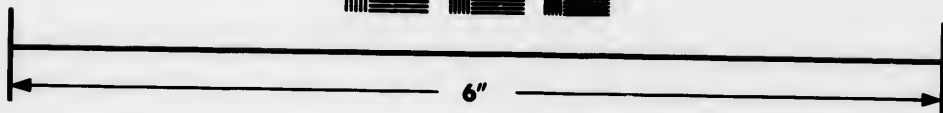
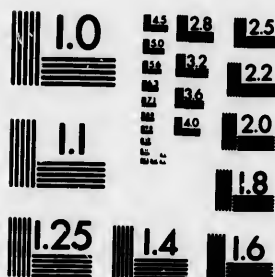


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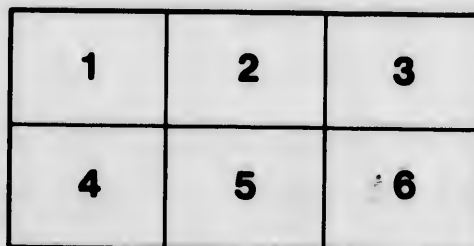
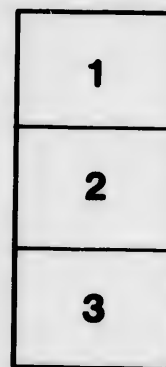
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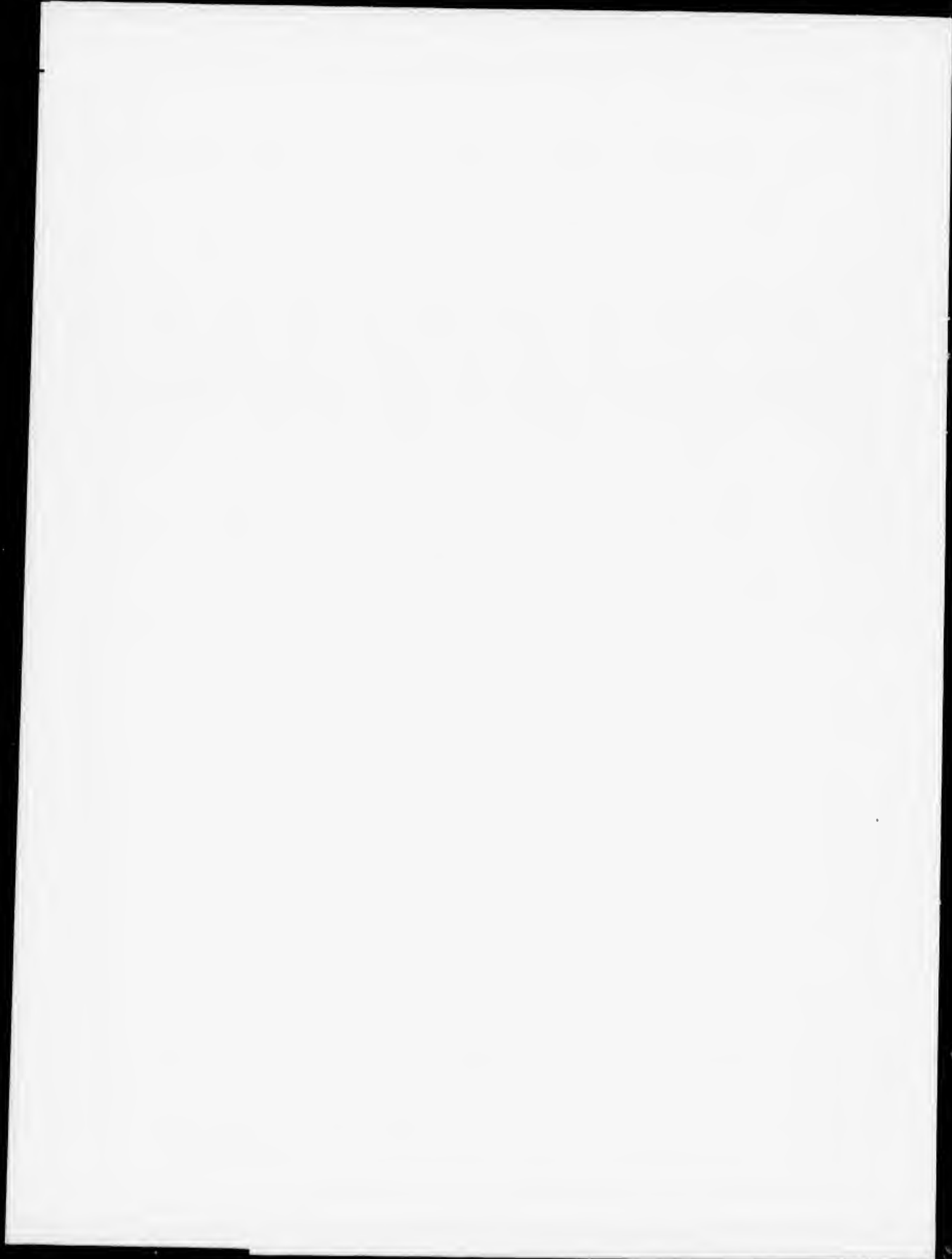
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1. *Ammannia catholica*. var. *Schlecht.* in *Linnaea*, 5. p. 568.

The specimen is unique, and very much advanced, so that we have not seen the petals, nor do we know how, in this state, it may be distinguished from *A. occidentalis*, De Cand., which may therefore prove the same species.

2. *A. sanguinolenta*. Sw.—*De Cand. Prod.* 3. p. 80. *Schlecht.* in *Linnaea*, 5. p. 568.

The petals, in a dry state, are not of a blood-colour, but very pale pink.

1. *Cuphea bracteata*; fruticulosa patens, ramulis calycibusque patentim hirtis pubescentibus, foliis ovato-lanceolatis acuminatis basi subcordatis subsessilibus utrinque hirtis pubescentibus, pedicellis unifloris solitariis vel binis supra axillaribus alternis folio floralis 2-4-plo brevioribus, calycibus 6-7 lin. longis basi gibbis, petalis 6 duobus obovato-oblongis (3-4 lineas longis) cæteris pusillis cito marcescentibus, staminibus 12? inclusis alternis pilosis, ovario sub 14-ovulato styloque glaberrimis.—*C. bracteata*. *Lag.*?

HAB. Talisco.—The longer and unguiculate petals are purple, the others (when dry) pale. It appears to belong to De Candolle's section "*Fruticoseæ*."

2. *C. tenella*; annua ramosa, ramis gracilibus puberulis, foliis angusto-lanceolatis obtuse acuminatis basi in petiolum attenuatis utrinque glabris vel minute puberulis, pedicellis capillaribus oppositis (nunc alternis) folium florale æquantibus, calyce fructifero anguste oblongo basi subæquali glabro glanduloso punctato, petalis minutis, stylo brevi pubescenti, fructu 21-24 spermo.

Calyces floriferi vix lineam superantes, subcylindracei; fructiferi 1-sesquilineam longi, anguste ampullacei, collo oreque obliquis.

We have not ascertained satisfactorily the number of stamens, although there are at least eleven, and we think twelve; they are all included within the tube of the calyx; the number of petals is also doubtful, but appears to be six.

3. *C. floribunda*; caule fruticoso ramoso, ramis elongatis scabris, foliis oblongo-lanceolatis acuminatis basi in petiolum longiusculum attenuatis utrinque nitidulis scabris, floribus racemosis in paniculas secundas sæpius digestis, ramis inflorescentiæ bracteis linearibus patentim glanduloso-hirsutis, calycibus deflexis arenatis basi obtuse calcaratis pubescenti-viscosis ore intus villosis, ovario 18-21-ovulato apice in stylum exsertum glabrum sensim attenuato.

HAB. Talisco and Tepic.—The calyx is red, and resembles that of *C. Melvillea*, but is not above eight or nine lines long. The two tolerably large petals (1½-2 lines long) are of a deep blood-red colour, the others we have not observed. There seem to be eleven stamens, all of them included. It obviously approaches to *C. secundiflora*, Fl. Mex., which we at one time thought it might be; but that is said to be an annual, or at all events an herbaceous plant. It is also much allied to *C. Melvillea*, but that has longer calyces and no petals.

4. *C. barbiger*; caule fruticoso? scabro, foliis subsessilibus utrinque hispidis oblongis basi obtusis apice acutiusculis, pedicellis brevibus extra-axillaribus terminalibus racemoso-spicatis subsecundis, calycibus longe tubulosis basi obtuse calcaratis hirsutis, petalis

duobus, staminibus 12? subexsertis, filamentis quibusdam (3 vel 4?) nudis cæteris valde purpureo-lanatis duobus etiam ultra antheram purpureo-barbatis, stylo glabro incluso.

HAB. Talisco.—This resembles, in some points, *C. procumbens*, Cav., but that has a much shorter flower, and the hairs on the calyx glandular. We judge that the terminal flowers form a spike-like raceme, from the appearance of one from which every flower has fallen off from the short pedicels. The tube of the calyx is rather more than an inch long.

5. *C. equipetala*, Cav.—HAB. Talisco.

ORD. XXXII. RHIZOPHOREÆ. Br.

1. *Rhizophora Mangle*, Linn.

ORD. XXXIII. COMBRETACEÆ. Br.

1. *Terminalia Catappa*, Linn.

From the appearance of the specimens, we suspect that they were collected at the same time, and along with those noticed from Loo Chou and Bonin. But we believe the species, or a variety of it, is also a native of Mexico.

1. *Conocarpa erecta*, H. B. K.

1. *Combretum farinosum*, H. B. K. *Nov. Gen.* 6. p. 110.—*Schlecht. in Linn.* 5. p. 558.—HAB. Acapulco and Tepic.

2. *C. Mexicanum*, H. and Bonpl. *Pl. Equin.* 2. t. 132?

HAB. Acapulco.—The petals of our plant are yellow; the fruit is oblong and 4-winged.

ORD. XXXIV. MELASTOMACEÆ. Juss.

1. *Conostegia Xalapensis*, Don.—*De Cand. Prod.* 3. p. 175. *Schlecht. in Linn.* 5. p. 562.—HAB. Talisco.

Folia in nostris oblongo-lanceolata basi subcordata, ciliato-serrata; alabastrum ovatum apice acutiusculum. Petala rosca. Cætera ut in *Melastomata Xalapensi* Bonpl. videntur.

HETEROCENTRON. *Nov. Gen.*

*Calyx* campanulatus, membranaceus, extus adpresse setosus; limbus quadripartitus, segmentis lanceolatis acuminatis persistentibus absque appendicibus alternantibus. *Petala* 4, late obovata. *Stamina* 8, quatuor longiora. *Anthere* oblonge crostrata obtuse uniporose: longiorum connectivo stipitato ad articulationem setis duabus subclavatis instructo, breviorum basi bigibboso. *Ovarium* liberum apice nudum. *Stylus* filiformis. *Stigma* acutum. *Capsula* inclusa, 4-locularis, apice loculicido-quadrivalvis.—*Caulis basi lignosus*. *Ramuli tetragoni hispidi*. *Folia petiolatu oblonga integerrima utrinque setosa, penninervia!* (1½-2 poll. longa, 8 lineas lata). *Flores albi thyrsoides, terminales, subpaniculati*.

1. *H. Mexicana*.

This plant does not accord with any of the genera described by De Candolle. It belongs to the *Rhæziaceæ*, but is, nevertheless, allied to *Castradenia* of G. Don (*Gen. Syst. Gard.* 2. p. 765), formed for the *Rhæzia inæquilateralis* of Schlechtendal (*Linnaea*. 5. p. 567); in that, however, the connectivum of all the stamens seems to be stipitate, the ovarium to be crowned with a few hairs, the inflorescence to be axillary, and the pair of opposite leaves to be unequal.

ORD. XXXV. MYRTACEÆ. *Juss.*1. *Myrtus communis*. *Linn.?*

This differs slightly from the European forms, by the ends of the young branches being covered with a rusty pubescence, and by the larger fruit (5-6 lines in diameter). We have not seen the flower, but so far as we can judge by the remains of the calyx-limb, the segments are obtuse, and often four or five in number. The structure of the seed is that of a true *Myrtus*.

1. *Eugenia? Capuli*. *Schlecht. in Linn. 5. p. 561.*

HAB. Acapulco.—According to Messrs Lay and Collio, this is called by the inhabitants *Capolin*.

ORD. XXXVI. ONAGRARIÆ. *Juss.*

1. *Jussiaea salicifolia*. *H. B. K.?*—*ut tote planta subpubescens, et pedicelli atque fructus bracteolati.*

2. *J. peplodes*. *H. B. K.*—HAB. Talisco.

3. *J. hirta*. *Vahl.?*—*var. pedicellis bracteolas subulatas minutas 1-2 ferentibus.*

1. *Lopezia hirsuta*. *Jacq.*—HAB. Talisco and Tepic.

SEMEIANDRA. *Nov. Gen.*

*Calyx* ovario cohærens, ultra ovarium longe productus, inæqualiter infundibuliformis, ad medium in laciniis quatuor lanceolato-lineares elongatas pendulas fissus, lacinia posteriore paullo brevior. *Petala* quatuor, angustissimo linearia, laciniis calycinis breviora, duo inter lacin. calycis posteriorem et laterales in sinibus orta; duo ad basin utrinque anterioris paulum adnata. *Stamina* duo, una cum stylo in columnam subcaruosam longe exsertam tubo calycis toto secus sepalum posterius adnatam comata, superne libera: unum (posterius) in ligulam petaloideam apice expansum; alterum (anterior) antheriferum. *Anthera* oscillatoria, bilocularis, loculis parallelis. *Ovarium* quadriloculare, multiovulatum. *Stylus* apice subulatus. *Stigma* capitatum. *Capsula* globosa, 4-locularis, loculicide quadrivalvis, polysperma: dissepimentis placente centrali adnatis persistentibus. *Semina* ovoides, minuta, muriculata.—*Frutex pubescens*. *Folia opposita vel alterna, ovata vel oblonga, utrinque pubescentia, basi in petiolum attenuata subintegerrima*. *Racemi terminales foliosi: pedicelli graciles folium sterc superantes, fructiferi deflexi, sub fructu incurvi*. *Flos sanguineus, sesquipollicem longus.*

1. *S. grandiflora*. (TAB. LIX.)

Affinis *Lopezie* ob stamina duo, uno fertili, altero apice petaloideo, at recedit calycis limbo ultra ovarium producto. *Habitus* quadammodo *Zauschnerie*, at caractere multum differt.

TAB. LIX. *Semeiandra grandiflora*. *Fig. 1.* Flower; *fig. 2.* Capsule; *fig. 3.* Capsule laid open, showing the seeds in the inner angles of the cells:—*magnified.*

DIPLANDRA. *Nov. Gen.*

*Calycis limbus* alte quadrifidus, paulo curvatus, laciniis duabus superioribus inter se fere ab apice sepius cohærentibus. *Petala* quatuor, rotundato-obovata, inclusa, ad basin lacinarum calycis inserta, inæqualia, posteriori majus. *Stamina* duo, antherifera, inter se et a stylo libera. *Antheræ* oblongo-lineares, oscillatoriæ. *Ovarium* quadriloculare. *Stylus* filiformis, inclusus. *Stigma* parvum, capitatum. *Capsula* nulla, globosa, quadrilocularis (nunc abortu trilocularis), apice loculicide quadrivalvis, dissepimentis placente centrali adnatis,

persistentibus. *Semina* in quoque loculo solitaria, ala brevi marginata.—*Frutex pubescens, ramosus*. Folia *opposita subsessilia, oblongo-lanceolata utrinque pubescentia, subintegerrima*. Flores *longe pedicellati, corymboso-racemosi, terminales: alabastrum obovoideum, obliquum*. Petala *purpurea*.

1. *D. lopezioides*. (TAB. LX.)

The immature seeds are flat, compressed; we have not observed more than one ovule in each cell of the ovarium. This genus connects *Lopezia* with *Haugu*.

TAB. LX. *Diplandra lopezioides*. Fig. 1. Flower; fig. 2. The same laid open; fig. 3. Capsule; fig. 4. Capsule laid open; fig. 5. Receptacles and dissepiments; fig. 6. Outer; and fig. 7. inner view of a seed:—*magnified*.

ORD. XXXVII. CUCURBITACEÆ. *Juss.*

1. *Elaterium? quinquefidum*; caule glabro, foliis glabriusculis cordato-suborbicularibus subquinquefidis sinuato-crenatis, lobo terminali acuminato cæteris sinibusque rotundatis, cirrhis bifidis, floribus masculis subumbellatis longe pedunculatis, femineis subsessilibus solitariis, fructu (nucis *Juglandis regie* fere magnitudine) glabro parce echinato.

HAB. Acapulco.—We cannot make out whether the fruit, before being pressed, was reniform, as in others of the genus, or ovoid.

1. *Momordica Balsamina*. *Linn.*

1. *Sicyos vitifolius*; caule sulcato subtriquetro pube glanduloso scabriusculo, foliis cordato-subrotundis quinquelobis scabris, lobis latis obtusis subdenticulatis, cirrhis subbifidis, floribus masculis subcorymbosis longe pedunculatis, femineis glomeratis breve pedunculatis, fructibus ovatis longe spinuliferis, spinis obscuris, seminibus ovoideis utrinque obtusis.—*S. vitifolius*. *Willd.?*

The fruit is about a line and a half or two lines long, and the spines about the same length.

1. *Anguria? dubia?* caule stricto, foliis profunde trilobis basi cuneatis supra scabris subtus hirsuto-pubescentibus, sinibus obtusis, lobis cuneato-oblongis serratis obtusiusculis mucronatis, floribus masculis racemosis, femineis in eadem axilla subternis pedicellatis.

We have described the position of the flowers of this plant, from the remains of the peduncles and pedicels; both flowers and fruit have fallen off. The genus, therefore, is very obscure; it has more the habit of *Tacsonia* or *Passiflora* than of the *Cucurbitaceæ*, but there are no glands on the leaves or petioles, and the cirrhi are lateral.

ORD. XXXVIII. PASSIFLOREÆ. *Juss.*

1. *Passiflora viridiflora*. *Cav. Ic. 5. tab. 424.*—*P. tubiflora*. *H. B. K. Nov. Gen. 2. p. 139?* *De Cand. Prod. 3. p. 332?*—*Tacsonia? viridiflora*. *Juss.—De Cand. l. c. p. 336.*

HAB. Acapulco.—Judging from the description, we do not conceive that Humboldt's plant differs in the smallest degree from that of Cavanilles. In ours, the pedicels are sometimes solitary, sometimes in pairs. The fruit is almost globose, six or seven lines in diameter, supported on a stalk about an inch and a quarter long. The seeds are compressed, oval, acute at both ends, whitish, and deeply filled with wrinkles. It

differs from *Tacsonia* by the calyx being only five-cleft, and the want of bractes; from *Passiflora*, by the tube of the calyx being as long as the segments; from *Murucuja*, by the structure of the corolla; but it is perhaps nearest this last.

2. *P. pannosa*; caule petiolisque eglandulosis velutinis, foliis utrinque velutino-hirsutis subtus albidis eglandulosis cordato-orbiculatis apice trilobis, lobis ovatis obtusis submucronatis medio minore, stipulis lanceolato-subulatis, pedicellis axillaribus solitariis vel geminis, calyce 5-fido piloso bracteis tribus discretis orbiculatis breviter acuminatis concavis integerrimis vel apice paucidentatis suffulto, laciniis linearibus tubo triplo longioribus, ovario subpiloso.—*P. pannosa*. *Smith? De Cand. Prod. 3. p. 325?*

HAB. Talisco.—This, having large bractes, and a five-cleft calyx, differs from all other species which we know, and even from all the sections of the genus proposed by De Candolle. We have little doubt of its being Smith's plant.

## ORD. XXXIX. TURNERACEÆ. DC.

1. *Turnera tomentosa*. *H. B. K.?*

We have not seen the flowers.

## ORD. XL. FOUQUIERACEÆ. DC.

1. *Fouquieria formosa*. *Kunth.*—HAB. Talisco.

## ORD. XLI. PORTULACEÆ. Juss.

1. *Portulaca pilosa*. *Sm.*—*var.?* foliis anguste oblongis obtusis trilinearibus.

## ORD. XLII. FICOIDEÆ. Juss.

1. *Glinus dictamnoides*. *Linn.*—*Pharnaceum pentagynum*. *Roxb.*—*Holostium hirsutum*. *Linn.?*

1. *Tetragonia expansa*. *Ait.*

Perhaps both this and the last belong to the Loo Choo collection.

## ORD. XLIII. UMBELLIFERÆ. Juss.

1. *Hydrocotyle asiatica*. *Linn.*

Most probably this also belongs to the Loo Choo or Bonin collection.

1. *Eryngium pectinatum*. *Presl.*—*De Cand. Prod. 4. p. 96.*—*var. foliorum dentibus geminatis utroque folii latitudine longiore, involucri foliolis quibusdam integerrimis.*

The habit of our plant resembles *E. paniculatum* and *E. aquaticum*, but some of the leaflets of the involucre are toothed, and the teeth of the leaves are in pairs. The capitula are nearly globose.

2. *E. Cervantesii*. *De Laroche?*—HAB. Talisco.

3. *E. tenue*; caule tenui simpliciusculo apice subcorymbosim ramoso, foliis radicalibus

. . . . ., caulinis petiolatis apice palmatifidis spinoso-serratis, floralibus capitulo breve pedunculato ovali approximatis sessilibus ovato-lanceolatis inciso-spinosis parvis, involucri foliolis lanceolato-subulatis integerrimis capitulo brevioribus paleis consimilibus.—HAB. Talisco.

Caulis 6-7-pollicares. Capitula lineas duas longa.

4. *E. Beecheyanum*; caule erecto striato simplici apice corymboso, foliis radicalibus lineari-oblongis basi attenuatis serraturis acuminato-spinosis a basi ad apicem instructis, caulinis subsessilibus basi serrato-pinnatifidis apice palmato-partitis, capitulis pedunculatis ovalibus comosis, involucri foliolis 9 capitulum subæquantibus lanceolato-subulatis integerrimis vel sæpius utrinque unidentatis, paleis integris, fructu minute papuloso.—HAB. Talisco.

Caulis vix pedalis. Capitula semipollicaria.

1. *Pastinaca sativa*. Linn.

Probably cultivated.

ORD. XLIV. ARALIACEÆ. Juss.

1. *Hedera arborea*; foliis simplicibus late ovalibus basi apice rotundatis vel ovatis acuminatis, floribus umbellatis, umbellis racemosis superioribusve subumbellatis longe pedunculatis, pedunculis patentibus vel deflexis, stylis in unicum pentagonum conicum coadunatis.—*H. arborea*. Sw. ? *De Cand. ? Prod. 4. p. 262?*

Petala quinque, libera, calycis margo quinquecrenatus.

Of this order we find two other species in the collection, both without leaves. The one is from Talisco, and has the flowers capitate, the capitula peduncled and disposed in a raceme, as in many species of *Actinophyllum* and *Hedera*, but has only two styles, as in *Panax*, to the known species of which it has little resemblance. In the other, from Tepic, the flowers are umbellate, from fifteen to thirty in each umbel; these umbels form a corymbose panicle, the branches of which are covered with a mealy pubescence that is easily rubbed off; there are five styles, which are united into one to near the middle, the upper portion being recurved. This is perhaps *Aralia pubescens*.

ORD. XLV. LORANTHACEÆ. Juss.

1. *Loranthus calyculatus*. *De Cand. ?*

The structure of the flowers and bractea is the same with the plant of De Candolle, but the young branches are angled: we should have supposed it to be *L. Scheidianus*, Schlecht. (in *Linnæa*, 5. p. 172), so well does it generally agree with the description, but that has a corolla three inches long, while in ours it does not exceed half that length. The leaves are ovate-lanceolate, falcate, and acuminate.

In the collection there is another species of *Loranthus*, or perhaps of *Viscum*, with opposite, oval, acute, or obtuse leaves, and long slender branches, but there is neither flowers nor fruit.

ORD. XLVI. RUBIACEÆ. *Juss.*LEPTOPETALUM. *Nov. Gen.*

*Calycis tubus* quadridentatus. *Corolla* quadripartita, laciniis elongatis lineari-spathulatis angustissimis patulis utrinque glabris. *Stamina* 4; filamenta filiformia corollam æquantia: antheræ oblongæ oscillatoriæ. *Ovarium* biloculare, multiovulatum. *Stylus* filiformis, apice crassior et submarginatus. Capsula hemisphærica, compressiuscula dentibus calyciis coronata bilocularis, vertice loculicidâ, rimâ dehiscens. *Semina* plurima in quoque loculo, (immatura) minuta angulata.—*Frutex glaber*. *Rami angulati*. *Folia opposita, sessilia, ovalia, acutiuscula, basi subcordata*. *Stipulæ late triangulares, breves acutæ, interpetiolares; Corymbi terminales, trichotomi*.

1. *Leptopetalum Mexicanum*. (TAB. LXI.)

TAB. LXI. *Fig. 1.* Flower; *fig. 2.* Corolla and stamens; *fig. 3.* Pistil; *fig. 4.* Fruit; *fig. 5.* The same cut through transversely:—*magnified*.

1. *Hamelia patens*. *Jacq.*1. *Chiococca racemosa*. *Jacq.*

1. *Farameum?* (Tetramerium) —; foliis breviter petiolatis oblongo-lanceolatis acutis stipulis caducis ramulorum latis brevibus exaristatis, cyma terminali trichotoma, bacca globosa calycis dentibus brevibus coronata.

HAB. Acapulco. Apparently near *F. jasminoides* or *sessilifolia*. Leaves two to four inches long.

1. *Cephalanthus occidentalis*. *Linn.*1. *Bigelovia distans*—*Borreria distans*. *Ch. & Schl.*—*Spermacoce distans*. *H. B. K.*2. *B.* — ?

Caulis adscendentes pubescentes. Folia ovata acuminata basi in petiolum attenuata, utrinque pubescentia. Stipularum setæ 2-3, tubo paulo longiores. Capitulum (in frustulo unico suppetente) solitarium terminale, 3-4 lineas in diametro, foliis quatuor parvulis bracteatum. Calyx pilis albis erectis vestitus: tubus obconicus: limbi dentes 4, inæquales, corolla infundibuliformis, tubo brevi tenui.

We cannot refer this satisfactorily to any described species, although most probably it may be among those enumerated by De Candolle; it may be *Borreria Bartlingiana*, but approaches much also to *B. Wydleriana*.

1. *Spermacoce tenuior*. *Linn.*—HAB. Tepic and Talisco.

1. *Diodia barbigeræ*; prostrata glabra, foliis oblongis acutis basi in petiolum attenuatis, stipularum setis 4-5 tubum basi barbatur æquantibus, floribus aggregatis verticillatis, calycis dentibus 4 obtusis, corolla (minuta) ore albo-barbata.—HAB. Talisco.

