valley, Yunnan. Lat. 27° 40' N. Alt. 8000 ft. June 1914." G. Forrest. No. 12,471.

"Shrub of 3-6 ft. Flowers white, tinged blue. Open scrub on the descent to the Yangtze from the eastern boundary of the Lichiang Valley, Yunnan. Lat. 27° 15' N. Alt. 9000-10,000 ft. June 1913." G. Forrest. No. 10,100.

The following are, I believe, the same:—

"Shrub of 10-15 ft. Flowers pale soft rose. Amongst

scrub on the mountains in the N.E. of the Yangtze bend. Lat. 27° 45' N. Alt. 10,000 ft. Aug. 1913." G. Forrest. No. 10,719. The leaves are larger and less hairy.

"Shrub of 15 ft. In fruit. In open thickets on the Tong Shan in the Yangtze bend. Lat. 27° 20' N. Alt. 9000 ft. Aug. 1913." G. Forrest. No. 10,891.

"Duplicate of No. 10,891 taken later in fruit. Sept. 1913." G. Forrest. No. 11,349.

This species is readily distinguishable from its Indo-Chinese allies by the large flowers.

Wendlandia subalpina, W. W. Sm. Sp. nov.

Species nana prostrata ex affinitate *W. Henryi*, Oliv.; habitu, foliis minimis, cymulis terminalibus subglobosis distinctissima.

Fruticulus prostratus 30-60 cm. longus habitu *Cotoneastri microphyllae*, Wall. ramosissimus ramis crassis rigidis cortice griseo praeditis ramulis tortuosis brevibus floriferis pilosulis. Folia petiolo 1-2 mm. longo minute pilosulo suffulta; lamina $\pm$ 6 mm. longa $\pm$ 5 mm. lata late ovata vel suborbicularis apice rotundata basi late cuneata integra coriacea supra atroviridis subnitens sparse pilosula nervis obscuris infra pallidior sparsius pilosula nervis 2-3 paribus inconspicuis; stipulae triangulares circ. 1 mm. longae persistentes. Cymulae globosae ramulos terminantes compactae 6-12-florae minute pilosulae folia superiora paululo superantes; pedunculus brevissimus; pedicelli 2-3 mm. longi; bractae bracteolaeque 1-2 mm. longae lineares pilosulae. Calycis tubus turbinatus circ. 1.5 mm. longus sparse pilosulus; lobi fere 1.5 mm. longi lineares vel lineari-lanceolati acuti vel obtusiusculi. Corollae albae tubus elongato-infundibularis vel subcylindricus vix 4 mm. longus apice $\pm$ 1 mm. latus extus glaber vel minute puberulus fauce glaber; lobi 5 contorti patentes tandem reflexi circ. 4 mm. longi 1 mm. lati, loriformes obtusiusculi glabri. Stamina 5, inter lobos corollae inserta, exserta, filamentis 2.5 mm. longis glabris, antheris circ. 1.5 mm. longis dorso affixis. Ovarium biloculare; stylus filiformis multo exsertus circ. 7 mm. longus glaber stigmatibus bifido lobulis 1 mm. longis. Fructus parvus subglobosus circ. 2 mm. diametro calycis lobis persistentibus coronatus crustaceus sparse pilosulus fere per totam longitudinem in duas partes dehiscens; partes ambae post seminum lapsum persistentes. Semina numerosa circ. 0.5 mm. longa minute areolata nitentia pallide brunnea.

"Dwarf prostrate shrub of 1-1½ ft. Flowers white. Open stony pasture and on cliffs in the mountains in the N.E. of the Yangtze bend, Yunnan. Lat. 27° 45' N. Alt. 11,000-12,000 ft. July 1913." G. Forrest. No. 10,378.

"Shrub of 1-2 ft. In fruit. Open dry situations in the Yang-pi mountains, Yunnan. Lat 26° 45' N. Alt. 9000 ft. Sept. 1913." G. Forrest. No. 10,999.

An alpine or subalpine plant, in flower and fruit certainly very closely allied to *W. Henryi*, Oliv., but differing in habit very markedly from any *Wendlandia* known to me.

Ypsilandra yunnanensis, W. W. Sm. et J. F. Jeff. Sp. nov.

Species habitu simillima *Y. tibeticae*, Franch. speciei adhuc unicae; pedicellis, filamentis brevissimis, stylo brevissimo, stigmate trifido nec capitato valde recedit.

Planta 15-30 cm. alta, fructu ad 45-60 cm. aucta. Rhizoma sat crassum radicibus fibrosis bene obsitum. Folia basilaria 6-12, rosulam formantia 6-15 cm. longa, 1.5-2 cm. lata, oblanceolata vel lineari-oblanceolata apice obtusa vel subrotundata indurato-apiculata basi in petiolum vix discretum $\pm$ longiuscule attenuata textura in sicco firma glaberrima nervis $\pm$ 15 vix conspicuis mediano haud majore pererrata; rosula squamis paucis membranaceis vel subfoliaceis basi cincta. Scapus erectus robustus vel nonnunquam gracilis glaber foliis caulinis vaginiformibus 5-6 remotis 1.5-2.5 cm. longis membranaceis scapo appressis praeditus. Inflorescentia racemosa 6-9-flora circ. 3 cm. longa, fructu multo elongata, ebracteata; pedicelli circ. 2 mm. longi, fructu ad 4 mm. elongati glabri. Flores contigui nutantes mediocres albi malodori. Perianthii campanulati persistentis segmenta libera $\pm$ 6 mm. longa circ. 2.5 mm. lata elliptica apice obtusa vel rotundata trinervula. Stamina 6 ad basim segmentorum affixa perianthium medium haud superantia, filamentis glabris basi paulo complanatis antheris hippocrepi-formibus unilocularibus. Ovarium staminibus paulo brevius trilobum triloculare ovulis numerosissimis; stylus brevissimus stigmate trifido lobulis recurvis stylum $\pm$ aequantibus. Capsula alte triloba septicide dehiscens ei *Heloniopsisidis* subsimilis; semina fusiformi-subulata.

"N.W. Yunnan, Salween-Mekong divide, east slope. Wet places in open forest. Alt. 13,000 ft. June 1911." Kingdon Ward. No. 163.

"Plant of 18-24 inches. In fruit. Open pasture on the western flank of the Shweli-Salween divide, Yunnan. Lat. 25° 20' N. Alt. 10,000-11,000 ft. Aug. 1912." G. Forrest. No. 8956.

"Plant of 6-9 inches, malodorous. Flowers white. Shady situations in thickets on Shweli-Salween divide, Yunnan. Lat. 25° 10' N. Alt. 9000 ft. Aug. 1913." G. Forrest. No. 12,055.

Burma:—"Ridge of Naung-Chaung-Nwai divide, Burmo-Chinese frontier. On mossy grass-clad ridge under dwarf

bamboo brake, in damp shady situation. Flowers green. Alt. 11,000-12,000 ft. July 1914." Kingdon Ward. No. 1808.

This new species of *Ypsilandra* does not fit exactly into that genus as described by Franchet. The genus has hitherto been monotypic, and the generic characters were based entirely upon the single species. There is an excellent figure with dissections in Nouv. Arch. Mus. Hist. Nat. Paris, x, pl. 17. The habit of this plant, the leaves, the scales on the scape, the perianth, the anthers, the ovary, and the seeds are quite in accord with the new species, which differs markedly in the very short stamens and style and in the trifid not capitate stigma.