1. *Mitracarpum Schizangium*. *De Cand. Prod. 4. p. 572.*1. *Galium Aparine*. *Linn.*—G. Mexicanum. *H. B. K.*

There are three other *Rubiaceæ* in this collection, but they are already noticed among those from Loo Choo and Bonin, whence they were, in all probability, brought.

## ORD. XLVII. VALERIANEÆ. Juss.

1. *Valeriana ceratophylla*. H. B. et Kunth, *Nov. Gen. Am. v. 3. p. 333. t. 276.*—HAB. Talisco.

## ORD. XLVIII. COMPOSITÆ. Juss.

1. *Stevia glandulosa*; fruticosa tota pubescenti-glandulosa, foliis oppositis sublonge petiolatis ovatis serratis, corymbis densis polycephalis, involucri trifloro, pappo paleaceo brevi exaristato.

HAB. Talisco.—A shrubby and apparently rather tall growing plant, every where clothed with glandular viscid down. Leaves, including the petioles, near two inches long. Capitula very compact. Achenia black, linear, crowned with about 5 short paleaceous, nearly equal, jagged scales.

1. *Elephantopus Carolinianus*. Willd.—*De Cand. Prod. 5. p. 86.*

The *E. nudicaulis* of the United States is not specifically distinct from this.

1. *Distrephus spicatus*. Cass.—*De Cand. Prod. v. 5. p. 87.*—*Elephantopus spicatus*. B. Juss.

1. *Lagascea latifolia*. *De Cand. Prod. 5. p. 92.*—*Nocca latifolia*. Lallav. et Lex. *Nov. Veg. Descr. 1. p. 31. Sweet. Br. Fl. Gard. t. 215.*

1. *Pectis Taliscana*; caule erectiusculo glabro tetragono opposite ramoso, foliis linearibus acuminatis mucronatis grosse glandulosis versus basin utrinque 2-3-ciliatis supra pubescenti-scabridis, pedicellis bracteatis monocephalis capitulos 2-4-plo superantibus, involucri squamis 5 linearibus convolutis acutiusculis, pappo radii et disci setis 3-6 aristatis basi dilatatis paleisque paucis brevissimis.

HAB. Talisco.—A small and incomplete specimen is all that we have had the opportunity of examining, but the pappus does not correspond with that of any described species.

2. *P. diffusa*; glabra, caule ramisque diffusis, foliis linearibus submucronatis, pedicellis elongatis pauci-bracteatis, involucri squamis 5 oblongis acutiusculis, pappi paleis setiformibus scabris inæqualibus in disco 10-20, in radio paullo paucioribus, ligulis oblongo-linearibus involucri duplo superantibus.

HAB. Talisco.—Allied to *P. elongata*, but smaller, and with a very diffuse habit.

1. *Piqueria trinervia*. Cav.  *Ic. 3. p. 19. t. 235.* *De Cand. Prod. 5. p. 104.*

1. *Gymnocoronis latifolia*; foliis ovatis serratis utrinque acuminatis secus petiolum decurrentibus, involucri foliolis oblongis acutis.

HAB. Talisco.—The flowers very much resemble those of *G. attenuata*, DC. (*Atomia spilanthoides*, Don; et Hook. et Arn. *Bot. of S. Am. in Comp. to Bot. Mag. v. 1. p. 238*); but the capitula are much larger, the scales of the involucri broader, and the leaves are vastly longer, and two inches and more in diameter.

1. *Cælestina ageratoides*. H. B. et Kunth, *Nov. Gen. Am. 4. p. 151.* *De Cand. Prod. 5. p. 108.*—*Ageratum cælestinum*. *Bot. Mag. t. 1730.*



1. *Phania? urenifolia*; herbacea glabra, foliis alternis grosse serratis petiolatis trifidis v. pinnatim trisectis lobo terminali petiolato trifido segmentis obtusis, capitulis paucis axillaribus longe pedunculatis subcorymbosis permultifloris (fere 100), involucri squamis striatis externis paucis ovatis acutis, internis 40-50 lineari-acuminatis, corolla pappi longitudine æquali perangusta lobis brevissimis obtusis, pappo brevissime coroniformi in setas tenues rigidas 4-5 producto, styli ramis elongatis longe exsertis tennibus.

We are extremely doubtful of this genus; but the plant has so many points in common with *Phania multicaulis*, DC., that we, for the present, refer it to the same genus, from which it differs in many of its characters. The scales of the involucre are very numerous; the achenia and corolla exceedingly slender; the setæ of the pappus slender, rigid, rough, and of a dark purple colour.

1. *Bolbostylis rigida*; fruticosa, ramis elongatis, foliis rigido-coriaceis ovatis acutis sessilibus reticulatis supra nitidis scabris subtus albo-tomentosis superioribus minoribus bracteiformibus, capitulis pedunculatis terminalibus axillaribusque subsolitariis, involucri turbinato-hæmiphærici foliolis imbricatis, ext. late ovatis acutis, int. oblongis.

Leaves  $1\frac{1}{2}$  to 2 inches long. Flowers large. Scales of the involucre blackish at the tips. Achenium narrow, furrowed. Pappus of many slender setæ slightly thickened below the point.

2. *B. hebecarpa*. De Cand. Prod. 5. p. 138.

HAB. Talisco.—This seems to agree with the plant thus named, except that there are about 13 (not 10) flowers in each capitulum.

1. *Eupatorium glaberrimum*. De Cand. Prod. 5. p. 144.

Specimens very imperfect.

2. *E. conyzoides*. Vahl, Symb. 3. p. 96. De Cand. Prod. 5. p. 143.—*β. glabrium*.

3. *E. ovaliflorum*; fruticosum pubescens subvelutinum, foliis oppositis brevi-petiolatis anguste ovatis acuminatis subcoriaceis 3-5-nerviis serratis, panicula trichotome composita, involucri ovalis sub 23-flori squamis arcte imbricatis ovatis obtusis striatis nitidis.

The leaves are singularly harsh and rigid, but clothed, especially above, with a short and almost velvety down. The involucre is almost exactly oval, contracted at the apex, and embracing tightly the florets. It seems most nearly allied to *E. divergens*, Less.

4. *E. nigrescens*; fruticosum fere ubique glabrum, foliis oppositis ovato-deltoidis acuminatis serratis tenuibus siccitate nigricantibus sublanceolatis petiolatis, petiolis gracilibus, corymbis polycephalis, involucri brevi-cylindracei squamis oblongis obtusis arcte imbricatis pubescentibus striatis sub 15-floris.

The old leaves are glabrous, as are the stems and older branches; the young leaves and pedicels and involucre are slightly downy.

5. *E. lasioneuron*; fruticosum, foliis patentibus sublanceolatis ovatis acuminatis submembranaceis serratis supra glabriusculis subtus ad costam præcipue lanuginosis, corymbis polycephalis, involucri patenti-campanulati foliolis glabriusculis laxis 1-2 externis

brevibus reliquis (14-15) subæqualibus lineari-lanceolatis membranaceis striatis sub 15-floris, acheniis striatis puberulis.

HAB. Talisco.—Leaves 3-4 inches long; petiole 1 inch. Capitula  $\frac{1}{2}$  of an inch in diameter. Pappus white, as the corollas also appear to be.

1. *Heterotheca inuloides*. Cass.—DC. *Prod.* 5. p. 317.—*Diplocoma villosa*. Sweet, *Fl. Gard.* t. 246.—*Doronicum Mexicanum*. Cerv. in *Link et Otto, Hort. Berol.* t. 22.

The *H. leptoglossa*, DC., is probably not distinct from this.

1. *Baccharis longifolia*? *De Cand. Prod.* 5. p. 402.

In our plant, the exterior scales of the involucre are ovate, the interior oblong, slightly but distinctly ciliated, and the lower part of the branches appears woody.

2. *B. hirtella*? *De Cand. Prod.* 5. p. 418.

If this be the plant of De Candolle, the leaves are 5-6 inches long, an inch or an inch and a half broad, the capitula densely clustered, of a pale straw-colour, almost white.

1. *Eclipta erecta*. L.—*De Cand. Prod.* 5. p. 490.

2. *E. brachypoda*. Mich.—*De Cand. Prod.* 5. p. 491.

#### CHÆTYMENIA. *Nov. Gen.*

*Capitulum* multiflorum, heterogamum, fl. radii ligulatis femineis obovatis, disci plurimis tubulosis hermaphroditis. *Involuceri* patenti-campanulati squamæ paucæ subbiseriales, inæquales, laxè imbricatæ, ovato, subacuminatæ, vix foliaceæ. *Receptaculum* nudum. *Styli* rami attenuati pilosi. *Achenia* oblonga, basi attenuata, angulata, angulis pilosis. *Pappi setæ* rigide, sub-20, corollæ tubulosæ longitudine, piloso-hispide, basi utrinque ala membranacea incisa auctæ.—Herba? *subsimplex, Mexicana, glabra*. *Caulis teres*. *Folia elongata, lineari-lanceolata, subpunctata, trinervia, opposita, basique connata*. *Pedunculi terminales acillaresque, longissimi, nudi*. *Flos majusculus (diametro bipollicaris), aurco-flavus*.

1. *Chaetymenia peduncularis*. (TAB. LXII.)

HAB. Talisco.—This genus appears to belong to the Subtrib. *Tagetineæ* of the *SENECIONIDEE* (DC.); but the character of the genus comes near to *Burrielia* in the *HELENIEÆ*. It, however, seems quite distinct from anything hitherto published.

TAB. LXII. *Fig.* 1. Floret of the ray; *fig.* 2. Do. of the disk; *fig.* 3. Seta of the pappus:—*magnified*.

1. *Porophyllum Linaria*? *De Cand. Prod.* 5. p. 649.—*Cacalia Linaria*. Cav.  *Ic.* 3. p. 19. t. 257.—HAB. Talisco.

#### TULOCARPUS. *Nov. Gen.*

*Capitulum* pauciflorum, monoicum; radii flosculo solitario femineo ligulato, apice tridentato, tubo gracili basi dilatato; disci flosculis 3-4, tubulosis masculinis, tubo longo gracili, limbo campanulato, alte 5-fido. *Involucrum* cylindraceum, 6-phyllum, biserialè, foliolis 3 ext. majoribus æqualibus striatis acutis, 3 int. scariosis, unico florifero. *Receptaculum* paleaceum, paleis involucri seriei int. similibus. *Antheræ* exsertæ (viridoscentes); filamentis dense barbatis. *Stylus* (fl. masc.) paululum exsertus, indivisus, puberulus. *Achenium* solitarium in singulo capitulo, magnum, obovato-oblongum, compressum, basi dorso callo magno rugoso tetragono.—Herba? *Mexicana, glabra*. *Caulis teres*. *Folia opposita, petiolata, ovato-lanceolata, serrata*. *Corymbi laterales terminalesque compositi*. *Flores flavi*.

1. *T. Mexicanus*. (TAB. LXIII.)

This genus, we believe, will be found to be quite distinct from any yet described. We have derived the generic name from the large wart or fleshy excrescence at the base of the outside of the achenium.

TAB. LXIII. *Fig. 1.* Capitulum; *fig. 2.* Floret from the disk; *fig. 3.* Floret of the ray, with the accompanying leaflet of the involucre, showing a front view; the fruit nearly ripe; *fig. 4.* Back view of the fruit, with its curious caruncle at the base.

1. *Melampodium sericeum?* Lagasca.—*De Cand. Prod. 5. p. 518.*

2. *M. (Zarabellia, DC.) tenellum*; caule herbaceo erecto trichotomo piloso, foliis oblongo- v. lineari-lanceolatis hinc inde parcedentatis utrinque attenuatis supra strigillosis, pedicellis folio longioribus, involucri squamis 4-5 rotundatis obovatis, acheniis curvato-obpyramidalibus apice truncatis lineis longitudinalibus transversalibusque rugosis reticulatim notatis, lateribus dorsoque compressis.—*M. oblongifolio proximum.*

3. *M. perfoliatum*. *H. B. et Kunth.*—*De Cand. Prod. 5. p. 21.*—*Alcina perfoliata. Cav. Ic. 1. p. 10. t. 15.*—*Wedelia. Willd.*—*Polymnia. Poir.*

1. *Parthenium Hysterophorus. L.*—*De Cand. Prod. 5. p. 532.*

1. *Zinnia maritima?* *H. B. et Kunth, Nov. Gen. Am. 4. p. 251. De Cand. Prod. 5. p. 536.*—*HAB. Talisco.*

1. *Jaegeria pedunculata*; hirsuto-hispida, caule subsimplici, foliis lanceolatis incisedentatis apice dentibusque callosis, pedunculo elongato gracili monocephalo.

*HAB. Talisco.*—Habit of *J. maioides*; but a span long, hairy, almost hispid, with lanceolate leaves, and a very elongated and slender flower-stalk.

2. *J. hirta?* Less.—*De Cand. Prod. 5. p. 442.*—*HAB. Talisco.*

1. *Tithonia pachycephala. De Cand. Prod. 5. p. 585.*

1. *Bidens leucantha. Willd.*—*De Cand. Prod. 5. p. 598.*

1. *Coreopsis bipinnatus. Cav. Ic. 1. p. 9. t. 14. De Cand. Prod. 5. p. 604.*

1. *Verbesina pinnatifida. Cav. Ic. 1. p. 67. t. 100. De Cand. Prod. 5. p. 615.*

2. *V. ceanothifolia?* Willd.—*De Cand. Prod. 5. p. 613.*

1. *Spilanthes alba. Willd.*—*L'Hérit. Stirp. p. 7. t. 4. De Cand. Prod. 5. p. 625.*

1. *Clomenocoma aurantia. Cass.*—*De Cand. Prod. 5. p. 641.*

A single capitulum alone, without foliage, is in the collection, from Acapulco.

1. *Schkuhria virgata. De Cand. Prod. 5. p. 654.*

1. *Tagetes (§ Leptocephalæ) congesta*; caule erecto pusillo ramosissimo, ramis perbrevis, foliis confertis oppositis pinnatisectis, segmentis linearibus mucronatis, capitulis corymboso-fasciculatis breviter pedicellatis cylindraceo-oblongis, flosculis 10-12, ligulis solitariis involucre longioribus, pappo aristis 2-4, paleis 2-3 truncatis v. obtusis.

1. *Allocaarpus scabrifolius*; ramis pubescentibus, foliis oblongo-lanceolatis acuminatis callosa-dentatis 5-nerviis supra scabris subtus ad nervos hirsuto-pubescentibus, capitulis corymbosis multifloris, ligulis 15-20, involucri squamis 15-20 3-4-serialibus striatis, acheniis radii glabris triquetris calvis, disci obovato-cylindraceis superne pubescentibus, paleis plurimis lineari-subulatis uniserialibus.—HAB. Talisco.

1. *Chlamysperma arenarioides*; humilis pubescenti-glandulosa, foliis ovatis integerrimis. (TAB. LXIV.)

There can, we think, be no doubt of the propriety of referring this to the same genus with *C. pratense*, Less. and DC., so well figured by Humboldt and Kunth under the name of *Unxia pratensis* (Nov. Gen. Am. t. 401). In our plant, however, the central florets have the limb quadrifid, and they are abortive. The curious broad incurved wing of the marginal achenia is quite smooth, not tuberculated.

TAB. LXIV. Fig. 1. Plant:—nat. size;—fig. 2. Capitulum; fig. 3. Floret from the disk; fig. 4. Floret from the ray, with the accompanying leaflet of the involucre; front view; the fruit nearly ripe; fig. 5. Back view of the fruit; fig. 6. Transverse section of the same:—magnified.

1. *Gnaphalium purpureum*. L.—*De Cand. Prod.* 6. p. 232.

2. *G. luteo-album*. L.—*Sm. E. Bot. t.* 1002. *De Cand. Prod.* 6. p. 230.

1. *Trixis* (§ *Macrochlænæ*) *obvallata*; fruticosa, foliis sessilibus oblongo-lanceolatis acutissimis sparse denticulatis glabris subtus junioribus ramulisque subsericeis, capitulis (magnis) corymbosis breviter pedicellatis, involucre 8-phyllo basi bracteis 4-5 amplis foliaceis ovato-lanceolatis obvallato, receptaculo piloso-fimbriifero. (TAB. LXV.)

Near *T. longifolia*, Don; but the leaves are quite sessile. Corollas bright yellow; pappus tawny.

TAB. LXV. Fig. 1. Capitulum, with its double involucre; fig. 2. Young floret; fig. 3. Old do.:—magnified.

2. *T.* (§ *Prionantheæ*) *latifolia*; fruticosa glabra, foliis sessilibus obovatis spinuloso-dentatis rigidis basi cordatis, ramis floriferis elongatis bracteatis apice laxè corymbosis, involucri foliolis omnibus imbricatis lanceolatis spinoso-acuminatis pubescentibus, capitulis 10-12-floris.

Leaves in the lower part of the plant 4-5 inches long, 3 broad. Lower bractees leaf-like, small; upper ones acuminate subspinulose, and gradually passing into the spinous scales of the involucre. Receptacle naked. Achenium erostate. Pappus nearly white. Corollas apparently yellow.

#### ORD. XLIX. LOBELIACEÆ. *Juss.*

1. *Lobelia ovalifolia*; herbacea ubique pubescens, caule erecto stricto, foliis sparsis ovalibus sessilibus subcoriaceis duplicato-glanduloso-serratis acutissimis, pedicellis elongatis solitariis axillaribus unifloris, corolla pubescente (rubra) superne usque ad basin fissa, limbo 5-fido, laciniis lineari-acuminatis, filamentis hirsutis.

Nearly allied to *L. mucronata*, Cav. (and Hook. Bot. Mag. t. 3207); but the leaves are much smaller, of a different form, coming suddenly to a very sharp point, and the serratures are considerably larger and more

unequal. The stems are leafy to the top, and hence the flowers are axillary. In *L. mucronata*, the leaves suddenly become bracteas among the flowers, and then the flowers are said to be racemose; but this we consider no permanent character, as is clearly shown in the following species.

2. *L. lanceolata*; herbacea pubescens, caule erecto stricto, foliis sparsis lanceolatis subsessilibus subcoriaceis duplicato-glanduloso-serratis anguste acuminatis, pedicellis elongatis solitariis unifloris axillaribus vel racemosis et foliaceo-bracteatis, corolla glabriuscula (rubro-flava?) superne usque ad basin fissa, limbo 5-fido, laciniis lineari-acuminatis, filamentis glabris.—An *L. rigidula*, *H. B. K. Nov. Gen. Am. 3. p. 311?*

This belongs to the same group with the preceding, as does the following, and it is possible that the three may be varieties of one and the same species. The present is distinguished from *L. ovalifolia* by the shape of the leaves and nearly glabrous corolla, and quite glabrous filaments: from *L. angulato-dentata*, by its downy stem and leaves, which later are sessile, more rigid, and by the nature of the serratures.

3. *L. angulato-dentata*; herbacea? glabra, foliis sparsis tenui-membranaceis lato-lanceolatis angulato-dentatis basi in petiolum brevem attenuatis apice tenui-acuminatis, pedicellis elongatis solitariis axillaribus u. floris, corolla glabra (rubro-flava?) superne usque ad basin fissa, limbo 5-fido, laciniis lineari-acuminatis, filamentis glaberrimis.

4. *L. arabidoides*; annua subcæspitosa glabra, caule gracili paniculato, foliis inferioribus lanceolatis grosse inciso-serratis in petiolum attenuatis reliquis linearibus subintegerrimis, floribus racemosis, calycis tubo brevissimo ore valde obliquo inferne calcarato, limbi laciniis lineari-lanceolatis inæqualibus, corolla (cærulea) superne usque ad basin fissa 5-fida bilabiata, labio inferiore bituberculato, fructu semisupero. (TAB. LXXVI.)

The curious spur-like process at the lower margin of the calyx, in the sinus of the two shorter laciniæ, both of this and the following species, varies in length, and the base of the corolla is prolonged into it.

TAB. LXXVI. Fig. 1. Flower; fig. 2. Fruit:—*magnified*.

5. *L. cordifolia*; annua subcæspitosa glabra, caule gracili paniculato, foliis inferioribus longe petiolatis cordato-rotundatis reliquis lanceolatis omnibus grosse inciso-serratis, floribus racemosis, calycis tubo brevissimo, ore valde obliquo inferne brevi-calcarato, limbi laciniis lineari-lanceolatis inæqualibus, corolla (cærulea) superne usque ad basin fissa 5-fida bilabiata, labio inferiore bituberculato, fructu semisupero.

Nearly allied to the preceding, but very different in the foliage, and the spur of the calyx is much shorter.

6. *L. divaricata*; parva annua ramosa glabra, ramis divaricatis tetragonis, foliis subdentatis inferioribus ovalibus petiolatis reliquis anguste lanceolatis, floribus racemosis, calycis æqualis tubo turbinato, laciniis lineari-lanceolatis uniformibus, corolla (cærulea) superne usque ad basin fissa quinquefida bilabiata, labio inferiore grosse bituberculato, fructu semisupero. (TAB. LXXVII.)

HAB. Talisco.—A small, often straggling species, apparently very distinct from any hitherto described.

TAB. LXXVII. Fig. 1. Flower; fig. 2. Fruit:—*magnified*.

ORD. L. GESNERIACEÆ. *Rich.*

1. *Gesneria Deppeana*. *Schlecht. in Linnæa*, 5. p. 110.

Allied to *G. elongata*, H. B. K., but far less hairy, with shorter leaves, smaller flowers, and a longer upper lip.

1. *Trevirania parviflora*; foliis ovatis uniformibus grosse inæqualiter serratis, pedunculis aggregatis gracillimis, corollæ limbo parvo erecto-patente.

The flowers are very much smaller than in the well-known *T. coccinea* (*Cyrilla pulchella*, Bot. Mag. t. 374), and the limb is extremely short, and scarcely spreading. It is still more different from *T. grandiflora*, *Schlecht. in Linnæa*, 8. p. 247; and equally so from *T. heterophylla*, *Mart.*: both of them likewise Mexican species.

ORD. LI. ERICEÆ. *Juss.*

1. *Clethra obovata*. *Ruiz et Pav. Fl. Per. t. 381.*—*C. tinifolia*. *Schlecht. in Linnæa*, 5. p. 127. (*non Sw.*).

ORD. LII. SAPOTEÆ. *Juss.*

1. *Lucuma? ferruginea*; foliis obovatis obtusis in petiolum attenuatis subtus (junioribus sericeo-) ferrugineis, floribus aggregatis.

ORD. LIII. ASCLEPIADEÆ. *Br.*

1. *Sarcostemma Cumanense? H. B. K. Nov. Gen. Am. 3. p. 195.*

HAB. Acapulco.—The leaves are glabrous; in other respects it seems to agree with Humboldt's Cumana plant.

1. *Asclepias glaucescens*. *H. B. K. Nov. Gen. Am. 3. p. 190. t. 227.*—HAB. Talisco.

ORD. LIV. APOCINEÆ. *Br.*

1. *Tabernæmontana littoralis*. *H. B. K. Nov. Gen. Am. 3. p. 228.*—HAB. Acapulco.

1. *Nerium odorum*. *L.*—flore pleno.—Acapulco: *cultiv.*

ORD. LV. GENTIANEÆ. *Juss.*

1. *Erythræa Mexicana? Griseb. ined.*

With our imperfect specimens, we dare not venture upon offering a character of this plant, of which there are two varieties, if not two distinct though closely allied species: both having the habit and paniculated stem with divaricated branches of *E. Mexicana*, *Griseb. in Herb. nostr.*; but the calyx is more deeply cleft. In the one from Tepic, the flowers are twice the size of the other kind (from Talisco), but we do not find any structural difference.

2. *E. Chilensis*. *Pers.*—*Chironia Chilensis*. *Willd.*

1. *Schultesia stenophylla*. *Mart. Brasil. t. 182.*



1. *Cressa Truxillensis*. *H. B. K. Nov. Gen. Am.* 3. p. 119.—*C. arenaria*. *Willd. in Roem. et Sch.* 6. p. 207.

Too near *C. indica*; and that again Choisy is disposed to consider as a mere variety of *C. Cretica*.

1. *Cuscuta fetida*. *H. B. K. Nov. Gen. Am.* 3. p. 122.

ORD. LX. BORAGINEÆ. *Juss.*

1. *Cordia Gerascanthus*. *Jacq. Am.* p. 43. t. 173. f. 16. *H. B. K. Nov. Gen. Am.* 3. p. 69.

1. *Tournefortia hirsutissima*. *Sw.—H. B. K. Nov. Gen. Am.* 3. p. 80. *Schlecht. in Linnæa*, 6. p. 379.

2. *T. synsystachia*. *Roem. et Sch.* 4. p. 539.—*Heliotropium*, *Ruiz et Pav. Fl. Peruv.* 2. p. 3. t. 109.

3. *T. Caraccasana?* *H. B. K. Nov. Gen. Am.* 3. p. 80.

1. *Tiuridium Indicum*. *Lehm.*—*Heliotropium Indicum*. *L.*

1. *Heliotropium Patabilcense?* *H. B. K. Nov. Gen. Am.* 3. p. 87.

ORD. LXI. SOLANEÆ. *Juss.*

1. *Nicotiana plumbaginifolia*. *Viv. in Roem. et Sch.* 4. p. 321. *Schlecht. in Linnæa*, 5. p. 111.—*N. crispa*. *Desf.*—*Jacq. Fragm.* n. 187. t. 84.

1. *Physalis pubescens*. *L.*—*Nees ab Esenb. in Linnæa*, 6. p. 467, *cum synon.*

1. *Brugmansia candida*. *Pers.*—*Datura arborea*. *Willd.*

1. *Solanum rubrum*. *Mill.*—*Dun. Sol.* p. 155.—*S. nigrum*. *γ. rubrum*. *Willd.*

2. *S. refractum*; fruticosum, ramis pubescenti-ferrugineis scabris aculeatis, foliis glabriusculis profunde pinnatifidis costa subtus aculeatis, laciniis remotis patentibus lato-lanceolatis integerrimis terminali longiore, racemis folio longioribus lateralibus compositis, ramis elongatis refractis apice præcipue floriferis, floribus secundis, pedicellis florem æquantibus, calyce hemisphærico-campanulato 5-dentato glabro. corolla profunde quinquefida.

Leaves a span long, tapering gradually into a short footstalk; the midrib beneath, and the branches, clothed with numerous short recurved prickles. Flowers apparently white, and about the size of those of *S. Dulcamara*.

3. *S. torvum*. *Sw.*

4. *S. verbascifolium*. *Linn.—Jacq. Hort. Vind.* 1. p. 13.

5. *S. Carolinense*. *Linn.—Jacq. Ic. Rar.* 2. t. 331.



ORD. LXII. ACANTHACEÆ. *Juss.*

1. *Justicia* (*Leptostachya*, *N. ab E.*) *pectoralis*. *Linn.*

1. *Elytraria ramosa*. *H. B. K. Nov. Gen. Am.* 2. p. 235.

There are seven other species of *Acanthaceæ*, but in too imperfect a state to allow us to determine one of them.

ORD. LXIII. VERBENACEÆ. *Juss.*

1. *Callicarpa Americana*. *Willd.—Lam. Ill. t.* 69. *f.* 1.

2. *C. subpubescens*; foliis oblongo-lanceolatis utrinque attenuatis petiolatis serratis glabris adultis subtus sparse stellato-pubescentibus, pedunculis axillaribus petiolum æquantibus, floribus copiosis cymosis.

Leaves, including the petiole, nearly a span long, two inches broad in the widest part, closely serrated.

3. *C. parvifolia*; foliis coriaceis obovatis obtusissimis breve petiolatis læviter crenatis supra adultis glabris subtus dense cano-tomentosis reticulatim venosis, pedunculis petiolum æquantibus, floribus capitato-cymosis.

Leaves an inch and a half long; the younger ones inclining to rust-colour beneath. The peduncles and petioles are densely stellato-tomentose, like the under side of the foliage.

1. *Vitex mollis*. *H. B. K. Nov. Gen. Am.* 2. p. 245.

HAB. Acapulco.—Corolla short, tubular, 5-lobed; four lobes uniform, the fifth dilated, flabelliform, and cucullate. Ovary 4-lobed.

2. *V. flavens?* *H. B. K. Nov. Gen. Am.* 2. p. 246.

Our specimens have no flowers; but the foliage seems to agree with that of *V. flavens*.

1. *Lippia callicarpæfolia*. *H. B. K. Nov. Gen. Am.* 2. p. 268.—HAB. Talisco.

2. *L. myriocephala*. *Schlecht. in Linnæa*, 5. p. 98. and 6. p. 372.

The foliage and the stems of this are extremely scabrous.

1. *Verbena veronicæfolia*. *H. B. K. Nov. Gen.* 2. p. 275.

Very near some of the varieties of *V. officinalis*.

2. *V. Aubletia*. *Jacq.—V. elegans?* *H. B. K. Nov. Gen. Am.* 2. p. 273.

1. *Stachytarpheta dichotoma*. *Vahl.—H. B. K. Nov. Gen. Am.* 2. p. 279.—*Verbena dichotoma*. *Ruiz et Pav.* 1. t. 34.

1. *Lantana lippoides*; fruticosa, ramis angulatis scabris, foliis breve petiolatis ellipticis rigidis serratis strigoso-scabris reticulatim venosis rugosis, pedunculis axillaribus solitariis petiolum æquantibus, capitulo subgloboso pedunculi longitudine, bracteis cordatis acutissimis appressis pilosis.

HAB. Talisco and Acapulco.—Whole plant hoary with short, rigid, whitish hairs. Leaves an inch long. The veins much sunk on the upper surface, prominent beneath.

Fragments of two other *Lantane* are in the collection.

1. *Citharexylon reticulatum*. *H. B. K. Nov. Gen. Am. 2. p. 257. Schlecht. in Linnæa, 5. p. 97.*—*Ehretia articulata*. *Willd. in Roem. et Sch. 4. p. 805.*

1. *Avicennia tomentosa*. *L.*

ORD. LXIV. LABIATÆ. *Juss.*

1. *Salvia* (§ *Membranaceæ*, *Benth.*) *lasiocephala*; herbacea pubescenti-hirta, foliis petiolatis ovato-cordatis acutis grosse serratis basi obtusis, pedunculis longissimis filiformibus, verticillastris globoso-glomeratis remotissimis paucis, bracteis cordatis acutis membranaceis reticulatis verticillastro subbrevioribus, calycibus dense albo-tomentosis.

The white, woolly, globose, remote verticillastra upon the long slender peduncles, readily distinguish this species.

2. *S. elongata*. *H. B. K. Nov. Gen. Am. 2. p. 287. t. 139.*—var. foliis supra pilosis.

3. *S. n. sp.?* near *S. Kcerlii*, *Benth. Lab. p. 363*, and *S. Scorodonia*, *Poir.*, but probably different from both; the inflorescence is much paniculated.

4. *S. Scorodonia?* *Poir.*—*Benth. Lab. p. 264.*

5. *S. occidentalis*. *Sw.*—*S. procumbens*. *Ruiz et Pav. Fl. Peruv. 1. t. 39. f. a.*

HAB. Talisco.—The specimens very imperfect.

1. *Stachys coccinea*. *Jacq. Hort. Schoenb. 3. t. 284. Bot. Mag. t. 666.*

2. *S. agraria*. *Schiede et Deppe in Linnæa, 5. p. 100. Benth. Lab. p. 550.*—HAB. Talisco.

1. *Perilomia scutellarioides*. *H. B. K. Nov. Gen. Am. 2. p. 327. t. 157. Benth. Lab. p. 445.*

1. *Hyptis albida*. *H. B. K. Nov. Gen. Am. 2. p. 319. Benth. Lab. p. 128.*

2. *H. spicata*. *Poit. Ann. Mus. 7. p. 474. t. 28. f. 2.*

3. *H. polystachya?* *H. B. K. Nov. Gen. Am. 2. p. 321. Benth. Lab. p. 119.*

4. *H. stellulata*. *Benth. Lab. p. 129.*—HAB. Talisco.

5. *H. n. sp.*, in some respects corresponding with Mr Bentham's 3d Sect. *Apodotes*; but we dare not venture to characterize it.

ORD. LXV. PRIMULACEÆ. *Juss.*

1. *Lysimachia glaucophylla*; fruticosa glabra, caule terete subangulato, foliis lanceolatis sparsis obtusis punctatis inferne attenuatis sessilibus, subtus glaucis, pedunculis

axillaribus solitariis unifloris folio brevioribus, calyce 4-partito laciniis lanceolatis inæqualibus foliaceis costatis corollam 5-partitam rotatam superantibus, filamentis glandulosis, stylo incrassato. (TAB. LXVIII.)

A fruticose plant, with leaves a good deal resembling those of *L. Ephemerum*, but with a totally different inflorescence.

TAB. LXVIII. *Lysimachia glaucophylla*. Fig. 1. Flower; fig. 2. Corolla laid open; fig. 3. Pistil:—magnified.

ORD. LXVI. SCROPHULARINEÆ. *Juss.*

1. *Buddlea decurrens*. *Schlecht. in Linnæa*, 5. p. 105.—An *B. acuminata*? *H. B. K.*

1. *Stemodia parviflora*. *Ait.—Schlecht. in Linn. 6.* p. 376.

1. *Mimulus glabratus*. *H. B. K. Nov. Gen. 2.* p. 397. *Schlecht. in Linn. 5.* p. 107.—  
HAB. Talisco.

1. *Scoparia annua*. *Schlecht. in Linnæa*, 6. p. 375.

2. *S. dulcis*. *Linn.*

1. *Capraria hirsuta*. *H. B. K. Nov. Gen. Am. 2.* p. 355.— $\beta$ . minus villosa.

2. *C. saxifragæfolia*. *Schlecht. in Linnæa*, 5. p. 105.

1. *Herpestes chamædryoides*. *H. B. K. Nov. Gen. Am. 2.* p. 296. *Schlecht. in Linnæa*, 5. p. 107.

2. *H. Monnieria*. *H. B. K. Nov. Gen. Am. 2.* p. 366.—*Gratiola. L.*

1. *Buchnera elongata*? *Sw.—Schlecht. in Linnæa*, 8. p. 245.—HAB. Talisco.

1. *Castilleja integrifolia. L.—Smith Ic. Pl. p. 39. t. 39. H. B. K. Nov. Gen. Am. 2.* p. 330.

1. *Lamourouxia multifida*? *H. B. K. Nov. Gen. Am. 2.* p. 339.

2. *L. cordata. Schlecht. in Linnæa*, 5. p. 103.

HAB. Talisco.—This must be, in a living state, a very fine plant, 2-3 or more feet high, with long spikes of large scarlet secund flowers.

1. *Russelia floribunda. H. B. K. Nov. Gen. Am. 2.* p. 359. *Schlecht. in Linnæa*, 5. p. 106.

2. *R. rotundifolia. Cav. Ic. 5. p. 9. t. 514.—HAB. Acapulco.*

ORD. LXVII. PLUMBAGINEÆ. *Juss.*

1. *Plumbago Mexicana*? *H. B. K. Nov. Gen. Am. 3.* p. 224.

It seems scarcely to differ from *P. Zeylanica*, and may perhaps be cultivated.

## ORD. LXVIII. NYCTAGINEÆ. Juss.

1. *Salpianthus purpurascens*.—*Boldoa purpurascens*. "Cav. Hort. R. Madrid. t. 7."
2. *S. arenarius*. Humb. et Bonpl. Pl. Æquin. 1. p. 154. t. 44. H. B. K. Nov. Gen. Am. 2. p. 218.—*Boldoa lanceolata*. Lagusca.—HAB. Acapulco.
1. *Boerhaavia polymorpha*. Rich.—Schlecht. in Linnæa, 5. p. 92.
1. *Pisonia Pacurero*? H. B. K. Nov. Gen. Am. 2. p. 218.

## ORD. LXIX. AMARANTHACEÆ. Juss.

1. *Iresine celosioides*. L.
2. *I. elongata*. Willd.—H. B. K. Nov. Gen. Am. p. 200.
1. *Chamissoa altissima*. Sw.—H. B. K. Nov. Gen. Am. 2. p. 196. t. 125.
1. *Brandesia n. sp.*?—foliis lanceolatis 2-3 uncialibus longis acuminatis glabris, paucis axillaribus, floribus globoso-capitatis.—HAB. Acapulco.
1. *Celosia cristata*. L.—cult. Acapulco.

## ORD. LXX. PHYTOLACCEÆ. Br.

1. *Phytolacca octandra*? L.—Schlecht. in Linnæa, 5. p. 91.
1. *Rivina humilis*. L.—H. B. K. Nov. Gen. Am. 2. p. 471.
1. *Petiveria alliacea*. L.—H. B. K. Nov. Gen. Am. 2. p. 188.

## ORD. LXXI. POLYGONÆÆ. Juss.

1. *Rumex crispus*? L.
1. *Polygonum* ——?

There are three species of this genus, in a very imperfect state; two of the *Persicaria* group, and one of the *Avicularia* group.

## ANTIGONON. Endlich. Gen. Pl. p. 310.

GEN. CHAR. *Perianthium* hexaphyllum persistens biseriale, demum incresecens; foliis tribus exterioribus lato-cordatis maxime reticulatis; tribus int. ovato-lanceolatis demum reticulatis, unico sæpe abortivo. *Stam.* 8 aequalia in capulum submembranaceum connata. *Antheræ* didyme versatiles, loculis oblongis, intus dehiscensibus. *Ovarium* 1 obtuse trigonum. *Stylus* trifidus; stigmata reniformi-capitata. *Achenium* trigonum perianthio aucto cinctum. "Semina basilare, e funiculo umbilicali erectum, pyramidatum. Embryo in axi (?) albuminis farinacei antitropus, rectus." Endl.—Suffrutices scaudentes Mexicani, subpubescentes, ramis angulatis. Folia alterna cordata petiolata, petiolo basi amplectante, nunc stipulacea. Racemi secundiflori apice corymbosi. Pedicelli apice articulati, 1-3 e bracteis fasciculatis squamæformibus minutis.

1. *A. leptopus*; petiolo gracili. (TAB. LXIX.)

Of this curious genus there is one,\* perhaps two species, in the Mexican collection of Andrieux, from which the excellent Endlicher has derived his character of the Genus *Antigonon*, and which he has rightly placed next to *Brunnichia*, in the order POLYGOŒÆ, Trib. III. "*Polygonæ spurie*." Indeed all the three are so closely allied, that they may possibly constitute but one species, the only striking difference I can find being that Andrieux's specimens (which are not very perfect) have singularly dilated footstalks to the leaves. In the n. 117 of Andrieux, there is, on each side of the stem, at the base of the petiole, a rather large transverse stipule; but in the other specimen, or species, the base of the petiole is continued merely in the form of a slightly elevated line all round the stem, as in our plant. Perhaps the stipules themselves have been very early deciduous. In our specimen, again, there is a slight difference in the flowers, which have three outer leaves of the perianth considerably larger than the rest; and there are three inner ones, of which one is generally abortive. Our fruit, though fully formed in appearance, contains only an imperfect seed.

TAB. LXXIX. Fig. 1. Flower; fig. 2. The same, the three outer leaves of the perianth being removed; fig. 3. Stamens, including the pistil; fig. 4. Outer, and fig. 5. inner view of an anther; fig. 6. Pistil:—all magnified.—fig. 7. Fruit:—nat. size.—fig. 8. Single fruit; fig. 9. Achenium; fig. 10. Portion of the stem with the sear (?) of the fallen stipule:—magnified.

#### ORD. LXXII. LAURINEÆ. Juss.

1. *Ocotea salicifolia*. H. B. K. *Nov. Gen. Am. 2. p. 458.*—*Nectandra salicifolia*. Nees *Laurin. p. 302.*

The flowers seem to be all female, and we are doubtful to what genus of *Laurineæ* of Nees von Esenbeck this should be referred. That author, indeed, places it in *Nectandra*, but he had not seen the flowers. We are rather disposed to refer it to his section ΟΚΕΟΔΑΡΝΕÆ, and probably it may come under *Ocotea*, as now circumscribed by Nees.

There are specimens of two other *Laurineæ* in the collection, one belonging to the *Cinnamomum* tribe.

#### ORD. LXXIII. ARISTOLOCHIÆ. Juss.

1. *Aristolochia Taliscana*; volubilis glabra, foliis petiolatis cordato-rotundatis obtusissimis basi sinu profundo lateque bilobis lobis rotundatis subtus pallidioribus, pedunculo axillari solitario unifloro folium superante, perianthii tubo breviusculo labium recurvum late ovatum intus filamentoso-papillosum æquante.

HAB. Talisco.—Apparently a distinct species from any hitherto described. The leaves about two inches long, and the same in breadth. The lip of the flower is nearly an inch long, about equal in length with the tube, suddenly bent back, clothed on the upper side with fleshy club-shaped appendages.

#### ORD. LXXIV. EUPHORBIACEÆ. Juss.

1. *Jatropha Curcas?* L.—HAN. Talisco.

1. *Hermesia Mexicana*; pubescenti-scabra, ramis teretibus, foliis ovato-oblongis acutis serratis, spicis masculis solitariis axillaribus, perianthio masc. 3-partito, staminibus 8?

\**A. platypus*; petiolo superne dilatato alato. "*Arredera?*" Andrieux *Plant. Mexic. exsicc. n. 117.*—No. 116 also, of the same collection, is an *Antigonon*, with larger flowers and leaves, and the petiole narrower, though distinctly winged; but it may be merely a variety. Both inhabit Tlacolola of Oaxaca.

Adrien de Jussieu unites the *Hermesia* of H. B. K., with *Alchornea*, Sw. How far justly we have no means of determining.

1. *Croton syringæfolius*. H. B. K. *Nov. Gen. Am.* 2. p. 67.

HAB. Acapulco.—The lower leaves are almost entirely cordate, the upper ones more approaching to ovate.

1. *Pedilanthus tithymaloïdes*. H. B. K. *Nov. Gen. Am.* 2. p. 63. *Bot. Reg.* t. 837.

1. *Euphorbia pilulifera*. L.—*Schlecht. in Linnæa*, 5. p. 83.—*E. globulifera*. H. B. K. *Nov. Gen. Am.* 2. p. 56.

2. *E. ocymoides*. L.?—*Schlecht. in Linnæa*, 5. p. 83.

3. *E. strigosa*; caulibus herbaceis erectis flexuosis, foliis strigoso-hirsutis lanceolatis (2 poll. longis) brevissime petiolatis integerrimis, involucris cupulatis laceratis eglandulosis paucis subumbellatis, bracteis sub 4 coloratis umbella longioribus.

This has a perennial root, bearing several flexuose branching stems, about a foot long.

1. *Poincettia pulcherrima*. *Grah. in Bot. Mag.* t. 3493.

1. *Acalypha rhombifolia*? *Schlecht. in Linnæa*, 7. p. 382.

#### ORD. LXXXV. URTICEÆ. *Juss.*

1. *Boehmeria elongata*. *Fisch.—Schlecht. in Linnæa*, 5. p. 81.

1. *Ficus lancifolia*; foliis sublonge petiolatis oblongo-lanceolatis tenui-acuminatis integerrimis submembranaceis, fructibus solitariis vel ternis axillaribus globosis sessilibus glabris.

#### ORD. LXXXVI. PIPERACEÆ. *Kunth.*

1. *Piper scabrifolium*; fruticosum, ramis obtuse tetragonis pubescentibus, foliis subcoriaceis brevi-petiolatis oblongo-ovatis brevi-acuminatis venosis utrinque scabris basi inæqualibus, spicis brevi-pedunculatis elongatis cylindraceis folio brevioribus.

2. *P. patens*; fruticosum, ramis divaricatis ad nodos geniculatis, foliis ovato-lanceolatis membranaceis acuminatis utrinque molliter pubescentibus nervosis basi acutis vix inæqualibus, spicis brevi-pedunculatis cylindraceis folio dimidio brevioribus.

3. *P. beyoniæfolium*; glaberrimum, ramis teretibus, foliis oblongo-ovatis membranaceis nervosis acutiusculis basi valde inæqualibus utrinque rotundatis, spicis elongatis cylindraceis brevi-pedunculatis folium æquantibus.

#### ORD. LXXXVII. AMENTACEÆ. *Juss.*

1. *Salix microphylla*; valde imosa, foliis parvis persistentibus sparsis sessilibus lineari-lanceolatis acutis obscure serratis costatis enervibus glabriusculis junioribus sericeis, stipulis minutis caducis, amentis coætaneis in ramulis terminalibus ovalibus parvis.

squamis (fœmineis) obovatis venosis pubescenti-hirtis, staminibus 2. (TAB. LXX.)—*S. microphylla*. *Schlecht. in Linnæa*, 6. p. 354.

A very remarkable species of *Salix*, with leaves like those of some small *Lythrum*, and flowers small in proportion. Our specimens possess only the male catkins.

TAB. LXX. *Salix microphylla*. *Fig. 1.* Outer view of a scale from the male amentum; *fig. 2.* Inner view, with flower; *fig. 3.* Leaf:—*magnified*.

## MONOCOTYLEDONES.

ORD. LXXXVIII. ORCHIDEÆ. *Juss.*

1. *Oncidium* *sp.*—HAB. Talisco.
1. *Cymbidium tenuifolium*. *Willd.?*—HAB. Talisco.

ORD. LXXIX. IRIDEÆ. *Juss.*

1. *Sisyrinchium* *sp.?*—HAB. Talisco.

ORD. LXXX. BROMELIACEÆ. *Juss.*

1. *Tillandsia usneoides*. *L.*—HAB. Talisco.
2. *T. vestita?* *Schlecht. in Linnæa*, 6. p. 53.

ORD. LXXXI. SMILACEÆ. *Br.*

1. *Smilax rotundifolia*. *Willd.*

Two other species, in a very imperfect state, are in the collection.

ORD. LXXXII. RESTIACEÆ. *Br.*

1. *Eriocaulon microcephalum?* *H. B. K. Nov. Gen. Am.* 1. p. 201.

ORD. LXXXIII. ANEILEMA. *Br.*

1. *Aneilema floribunda*.—*Commelina floribunda*. *H. B. K. Nov. Gen. Am.* 1. p. 269.

ORD. LXXXIV. ALISMACEÆ. *Rich.*

1. *Alisma virgata*; foliis latissime ovatis obtusis basi cordatis, paniculæ ramis elongatis strictis, floribus densis verticillatis, verticillis remotis, pedicellis flore vix duplo longioribus, bracteis ovatis verticillo brevioribus.

2. *A. Andrieuxii*; foliis elliptico-lanceolatis acutis basi attenuatis, paniculæ ramis elongatis strictis, floribus densis verticillatis, verticillis subremotis, pedicellis florem subæquantibus, bracteis subulatis verticillo longioribus.—*Alisma Andrieux Pl. Mexic. Exsicc. n. 91.*

The same species was found by M. Andrieux about Tehuantepec of Oaxaca.

ORD. LXXXV. AROIDEÆ. *Juss.*

1. *Pistia Stratiotes*. *L.*

ORD. LXXXVI. CYPERACEÆ. *Juss.*

1. *Isolepis exigua*.—*Scirpus exiguus*. *H. B. K. Nov. Gen. Am.* 1. p. 154.
1. *Fimbristylis ferruginea*.—*Isolepis ferruginea?* *Schlecht. in Linnæa*, 6. p. 27.
1. *Cyperus exaltatus*. *Retz.*

*C. exaltatus* is indeed an East Indian species, but we scarcely see how this differs from it. It agrees too in many points with *C. Toluccensis*, *H. B. K.*, but the glumes are not reflexo-mucronate.

ORD. LXXXVII. GRAMINEÆ. *Juss.*

1. *Panicum maximum*. *Jacq.*
2. *P. sp.*—*elatum*, foliis lanceolatis acuminatis basi cordato-amplexantibus glaberrimis, panicula ramosissima, spiculis compressis, glumis inæqualibus obtusis striatis glabris.
3. *P. (Digitaria) adscendens?* *H. B. K. Nov. Gen. Am.* 1. p. 97.  
Very nearly allied to *P. commutatum* from the East Indies.
4. *P. (Hymenachne) Myurus*. *Lam.*—*H. B. K. Nov. Gen. Am.* 1. p. 98.
1. *Pennisetum purpurascens*. *H. B. K. Nov. Gen. Am.* 1. p. 113.
1. *Ctenium Americanum*. *Spr.*
1. *Arundo nitida*. *H. B. K. Nov. Gen. Am.* 1. p. 149. t. 688.
1. *Cenchrus echinatus*. *L.*
1. *Eragrostis ciliaris*. *P. Beauv.*—*Poa ciliaris*. *H. B. K.*
2. *E. plumosa*. *Trin.*—*Poa*. *Retz.*

## ACOTYLEDONES.

## ORD. LXXXVIII. FILICES.

1. *Lycopodium pallescens*. *Hook. et Grev. in Bot. Misc. v. 2. p. 381.*—*An Presl, Reliq. Henk. p. 79?*
1. *Marsilea vestita*. *Hook. et Grev. Ic. Fil. p. 159.*—*HAB. Talisco.*
1. *Nephrolepis exaltata*. *Schott.*—*Aspidium exaltatum*. *Sw.*
1. *Asplenium Nidus*. *L.*
2. *A. subalatum*; cespitosum pinnatum, pinnis oblongis rigidis subacutis subtus basi superiore truncata margine inferiore dimidiato integro, reliquo inciso-pinnatifido laciniis



plerumque bifidis, soris longitudinalibus 1-2 prope marginem inferiorem, rachide (aterima nitida) facie inferiore concaviuscula alato-marginata, dorso senicylindrico. (Tan. LXXI.)

A very nearly allied species to this, if not the same, differing only in the more acuminate pinnae, is No. 1287 of Mr Cuming's collection from Columbia. In our Mexican specimens, probably from not being submitted to pressure when freshly gathered, the rachis is incurved, and all the pinnae refracted, so that they all point to one side. The fructifications are so sunk into the frond, as to give a tuberculated appearance to the anterior surface.

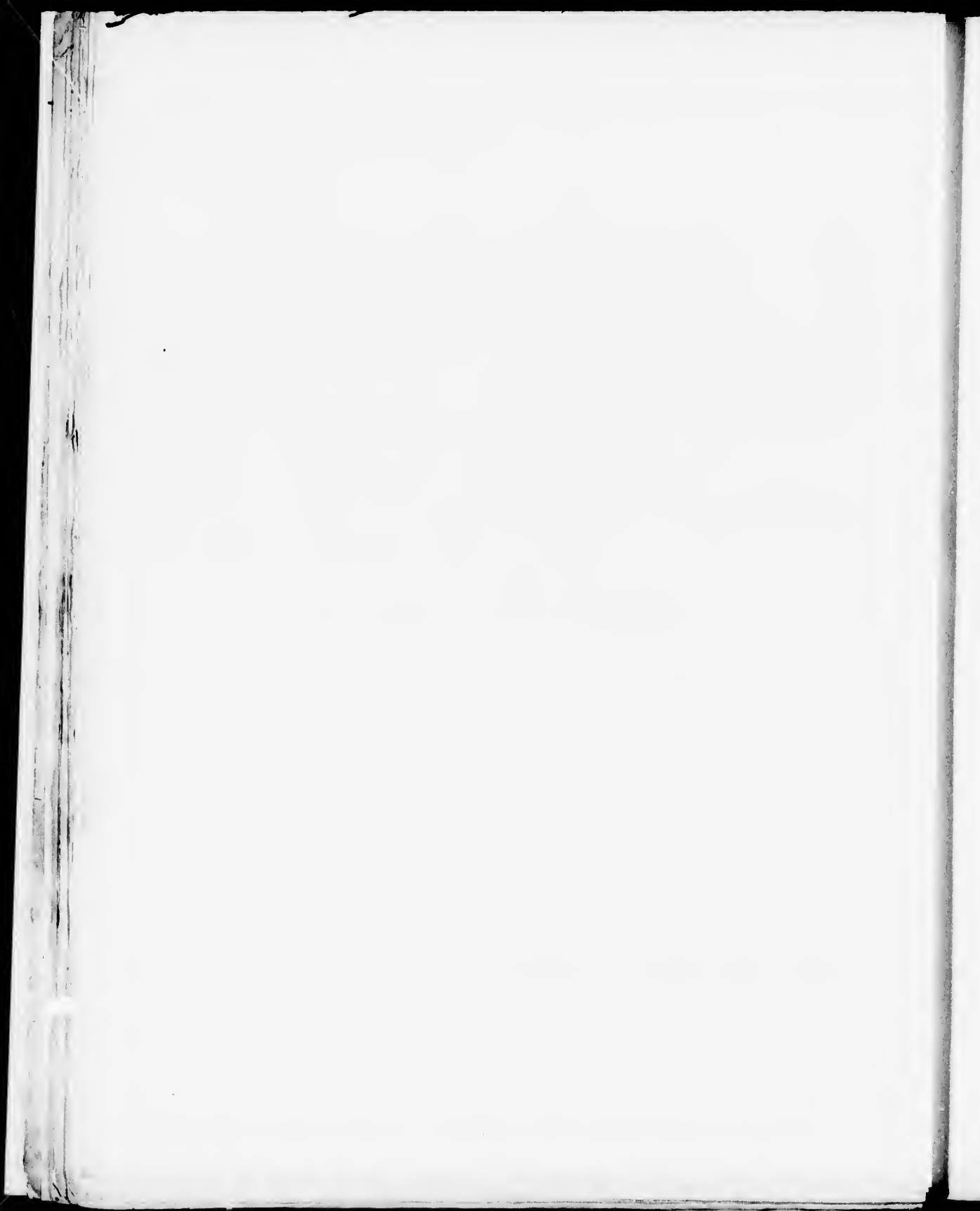
TAB. LXXI. *Fig. 1.* Anterior, and *fig. 2.* posterior view of a fertile pinna:—*magnified.*

1. *Woodwardia radicans. Sw.*

1. *Blechnum occidentale. L.*

ORD. LXXXVIII. HEPATICÆ.

1. *Fimbrinria tenella. Nees ab Esenb. Hor. Phys. Berol. p. 45. Bischoff, Lebermoosc, in Act. Acad. Nat. Cur. v. 17. P. II. p. 1022. t. 69. f. 2.—HAB. Tulisco.*



## SUPPLEMENT.

By a reference to the first page of this work, it will now be seen that we have described, as far as lay in our power, the species of the various collections made during the voyage of H.M.S. *Blossom*, with the exception of those of Rio Janeiro. This was the first and it was the last place visited by the Naturalists. But the collection is so small, the specimens in such very wretched condition, and those few plants which can be determined so well known, that we think it unnecessary to enumerate them. We believe we shall further the cause of science much more by occupying the remaining pages of our work with a Supplement to the *Californian Collection*, which we are enabled to do from that made, chiefly at Monterey and San Francisco, (at no great distance from the coast,) by the unfortunate Douglas, as narrated in the *Companion to the Botanical Magazine*, vol. 2. p. 79, &c.; and from another, very recently sent to us by Mr Tolmie, from the "*Snake Country*," in the interior of California. This is a name given to the vast extent of Prairie through which Lewis' branch, or the *Snake River*, holds its course. Fort Hall is situated at the confluence of Blackfoot with Snake River, near Blackfoot Hill, in N. lat. 42° 30', W. long. 114°. Snake Fort is built at the junction of Reed's River with the Snake, the position of which is in N. lat. 44° 20', long. 116° W. The specimens, in beautiful preservation, were gathered, in the summer of 1837, by a friend of Mr Tolmie, who conducted a party from Fort Vancouver, on the Columbia, to the rendezvous of the American Trappers, in the interior of California. Some few of the specimens from the "*Green River*;" for the meeting of the Beaver Trappers, who, to the number of 500 or 600, are scattered through the Rocky Mountains and adjacent country, was held in that year in the valley of the "*Green River*," a stream which is considered to be probably the main branch of the Rio Colorado, and which empties itself into the Gulf of California. There is not, perhaps, in the whole of North America, a district more interesting to the Botanist than that from which these plants are derived; situated near the western foot of the Rocky Mountains, at an immense distance from the coast, and at a great elevation, as may be inferred from the fact of its being near the sources of two great rivers, the one having its course to the north (into the Columbia), the other to the south (into the Gulf of California); and whose respective windings seem to circumscribe the whole of New California, except that portion of it which is washed by the Pacific Ocean. If other gentlemen attached to the hunting expeditions of the Hudson's Bay and American Companies would thus occupy a portion of their leisure time, we should soon be as well acquainted with the vegetation of the interior of this vast continent as we now are with that of its coasts.

## CALIFORNIA.—SUPPLEMENT.

Where not otherwise mentioned, it is to be understood that the following species are from the collection of Mr Douglas. They were presented by the Horticultural Society of London, in whose service Mr Douglas was at the time that he gathered them.

ORD. I. RANUNCULACEÆ. *Juss.*

1. *Ranunculus aquatilis*. *L.*—*Hook. et Arn. in Bot. of Beech. Voy. v. 2. p. 134. Torr. et Gray, Fl. of N. Am. 1. p. 15.*—var. *brachypus*; pedunculis folio brevioribus.

This var. has all the leaves capillaceo-multifid: the segments divaricated. Peduncles less than an inch long, invariably shorter than the leaves.

2. *R. glaberrimus*. *Hook. Fl. Bor. Am. 1. p. 12. t. 5. A. Torr. et Gr. Fl. 1. p. 19.*

HAB. Snake Country: Blue Mountains. (*Tolmie*.)

3. *R. hebecarpus*; gracilis ramosus patenti-hirsutus foliosus, foliis longe petiolatis inferioribus tripartitis superioribus triternatim partitis segmentis cuneatis 3-5-fidis, pedunculis oppositifoliis folii longitudine, petalis 5 calycem subæquantibus, carpellis suborbicularibus compressis stylo recurvo acuminatis tuberculatis hirsutis.—*R. parviflorus*. *γ. Torr. et Gr. Fl. 1. p. 25.*

This will rank near *R. Chilensis*; from which, however, it is readily discriminated by its smaller size, fewer flowers and petals, more deeply divided leaves, and especially by the tuberculated and hispid carpels. The much more hairy leaves and carpels, and the deeply divided leaves, distinguish it from *R. parviflorus*, Sm., to which, in other respects, it bears a considerable resemblance.

4. *R. dissectus*; caule erecto glabriusculo ramoso, foliis radicalibus inferioribusque longe petiolatis bi-tripinnatis sectis hirsutis supremis minus divisissimis sessilibus, laciniis lineari-lanceolatis acutissimis basi decurrentibus, vaginis elongatis sulcatis hispidissimis, floribus subpaniculatis, calycibus reflexis hispidissimis, petalis 11-14 obovato-oblongis, ovariis stylo brevi recurvato.

A species remarkable for the much divided leaves in a pinnated manner, and for the segments being broad and decurrent at the base. The flowers are large, many-petaled. It may be placed near *R. orthorhynchus*, Hook. Fl. Bor. Am. v. 1. p. 21. t. 9; like which, it has a root formed of many thickish descending fibres.

1. *Isopyrum occidentale*; apetalum, radice —? petiolis basi vix dilatatis, capsulis 6-7 oblongis compressis transversim venosis patentibus stylo filiformi apice recurvo mucronatis 8-9 spermis.

This appears to belong to the *Enemion* of Rafinesque and De Candolle, which I can only consider as an apetalous *Isopyrum*. From *Enemion biternatum*, which I still think may prove a var. of *I. thalictroides*, the present one differs in the smaller sepals, scarcely dilated base of the petioles, and especially in the more numerous capsules, and their different figure and direction, and the number of seeds: in the

*Enemion triteratum*, the capsules are only two or three in number, reflexed, broadly ovate, with two or three oblique veins, two- or at most three-seeded, tapering gradually into a long recurved style. This also seems to be the structure of the fruit of *Isop. thalictroides*, judging from Jacquin's figure (*Fl. Austr. t. 105*), for my own specimens of that species do not possess the fructification.

1. *Aquilegia cærulea*; calcare stricto subulato limbum duplo superante apice cluvato. (TAB. LXXII.)—*Torr. et Gr. Fl. 1. p. 30.*—A. leptocera. *Nutt.*

IIA. Snake country, between Henry's and Fish Rivers. (*Tolmie*).—The flowers will at once distinguish this from all the other *Aquilegia*, for they are nearly three inches in diameter, and the long subulate slender straight spur is also nearly three inches long. The colour is probably blue in the recent state, nearly white when dry.

TAB. LXXII. *Aquilegia macrantha*:—*nat. size.*

1. *Delphinium* (*Delphinastrum*, pet. inf. limbo integro) *grandiflorum*. *L.—Sims, Bot. Mag. t. 1686. De Cand. Prod. v. 1. p. 53.*— $\beta$ . *variegatum*. *D. variegatum. Torr. et Gr. Fl. 1. p. 32.*

In the Californian plant, which is, I think, identical as to species with the *D. grandiflorum* of Siberia and China, the upper petals are yellow, the lower ones with the yellow spot less distinct than in the variety of the Old World, and the leaves have shorter and thicker segments. In one of our specimens, the whole of the petals are variegated, dingy yellow and blue.

2. *D.* (*Delphinastrum*, pet. inf. limbo bifido) *azureum*.—*Mx. Fl. Am. v. 1. p. 314. Delessert, Ic. Select. v. 1. p. 60. De Cand. Prod. v. 1. p. 54. Torr. et Gr. Fl. 1. p. 32.*

3. *D.* (*Delphinastrum*, *Fl. N. Am. 1. p. 32.* pet. inf. limbo bifido) *Menziesii*.—*De Cand. Prod. v. 1. p. 54. Hook. Fl. Bor. Am. v. 1. p. 25. Bot. Reg. t. 1192. Torr. et Gr. Fl. 1. p. 31.*

Very similar in the structure of the flowers to the preceding, but these flowers are larger and more hairy. —From the coast, *Douglas*, to the Snake Country. (*Tolmie*.)

4. *D.* (*Delphinastrum*) *simplex*.—*Dougl. in Hook. Fl. Bor. Am. v. 1. p. 25.*— $\beta$ . *calcare calycem subæquante.*

Of this variety, which differs from Mr Douglas' in no essential particular, except in the shorter spur, there are two states in the collection; one with the stem and leaves downy, the other quite glabrous. In all, the form and relative size of the petals are the same; and I cannot agree with those botanists who have multiplied the species of the Genera *Delphinium* and *Aconitum* upon the slightest possible grounds. Perhaps indeed Messrs Torrey and Gray are right in referring this to *D. Menziesii*.

5. *D.* (*Delphinastrum*) *exaltatum*. *Ait.—De Cand. Prod. v. 1. p. 54. Hook. Fl. Bor. Am. v. 1. p. 25.*—*D. Californicum. Torr. et Gr. Fl. 1. p. 31.*

These are very fine specimens, with their densely flowered racemes sometimes a foot in length. In other respects, this plant entirely agrees with my specimens from the eastern side of North America. Messrs Torrey and Gray consider it a distinct species.

6. *D.* (*Delphinastrum*) *sarcophyllum*; petiolis basi dilatatis, foliis carnosis sub-peltatis tripartitis inferiorum segmentis obcordatis crenato-lobatis superiorum oblongis integerrimis

mis, petalis inferioribus spatulatis limbo bifido ciliato disco parce piloso, superioribus elongatis exsertis apicibus pilosis, calcare calyce glabro subduplo longiore.—*D. nudicaule*. Torr. et Gray, *Fl.* 1. p. 33.

A very singular and most distinct species, two feet and more high, branched. Leaves principally from the base, but by no means all radical, thick and fleshy, of three deep obovate and lobed segments. Flowers in large lax panicles, of a red-purple colour, with a very long spur, nearly glabrous. Petals all spatulate; the upper ones longer than the calyx, much exserted. The *D. nudicaule* of Torrey and Gray, though found by Mr Douglas, does not quite accord with this plant, and these authors do not notice the singularly fleshy leaves.

#### ORD. II. BERBERIDEÆ. Vent.

1. *Berberis Aquifolium*. Pursh.—Hook. *Fl. Bor. Am.* v. 1. p. 29 (excl. syn. *B. repentis*). Lindl. *Bot. Reg.* t. 425. Hook. et Arn. *Bot. of Beech. Voy.* p. 134. Torr. et Gr. *Fl.* 1. p. 50.—*Mahonia Aquifolium*. Nutt.—*De Cand. Prod.* v. 1. p. 108.\*

1. *Epimedium hexandrum*. Hook. *Fl. Bor. Am.* v. 1. p. 30. t. 13.—*Vancouveria hexandra*. Morr. et Decaisne, *Ann. des Sc. Nat.* 2d Ser. v. 2. p. 351. Torr. et Gr. *Fl.* 1. p. 52.

My specimen of this plant shows that the flowers are sometimes in rather large lax panicles. Some of the leaflets are more than two inches in diameter.

#### ORD. III. PAPAVERACEÆ. Juss.

The plants of this family in Mr Douglas' collection are possessed of peculiar interest; affording, as they do, eight new species, and three new genera; of which latter, one is remarkable for the beauty of its blossoms, as another is for its frutescent habit and rigid coriaceous leaves and fruit, an anomaly in the Order. Some of these having been cultivated in the garden of the Horticultural Society, our valued friend Mr Bentham has directed his attention to them, and has admirably characterized the new genera and species above alluded to, in the *Transactions of the Horticultural Society of London*. His characters we cannot do better than adopt.

#### PLATYSTEMON. Benth.

GEN. CHAR. *Sepala* 3, ovata, caduca, pilosa. *Pet.* 6. *Stamina* numerosa. *Filamenta* dilatata, membranacea, obovata. *Antheræ* lineares, biloculares, lateraliter debiscentes. *Ovaria* plurima, (10 et ultra), linearia, stigmatibus sessili lineari terminata. *Capsula* totidem, distincte, torulosa, articulata, indehiscentes, transversim multiloculares, extus piloso-hispide. *Semina* in quoque loculo solitaria, pendula. Benth.

1. *Platystemon Californicum*. Benth. *Hort. Trans.* v. 1. 2d. Series, p. 405. Lindl. *Bot. Reg.* t. 1679. Hook. *Bot. Mag.* t. 3579. Torr. et Gr. *Fl.* 1. p. 65.

"This little annual," Mr Bentham observes, "flowered" (the first season) "very sparingly; but the fine specimens transmitted by Mr Douglas in a dry state, promise that it may become as interesting to the horti-

\* There is a very distinct species of *Berberis* (Section *Mahonia*), in Mr Andrieux's collection of "*Plantæ Mexicane exsicc.* n. 469," without any name, and with only the remark, "Locus proprius incertus." It may be thus characterized:—

*B. Andrieuxii*; foliis pinnatis, pinnis 4-5-jugis cum impari oblongis obtusis submembranaceis reticulatim venosis læviter serratis, racemis laxis sparsis folio subbrevioribus.

culturist from its beauty, as it is to the botanist, from forming the connecting link between the *Ranunculaceæ* and *Papaveraceæ*. The trisepalous calyx, and numerous distinct ovaria, would have placed it in the former Order, were it not for the structure of the anthers, the very deciduous sepals, and the general habit, which do not admit of its being removed from *Papaveraceæ*, especially considering its close affinity with *Eschscholtzia*, (*Chryseis*, Lindl.) through *Platystigma* and *Dendromecon*."

The original discoverer of this curious plant, it is but right to state, is Mr Menzies, who gathered specimens in California, during the celebrated voyage of Captain Vancouver, and distributed them to his botanical friends in this country; but which, I regret to say, have, along with many other of his treasures thus generously dispersed, remained to the present day unpublished.—The *P. leiocarpum*, Fisch., is considered by Messrs Torrey and Gray a variety of this.

PLATYSTIGMA. *Benth.*

*Sepala* 3, ovata, caduca, pilosa. *Petala* 4-5. *Stamina* numerosa. *Filamenta* filiformia. *Antheræ* lineares, biloculares, lateraliter deliscentes. *Stigmata* 3, ovata, acuta, erecto-divergentia. *Capsula* oblonga, basi attenuata, 1-locularis, 3-angularis, 3-sulcata, 3-valvis, ab apice ad basin deliscentis: valvulis conduplicatis margine in placentis filiformibus productis. *Semina* numerosa, minuta, ovoidæa, nigra, levissima, nitida. *Benth.*

1. *Platystigma lineare*. *Benth. l. c. p. 407. Hook. Ic. Pl. 1. t. 38. Lindl. Bot. Reg. t. 1954. Hook. Bot. Mag. t. 3575. Torr. et Gr. Fl. 1. p. 65.*

*Herba* pusilla, cespitosa. *Caulis* brevissimi, dense foliosi. *Folia* linearia, integerrima, amplexicaulia, 1-nervia. *Scapi* semipetiales, erecti, uniflori, patentim pilosi.—A smaller plant than *Platystemon*, and growing in closer tufts, but otherwise resembling it very much in habit, though so different in botanical character. The flowers are yellow, rather smaller than in *Platystemon*.

DENDROMECON. *Benth.*

*Sepala* 2, ovata, caduca. *Pet.* 4. *Stamina* plurima. *Filamenta* filiformia. *Antheræ* lineares. *Stigmata* 2, sessilia, brevia, crassiuscula. *Capsula* elongata, siliquaformis, 1-locularis, bivalvis, valvulis coriaceis duris a basi ad apicem deliscentibus. *Placentæ* marginales, filiformes. *Semina* plurima, majuscula, pyriformia, lævia.—*Fruiculus dense foliosus, rigidus, glaber. Folia lanceolata, acuta, denticulata, penninervia, reticulata, rugosa, rigida. Pedunculi axillares, uniflori.*

1. *Dendromecon rigidum*. *Benth. l. c. p. 407. Hook. Ic. Plant. 1. t. 37. Torr. et Gr. Fl. 1. p. 64.*

A very singular plant, as Mr Bentham justly remarks, in this Order; with completely woolly stems, and rigid pungent leaves, scabrous rather than toothed at the margin, the principal nerves few, and running nearly parallel with the midrib, mixed by transverse ones, which give a reticulated appearance, particularly on the underside, where the nerves are prominent.

1. *Chryseis Californica*; caule ramoso folioso, foliorum segmentis linearibus, pedunculis cytho-infundibuliformi, limbo maximo dilatato, calyce longe acuminato.—*Eschscholtzia Californica. Cham. (non Lindl. Hook. etc.)—E. crocea. Benth. l. c. p. 407. Lindl. Bot. Reg. t. 1677. Hook. Bot. Mag. t. 3495.—Chryseis crocea. Torr. et Gr. 1. p. 63.—β. minor. Chryseis compacta. Lindl. Bot. Reg. t. 1948.*

I was much struck with the circumstance of there being no specimens of the *C. Californica* of our gardens in this Californian collection, and was thence led to refer to our first authority for this species, the figure and description of Chamisso, in the *Horæ Physicæ Berolinenses*, (p. 73, t. 15.) as well as to original speci-

mens in my herbarium; and it results from this examination, that Chamisso's original plant, gathered at San Francisco, as well as Mr Menzies' original specimens from Monterey (lat. 36°), are assuredly what we have hitherto called *C. crocea*. If, then, the species be really distinct, which perhaps may admit of some doubt, it is imperative that we transfer the name of "*Californica*" to the plant of Chamisso, who has so well figured and described it. The more northern plant, the principal station for which seems to be from lat. 40° to the sources of the Multnomak, in lat. 43°, may then bear the name of its discoverer, *C. Douglasii*. The localities they inhabit seem to be also different: the Californian species is found in dry sandy (sea?) shores, at the port of San Francisco (*Chamisso*); the northern plant, in open prairies, on the banks of streams.

2. *C. cæspitosa*; caulibus abbreviatis basi foliosis, foliis subradicalibus segmentis lineari-dilatatis cuneatis, pedunculis elongatis erectis, cyatho tubuloso limbo subnullo, calyce apice attenuato longe acuminato. *Benth. l. c. p. 408.* (*Eschscholtzia*.) *Torr. et Gr. Fl. 1. p. 63.*

"Flowers yellow, considerably smaller than those of *C. Douglasii* and *Californica*."

3. *C. tenuifolia*; caulibus abbreviatis basi foliosis, foliis radicalibus segmentis lineari-subulatis, pedunculis elongatis erectis, cyatho tubuloso limbo brevissimo, calyce obtusiusculo acuminato. *Benth. l. c. p. 408.* (*Eschscholtzia*.) *Torr. et Gr. Fl. 1. p. 64.*

4. *C. hypocoides*; caulibus elongatis ramosis foliosis, foliorum segmentis breviter lineari-cuneatis, pedunculi appendice tubuloso limbo subnullo, calyce apice breviter acuminato. *Benth. l. c. p. 408.*—(*Eschscholtzia*.) *Torr. et Gr. Fl. 1. p. 64.*

"Habit nearly that of *C. Douglasii*; but the leaves are much smaller, and the flowers not one-third the size. It bears much resemblance to *Hypocoum grandiflorum*."

1. *Meconopsis heterophylla*; foliis paucis remotis pinnatisectis, segmentis inferiorum ovatis subincisis subpetiolulatis, superiorum linearibus integerrimis subconfluentibus, capsulis lævibus 5-6-valvibus. *Benth. l. c. p. 408.* *Torr. et Gr. Fl. 1. p. 61.*

2. *M. crassifolia*; caule basi folioso, foliis crassiusculis glaucis pinnatisectis, segmentis inciso-lobatis margine revoluto foliorum inferiorum ovato-cuneatis superiorum lineari-cuneatis, capsulis lævibus. *Benth. l. c. p. 408.* *Torr. et Gr. Fl. 1. p. 61.*

"These two species of *Meconopsis* belong to the first section of De Candolle. The flowers of both are of an orange-red, about the size of those of *Papaver Argemone*."

#### ORD. IV. FUMARIACEÆ. *De Cand.*

1. *Dielytra chrysantha*; caule elato folioso ramoso, foliis bi-tripinnatisectis segmentis linearibus acutis glaucis, panicula elongata, bracteis calycibusque late ovatis obtusis, petalis spatulatis exterioribus basi vix gibbosis, interioribus dorso fere per totam suam longitudinem lato-alatis, stigmatibus latissimo truncato. (TAB. LXXIII.)

*Planta* ab omnibus hujusce generis insigniter distincta. *Caulis* herbaceus bi-tripetalis, erectis, teres, foliosus. *Folia* inferiora 6-8-uncialia, reliqua sensim minor, bi-tripinnatisecta, divisionibus vel pinnis primariis remotis, segmentis ultimis linearibus, acutis, glaucis. *Rachis* teres. *Panicula* elongata, multiflora. *Flores* majusculi, speciosi, aurei. *Bractææ* calycesque ovati, membranacei, obtusi. *Corolla* fere unciam



longa. *Petala* clausa, omnia spatulata versus apicem dorso insigniter concavo-carinata; 2 exterioribus basi vix gibbosis; 2 interioribus apice unitis, dorso per totam fere longitudinem lato-alatis, ala undulata protrusa. *Stamina* diadelpa, singula phalanx o filamentis tribus, leniter coalunatis, apicibus liberis. *Athera* lineares. *Germen* lineare in stylo longo attenuatum. *Stigma* magnum, marginibus deflexis undulatis apice truncato.

Tab. LXXIII. *Dielytra chrysantha*. Fig. 1. Flower; fig. 2. Inner petals; fig. 3. Stamens and pistil.

ORD. V. CRUCIFERÆ. *Juss.*

1. *Turritis? lasiophylla*; simplex elongata stricta inferne pilis simplicibus rigidis hispida superne glabriuscula, foliis oblongo-lanceolatis pinnatifidis petiolatis supremis linearibus integerrimis basi attenuatis, calycibus subpilosis petalis, linearibus (flavis) unguiculatis, siliquis (immaturis) longis angusto-linearibus strictis arcte deflexis.

A very distinct species, 1½ foot to 2 feet high, very straight, unbranched; lower leaves on long petioles, pinnatifid with sharp unequally sized teeth. Petals yellow, linear, about half as long again as the calyx. Young pods very narrow, not in the least curved, deflexed.

1. *Arabis blepharophylla*; foliis utrinque nudis marginibus pilis albis rigidissimis simplicibus vel furentis ciliatis, radicalibus obovato-spathulatis caulinis oblongis sessilibus, calyci foliolis ellipticis obtusis superne stellato-pubescentibus, petalis obovatis in unguam attenuatis (purpureis).

A small plant, three or four inches high, with a perennial root. Stem simple. Radical leaves several, spreading, an inch or more long, naked on both sides, those of the stem hispid on the costa beneath; all of them margined with white, singularly rigid, simple or forked hairs. Calyx membranaceous, slightly coloured, and scarioso at the margin, half of the length of the petals, which appear to be purplish.

1. *Pachypodium integrifolium*; glaberrimum, foliis lineari-lanceolatis integerrimis subglaucis, floribus fructibusque dense corymbosis, siliquis angusto-linearibus teretibus torulosis, stylo brevi, stigmatate parvo capitato. (Tab. LXXIV.)—*Nutt. in Torr. et Gr.* 1. p. 96.

HAB. Snake Country. Blackfoot River. (*Tolmie*.)—Of the genus of this we are very doubtful, the fruit not being ripe, though the siliques seem fully formed. But these siliques are quite terete (the valves being concave), singularly torulose or moniliform, and there is a great disposition (when saturated with moisture) in their valves, not in the rest of the seed-vessel, to break at the joints. The root is perennial; from the summit of which arise one or more stems 12-14 inches high, branched at the base, and above also bearing many short leafy branches, each terminated by a dense corymb of pale purple flowers. Calyx glabrous, membranous. Petals obovato-lanceolate, with long claws. The fruit likewise forms corymbs, about an inch long, curved upwards. Seeds in a single row, oblongo-ovate, minutely dotted. Embryo unformed in our specimen.

Tab. LXXIV. Fig. 1. Flower; f. 2. Siliqua with the valves separated; f. 3. Unripe seed:—*Nutt. in Torr. et Gr.*

\* After the above had been printed under the name of *Cardamine? torulosa*, Hook. et Arn., authentic specimens of Dr Boott's Herbarium have proved to us that this is the *Pachypodium integrifolium*, l. c. The genus is founded by *Macropodium laciniatum*, Hook. Bot. Misc. 1. p. 341. t. 68. (which has much compressed pods); and is separated by Mr Nuttall from *Macropodium* (Br.) on account of the incumbent cotyledons and narrower siliques, with shorter stipes. The present plant has the siliques perfectly terete and torulose, and scarcely differs from *Cardamine* or *Arabis*, except in the direction of the radicle, which indeed, though dorsal in its origin, is applied obliquely to the cotyledons.

1. *Streptanthus glandulosus*; inferne piloso-hispidus, foliis lineari-oblongis dentato-subpinnatifidis dentibus glandulosis. radicalibus petiolatis caulinis profunde sagittatis amplexicaulibus, floribus erecto-patentibus (purpureis) secundis, siliquis longe linearibus patentibus curvatis valvis reticulatis uninerviis. *Hook. Ic. Pl. 1. t. 40. Torr. et Gr. Fl. 1. p. 77.*

Quite different from the *S. maculatus*, Nutt., from the *obtusifolius*, Hook. Bot. Mag. t. 3317, as well as from the *S. hyacinthoides*, Hook. Bot. Mag. t. 3516. The lower part of the plant is always more or less hispid, the leaves pinnatifid (the uppermost ones sometimes excepted), with the teeth or segments terminated by a gland; the flowers (of the same colour as the last-mentioned handsome species) never drooping, but secund; the siliqua always curved, glabrous.

2. *S. sagittatus*; subglaber, foliis radicalibus spathulatis caulinis sessilibus sagittatis integerrimis acutis inferioribus oblongis superioribus linearibus, floribus siliquisque erectis, petalis obovatis longe tenuiterque muciculatis.—*Nutt. in Torr. et Gr. Fl. 1. p. 76.*

HAB. Snake Country, about Thomas' Fort. (*Tolmie*).—An erect, rather stout plant, a foot to 18 inches high, glabrous, except in the petioles of the lower leaves, which are distantly ciliated. Stem-leaves strongly sagittate, in our specimens 4.5 inches long; but in general 2-3 inches.

3. *S. flavescens*; pilosus, foliis lineari-oblongis inferioribus petiolatis dentato-pinnatifidis dentibus glandulosis caulinis sessilibus integerrimis, floribus erectis (flavescentibus), petalis linearibus acutis, siliquis (immaturis) erectis hirsutis. *Hook. Ic. Pl. t. 44. Torr. et Gr. Fl. 1. p. 77.*

The few specimens of this plant in our collection appear to have the habit and character of *Streptanthus*. They are small, 6-8 inches high, simple, unbranched; the cauline leaves sessile, but not amplexicaul, nor in any way auricled at the base. The flowers are yellow, but the anthers have a purplish tinge. Germen and young fruit (which is erect) hairy; style evident; stigma capitate.

1. *Hesperis Menziesii*. (TAB. LXXV.)—*Hook. Fl. Bor. Am. 1. p. 60.*—*Phœnocaulis cheiranthoides*. *Nutt. Torr. et Gr. Fl. 1. p. 91.*

HAB. Pine Creek, in the Snake Country. (*Tolmie*).—Very fine specimens of this plant are in the beautiful collection of Mr Tolmie, from the Snake Country, which enable us to give a figure of it. Radical leaves large, oblongo-spathulate, hoary, with minute, dense, stellated down, tapering into petioles, which are dilated at the base, quite destitute of pubescence, glossy, and of a bright straw-colour. Scapes, as they may be called, (rather than stems,) scarcely twice the length of the root-leaves, nearly glabrous, as are the small oblong leaves which they bear themselves. Corymbs of many large bright purple flowers. Young siliques spreading.\*

TAB. LXXV. *Fig. 1.* Pod; *fig. 2.* Another pod, with one valve removed:—*natural size.*—*fig. 3.* Seed and podosperm; *fig. 4.* Embryo; *fig. 5.* Embryo in an unusual state:—*magnified.*

\* Since the above was in type, we have had the pleasure of seeing the fruit of this beautiful plant, sent to Dr Booth by Mr Nuttall, as his *Phœnocaulis cheiranthoides*. This fruit indeed differs (as may be seen from that which we have now added to our figure) from *Hesperis* (we more particularly allude to *H. aprica*), in the pods being broader, fewer, about (11)-seeded, the seeds without margin; and in having the cotyledons accumbent; though in our seed, which had a third imperfect cotyledon, the cotyledons were incumbent. In every other respect the flowers and the fruit quite agree with *Hesperis*, on which account we are led, for the present, to continue it in that genus.

1. *Sisymbrium brachycarpum*. Richards.—Hook. Fl. Bor. Am. 1. p. 62.—*S. caulescens*. *δ*. Torr. et Gr. Fl. 1. p. 92.

HAB. Snake Country. Confluence of Reed's River with the Snake River. (Tolmie.)

2. *S. curvisiliqua*. Hook. Fl. Bor. Am. 1. p. 61.—*Nasturtium*. Nutt. in Torr. et Gr. Fl. 1. p. 73.

HAB. Snake Country. (Tolmie.)

1. *Erysimum asperum*. DC.—Hook. Fl. Bor. Am. 1. p. 64. t. 22. Torr. et Gr. Fl. 1. p. 95.—*E. cicutum*. Nutt. in Torr. et Gr. Fl. 1. p. 95.

HAB. Snake Country; about the American falls on the Snake River, and at Green River. (Tolmie.)

2. *E. ? glaberrimum*; foliis radicalibus spatulatis caulinis pinnatifidis supremis linearibus integerrimis.

HAB. Snake Country. Confluence of Reed's River with the Snake River. (Tolmie.)—Root perennial, bearing at the summit several erect stems, scarcely a foot high, and their stems are simple. Lower leaves spatulate, entire, soon withering; the principal ones of the stem pinnatifid; the uppermost ones linear, entire; all glabrous, as is every part of the plant. Corymbs of several rather small flowers. Calyx glabrous, of four membranaceous ovate-lanceolate leaves. Petals yellow, but not very bright. Petals obovate, clawed, nearly twice as long as the calyx. Young siliques narrow, linear.

1. *Lepidium corymbosum*; glabrum, ramis corymbosis, foliis pinnatifidis inferioribus bipinnatifidis, floribus densa corymbosis, petalis 4, siliculis apteris (parvis) orbiculari-ovatis obsolete emarginatis, stylo exserto.

HAB. Snake Country. American falls of Snake River. (Tolmie.)—A very distinct species. Root annual. Whole plant glabrous. Stem erect, rigid, a span to a foot high, bearing, especially in the upper half, several erect-patent branches, the lower ones the largest, so that all the specimens have a very corymbose appearance, and each branch bears several corymbs of largish white flowers. Leaves 1-2 inches long, pinnatifid; the segments oblong, those of the lower leaves again pinnatifid. Corymbs very dense, and the fructified racemes are very short. Silicles small, quite glabrous, broadly ovate, approaching to orbicular, wingless, scarcely notched, and with a rather considerably exerted style.

2. *L. latipes*; humifusum caespitosum, foliis bipinnatifidis, floribus densissimis, pedicellis latissimis planis, siliculis ellipticis reticulatis hirsutis antice bialatis alis rectis longitudine siliculorum, stigmatibus sessilibus. Hook. Ic. Pl. t. 41. Torr. et Gr. Fl. 1. p. 116.

This is a remarkable plant, of a singularly compact mode of growth; the branches stout, downy, humifuse; the leaves many of them 3-4 inches long, glabrous, or only here and there ciliated, bipinnatifid; the segments linear. Corymbs of exceedingly numerous, very closely placed, small flowers, succeeded by broad crowded racemes of fruit. Petals small, ciliated. Pedicels broad and quite flat, downy. Silicles large for the size of the plant, elliptical, compressed, reticulated, more or less clothed with white hairs; the margin of the dissepiment broad; the apex on each side the minute sessile stigma extends into two acuminate wings, nearly equal in length with the pouch.

3. *L. oxycarpum*; subpubescens, caulibus procumbentibus gracilibus, foliis linearibus integris vel pinnatifidis, fructus racemis laxis, pedicellis latis compressis patentibus-reflexis,

siliculis glaberrimis orbicularibus compressis reticulatis emarginato-bilobis lobis subdivaricatis acutis, stigmatе sessili.—*Torr. et Gr. Fl. 1. p. 116.*

A much branched and spreading annual, with long slender racemes of fruit, and recurved compressed pedicels. The pouch is very similar in form to that of *Lepidium bipinnatifidum*, but broader at the base, and with the lobes longer and slightly diverging. The leaves and general aspect of the plant are very different in the two.

4. *L. leiocarpum*; glabriusculum, caulibus procumbentibus, foliis pinnatifidis, fructus racemis laxis, pedicellis latis planis patenti-reflexis, siliculis glaberrimis nitidis orbicularibus compresso-planis marginibus subincurvis apice emarginatis, stigmatе sessili.

Habit of the preceding, but less slender. The leaves are more pinnatifid; the pedicels broader and flatter; the siliculae rather larger, very glossy, destitute of reticulation; the margin a little curved upwards; the apex with only a minute notch.

1. *Thysanocarpus elegans* (*Fisch. et Mey.*); calyce petalis vix duplo breviori, siliculis orbiculari-ovalibus membranaceo-alatis alis foraminibus plurimis pertusis apice emarginatis, stylo exserto sinus duplo superante.—*α.* siliculis glabris.—*T. elegans. Fisch. et Mey. in Ind. Sem. Hort. Petrop. p. 51. Torr. et Gr. Fl. 1. p. 118.*—*β.* siliculae disco tomentoso.

A most beautiful species, very different from the original *T. curvipes*. Our specimens have all a woolly disk to the siliculae, in which particular alone it differs from *T. elegans*, Fischer et Meyer, and is probably the same as the same authors notice from California, as discovered by M. Deppe, differing only in the longer style. The present variety is 1½ to 2 feet high, lower leaves slightly pinnatifid and hairy, upper ones glabrous, entire, sagittate at the base, racemes of fruit 8-10 inches long. Siliculae of a most elegant structure, margined with a broad somewhat crenated wing, in which is a range of rather large oblong perforations all round the woolly disk.

2. *T. curvipes. Hook. Fl. Bor. Am. v. 1. p. 69. t. 18. f. A. Torr. et Gr. Fl. 1. p. 118.*—*β.* siliculae disco pubescente.

The var. *β.* alone is in this collection, differing in no respect from the original *T. curvipes*, except in the downy fruit.

3. *T. pulchellus. Fisch. et Mey. Ind. Sem. Hort. Petrop. 1835. p. 50. Torr. et Gr. Fl. 1. p. 118.*—*α.* silicula nuda.—*β.* siliculae disco tomentoso.

These two states of the plant are mixed together, as if gathered in the same locality, and I see no reason to consider them other than varieties of the same species. The species is easily distinguished from *T. curvipes* by the much longer style, and the scarcely notched apex of the siliculae.

4. *T. pusillus*; pubescenti-hirtus ramosus, siliculis orbicularibus vix alatis pilis patentibus uncinatis utrinque tectis, floribus apetalis. *Hook. Ic. Pl. 1. t. 43. Torr. et Gr. Fl. 1. p. 119.*

A very minute plant. The flowering specimens probably do not equal an inch in height, but the inflorescence runs out into slender racemes, 3 or 4 inches long, bearing siliculae to the very base. These are scarcely so large as flax-seed, orbicular, compressed, and not distinctly winged, but clothed all over with spreading uncinately white hairs.

ORD. VI. CAPPARIDEÆ. *Juss.*

1. *Cleome lutea*. *Hook. Fl. Bor. Am.* 1. p. 70. t. 25. *Torr. et Gr. Fl.* 1. p. 122.

HAB. Snake Country. Between Burnt River and Malheur River. (*Tolmie.*)

ORD. VII. VIOLARIEÆ. *DC.*

1. *V. Muhlenbergiana*. *Ging.—Hook. Fl. Bor. Am.* 1. p. 78. *Torr. et Gr. Fl.* p. 140.

HAB. Snake Country; at Hans Forks.

2. *V. prænorsa*. *Douglas in Bot. Reg. t.* 1254. *Hook. Fl. Bor. Am.* 1. p. 80. *Torr. et Gr. Fl.* 1. p. 14.

3. *V. pedunculata*; caule brevi, stigmatē capitato utrinque piloso, foliis cordato-rhombicis basi subabrupte in petiolum longum attenuatis subpuberulis obtuse crenatis, stipulis parvis lanceolatis integris, pedunculis elongatis, sepalis lanceolatis acuminatis, petalis ovato-lanceolatis calcare brevissimo. *Torr. et Gr. Fl.* 1. p. 141.

With the exception of the different shape of the leaves, this seems scarcely different from *V. Nuttallii*, Ph. and *Hook. Fl. Bor. Am.* 1. p. 79. t. 26; and we had marked it as a broad leaved var. of that species, till we saw our friends Messrs Torrey and Gray had described it as a new species; whose opinion, in this case, we are willing to adopt. The flowers are large, handsome, golden colour.

4. *V. chrysantha*; subcaulis, stigmatē capitato utrinque subpiloso, foliis bipinnatifidis junioribus hirsutis laciniis linearibus integris v. subpinnatifidis, stipulis ovato-lanceolatis membranaceis integris, pedunculo elongato, sepalis lanceolatis ciliatis, petalis obovatis subuniformibus, calcare brevissimo. *Hook. Ic. Pl. t.* 49. *Torr. et Gr. Fl.* 1. p. 143.

One of the most distinct of all the species of this extensive genus. The root, if it may be so called, seems to be a congeries of subterranean filiform stems, agglutinated together; the portion of the stem above ground being very short. Leaves bipinnatifid, sometimes even tripinnatifid, very unlike those of any other *Viola*. Flowers large, golden yellow, the two upper petals with a brown cloud on the outside, the lower with a very short spur, and a few dark lines above the base. Anthers slightly combined.

5. *V. ocellata*; glabra, stigmatē globoso-clavato, caulibus erectis elongatis gracilibus, foliis longe petiolatis cordato-subacuminatis crenatis, stipulis lanceolatis ciliatis, pedunculis folio brevioribus, sepalis linearibus, petalis obovatis basi attenuatis lateralibus supra basin barbatis, calcare brevissimo.—*Torr. et Gr. Fl.* 1. p. 142.

Too near, I am afraid, to *V. Canadensis*. It is, however, a glabrous plant, very slender. The leaves are narrower, the flowers smaller, the upper petals deep purple, the two lateral ones with a purplish spot above the beard, the rest of the flower nearly white.

ORD. VIII. CARYOPHYLLACEÆ. *Juss.*

1. *Arenaria rubra*. *L.—Hook. Fl. Bor. Am.* 1. p. 98.—*Spergula rubra*. *Torr. et Gr. Fl.* 1. p. 175.

2. *A. verna*. *L.—Hook. Fl. Bor. Am.* 1. p. 99. *Torr. et Gr. Fl.* 1. p. 161.— $\beta$ . parce pilosa glandulosa, capsula majore.

3. *A. Franklinii*. Hook. *Fl. Bor. Am.* 1. p. 101. t. 35. Torr. et Gr. *Fl.* 1. p. 178.—*β. minor*; magis cæspitosa.—*A. Hookeri*. Nutt. in Torr. et Gr. *Fl.* 1. p. 178?

HAB. *β.* Snake Country; at Snake Fort. (*Tolmie*).—This var. is probably the *A. Hookeri* of Nutt. l. c., which he found in the Rocky Mountains, lat. 40°, and of which he remarks that it is "allied to *A. Franklinii*, but with shorter leaves, bracteas, and sepals."

1. *Stellaria stricta*. Rich.—Hook. *Fl. Bor. Am.* 1. p. 96.—*S. longipes. β.* Torr. et Gr. 1. p. 185.

HAB. Snake Country. Thomas' Fork. (*Tolmie*.)

1. *Silene Gallica. L.*—*S. quinquevulnera*. Torr. et Gr. *Fl.* 1. p. 191? (at least as to the Californian specimens from Mr Douglas, there alluded to.)

1. *Lychnis pulchra. Schlecht.* in *Linnaea*, v. 5. p. 234.—*β. foliis linearibus*.

These specimens quite agree with the Mexican *L. pulchra*, above quoted, except in the narrower leaves. The petals are deep red.

#### ORD. IX. MALVACEÆ. Juss.

1. *Malva rotundifolia. L.*—*M. obtusa*. Torr. et Gr. *Fl.* 1. p. 225.

We do not see how this in any way differs from the *M. rotundifolia* of Europe, and it is in all probability an introduced plant.

2. *M. malachroides*; herbacea erecta ubique piloso-hispida, foliis longe petiolatis membranaceis profunde cordatis subprofunde 5-7-lobis acutis grosse subinciso-dentatis, stipulis subulatis, pedunculo terminali foliis brevioris, floribus spicatis, involucri bracteis 3 subulatis calyceque hispidissimis, petalis bifidis.

We possess no fruit of this plant, which seems very different from anything hitherto described.

1. *Sida malvaeflora. DC.*—Lindl. *Bot. Reg.* t. 1036. Hook. *Fl. Bor. Am.* 1. p. 108. Torr. et Gr. *Fl.* 1. p. 234.

2. *S. diploscypha*; annua herbacea, caule petiolis bracteisque patenti-pilosis, foliis digitatis 7-partitis, laciniis bi-trifidis oblongis obtusis, stipulis bracteisque lineari-setaceis, floribus aggregatis, calycis 5-partiti laciniis acuminatissimis. (TAB. LXXXVI.)—Torr. et Gr. *Fl.* 1. p. 234.

Column of stamens, as Messrs Torrey and Gray have described it, double; outer one hispid externally lobed below the middle, the anthers in a single row, about five at the summit of each of the lobes; inner one irregularly lobed, rather shorter than the outer, and connate with it above the base. Ovaries 9, one inserted into a shallow 9-toothed cup.

TAB. LXXXVI. Fig. 1. Column of stamens; fig. 2. The same, the outer column laid open; fig. 3. Pistil.

3. *S. grossulariaefolia*; incana stellatis pubescens, foliis cordatis 3-5-partitis, laciniis cuneatis 3-5-fidis, pedunculis axillaribus 3-5-floris, calyce 5-fido ad basin foliolis 2-3 subulatis deciduis.

HAB. Bamecoch River. Snake Country. (*Tolmie*).—Flowers large, red, resembling those of *S. coccinea*, and of the following species, to which it is nearly allied, though quite different in the foliage.

4. *S. dissecta*; incana stellatim pubescens, foliis profunde 5-partitis, laciniis linearibus 3-multifidis, pedunculis axillaribus 1-3-floris, calyce 5-fido.—*Torr. et Gr. Fl. 1. p. 235.*

Bear River, Snake Country. (*Tolmie*).—Messrs Torrey and Gray observe that this comes very near to *S. coccinea*, but it is smaller, the leaves much more divided, and the segments narrower, and I believe really distinct.

ORD. X. ACERINEÆ. *Juss.*

1. *Negundo Californicum*; foliis 3-foliolatis molliter pubescenti-hirsutis subtus præcipue, foliolis ovato-acuminatis trilobis lobis ovatis acutis inciso-serratis petiolis velutinis, fructu oblongo pubescente ala oblique obovata. (TAB. LXXXVII.)—*Torr. et Gr. Fl. 1. p. 250.*

This is a totally different species both from *N. fraxinifolium*, Nutt. (*N. aceroides*, Moench, and Torr. et Gray,) and from *N. Mexicanum*,\* of which there are fine specimens in *Andrieux's Pl. Mexic. Esicc. p. 489.*

TAB. LXXXVII. *Negundo Californicum.*

1. *Acer macrophyllum*. Ph.—*Hook. Fl. Bor. Am. 1. p. 112. t. 38.*

ORD. XI. HIPPOCASTANÆÆ. *DC.*

1. *Æsculus Californica*. Nutt. in *Torr. et Gr. Fl. 1. p. 251.*—*Calothyrsus Californica*. *Spach, in Ann. des Sc. Nat. 2d Ser. v. 2. p. 62.*

ORD. XII. AMPELIDEÆÆ. *Rich.*

1. *Vitis Caribæa*? raris foliisque junioribus pedunculisque tomentosis, foliis subrotundo-cordatis 3-vel obscure 5-lobis acutis grosse serratis subcoriaceis sinu valde profundo supra glabris subtus cinereo-tomentosis.—*De Cand. Prod. 1. p. 634?*—*V. Indica Sw.?*—*H. B. K. Nov. Gen. Am. 5. p. 227.*

Fruit the size of a currant.

ORD. XIII. GERANIACEÆÆ. *Juss.*

1. *Erodium macrophyllum*; pubescenti-pilosum, foliis longissime petiolatis cordatis breviter 5-7-lobis crenato-serratis pedunculis longitudine foliorum umbellatis calycibusque glanduloso-pilosis, umbellis 5-floris, sepalis ellipticis mucronato-acuminatis margine membranaceis, coccis oblongis basi attenuatis apice truncatis sericeo-villosis.

This is a true *Erodium*, having the five sterile stamens in the flower, and the awns of the fruit spirally twisted, and bearded internally with red hairs. Leaves 2-2½ inches broad.

\* And which may be thus characterized:—*N. Mexicanum*; glaberrimum, foliis trifoliolatis foliolis cordato-ovatis anguste acuminatis nitidis æqualiter serratis lateralibus ad marginem inferiorem bilobis intermedio trilobis, fructibus ovato-oblongis ala oblique oblonga.—HAB. In montibus circa Tolucaam. *Andrieux.*

ORD. XIV. LIMNANTHACEÆ. *Br.*

1. *Limnanthes Douglasii*. *Br.*—*Lindl. Bot. Reg. t. 1673. Hook. Bot. Mag. t. 3554. Torr. et Gr. Fl. 1. p. 209.*

ORD. XV. OXALIDEÆ. *De Cand.*

1. *O. Oregana*; acaulis, rhizomate elongato ramoso hic illic squamis dentato, foliis longe petiolatis foliolis (magnis) late obcordatis ciliatis subtus petiolis scapoque unifloro supra medium bibracteolato calycibusque pilosis pilis ubique ferrugineis, petalis obovatis, staminibus calycem subæquantibus.—*Nutt. in Torr. et Gr. Fl. 1. p. 211.*

Mr Nuttall is quite correct in making this western *Oxalis* different from the *O. Acetosella* of Europe and Eastern America. It is much larger, the young leaves and buds and the petioles, peduncles, bracteas and calyx, and underside of the leaves and their margins, are clothed with ferruginous hairs. The description in *Hook. Fl. Bor. Am.*, of *O. Acetosella*, belongs exclusively to that plant: the North-western specimens, and the remarks on them, belong to *O. Oregana*. It was first found by Mr Menzies in California.

## ORD. XVI. RHAMNEÆ.

1. *Rhamnus oleifolius*. *Hook. Fl. Bor. Am. 1. p. 123. t. 44.*

1. *Ceanothus incanus*; ramis brevibus crassis teretibus siccitate subpruinosis (vix pubescentibus), foliis petiolatis lato elliptico-ovatis 3-costatis coriaceis glanduloso-serratis obtusis supra velutinis subtus pubescenti-canis, glomerulis multifloris densis sessilibus folio brevioribus.—*Torr. et Gr. Fl. 1. p. 266.*— $\beta$ . *minor*; foliis angustioribus supra nudis.

Ovary with three distinct lobes rising above the disk. Flowers white.

2. *C. thyrsiflorus*. *Esch.*—*Hook. Fl. Bor. Am. 1. p. 125. Hook. et Arn. in Bot. of Beech. p. 136. Torr. et Gr. Fl. 1. p. 266.*

3. *C. divaricatus*; ramis teretibus siccitate pruinosis, ramulis sæpe spiuescentibus (spinis obtusis) patentibus, foliis elliptico-oblongis subcoriaceis tricostatis minute glanduloso-serratis supra glabris lucidis subtus pallidioribus nervis præcipue subpubescentibus, paniculis elongatis densifloris, floribus glomeratis (cæruleis).—*Nutt. in Torr. et Gr. Fl. 1. p. 267.*

In its flowers this bears a great resemblance to the preceding; but the leaves are very different, much less strongly nerved, and the prominent angles of the stem are wholly wanting. The ovary, too, is smooth, and does not present three projecting lobes as does that of *C. thyrsiflorus*.

4. *C. sorediatus*; ramis teretibus resinoso-verrucosis, ramulis patentibus subsericeis, foliis elliptico-ovatis obtusis subcoriaceis minute glanduloso-dentatis 3-costatis supra glabris subtus incano-pubescentibus ad nervos sericeis, glomerulis multifloris densis folio parum longioribus, (floribus cæruleis).

The short dense glomerules of flowers resemble those of the first species; but these flowers are blue. The germen, too, is without lobes. The branches are copiously studded with resinous warts; in the more exposed parts of the stem, frequently forming large patches.



5. *C. integerrimus*; glaber, ramis subangulatis parce resinoso-viscosis, foliis 3-costatis submembranaceis oblongo-ellipticis obtusis integerrimis subtus pallidioribus, paniculis elongatis multifloris, floribus glomeratis albis.

A very distinct species, with quite entire leaves, and very long narrow panicles of white flowers. Except on the very youngest leaves or branches, there is no appearance of pubescence on the plant. Ovary without projecting lobes.

6. *C. cuneatus*; ramulis teretibus pubescentibus, foliis penninerviis oppositis fasciculatis coriaceis oblongo-cuneiformibus integerrimis obtusis v. emarginatis supra glabris subtus in areolis cano-pubescentibus, glomerulis densifloris brevibus subumbellatis, (floribus albis) ovario grosse 3-tuberculato.—*α. rufescens*; ramulis pubescenti-ferrugineis.—*Rhamnus? cuneatus*. *Hook. Fl. Bor. Am. 1. p. 124.*—*Ceanothus macrocarpus*. *Nutt. in Torr. et Gr. Fl. 1. p. 267.*—*β. cinerascens*; ramulis cinereo-puberulis.—*C. cuneatus*. *Nutt. in Torr. et Gr. Fl. 1. p. 267.*

We agree with Messrs Torrey and Gray in thinking that *C. macrocarpus*, Nutt. (which is certainly our original *Rhamnus? cuneatus*), and the *C. cuneatus*, Nutt., constitute in reality but one species, differing as they do almost exclusively in the colour of the pubescence. Both have the same balsamic odour. The authors just mentioned are likewise disposed to consider the *C. verrucosus* of Nutt., in Torr. et Gr. l. c., as another var. of *C. cuneatus*.

7. *C. rigidus*; ramulis teretibus pubescenti-tomentosis, foliis penninerviis oppositis orbiculari-cuneatis retusis coriaceis grosse spinoso-dentatis supra glabris subtus in areolis subincanis, glomerulis multifloris brevibus subumbellatis (floribus cæruleis).—*Nutt. in Torr. et Gr. Fl. 1. p. 268.*

8. *C. dentatus*; fulvo-sericeo-pilosus, ramis teretibus, foliis alternis penninerviis fasciculatis coriaceis oblongo-cuneiformibus marginibus revolutis grosse glanduloso-dentatis supra sparse subtus dense pubescenti-sericeis, pedunculis elongatis, paniculis oblongis densifloris (floribus albis).—*Torr. et Gr. Fl. 1. p. 268.*

9. *C. papillosus*; ramis teretibus hirsuto-tomentosis hic illic resinoso-verrucosis, foliis densis oblongis coriaceis alternis penninerviis junioribus stipulaceis supra margineque glanduloso-papillosis pubescentibus subtus tomentosis, pedunculis subaggregatis ad apices ramulorum, floribus (cæruleis) capitatis deciduo-bracteatis, ovario lobulis tribus elongatis erectis.—*Torr. et Gr. Fl. 1. p. 268. Hook. Ic. Pl. 3. t. 272.*

This species has a fragrant and somewhat resinous smell.

#### ORD. XVII. LEGUMINOSÆ. *Juss.*

1. *Thermopsis macrophylla*; caule angulato, petiolis calycibus ovarisque hirsutissimis, foliis trifoliolatis, foliolis obovato-ellipticis utrinque acutis supra glabris subtus pubescentibus, stipulis maximis (biuncialibus) ovatis acutis.

Leaflets 4 inches long. Calyx angled, deeply 2-lipped; upper lip ovate bidentate, lower 3-partite, the segments lanceolato-subulate. Stamens 10, free. Ovary linear, densely sericeo-villous, on a short glabrous stipes. A very fine and distinct species, with apparently white, but probably, when recent, yellowish flowers. Leaves much longer than in any hitherto known species.

1. *Medicago maculata*. *Sibth.*

Probably imported.

1. *Trifolium Macraei*. *Hook. et Arn. in Bot. Misc.* 3. p. 179.—*T. albo-purpureum*. *Torr. et Gr. Fl.* 1. p. 313.

These specimens exactly agree with those of Chili. The flowers are small, a little protruded beyond the silky calyces, dark purple, pale at the tips. It is a small slender spreading plant. Stems a span long. Stipules often ovate.

2. *T. dichotomum*; erectum dichotomum patenti-pilosum, foliis anguste obovatis denticulatis, stipulis folioli dimidium æquantibus lato-ovatis acuminatis, capitulis lato-ovatis obtusis longe pedunculatis, calycibus sessilibus dense piloso-sericeis dentibus longis setaceis rectis subæqualibus corollæ longitudine.

In many particulars this agrees with the preceding species, but it is, in every respect, a much larger and stouter plant, apparently growing quite erect. The stipules are  $\frac{1}{2}$  to  $\frac{3}{4}$  of an inch in length, the capitula more than an inch. The calyx is quite as long, or rather longer than the corollas, which latter appear to be of a purple colour.

3. *T. gracilentum*; annum glabrum, caulibus erectis gracilibus, foliis obcordato-cuneatis serratis serraturis aristatis, stipulis e lata basi lanceolato-acuminatis integerrimis, pedunculis elongatis, floribus umbellatis demum deflexis, calycis glaberrimi striati dentibus subulatis tubo longioribus corolla brevioribus inferiore reliquis sub  $\frac{1}{2}$  brevioribus, legumine dispermo stipitato.—*Torr. et Gr. Fl.* 1. p. 316.

A slender, erect, annual plant, glabrous in every part. Corollas purple, apparently persistent, and becoming scarious.

4. *T. (Involucraria) microcephalum*. *Ph.*—*Hook. Fl. Bor. An.* 1. p. 133. *Torr. et Gr. Fl.* 1. p. 317.5. *T. (Involucraria) amplexans*; parvum erectum glabrum, foliis cuneatis dentatis, stipulis ovatis membranaceis cuspidatis, pedunculis axillaribus folium æquantibus, capitulo 3-5-floro, involucre profunde 3-5-fido membranaceo lobis rotundatis membranaceis subincisis, calycis rigidi tubo brevissimo dentibus subulato-setaceis corollam floriferam parum brevioribus nunc bifidis, vexillo demum maximo inflato membranaceo, legumine oblongo transversim rugoso 4-spermo vexilli longitudine. (TAB. LXXVIII.—) *Torr. et Gr. Fl.* 1. p. 319.

In size and general aspect this *Trefoil* accords with *T. depauperatum*, but *there* the involucre is obsolete and truncate, here (comparatively) large and deeply lobed.

TAB. LXXVIII. *Fig.* 1. Capitulum of flowers; *fig.* 2. Single flower; *fig.* 3. Capitulum of three fruits, with the persistent corollas:—*magnified*.

6. *T. (Involucraria) microdon*; glabrum subdecumbens ramosum, foliis obcordatis acute serratis, stipulis ovatis acuminatis integerrimis, involucre hemisphæricis multifidis nervosis capitulo denso parum brevioribus laciniis 3-5-fidis spinuloso-serratis, calycis

dentibus brevissimis triangulari-ovatis acutis ciliato-serrulatis, legumine oblique obovato 1-spermo. (TAB. LXXIX.)—*Hook. et Arn. in Bot. Misc. 3. p. 180.*

This differs in no respect from the Chilean plant we described in our *Contributions to the Botany of South America.*

TAB. LXXIX. *Fig. 1.* Capitulum and involucre; *fig. 2.* Single flower; *fig. 3.* Legumen:—*magnified.*

7. *T. (Involucraria) melananthum*; procumbens elongatum glabrum, foliis obovato-cuneatis (stipulisque ovato-acuminatis rigidis) spinuloso-dentatis, pedunculis axillaribus folio longioribus, involucri plano-hæmispæricis reticulatis incisus spinulosus capitulo denso brevioribus, calycis rigidi striati campanulati dentibus lato-subulatis spinescentibus tubo longioribus corolla acuminata brevioribus integerrimis demum reflexis, legumine lato-elliptico dispermo membranaceo.—*T. variegatum. β. Torr. et Gr. Fl. 1. p. 317?*

This comes very near *T. Chilense*, *Hook. et Arn. supra, p. 16*; but the stems are much taller, bearing more copious heads of flowers, and the teeth of the calyx are quite entire.

8. *T. (Involucraria) obtusiflorum*; pubescens, caule elongato, foliis obovato-lanceolatis spinuloso-denticulatis, stipulis lanceolatis profunde inciso-spinosis, pedunculis axillaribus folio duplo longioribus, involucri planiusculis parvis reticulatis inciso-spinosis capitulo laxiusculo majusculo triplo brevioribus, calycis dentibus subulato-spinosis integerrimis longitudine tubi carina obtusa apice subdentata multo brevioribus, ovario oblique obovato subdispermo. *Hook. Ic. Pl. v. 3. t. 281.*

About a foot or more high, downy. Flowers large in proportion to the involucre. Corollas long, pale-coloured, with a dark spot on the keel: the vexillum very blunt, and at the apex slightly toothed or jagged. Ake very narrow, almost as long as the vexillum.

9. *T. (Involucraria) involucratum. Willd. (non Kunth). Smith in Rees' Cycl.—Hook. Fl. Bor. Am. 1. p. 133.—T. tridentatum. Lindl. in Bot. Reg. sub fol. 1070.—T. aciculare. Nutt. in Torr. et Gr. Fl. 1. p. 319.*

This is found in Chili as well as in California and N. W. America.—It varies considerably in size, from six inches to a foot or more in height; with its leaflets more or less narrow, sometimes obtuse, sometimes quite acute. Segments of the calyx broad, with two (lateral) very short teeth and one long spinous one.

10. *T. (Involucraria) fimbriatum.—T. heterodon. Torr. et Gr. Fl. 1. p. 318.—α. foliolis oblongo-ovalibus acutis, laciniis calycinis corolla duplo brevioribus omnino integerrimis.—T. fimbriatum. Lindl. Bot. Reg. t. 1070.—β. foliolis obovatis retusis.—γ. foliolis obovatis obtusis, calycis lacinia inferiore profunde trifida.—δ. foliolis oblongis obtusiusculis, calycis lacinia inferiore profunde trifida, reliquis bifidis vel integris, omnibus carinam æquantibus.*

This is a very variable species, or there are three distinct species in our collections. The original plant of Lindley has short teeth to the calyx, and those quite entire; and to this *T. spinulosum*, *Dougl. in Fl. Bor. Am. 1. p. 133*, must be referred. Our *β.*, gathered in California by Mr Menzies, has obovate leaves, but it does not in other respects differ from Dr Lindley's plant. Our two other vars., as we here consider them, are in the present Californian collection, var. *γ.* having the lower segment of the calyx always deeply 3-fid, while our var. *γ.* has larger paler-coloured flowers, longer teeth to the calyx, and those teeth, in the greater number, bi- or trifid.

11. *T.* (Involucrarium) *furcatum*. Lindl. *Bot. Reg. t.* 1883 (ann. 1836). Torr. et Gr. *Fl. 1.* p. 319.—*T.* physopetalum. Fisch. et Mey. *Animadv. Bot. p.* 18 (ann. 1837).

Among the largest and handsomest of all the *Trefoils*, and at the same time the most singular. In some of our specimens the stipules are an inch long, and nearly  $\frac{3}{4}$  of an inch broad, and the fructified capitula are more than two inches in diameter.

1. *Hosackia crassifolia*. Benth. in *Linn. Trans.* 17. p. 365.

2. *H. stipularis*. Benth. *l. c.* p. 365.

3. *H. gracilis*. Benth. *l. c.* p. 365.

4. *H. grandiflora*. Benth. *l. c.* p. 366.

5. *H. tomentosa*. Benth. *l. c.* p. 366.

6. *H. cytisoides*. Benth. *l. c.* p. 366.

First found by Mr Menzies in California.

7. *H. juncea*. Benth. *l. c.* p. 366.

8. *H. sericea*. Benth. *l. c.* p. 367.

I possess specimens of this plant (but without flowers) gathered also at the great falls of the Columbia by Mr Douglas.

1. *Lotus* (§ *Microlotus*. DC. Benth.) *subpinnatus*. Lag.—Hook. et Arn. *supra*, p. 17. t. 8. Benth. *l. c.* p. 367.

2. *L. micranthus*. Benth. *l. c.* p. 367.—*Hosackia parviflora*. Benth. in *Bot. Reg. sub. fol.* 1257. Hook. *Fl. Bor. Am.* 1. p. 134.

1. *Psoralea strobilina*; caule (herbaceo) petiolis stipulis pedunculis bracteisque hirsutis glandulisque pedicellatis fuscis scabris, foliolis (3) rhombeo-rotundatis ovalibusve supra glabris nigro-punctatis subtus præcipue, stipulis (majusculis) lato-ovatis cuspidato-acutis membranaceis, racemis maximis, bracteis lato-ovatis acuminatis flores superantibus, calycis lacinia inferiore corollam æquante subtus pubescenti-canis. (TAB. LXXX.)—*P. macrostachya*,  $\beta$ ? Torr. et Gray, *Fl. 1.* p. 304.— $\beta$ . stipulis bracteisque multo minoribus.—*P. macrostachya*. Lindl. *Bot. Reg.*

A tall growing plant, with striated stems, and leaflets 2-3 inches long. Flowers purplish, subtended by very large glandular bracteas which almost conceal them.

TAB. LXXX. Fig. 1. Bractea; fig. 2. Flower; fig. 3. Pedicellated gland; fig. 4. Pistil.

2. *P. macrostachya*; pubescens, caule (herbaceo) glandulis elevatis sparsis scabro, foliolis (3) ovali-lanceolatis utrinque punctatis basi apiceque acutis, stipulis (parvis) lanceolatis, spicis elongatis longe pedunculatis compactis nigro-villosis, bracteis rhombeis longe cuspidatis flore brevioribus, calycis (eglandulosi) lacinia inferiore corollam æquante. *De Cand. Prod.* 2. p. 220. (non Lindl.) Torr. et Gr. *Fl. 1.* p. 304.

Allied to *P. pubescens*, which we have from Peru, but that is much more hairy, the leaflets are broader at the base, the calyx rough with glands, and the corollas smaller.

3. *P. orbicularis*; repens, (foliis corollisque exceptis) glandulis elevatis scabra, caule gracili, petiolis pedunculisque longissimis (spithamæis ad pedalem), foliis (3) rotundato-cuneatis obtusissimis pubescentibus nigro-punctatis, stipulis parvis ovatis membranaceis, spicis brevibus nigro-villosis, bracteis calycisque lacinia inferiore corollam æquantibus.—*Lindl. Bot. Reg. t. 1971.*

Flowers rather large, purple. Leaflets two inches and more long.

4. *P. physodes*; erecta glabriuscula herbacea, foliis (3) late rhombico-ovatis punctatis, stipulis parvis lanceolatis membranaceis, racemis laxis pedunculatis folio longioribus, calycibus demum inflatis glandulosis corolla dimidio brevioribus dentibus brevibus subæquantibus.—*Douglas.—Hook. Fl. Bor. Am. 1. p. 136. Torr. et Gr. Fl. 1. p. 304.*

Our former specimens from the Columbia, with only withered flowers, led us into an error with respect to the relative length of the calyx and corolla. The corolla is in reality twice the length of the calyx. After flowering, the latter becomes longer and inflated, and quite encloses the 1-seeded legume.

1. *Petalostemon macrostachyum. Torr. in Ann. Lyc. N. Y. 2. p. 176. Torr. et Gr. Fl. 1. p. 309.*—*P. ornatum. Dougl.—Hook. Fl. Bor. Am. 1. p. 138.*

HAB. Between Bruncan and Onyhee Rivers, Snake Country. (*Tolmie.*)

1. *Amorpha Californica*; fruticosa pubescens, ramulis petiolisque glandulis rigidis acutis aculeatis, foliis ellipticis obtusis subtus nigro-punctatis, calycibus striatis pubescenti-canais 5-fidis glandulosis lacinis lanceolatis glandula terminatis, stylo exserto recurvo acuto germineque globoso-villosis.—*Nutt. in Torr. et Gr. Fl. 1. p. 306.*

A very distinct species, most allied perhaps to *A. fruticosa*.

1. *Phaca macradon*; erecta dense pubescenti-canescens demum glabriuscula, caule angulato, foliis 11-13-jugis oblongo-lanceolatis obtusis apiculatis brevissime petiolulatis, stipulis parvis lanceolato-acuminatis persistentibus, pedunculis folio subbrevioribus, racemis elongatis multifloris, bracteis subulatis membranaceis longitudine pedicellorum, calycis tubo ovali, dentibus filiformi-subulatis flexuosis tubum æquantibus corolla parum brevioribus.

A tall growing species. Leaves six inches long, pubescenti-villous and hoary, in the older leaves as well as on the pale reddish-brown angular stems, at length less hairy and almost glabrous. Flowers apparently yellow, at first patent, then reflexed; the corolla a good deal curved upwards. Calyx with singularly long flexuose, narrow, subulate teeth. Ovary linear, compressed, silky.

2. *P. leucophylla*; erecta canescenti-sericea, caule obscure striato, foliis 14-18-jugis oblongo-lanceolatis obtusis brevissime petiolatis, stipulis parvis subulatis membranaceis, pedunculis folio duplo longioribus, racemis oblongis densilloris subspicatis, bracteis subulatis pedicellum brevissimum æquantibus, calycis ovalis dentibus lato-subulatis brevibus rectis subæqualibus.—*Astragalus leucophyllus. Torr. et Gr. Fl. 1. p. 336.*

Habit of the preceding, and of several acknowledged *Phacæ*, on which account, in the absence of fruit, I refer it to the present genus. Flowers large, probably cream-coloured when fresh, erecto-patent.

3. *P. Douglasii*; decumbens elongata glabra, caule striato, foliolis fere semper oppositis 12-14-jugis oblongis obtusis subapiculatis subsessilibus, pari inferiore remoto, stipulis ovatis acutis membranaceis, pedunculis folio longioribus, racemo plurifloro laxo ovali-oblongo, bracteis pedicellum brevissimum superantibus, calycis villosuli dentibus lato-subulatis brevibus rectis subæqualibus albo-ciliatis, legumine (unciali) ovali-oblongo acuto inflato. *Torr. et Gr. Fl. 1. p. 346.*

Apparently a straggling plant, 1½ or 2 feet long, glabrous in every part, except the calyx and the ovary, though the hairs almost disappear on the fully formed legumes.

4. *P. densiflora*; decumbens subincano-pubescent, caule striato, foliolis 16-18-jugis densis obovato-cuneatis retusis, stipulis connatis ovatis acuminatis membranaceis, pedunculis folio longioribus, racemis ovatis demum reflexis densifloris, bracteis parvis subulatis pedicellum æquantibus, calycis tubo brevi dentibus lato-subulatis brevibus rectis subæqualibus, legumine maximo subbiunciali elliptico acuto inflato.—*Sm. in Rees' Cycl.—De Cand. Prod. 2. p. 274. Hook. et Arn. supra, p. 138. Hook. Ic. Pl. 3. t. 282. Torr. et Gr. Fl. 1. p. 344.*—*P. canescens. Nutt. in Torr. et Gr. 1. p. 344.*

A straggling plant, slightly hoary with down. The leaves and leaflets crowded.

5. *P. astragalina. De Cand.*— $\beta$ . foliolis floribusque minoribus.

We have compared what we have here considered a slight variety of *P. astragalina*, with the common alpine and arctic state of the plant, and can find no difference, except in the smaller and slenderer flowers and leaflets. California, however, must undoubtedly be considered a very southern station for it. It is scarcely distinguishable from *P. debilis*, Nutt., but that is a Rocky Mountain and not a coast plant.

1. *Astragalus Hypoglottis. L.*—*A. goniat. Nutt. in Torr. et Gr. Fl. 1. p. 330.*

HAB. Pine Creek, Snake Country. (*Tolmie.*)—Mr Nuttall's *A. goniatius*, from the Rocky Mountains, N. California, is precisely the same.

2. *A. glareosus. Dougl. in Hook. Fl. Bor. Am. 1. p. 152. Torr. et Gr. Fl. 1. p. 333.*  
—*A. argophyllus. Nutt. in Torr. et Gr. Fl. 1. p. 331 (excl. the synonym).*

HAB. About Snake Fort, Snake Country. (*Tolmie.*)—Mr Nuttall had considered his *A. argophyllus* as probably the same as the *A. melanocarpus* of Dr Richardson; but on a comparison of specimens, we find that not to be the case. The *argophyllus* is identical with the *A. glareosus* of Douglas.

3. *A. didymocarpus*; suberectus pilosiusculus, foliolis sub-8-jugis oblongo-subobovatis emarginatis, stipulis parvis ovatis membranaceis ad basin petioli subconnatis, pedunculis folio longioribus, floribus capitatis parvis, calycis hirsuti dentibus subulatis rectis longitudine tubi, leguminibus coriaceis didymis rugoso-venosis lobis monospermis. (TAB. LXXXI.)

This is a very remarkable species, especially in the structure of its legumes. These are obovate, laterally compressed, strongly nerved and wrinkled, with the introflexed margins (from beneath) reaching nearly to the back, so as to divide them into two compressed one-seeded lobes.

TAB. LXXXI. *Fig. 1.* Flower and bractea; *fig. 2.* Carina; *fig. 3.* Ovary; *fig. 4.* Fruit, with the persistent calyx; *fig. 5.* View of the underside of the fruit; *fig. 6.* The lobes of the fruit forced back, when they easily separate into two 1-seeded portions; *fig. 7.* Seed 1—magnified.

1. *Lathyrus palustris*. L.—var. *s.* (Torr. et Gr. Fl. 1. p. 276); minute pubescens, calycis dentibus lateralibus triangulari-oblongis obtusis tubo multo brevioribus, foliolis 4-5-jugis rigidis, caule subangulato.

I quite agree with Messrs Torrey and Gray in referring this to *L. palustris* of Linnæus, which is a very variable species.

## LUPINUS. L.

The *Lupines* of California, sent by Mr Douglas to the Horticultural Society, having been fully and carefully described by Professor Agardh, Jun., in his valuable "*Synopsis Generis Lupini*," we shall content ourselves by referring to that work for their characters and synonyms.

1. *Lupinus Menziesii*. Ag. Syn. Lup. p. 2.
2. *L. microcarpus*. Sims, Bot. Mag. t. 2413. Hook. et Arn. supra, p. 21. Ag. l. c. p. 2.  
A native of Chili as well as California.
3. *L. densiflorus*. Benth. Hort. Trans. N. S. 1. p. 409. Lindl. Bot. Reg. t. 1689. Ag. l. c. p. 3.
4. *L. hirsutissimus*. Benth. Hort. Trans. N. S. 1. p. 409. Ag. l. c. p. 4.
5. *L. concinnus*. Ag. l. c. p. 6. tab. 1. f. 1.
6. *L. nanus*. Dougl. mst.—Benth. in Hort. Trans. N. S. 1. p. 409. t. 14. f. 2. Ag. l. c. p. 11.
7. *L. leptophyllus*. Benth. in Hort. Trans. N. S. 1. p. 409. Lindl. Bot. Reg. t. 1670. Ag. l. c. p. 12.
8. *L. micranthus*. Dougl. in Bot. Reg. t. 1251. Hook. Fl. Bor. Am. 1. p. 162. Ag. l. c. p. 14.
9. *L. bicolor*. Lindl. Bot. Reg. t. 1109. Hook. Fl. Bor. Am. 1. p. 162. Ag. l. c. p. 14.
10. *L. gracilis*. Ag. l. c. p. 15. tab. 1. f. 2.
11. *L. pusillus*. Ph.—Hook. Fl. Bor. Am. 1. p. 15. Ag. l. c. p. 15.
12. *L. grandifolius*. Lindl. in Ag. l. c. p. 18.
13. *L. latifolius*. Ag. l. c. p. 18.
14. *L. cytisoides*. Ag. l. c. p. 18.
15. *L. affinis*. Ag. l. c. p. 20.—*L. Nootkensis*.  $\beta$ . Hook. Fl. Bor. Am. 1. p. 163? (Ag.)—Sims, Bot. Mag. t. 2136. (Ag.)
16. *L. Nootkatensis*. Donn.—Ph.—Sims, Bot. Mag. t. 1311. Hook. Fl. Bor. Am. 1. p. 163. Ag. l. c. p. 21.
17. *L. versicolor*. Lindl. Bot. Reg. t. 1979.
18. *L. rivularis*. Lindl. Bot. Reg. t. 1595.

19. *L. sericeus*. Ph.—Hook. Fl. Bor. Am. 1. p. 164. Hook. et Arn. supra, p. 138. Ag. l. c. p. 30.
20. *L. plumosus*. Dougl. in Bot. Rey. t. 1217. Hook. Fl. Bor. Am. 1. p. 165. Ag. l. c. p. 32.
21. *L. Chamissonis*. Esch. Pl. Nov. Calif. in Act. Petrop. 10. p. 238. Ag. l. c. p. 32.
22. *L. albifrons*. Benth. in Hort. Trans. N. S. 1. 416. Lindl. Bot. Reg. t. 1642. Ag. l. c. p. 33.
23. *L. Douglasii*. Ag. l. c. p. 34.

To the above species, fully described by Agardh, we have the two following to add:—

24. *L. truncatus*; appresse pubescenti-pilosus demum glaber, foliolis 5-7 linearibus basi angustatis apice bi-tridentatis, stipulis minutis linearibus brevibus, racemis elongatis, floribus alternis, bracteis pedicello brevioribus persistentibus, calycis bracteolati labio superiore bipartito inferiore integro (minute tridentato. Nutt.), ovario lineari-oblongo hirsutissimo.—Nutt. mst.—Torr. et Gr. Fl. ined.

Nearly allied to *L. linifolius*, Roth; and an imperfect specimen, in Dr Lindley's collection from Douglas (California), is doubtfully referred to that species by Agardh. But it is truly distinct, in the more truncate leaflets and the much smaller stipules and bractees, which latter are also persistent. Mr Nuttall found it at San Diego, N. California, and his name we adopt. Flowers deeply tinged with purple.

25. *L. parviflorus*; elatus erectus ramosus pubescenti-hirsutus demum glaber, foliolis 5-7 obovato-lanceolatis, stipulis minutis subulatis persistentibus, racemis elongatis, floribus (parvis cæruleis) subverticillatis, bracteis subulatis pedicellum æquantibus deciduis, calycis sericei labiis subæqualibus superiore bidentato inferiore integro, (legumine hirsuto subtrispermo).—Nutt. mst.—Torr. et Gr. Fl. ined.

HAB. Between Henry and Smith's Rivers, Snake Country. (Tolmie).—An exceedingly well-marked species, 1½ to 2 feet high, subglaucous. Leaflets broader upwards, acute or generally very obtuse. Racemes long, slender, of numerous small bluish flowers.

#### ORD. XVIII. ROSACEÆ. Juss.

##### NUTTALLIA. Torr. et Gr. Fl. Am. ined.

(Not of De Caudolle\* or Dick.)

DICECIA. Calyx campanulatus, 5-fidus, liber, in fœmin. ad basin transversim secedens. Petala 5, oblongo-ovalia, breviter unguiculata.—FL. MASC. Stamina biserialia; superiora subdecem ad marginem calycis inserta; inferiora 5, versus medium tubi. Filamenta brevia, incurva (staminum inferiorum arete deflexa). Anthera subrotunda. Rudimentum pistilli 0.—FL. FEM. Stamina ut in masc., sed abortiva. Pistilla 5, erecta. Germen oblique obovatum, glaberrimum. Stylus paulo infra apicem ad marginem interiore situm, filiformis, basi articulatus, demum deciduus. Stigma dilatatum. Ovuula 2, collateralia, pendencia, ad

\* The *Nuttallia* of De Caudolle, founded upon the *Ilex Canadensis*, Mx., is the *Nemopanthes*, Raf., and the *Nuttallia* of Dick is now divided between *Sida* and *Malva*.



axin interiorem loculi affixa. *Fructus* compositus, *corripis* (abortione) 3, 2 vel 1, subsiccis, oblique obovatis, subincurvis. *Putamen* chartaceum. *Semen* 1, pendens, obovatum. *Albumen* nullum. *Cotyledones* late obovate, compressæ. *Radicula* supera.

1. *Nuttallia cerasiformis*. Torr. et Gr. Fl. of N. Am. ined.—(TAB. LXXXII.)

The greater part of the accompanying drawing of this entirely new genus, was made from imperfect specimens gathered on the Columbia by Mr Douglas and Dr Scouler in 1825. It has since been sent me, in various states, from the "margins of pine woods," in the same country, by Dr Gairdner and Mr Tolmie, and from these specimens the drawing was completed. It now appears in Mr Douglas' Californian collection; and I have lately received the same plant from Mr Nuttall, gathered by that gentleman on the Columbia, and bearing the *ms.* name of *Nuttallia cerasiformis* of Torrey and Gray, a name which I have the greatest pleasure in thus perpetuating. Nor could the name be attached to any plant with greater propriety than to one inhabiting a district of country where that gentleman has so eminently signalized himself by his recent laborious researches and discoveries. We here subjoin Mr Nuttall's description, drawn up on the spot, as copied from his *ms.* by my friend Dr Gray, and which shows how well he distinguished all its remarkable features.

"A small forest-tree, about the size of *Amelanchier Botryapium*, exhaling a faint scent of *Bitter Almonds*, with a smooth brown bark on the branches, and alternate, oblong, entire, thin leaves, connected at the base with a branchlet, both included in the common bud. Leaves alternate, entire, cuneate-oblong, apiculated, and attenuated below into a short petiole, more or less pubescent or glabrous beneath; the same bud producing both leaf and raceme. Raceme pendulous, and, with the white flowers and unguiculate oblong petals, resembling *Amelanchier Botryapium*. Braets membranous, narrow, and acuminate. Male calyx campanulate, half-way 5-cleft. Segments lanceolate. Stamens about 12-15, inserted on and below the margin of the calyx. Female calyx dividing circularly towards the base; the base remaining beneath the fruit. Stamens minute and rudimental, fewer. Germs 5, roundish, 2-3 usually soon abortive; styles filiform, deciduous; stigma small, 2-lobed. Germens for some time gibbous, the mature drupe at length nearly straight, the internal indehiscent suture scarcely visible; pulp a mere succulent blackish-brown skin, furnished with a bloom. Nut 1-seeded; no perisperm or albumen. Embryo straight, the radicle inserted towards the summit of the fruit. The fruit is greedily eaten by robins and other baccivorous birds, though almost bitter to the taste, and with the heavy odour of the bitter almond."

TAB. LXXXII. *Nuttallia cerasiformis*.—A. Branch of a male plant in flower.—B. Branch of a female plant, from which the calyx and petals have fallen, and exhibiting the fertilized ovaries.—C. Branch with ripe fruit:—*nat. size*.—*Fig. 1.* Flower; *fig. 2.* Calyx of a male flower laid open, showing the situation of the stamens; *fig. 3.* Female flower, after the calyx has fallen away; *fig. 4.* Pistillum; *fig. 5.* The same, laid open; *fig. 6.* A single fruit; *fig. 7.* The same, laid open; *fig. 8.* Embryo:—*magnified*.

1. *Cercocarpus parvifolia* (Nutt.); foliis late obovatis dentatis (junioribus præcipue) subtus pubescenti-hirsutis, floribus geminatis recurvis, fructus cauda longissima. *Nutt. in Herb. Hook.*—Torr. et Gr. Fl. ined.—Hook. Ic. Pl. t. 323.

This species comes so very near the description of the Mexican *C. fothersgilloides*, H. B. K. Nov. Gen. Am. t. 559, that until we examined specimens lately sent by Mr Hartweg, we hesitated whether it should not be referred to that plant. All the specimens, however, from Mr Douglas, as well as one collected by Mr Nuttall on the Platte River, have the leaves smaller, and more downy beneath, than Humboldt's species, the flowers not clustered, but geminate and recurved, the fruit larger, and the cauda much longer and more plumose. A second species, found by Mr Nuttall (*C. betuloides*, Nutt. *ms.* in Herb. Hook., and Hook. Ic. Pl. t. 322), is also quite distinct from the Mexican plant; while a third species, *C. ledifolia* (Nutt. *ms.* in Herb. nostr., and Hook. Ic. Pl. t. 324), is extremely different from all the rest.

With regard to the genus itself, it must rank very close to *Purshia*, from which it scarcely differs, except

in the absence of petals, in the deciduous calyx, and in the much larger and plumose style. In our present species, the calyx is sometimes carried up by the elongated persistent style, on which it remains some way below the apex.

1. *Spiræa* (*Physocarpus*) *opulifolia*. Linn.—Hook. *Fl. Bor. Am.* 1. p. 171.— $\beta$ . Hook. *l. c.*—*S. capitata*. Pursh.—*S. ribifolia*. Nutt. *ms. in Herb. Hook.*

Mr Nuttall's specimen is from the Columbia; his *S. pauciflora*, from the same country, seems scarcely different.

2. *S.* (*Spiraria*) *ariaefolia*. Sm.—Hook. *Fl. Bor. Am.* 1. p. 173.

1. *Adenostoma fasciculata*. Hook. et Arn. *supra*, p. 139. t. 30.—*A. fasciculata* et *brevifolia*. Nutt. *ms. (in Herb. Hook.)*

We can perceive no difference between Mr Nuttall's two supposed species. His *A. brevifolia* is but a more stunted plant, with shorter leaves.

1. *Rubus macropetalus* (Dougl.). Hook. *Fl. Bor. Am.* 1. p. 178. t. 59.

1. *Potentilla glandulosa*. Lindl. *Bot. Reg. t.* 1583.— $\beta$ . *petalis calyce longioribus*. Lindl. *Bot. Reg. t.* 1973.

From this we can scarcely distinguish the *P. Oregana*, Nutt. *ms. in Herb. nostr.*, nor even his *P. fissa*, *ms.*

2. *P. anserina*. L.

1. *Horkelia fusca* (Lindl.); glanduloso-pubescens, foliis radicalibus 6-7-jugis laciniis cuneato-oblongis pinnatifidis vel palmatifidis incisis, paniculis corymbosis capitatis, petalis calycem superantibus, calycis laciniis accessoriis integerrimis duplo angustioribus, stipulis palmatifido-incisis, bracteis palmatis capitulis brevioribus.—Lindl. *Bot. Reg. t.* 1997.

Mr Lindley states this to have come from California; but our specimens were collected by Douglas in 1835, in the interior, and probably in Columbia.

2. *H. cuneata* (Lindl.); villosa-pubescens, foliis radicalibus pinnatis 10-12-jugis laciniis subrotundo-cuneatis incisis, paniculis corymbosis capitatis, petalis calycem superantibus, calycis laciniis omnibus integerrimis consimilibus oblongo-lanceolatis, stipulis subintegris ovato-lanceolatis, bracteis tripartitis capitulis villosis brevioribus.—Lindl. *Bot. Reg. sub folio* 1997.—*H. Douglasiana*. Nutt. *ms. in Herb. Hook.*

*H. parviflora*, Nutt. *ms.*, differs by being more villous, by having fewer leaflets to the radical leaves, and the accessory calycine segments twice as narrow as the others. It is from the mountains of California.

3. *H. capitata* (Lindl.); caule basi glabriusculo apice glanduloso-pubescente, foliis radicalibus pinnatis 5-6-jugis laciniis inferioribus subrotundis incisis basi cuneatis, petalis calycem superantibus, calycis laciniis accessoriis integerrimis multo angustioribus, stipulis integris tripartitisve, capitulis solitariis bractea pinnatifida brevioribus.—Lindl. *Bot. Reg. sub folio* 1997.

Lindley mentions that this is a Californian plant; but our specimens were collected by Douglas on the Cascade Mountains of the Columbia.

4. *H. congesta* (Hook.); basi hirsutissima apice glandulosa, foliis radicalibus pinnatis sub-7-jugis laciniis angustis cuneatis apice præcipue incisís, paniculis corymbosis capitatis multifloris glandulosis pubescentibus, petalis calycem paullo superantibus, calycis laciniis accessoriis integerrimis multo angustioribus, stipulis palmatifido-incisís, bracteis 3-5-partitis capitulis brevioribus.—Hook. *Bot. Mag. t.* 2880. *Flor. Bor. Am.* 1. p. 196.—*H. hirsuta*. Lindl. in *Bot. Reg. sub folio* 1997.—*H. pilosa*. Nutt. *ms. in Herb. Hook.*

Dr Lindley states that this also was found in California, but our specimens from Douglas were collected, in 1835, in the interior of the Columbia, and those from Nuttall are from the Wallamet plains. These differ in no respect from the plant long ago figured in the *Bot. Mag.*, and are distinguished from all the preceding by the lower part of the stem and petioles of the leaves being very hirsute, with long, patent, harsh hairs. In habit, and particularly in the shape of the segments of the radical leaves, this approaches most to *H. fusca*.

5. *H. grandis*; pubescenti-villosa, foliis caulinis inferioribus 4-5-jugis laciniis subalteris cuneato-subrotundis 3-5-partitis, lobis cuneato-obovatis incisís terminali alte trifidis, floribus solitariis longe pedunculatis omnibus e dichotomus calycis villosi laciniis accessoriis ovato-oblongis subtrifidis quam interiores lanceolatas acutas majoribus petala fere duplo superantibus, stipulis pinnatifidis.

Our specimens are from California. When we compare this with *H. Californica*, Cham. et Schlecht. in *Linnaea*, 2. p. 27, we find so many points of resemblance, that we are almost inclined to suppose them the same, and that the present plant may not be completely developed, and therefore not exhibiting the ample panicle described by these authors. The points of resemblance are—1. *H. Californica*, like ours, does not seem to have the flowers capitate, as in all the other species, but has them disposed in "panícula multiflora ampla, basi pluries dichotoma eum alari, apice racemosa." 2. The outer segments of the calyx are broader and less sharp than the inner, and are usually furnished with a small tooth or incision on one or both sides. 3. The plant is more villous towards the extremity. 4. The leaves are large, and the leaflets, of a similar shape, are few, and somewhat alternate or pseudo-opposite. 5. The calyx is large, and the petals small.—The chief discrepancy lies in the length of the peduncles; in our plant, those belonging to the lower flowers are upwards of an inch long, whereas, in *H. Californica*, they are said to be "sesquilineares, inferiores remotiores."

1. *Acrona pinnatifida*. Ruiz et Pav. *F. Per. et Chil.* 1. t. 104. f. 1.—var.  $\gamma$ . Hook. et Arn. in *Bot. Misc.* 3. p. 307.

These specimens of Mr Douglas exactly accord with the var.  $\gamma$ . of our Chilean *A. pinnatifida*, published in the *Bot. Miscellany*; and we now doubt very much if the *A. trifida*, R. et P., be really distinct from it. Our specimens are in very fine condition, but we regret that they do not exhibit the nature of the fruit.

1. *Rosa blanda*? Ait.—Hook. *II. Bor. Am.* 1. p. 199?—*R. Californicæ* var. Cham. et Schlecht. in *Linnaea*, v. 2. p. 35?

Of the plant which we here refer doubtfully to *R. blanda*, there is one fine specimen; but that only in fruit. It appears to belong to a tall and stout growing plant, without any glossiness on its purplish stem and foliage, and every where wholly destitute both of aculei and setæ. Leaves closely placed. Leaflets 5-7, oval or obovate, regularly serrated, except at the base, slightly plaited, generally obtuse, glabrous (but not lucid) above, downy, with short setæ beneath. Corymb bearing copious flowers. Fruit globose, and, as well as the peduncles, quite smooth and glabrous. Sepals uniform, persistent, spreading, ovato-lanceolate, much acuminate, downy and slightly glandular, white at the margin.

1. *Photinia arbutifolia*. *Lindl.—Hook. et Arn. supra, p. 139.*

We do not see that *P. nudiflora* of Nuttall's ms. in Herb. Hook. differs in any respect from the present species. This was first discovered by Mr Menzies, during Vancouver's voyage.

1. *Cerasus ilicifolius* (*Nutt. ms.*); foliis coriaceis perennantibus lucidis cordato-ovatis breve petiolatis spinoso-dentatis, racemis densifloris axillaribus terminalibusque folia æquantibus, bracteis pedicello brevioribus. (TAB. LXXXIII.)

This singular species has leaves resembling those of the Holly, equally harsh, rigid, and spinous; but with the fruit we are unacquainted. The racemes are copious and thickly flowered.

TAB. LXXXIII. *Cerasus ilicifolius*.—*Fig. 1.* Flower:—*magnified.*

ORD. XIX. CALYCANTHEÆ. *Lindl.*

1. *Calycanthus occidentalis*; foliis ovato-lanceolatis acuminatis rigidis nitidis utrinque concoloribus scabridis glabris, pedunculis elongatis. (TAB. LXXXIV.)

Branches smooth, of a rusty red colour. Leaves subcordate at the base, about six inches long and two broad, gradually acuminate from below the middle, where they are broadest, to the apex, neither glaucous nor tomentose underneath, even when young. The peduncles are either terminal, or from the forks of the branches, and from two to three inches long when the flower is expanded.

TAB. LXXXIV. *Calycanthus occidentalis*.—*Fig. 1.* Calyx-tube, showing the stamens, the sepals being removed; *fig. 2.* Stamen; *fig. 3.* Calyx-tube laid open, showing the ovaries.

ORD. XX. ONAGRARIÆ. *Juss.*1. *Zauschneria Californica*. *Prest, Rel. Henk. p. 28, t. 52. Hook. et Arn. supra, p. 140.*

Of this there are two forms in the collection: the one has the whole plant, but especially the leaves and flowers, much more densely canescent than the other; its flowers too are smaller, and of a less lively red colour.

1. *Clarkia pulchella*. *Pursh.—var. flore purpureo et albo.*

HAB. Snake Country, about Snake Fort. *Mr Tolmie.*

2. *C. elegans*. *Lindl.—Phæostoma Douglasii. Spach, Suites à Buffon, IV. p. 393.*

This varies much in the hairiness of the ovarium and calyx; but is quite distinct from the following, with which Spach unites it.

3. *C. rhomboidea*. *Dougl. in Hook. Fl. Bor. Am. 1. p. 214. Lindl. Bot. Reg. t. 1981.*  
—*C. gaurioides. Hortul.—Don in Sweet Br. Fl. Gard. 2d. Ser. t. 379.*

1. *Eucharidium concinnum*. *Fisch. et Meyer.—Hook. Bot. Mag. t. 3589.*

A solitary specimen of this we found mixed with *Clarkia rhomboidea*, with the foliage of which it agrees pretty well; but it has very different flowers.

1. *Oenothera* (*Holostigma*) *alyssoides*; humilis multicaulis puberula, foliis inferioribus multo majoribus oblongo-lanceolatis inæqualiter dentatis in petiolum attenuatis caulibus paulo brevioribus, superioribus linearibus, racemis foliosis secundis circinnatis, ovarii

tenuissimis sessilibus, petalis filamenta æquantibus stylo brevioribus, capsulis contortuplicatis striatis torulosis.—*Hook. Ic. Pl. vol. IV. (ined.)*

This is one of the most remarkable species of the group with which we are acquainted. It has a slender perpendicular branched root, from the summit of which arise several short ascending stems, from three to five inches long, the central one, however, erect, and always apparently floriferous from the base to the summit, the capsule at the base being almost mature, while the upper portion is only in flower. Lower leaves almost equal in length to the stems, and sometimes nearly an inch broad, while the upper ones become bracteæ and are shorter than the flowers. Flowers pale yellow, and retain their colour when dried, as in *Æn. dentata*, Cav.; they are copious, racemose and secund, the upper portion of the raceme being recurved until the flowers expand. Petals roundish, obovate, obtuse, and not at all emarginate. The whole habit is that of some species of *Alyssum*, or rather, perhaps, of *Vesicaria*. The capsules are about an inch long, contortuplicate, slender, not half a line thick at the base, slightly attenuated at the extremity, somewhat terete, but striated, torulose by the constrictions between the seeds. To this, *Æ. contorta*, Dougl. in Hook. Fl. Bor. Am., seems allied: but of that plant we possess only a very imperfect specimen, and it seems quite distinct.

HAB. Pine Creek, Snake Country. *Mr. Tolmie.*

2. *Æ. (Holostigma) spiralis (Hook.)*; radice multicapite, caulibus adscendentibus puberulis simplicibus, foliis oblongo-spathulatis (inferioribus longe) in petiolum attenuatis integerrimis canescentibus, floribus axillaribus, petalis stamina stylumque superantibus, ovario piloso e basi crassiore attenuato, fructu acute tetragono acuminato incano spirali-ter torto.—*Hook. Flor. Bor. Am. 1. p. 213. Hook. et Arn. supra, p. 141.*

More perfect specimens, from California, than those we formerly possessed, have enabled us to draw up the above character; and we may observe, that the figure of *Æ. cheiranthifolia*, Horn. Bot. Kog. t. 1040, is so extremely similar to the present species, that were it not stated by its original describer to be a native of Chili, we should have considered it the same. The flowers, as in all the following individuals of this subgenus, become green when dry. The stems are from four to eight inches high.

3. *Æ. (Holostigma) micrantha. Horn.—H. hirta. Link.*

*Æ. heterophylla*, Nutt. ms., comes very near this, and is perhaps not really distinct; but in the only specimen we have seen, the capsule is thinly covered with short adpressed hairs, and not rough with spreading hairs, as in Hornemann's plant.

4. *Æ. (Holostigma) graciliflora*; acaulis pilosa, foliis anguste spathulato-linearibus integerrimis vel apice denticulatis, floribus sessilibus, tubo elongato filiformi foliis paullo brevioribus, petalis late obcordatis.—*Hook. Ic. Pl. vol. IV. (ined.)*

This is a small annual plant; the leaves are erect, and from an inch and a half to two inches long, and scarcely a line broad near the apex, while they taper gradually downwards. We have not seen the fruit, but the ovarium is oblong. The flowers are large in proportion to the size of the plant. It is very distinct from any other species with which we are acquainted.

(We may here remark, that *Æn. maritima*, Nutt. ms., from St Diego, in California, is the same with *Æ. viridescens*, Hook. Flor. Bor. Am. 1. p. 214; and *Æn. (Gyranthus) lithospermoides*, Nutt. ms., is *Æn. Boothii*, Dougl. in Hook. Fl. Bor. Am.; while the *Æ. pygmaea* of the same botanist, l. c., is probably also not distinct from it. Douglas, in the Flor. Bor. Am., says of *Æ. Boothii*, that the style is much exserted; but in his own as well as in Nuttall's specimens, it is scarcely the length of the petals.)

5. *Æ. (Godetia) purpurea. Willd.—Godetia Willdenowiana. Spach.*

Our only specimen has the capsule hirsute; the seeds are horizontal, as in *Æ. decumbens* and *Æ. lepida*, from both of which, however, it is readily distinguished, by the greater length of the fruit. The leaves are more pointed than in the cultivated form of the species, and slightly toothed.

6. *Æ. (Godetia) lepida*. Lindl. Bot. Reg. t. 1849.

This nearly agrees with *Æ. procumbens* in the form of the fruit, but it is more hairy; the stem of the present species is erect, and the leaves, especially in the wild specimens, are slightly hairy. They are, however, too closely allied.

7. *Æ. (Godetia) viminea*. Dougl.—var. *parviflora*?

Of this variety, the only specimen in the collection has flowers as small as those of *Æ. quadrivulnera*, from which it differs by the canescent, not hairy, fruit, and by the infundibuliform tube of the calyx being longer than the ovarium, even longer in that respect than in the usual form of *Æ. viminea*. The calycine segments are as long as the corolla, while in the common state they are only half its length. If new, it may be distinguished from the other species of *Godetia* as follows:—Calycis tubo infundibuliformi ovario longiore, laciniis corollam æquantibus, staminibus corolla duplo brevioribus, stylo ultra tubum exserto, stigmatis lobis brevibus ovalibus, capsula basi crassiore canescente, seminibus adscendentibus.—There is likewise another plant in the collection, so very closely allied in characters to the common appearance of *Æ. viminea*, that we feel unwilling to separate it as a species, without a more numerous set of specimens; in it the branches are acutely angled, and the habit is entirely that of *Æ. purpurea*; it may be recognised by the following marks:—Erecta glabriuscula glaucosecens, ramis angulatis apice densifloris, foliis anguste lanceolatis acuminatis denticulatis, calycis tubo infundibuliformi ovarium subæquante, laciniis staminibusque corolla duplo brevioribus, stylo ultra antheras exserto, stigmatis lobis brevibus ovalibus, capsula basi crassiore denum glabra, seminibus adscendentibus.

8. *Æ. (Godetia) tenella*. Cav.—var.  $\beta$ . *tenuifolia*. Lindl.?

We have two forms in the collection, which we can scarcely distinguish from the narrow-leaved variety of Dr Lindley, or *Æ. tenuifolia* of Cavanilles: the one is pale-flowered; the other has deep purple small flowers, exactly resembling our *Æ. tenella*, var. *parviflora*, from Chili. It differs from *Æ. viminea* by the very short calyx-tube, and from *Æ. Romanzovii* (which appears to be occasionally cultivated, under the name of *Æ. tenella*, in our gardens) by the long exserted stigma. Perhaps, however, these characters are variable, and, if so, several of the allied species from the West Coast of America may likewise be referred to *Æ. tenella*.

9. *Æ. (Godetia) rubicunda*. Lindl. Bot. Reg. t. 1856.

Mr Douglas' specimens are imperfect, and, as far as regards the colour of the flowers, resemble the figure of *Æ. roseo-alba*, in Sweet Brit. Fl. Gard. t. 268, more than that given by Dr Lindley; the leaves are, however, much narrower and more acute, and the species, along with the hybrid *Æ. bifrons*, Bot. Reg. t. 1405 (not of Sweet Br. Fl. Gard. 2d Ser. t. 386, which has yellow flowers), tends to unite *Æ. roseo-alba* to *Æ. Lindleyi*. All the three species have ascending seeds, a capsule attenuated at the base, with the stigma-lobes linear, and are perhaps most easily distinguished thus:—1. *Æ. roseo-alba*, stem erect, leaves oblong or lanceolate-oblong, obtuse.—2. *Æ. rubicunda*, stem erect, leaves acuminate.—3. *Æ. Lindleyi*, stem diffuse, ascending.

10. *Æ. (Godetia) Lindleyi*. Dougl.?—*Æn. macrantha*. Nutt. ms. (certe).

In this the stigma-lobes are rather shorter than the usual form of the plant from the Columbia.

11. *Æ. (Eucnothera) marginata* (Nutt. ms.); patentim canescenti-villosa, caule

humillimo foliis radicalibus lanceolatis longe petiolatis dentato-pinnatifidis multo brevioribus, calycis tubo longissimo, capsula oblongo-cylindracea obscure tetragona.

HAB. Near the Blue Mountains, and about the Salmon Falls of the Snake River, Snake Country. *Mr Tolmie*.—The flowers are large and handsome; the tube about as long as the radical leaves.

12. *C.* (*Eucnothera*) *odorata*. *Jacq.*?

The leaves are rather more hairy than usual; but we perceive no essential difference.

1. *Gaura* (*Spach*) *decorticans*; glabra basi fruticosa, foliis lineari-lanceolatis utrinque attenuatis dentatis, junioribus pubescentibus, spicis bracteatis laxis brevibus obtusissimis, ovario longe subulato subpubescente, calycis tubo ovario 2-3-plo brevioribus laciniis petalaeque æquantibus, stigmatibus subglobosis 4-lobis.

The bark is a shining white, with a reddish tinge, and readily peels off from the stem. Leaves two to three inches long. Bractees leafy, linear, shorter than the subulate germs. Petals 4, somewhat unilateral. Style longer than the stamens. The spike, while one or two of the lower flowers only are open, is broad and very obtuse, and resembles the raceme of a *Diplostaxis*.

ORD. XXI. SALICARIÆ. *De Cand.*

1. *Lythrum lineare*. *Linn.*

ORD. XXII. LOASÆ. *Juss.*

1. *Bartonia lewicaulis*. *Dougl. in Hook. Fl. Bor. Am. 1. p. 221. t. 69.*

2. *B. aurea*. *Lindl. in Bot. Reg. t. 1831. Hook. Bot. Mag. t. 3649.*

3. *B. micrantha*; tota pilis brevibus hispida, caule erecto dichotomo albescente, foliis ovatis acuminatis basi cuneatis sessilibus sinuato-pinnatifidis, floribus glomeratis folio florali brevioribus ebracteatis, petalis 5 ovatis segmenta calycina superantibus, staminibus 15-20, 5 petaloideis apice emarginatis, capsula oblongo-cylindracea 3-sperma apice trilvalvi, stylo leviter spiraliter torto.—(TAB. LXXXV.)

The hairs are jointed, and some of them, particularly those on the pedicels and branchlets near the flowers, are spinulose at the joints; the spines verticillate and reflexed. This plant has quite the habit of *Mentzelia*, especially in the broad foliage and few-seeded fruit, and the *B. albicaulis* tends to unite *Acrolasia* of Presl again to *Bartonia*; indeed we scarcely find a single character left to distinguish that genus. None of the species can be said to have more than 5 petals: *B. ornata* has 5 sterile petaloid stamens; *B. lewicaulis*, *peruviflora*, *micrantha*, and probably also *B. nuda*, have the petaloid stamens antheriferous; while *B. albicaulis*, *aurea*, and *Acrolasia Bartonoides* are destitute of the petaloid stamens. In *B. ornata*, *lewicaulis*, and some others, the stamens are very numerous; in *B. albicaulis* there are about 30; in *B. micrantha* not more than 20; and in *Acrolasia*, 10. The seeds in most of the species are very numerous; in *B. albicaulis* fewer; but in *B. micrantha*, and in *Acrolasia* they are reduced by abortion to one to each placenta, placed in the capsule one above the other. The only difference then between *Acrolasia* and *Bartonia* lies in the style of the former not being twisted, and spirally twisted in the latter; but that character again is weakened by our present species, for here the style is so slightly twisted as scarcely to be perceptibly so. From *Bartonia* we do not see how *Mentzelia* can well be distinguished. Kunth's two species have 10 petaloid fertile outer stamens; *M. hispida* 10 outer subulate stamens, longer than the others; while in *M. aspera* and *digosperma* they are

similar to the others. So that, if we rely on the definite number of seeds, we must place both *B. micrantha* and *Acerolasia* in *Mentzelia*.

TAB. LXXXV. *Fig.* 1. Flower, with floral leaf; *fig.* 2. Flower; *fig.* 3. Inner stamen; *fig.* 4 & 5. Outer or petaloid stamen; *fig.* 6. Young fruit; *fig.* 7. Seeds; *fig.* 8. Hairs from the branchlets near the flowers; *fig.* 9. Portion of the same.

ORD. XXIII. PORTULACÆ. *Juss.*

1. *Claytonia tenuifolia* (*Torr. et Gray*); annua, radice fibrosa, caulibus plurimis simplicibus filiformibus, foliis anguste linearibus, radicalibus sensim in petiolum longum attenuatis, caulinis duobus oppositis sessilibus basi hinc subconnatis racemo terminali subumbellato sessili unibracteato multo longioribus, petalis oblongis calycem superantibus. *Torr. et Gray, Fl. 1. p. 201.*

2. *C. lanceolata. Pursh.*

HAB. Snake Country. *Mr Tolmie.*

3. *C. spathulata. Dougl. in Hook. Flor. Bor. Am. 1. p. 226.*—*β. major*, caulibus 3-4-uncias longis, foliis caulinis lanceolatis.—*γ. exigua*, caulibus gracilibus, foliis caulinis sublinearibus.—*C. exigua. Torr. et Gray, Fl. 1. p. 200.*

1. *Calandrinia Menziesii. Hook. in Torr. et Gray, Fl. 1. p. 197.*—*C. speciosa. Lindl. Bot. Reg. t. 1598. Torr. et Gray, l. c. (non Hook. Bot. Mag. t. 3379.)*—*Talinum Menziesii. Hook. Fl. Bor. Am. 1. p. 223. t. 70.*

ORD. ? PORTULACEIS *affinis.* (SPÆTALUMÆ. *Nutt.*)

1. *Lewisia rediviva. Pursh.—Hook Bot. Misc. 1. p. 344. t. 70. Nutt. Fl. Rock. Mount. p. 24. (TAB. LXXXVI.)*

HAB. Common throughout the interior of the Snake Country. *Mr Tolmie.*

The specimens from the Snake Country of California consist of flowers only, but those in a most beautiful state. Others, collected by Mr Tolmie himself, to the north of the Columbia, have the leaves and roots quite perfect, and the flowers with capsules almost fully formed. Thus we are enabled to give a more complete account than has yet appeared of this plant, so well known to the Indians of N. W. America, and so much employed by them as an article of food. We may premise, that the account of the foliage and scapes and flower-buds, given in the *Botanical Miscellany*, is quite correct. But the roots were imperfect, from having been prepared for food; in which operation not only the fibrous parts are removed, but the whole of the bark also, (dark brown externally, bright red within,) leaving only the nearly pure white fleshy inner portion of the root. The flowers are large, the scapes succulent, jointed above the middle, and involucreted with 5-7 subulate membranous scales. Sepals about 7, orbiculari-ovate, membranous, spreading, obtuse, pale brown, persistent. Petals 8-10, of a delicate filmy texture and rose colour, 2 or 3 narrow and almost linear, the rest ovate acute, spreading, marcescent, and ultimately twisting around the stamens and pistil, while the sepals retain their form and colour. Stamens numerous, inserted at the base of the calyx. Filaments slender, shorter than the petals. Anthers linear-oblong, yellow, slightly bifid at each extremity, inserted by the back just above the fork. Ovary globose-ovate, finely striated, and contracted at the base into a very short thick stipes. Style persistent, but apparently jointed with a dark line a little above the base, and then dividing



into about 6 filiform downy stigmas. Capsule coriaceous membranaceous, as in *Cerastium*, globose, terminated by the style and stigmas, and firmly surrounded by the twisted withered corolla, separating transversely at the base, and there cleft into about 6 segments, leaving the short stipes in the form of a fleshy ring. Seeds numerous, dark-brown, hard, shining, smooth, reniform-globose, each attached to a long white podosperm, arising from the base of the cell. Embryo terete, yellow, curved round the white mealy albumen. Radicle short. Cotyledons long, unequal.

We do not find all the petals equal and narrow-lanceolate, as represented by Mr Nuttall.

Mr Nuttall considers this plant as intermediate between *Ficoideæ* and *Cactoideæ*; but the above description and accompanying plate confirm the views we have all along entertained of its close affinity with *Portulacææ*. With that Order it agrees in the one-celled capsule, the long podosperms and stigmas, the structure of the seed-coat, albumen, and embryo, and with some of the species in the marcescent corolla twisting round the pistil. It differs principally in the more numerous sepals (Torrey and Gray having lately limited *Portulacææ* to these genera which have two or rarely three sepals), and by the capsule bursting from the base upwards. If, however, it be thought necessary to form of it a new Order, surely the name *Lewisieæ* is much to be preferred to the barbarous one given by Nuttall, derived from that by which the plant is known to some of the Indian tribes.

TAB. LXXXVI.—A. Flowering specimen, with growing leaves; part of the root with the bark taken off, exhibiting the state in which it is eaten.—B. Specimen in fruit, with the old dry leaves:—*nat. size.*—*Fig. 1.* Side view of a flower; *fig. 2.* Stamens; *fig. 3.* Pistillum; *fig. 4.* Ovary laid open, showing the ovules; *fig. 5.* Ovule, with its podosperm; *fig. 6.* Capsule firmly enveloped with the marcescent petals; *f. 7.* Capsule separated from the receptacle, splitting upwards at the base; *f. 8.* Seed; *f. 9.* Seed laid open, showing the albumen and embryo; *fig. 10. & 11.* Embryo, with its unequal cotyledons.

#### ORD. XXIV. GROSSULARIÆ. *De Cand.*

1. *Ribes tenuiflorum.* Lindl.—*Hook. Fl. Bor. Am. 1. p. 235.*

2. *R. malvaceum.* Sm. in *Rees' Cycl. XXX. n. 13.* DC. *Prod. III. p. 483.* Benth. in *Hort. Soc. Trans. N. S. 1. p. 476.* Don in *Sweet Br. Fl. Gard. N. S. IV. t. 340.*—*R. sanguineum.* Hook. et Arn. *supra, p. 141.*—*α.* bracteis subintegris.—*β.* bracteis incis.

Mr Bentham, in the *Hort. Soc. Transactions*, appears to describe this as a new species, without advert- ing to the circumstance that it had been long ago accurately defined by Smith, under the same name, from specimens collected by Menzies. In the *Flor. Bor. Am.* it is united to *R. sanguineum*, from which, how- ever, we are now convinced it is perfectly distinct, on account of the short pedicels. Both these species have the branches of the style very short and recurved, while in *R. glutinosum* they are long and upright.

3. *R. glutinosum (Benth.);* inerme, foliis cordatis sub-5-lobis serratis venosis utrinque glabriusculis subviscosis, racemis 30-40-floris laxis pubescentibus folio 2-3-plo longioribus, pedicellis flore longioribus, calycis tubuloso-campanulatis laciniis oblongis obtusis patentibus petala (rubra) integerrima superantibus, bracteis oblongo-lanceolatis, baccis turbinatis hirsutis. Benth. in *Hort. Soc. Trans. N. Ser. 1. p. 476.*

4. *R. Menziesii.* Pursh, *Fl. Am. Sept. II. p. 732.* Hook. et Arn. *supra, p. 141.*—*R. ferox.* Sm. in *Rees' Cycl. XXX. n. 26.*

5. *R. speciosum.* Pursh, *Fl. Am. Sept. II. p. 731.*—*R. stamineum.* Sm. in *Rees' Cycl. XXX. n. 30.*

Some of the young vigorous unbranched shoots, which are from a foot and a half to two feet long, are clothed with numerous rigid bristles or prickles, which give those portions of the plant a very different appearance from that in which it is usually figured and described. We have seen no fruit.

6. *R. Californicum*; glabrum, ramis nudis, spinis stipularibus ternis, foliis cordato-reniformibus 3-5-lobis, lobis subincisis, pedunculis 1-3-floris, bracteis rotundato-ovatis, calycis tubo brevi, laciniis ovato-lanceolatis tubo 3-plo longioribus demum reflexis apice glabris, staminibus petala triplo superantibus styloque simplici glabris, ovario glanduloso-piloso.

This differs from *R. niveum*, Lindl. (with which we are only acquainted from the figure in the *Bot. Register*), besides what is pointed out in the above diagnosis, by the erect, or rather patulous, not connivent, stamens.

7. *R. occidentale*; glabrum, ramis nudis, spinis stipularibus solitariis, foliis cordato-reniformibus 3-5-lobis, lobis incisis, pedunculis 1-3-floris, calycis laciniis oblongis tubo sublongioribus demum reflexis apice pedicellatis staminibus petala triplo longioribus glabris, stylo glabro ultra medium bifido stamina superante, ovario echinato.

The stamens in this and the next species, as well as in the last, have their anthers ovate, much larger in proportion to the flower than is usual in the genus, and tipped with a distinct blue mucro.

8. *R. subvestitum*; glanduloso-pubescent (foliis supra exceptis), ramis rigide setosis, spinis stipularibus 3-4 gracilibus, foliis cordatis 3-5-lobis supra parce pilosis, lobis incisis, pedunculis 1-3-floris, calycis pubescenti-glandulosi tubo ovarium subduplo superante laciniis oblongis parium brevioribus, staminibus petala duplo superantibus glabris, stylo glabro simplici (nunc bifido!), ovario piloso-glanduloso.

In all the flowers, except one, the style is decidedly simple, but in that one it is bifid to near the middle. The whole plant, with the exception of the upper side of the leaves, is covered with a glandular pubescence: the ovarium, although glandular and hairy, exhibits no tendency to become a prickly fruit.

9. *R. triflorum*. Willd.

#### ORD. XXV. SAXIFRAGEÆ. Juss.

1. *Tellima* (*Lithophragma*) *parvifolia*; hirsuta scabra, foliis omnibus tripartitis, segmentis inciso-pinnatifidis, petalorum lamina tripartita ovario semi-infero. *Hook. Fl. Bor. Am. v. 1. p. 239. t. 78. A.*

HAB. Green River of the Snake Country. *Mr. Tolmie.*

2. *T.* (*Lithophragma*) *heterophylla*; hirsuto-scabra, foliis radicalibus cordatis 3-5-lobis crenato-lobatis, caulinis profunde 5-fidis, lobis inciso-trifidis, petalorum lamina apice trifida, ovario omnino supero.

The sub-genus *Lithophragma* of Nuttall (*Pl. Rock. Mount. p. 26*), we are disposed to distinguish by the unguiculate 3-lobed petals, and three distinct styles, while in the true species of *Tellima*, the petals are oblong-linear, sessile and irregularly lacinate, and the styles only two. From this sub-genus we of course exclude *Mitella trifida*, to include which Nuttall has given a very different character. The present species varies extremely in the size of the foliage, the leaves being sometimes only one inch, in other specimens two or even three inches in diameter.

1. *Heuchera hispida*; scapo nudo petiolisque hirsuto-pilosis, foliis cordatis rotundatolobatis crenatis utrinque parce pilosis, panicula elongata angusta laxa, calycibus æqualibus undique longe et canescenti-hispidis, petalis lineari-oblongis pusillis fugacibus, staminibus 5 vix exsertis, stylis brevibus!

The filaments are not longer than the lobes of the calyx. It appears to be a very distinct species, approaching, in the short stamens, to *H. cylindrica*, Dougl., but with a totally different habit. The short styles are slightly at variance with the generic character usually given, but in *H. cylindrica* they are almost as short. In *H. cylindrica* no petals have been observed, here they are extremely caducous, so much so as not to be found soon after the flower-buds expand. It is therefore probable, that they may be also present in younger specimens than we have seen of *H. cylindrica*, and that the two species may form a sub-genus of *Heuchera*, distinguished by the fugitive petals, short thickish styles, and short filaments.

ORD. XXVI. UMBELLIFERÆ. *Juss.*

1. *Hydrocotyle natans*. *Cyrrill.*

1. *Bowlesia lobata*. *Ruiz et Pav.*

1. *Sanicula arctopoides*. *Hook. et Arn. supra, p. 141.*

2. *S. nudicaulis*; caulescens, foliis præcipue radicalibus longissime petiolatis cordatis 3-partitis segmentis lato-obovatis sublobatis setoso-dentatis lateralibus bifidis caulinis consimilibus duobus oppositis ad umbellæ triradiatæ basin, calycis tubo echinato.

3. *S. Menziesii*. *Hook. et Arn. supra, p. 142.*

4. *S. laciniata*; caulescens, foliis petiolatis circumscriptione cordatis profunde 5-partitis, segmentis laciniato-pinnatifidis, laciniis angustis setoso-acuminatis, umbellis compositis, involucri involucrisque bipinnatifide laciniatis.

This is most allied to *S. Menziesii*, but differs in the much more deeply divided leaves.

5. *S. bipinnata*; caulescens, foliis longe petiolatis bipinnatis, pinnis remotis, pinnulis anguste-obovatis basi cuneatis inciso-dentatis dentibus mucronatis, umbella subcomposita, involucri foliolis profunde trifidis, laciniis pinnatifide laciniatis, calycis tubo basi nudo versus apicem echinato.

In the divided leaves, this approaches to *S. graveolens*, but is, in fact, a very different species.

1. *Zizia cordata*. *Koch.—De Cand. Prod. 4. p. 100.*

HAB. Green River of the Snake Country. *Mr. Tolmie.*

1. *Leptocaulis inermis*. *Nutt.*

The fruit of this is rugulose, or very slightly tuberculate, but is much broader than in the other species of the genus.

1. *Helosciadium leptophyllum*. *DC.—var. ? latifolium.*

The specimens are only in young fruit, and the segments of the upper leaves are considerably broader than

in any form we have yet seen, while even the lower ones are broader than in *H. laciniatum*, DC., which we consider a mere variety of this species.

1. *Ferula feniculacea*. Nutt.—Hook. *Fl. Bor. Am.* 1. p. 268.

HAB. Snake Country. *Mr Tolmie*.

2. *F. macrocarpa*; pedalis, puberulo-glaucescens, foliis ternatim compositis, laciniis lato-linearibus decurrentibus basi angustatis apice acutissimis, involucre oligophyllo caduco, involucelli vix dimidiati foliolis oblongo-lanceolatis arcte reflexis, fructibus ovato-oblongis pedicello longioribus.

Nearly allied to the larger specimens of *F. feniculacea*, from Carlton House, but the leaves are much less compound, and the ultimate segments longer.

3. *F. caruifolia*; acaulis, glabra, virens, foliis latissime vaginatis supra decompositis, laciniis lineari-acuminatis, petiolo perbrevis, scapo folio paullo superante, involucre nullo, involucello magno monophyllo 10-12-partito, laciniis obovatis coloratis venosis erectis umbellam floriferam obvallantibus, fructibus lato-ellipticis.

A very remarkable species, quite free from glaucescence, with extremely large sheathing bases to the leaves, the divisions of which resemble those of *Carum Carui*, and with an involucellum large in proportion to the umbels. The disk of the back of the fruit is much broader than the wing, whereas, in the two preceding species, they are pretty nearly equal.

4. *F. parvifolia*; subcaulescens, glabra, foliis radicalibus petiolum subæquantibus circumscriptione deltoideis tripinnatifidis, laciniis ovatis acuminatis incisus patentibus, caule subnudo foliis 3-4-plo longiore, involucre oligophyllo vel nullo, involucello sub-8-phylo, foliolis lanceolato-subulatis erectis, fructibus lato-elliptico-obovatis.

The leaves are small, not more than an inch and a half long, on slender petioles of the same length. The flowers are bright yellow. The disk of the fruit is scarcely so broad as the wing. We may here notice, that *F. Palmella*, Hook. *Fl. Bor. Am.*, is *Cyncopterus glomeratus*, Nutt.

1. *Seseli? triternatum*. Pursh.—Hook. *Flor. Bor. Am.* 1. p. 264. t. 94.

HAB. Snake Country.

Nuttall (*Pl. Rocky Mount.* p. 27) refers this to *Eulophus*, but the fruit seems very different. He describes there two species, one glabrous and caulescent; this, although not figured in the *Flor. Bor. Am.*, was considered a mere form of *S. triternatum*; the other of Nuttall seems only to differ from our plant by being puberulous, while the true *S. triternatum* is quite glabrous.

1. *Caucalis microcarpa*; piloso-hispida, foliis tripinnatifidis, umbella 4-5-radiata, involuceri foliis sessilibus folia caulina simulantibus, umbellæ radiis fructiferis 3-4-plo brevioribus, umbellulis 5-7-fidis, involucelli foliolis 3-4 linearibus, fructibus oblongo-ellipticis parvis, aculeis brevibus apice uncinatis.

This has much the appearance of *Anthriscus vulgaris*, but wants the beak to the fruit; it resembles likewise *C. daucoides* and *leptophylla*, but the fruit is much smaller, and the leafy involucre is a peculiar character. Some of the young specimens are only two or three inches high, but one in fruit is upwards of a foot.

ATENIA. *Nov. Gen.*

*Calycis* margo 5-dentatus persistens. *Petala* obcordata cum lacinula inflexa. *Fructus* subglobosus latere compressus didymus lævissimus. *Mericarpia* dorso jugis 5 filiformibus subprominulis æqualibus æquilobis, lateralibus ante marginem positis. *Vallicula* evittata! Commissura angusta ovittata. *Carpopodium* integrum tenue. *Semen* tereti-convexum antice planiusculum.—Herbæ *glabræ bipedales*. *Caulis teres superne ramosus, oligophyllus*. *Folia* pinnata, pinnis 2-3, angustissime linearibus basi apice attenuatis, vaginis elongatis, angustis. *Umbella* composita, sub 10-radiata. *Involuerum* nullum aut *monophyllum parvum subulatum*. *Involucella* polyphylla, foliolis parvis subulatis. *Flores* albi.

1. *A. Gairdneri*.

Besides our Californian specimens, we have the same, gathered by the late Dr Gairdner, in dry grounds by the Columbia River.

ORD. XXVII. CAPRIFOLIACEÆ. *Juss.*

1. *Lonicera ciliosa*. *Poir.*—*Hook. et Arn. supra*, p. 143.

2. *L. Ledebourii*. *Koch.*—*Hook. et Arn. supra*, p. 143.

3. *L. (?) subspicata*; fruticosa ramulis folisque junioribus pubescentibus, foliis oppositis breviter petiolatis coriaceis ellipticis integerrimis nitidis subtus pallidioribus, floribus laxè spicatis bracteatis solitariis v. binis oppositis, ovario globoso limbo calycino 5-lobò, corollò bilabiata pubescenti labio superiore 3-inf.-trifido.

Of this remarkable plant, our collection possesses but a solitary specimen, with several spikes, but with few perfect flowers. The branches are woody. Leaves about an inch long, their margins much recurved in a dry state; upper branches terminating in flowering spikes, the leaves passing into opposite remote pairs of bracteas, and having in their axils lesser bracteas, which bear the flowers solitary or in pairs. These are small, not half an inch long. Ovary globose, crowned with 5 moderately large blunt lobes or teeth. Corolla downy, oblong, bifid or two-lipped, the lips rather unequal, one with 3, the other with 2 oblong lobes. Stamens 5. Anthers large, rather shorter than the corolla. Anthers large, linear-oblong. Style reaching to the top of the stamens, curved. Stigma globose.—The aspect is quite different from any *Lonicera* with which we are acquainted.

ORD. XXVIII. RUBIACEÆ. *Juss.*

1. *Galium boreale*. *L.*—*G. septentrionale*. *Roem. et Sch.*

HAB. Snake Country. *Mr Tolmie*.

2. *G. Californicum*; annum? gracile diffusum ramosum ubique hirsuto-pilosum, caulibus 4-gonis, foliis quaternis patentibus ovatis acutissimis, pedunculis subterminalibus solitariis ternisve 1-3-floris folia superantibus, ovario subgloboso lævi glabro, corollæ (albæ) laciniis acutissimis.

Imperfect specimens of this, collected also in California, by Mr Menzies, have been long known to us. Mr Douglas' possess flowers, but we are still unacquainted with the fruit. The root, also, we have not seen. When held between the eye and the light, the leaves present a distinct reticulated appearance.

ORD. XXIX. VALERIANEÆ. *Juss.*

1. *Plectritis congesta*. *De Cand. Prod. 4. p. 631.*—*β. Hook. Fl. Bor. Am. 1. p. 291.*

## ORD. XXX. COMPOSITÆ.

1. *Bulbostylis Cavanillesii*. De Cand. Prod. 5. p. 138.—*Eupatorium squarrosum*. Cav. Ic. 1. p. 66. t. 98.

1. *Corethrogyne Californica*. De Cand. Prod. 5. p. 215.

1. *Aster salsuginosus*. Rich.—Hook. Fl. Bor. Am. 2. p. 6. Bot. Mag. t. 2492.—*Erigeron Californicum*. Dougl. ms.

This species is from the interior, and was sent by Dr Gairdner as collected by Mr Douglas.

1. *Diplopappus incanus*. Lindl. in De Cand. Prod. 5. p. 278. Bot. Reg. t. 1693. Hook. Bot. Mag. t. 3382.

2. *D.?* *occidentalis*; elatus, caule glaberrimo angulato superne ramoso, ramis copiosis subsimplicibus subcorymbosis monocephalis, foliis linearibus rigidis obtusis pilis brevibus simplicibus adpressis utrinque asperis, ramis multo minoribus, involucri hemisphaerici squamis numerosis imbricatis subulatis pubescentibus interioribus sensim majoribus lanceolatis albidis fusco-lineatis, radii flosculis sub-40 linearibus purpureis discum duplo superantibus, pappo uniseriali?, ovario hirsuto.

The structure of the pappus seems rather to resemble that of *Erigeron*, but the capitula are only in a young state: the habit, however, allies it more to *Diplopappus* of De Candolle.

3. *D. leucophyllus*. Lindl. in De Cand. Prod. 5. p. 278.

Of this we have seen no specimen, nor are we certain that it was collected by Douglas, although, as it is a Californian plant, and named by Professor Lindley, we think this probable.

1. *Erigeron speciosum*. De Cand. Prod. 5. p. 284.—*Stenactis speciosa*. Lindl. Bot. Reg. t. 1577.

2. *E. glabellum*. Nutt.—Hook. Flor. Bor. Am. 2. p. 18. Bot. Mag. t. 2923.

HAB. Snake Country. Mr Tolmie.

3. *E. purpureum*. Ait.—De Cand. 5. p. 285. Hook. Fl. Bor. Am. 2. p. 19.

1. *Distasis?* *concinna*; tota pilis albidis patentissimis canescenti-strigosa, radice perenni collo multicipiti, caulibus erectis gracilibus angulatis ramosis, foliis linearibus basi attenuatis radicalibus sublonge petiolatis, involucri foliolis subulatis albidis dorso viridibus, radii flosculis uniserialibus numerosis anguste linearibus disco duplo longioribus, pappo conformi biser. 2, serie ext. brevi paleaceo, int. 8-10 setoso.

HAB. Snake River, below the Salmon Falls, Snake Country. Mr Tolmie.

Of the genus of this most beautiful plant we are uncertain. The slender stems scarcely a span high, the copious foliage, peduncles, and involucre, are every where hoary with harsh white spreading hairs. The flowers are about the size of a daisy; the ray bright blue, in the dried plant, and the disk yellow. The outer pappus consists of 5 or 6 lanceolate, short paleæ; the hairs of the inner row are equal in thickness throughout.

1. *Brachyris Californica*. De Cand. Prod. 5. p. 313.

The genus *Brachyris*, as we have already mentioned, in the *Companion to the Bot. Mag.* II. p. 51, is not different from *Gutierrezia* of Lagasca, which name ought, by right of priority, to be adopted. This species is surely a var. of *B. Euthamiae*; indeed we are even far from certain if the *B. paniculata*, *Euthamia, Californica*, and *Tezana*, are not all forms of the *G. linearifolia*, Lag.

1. *Grindelia hirsutula*. Hook. et Arn. supra, p. 147. De Cand. Prod. 7. p. 278.—*G. rubricaulis*. De Cand. Prod. 5. p. 316.1. *Woodvillea calendulacea*. De Cand. Prod. 5. p. 318.

Of this we have found no specimens in our collection of Mr Douglas' plants, but it seems probable, from the description given by De Candolle, and which seems to have been taken from an immature specimen, that it is the same as *Aster Californicus*, Less.—We may here remark, that we do not well see how this plant and *Erigeron glaucum*, Ker, differ; the latter is supposed, by Ker, to have come from South America; afterwards the locality of Buenos Ayres was given by some foreign botanists, we do not know for what reason. We have never received it from Buenos Ayres, and suspect the seeds may have been brought by Mr Menzies from California.

1. *Aplopappus linearifolius*. De Cand. Prod. 5. p. 347.

In some of the radical florets we find on each side a long subulate appendage, arising from the base of the ligule.

2. *A. florifer*. Hook. et Arn.—*a.* foliis lineari-spathulatis.—*Erigeron florifer*. Hook. Flor. Bor. Am. 2. p. 20.—*β.* foliis obovato-spathulatis.

HAB. *β.* Dry plains of the Snake Country. *Mr Tobnie*.

This species is very nearly allied to *A. linearifolius* in the capsule and involucre, but the foliage is quite different.

1. *Pyrrocoma grindelioides*. De Cand. Prod. 5. p. 350.—*Aplopappus squarrosus*. Hook. et Arn. supra, p. 146. De Cand. Prod. 7. p. 280.

The pappus of *P. carthamoides*, as well as of the present species and of the following, is certainly in a double series, the outer row similar to the inner, but shorter and more slender. There is therefore reason to fear that the genus must be either distinguished from *Aplopappus* solely by the homogamous capitula (but there are some Chilian species of *Aplopappus* without a ray) and tawny rigid patulous pappus, or the two should be united.

2. *P. Menziesii*; caule suffruticoso, ramis elongatis simplicibus apice corymbosis, foliis lineari-spathulatis apice acute tridentatis punctatis glabris, corymbis compactis paucifloris, involucri obconici squamis imbricatis oblongis acutis apice herbaceis subpatulis, achenio sericeo.

This, so far as we know, has only been found by Mr Menzies; it approaches closely to those species of *Aplopappus* placed in the section *Aplodiscus* by De Candolle. The receptacle is favose and fimbriated. The leaves seem to have been somewhat succulent when growing.

1. *Lessingia germanorum*. Cham. in *Linnaea*, 4. p. 203. t. 2. f. 2. Less. Comp. p. 388. f. 17. De Cand. Prod. 5. p. 251.

Our specimens, in Douglas' collection, are more slender, less branched, more tomentose, and the floriferous branches much longer than in that we have from Chamisso. The style is unquestionably that of the *Senecioneæ*, but the habit of the plant that of some of the slender *Asterea*.

1. *Baccharis Douglasii*. *De Cand. Prod.* 5. p. 400.—*B. viscosa*. *Hook. et Arn. supra*, p. 147.

This is certainly our *B. viscosa*, from California, and we cannot see how it is to be distinguished from the Chilean plant.

2. *B. viminea*. *De Cand. Prod.* 5. p. 400.

3. *B. pilularis*. *De Cand. Prod.* 5. p. 407.

We have no specimen of this in the collection, unless it prove, what we suspect, the same as *B. consanguinea*.

4. *B. consanguinea*. *De Cand. Prod.* 5. p. 408.—*B. glomeruliflora*. *Hook. et Arn. supra*, p. 147.

Although, in deference to De Candolle, we admit this as a distinct species, we still hesitate about its being really different from *B. glomeruliflora*. Our var.  $\alpha$ , of this work, we would refer to *B. consanguinea*, certainly, and the female of  $\beta$ . to *B. pilularis*, which has the capitula solitary; the male of our var.  $\beta$ . may belong to either.

1. *Franseria Chamissonis*. *Less.—Hook. et Arn. supra*, p. 148.— $\beta$ . *De Cand. Prod.* 5. p. 524.

The var.  $\beta$ . only is in the collection; this has quite the habit of an *Ambrosia*, and perfectly unlike the var.  $\alpha$ .

1. *Coniothele Californica*. *De Cand. Prod.* 5. p. 531.

The description given by De Candolle is extremely correct: he has omitted, however, to take notice of a remarkable structure in the ray; the ligula is oblong, very obtuse, cordate at the base, destitute of tube, and therefore sessile on the top of the ovarium, embracing the base of the style. The florets of the disk are broadly infundibuliform: the anthers included, as well as the abortive style and capitate stigma; these are apparently quite destitute of an ovary. The achenia (of the ray) possess that remarkable property noticed by De Candolle, which was first observed in the seed of the genus *Gilia*, and of the common *Cress*, of emitting horizontal filaments, which, after being kept some time in water, unite and form a radiately striated gelatinous mass or limbus, equal in thickness to the seed itself. Mr Joseph Hooker has observed the same peculiarity in one or two species of *Compositæ* from Van Diemen's Land.

1. *Leptosyne Douglasii*. *De Cand. Prod.* 5. p. 531.

The florets of the disk have the style abortive; the achenia of the ray are surrounded by a winged margin, and have the pappus coroniform.

1. *Alarçonnia helenoides*. *De Cand. Prod.* 5. p. 537.

2. *A. ? angustifolia*. *De Cand. Prod.* 5. p. 537.

1. *Agarista calliopsidea*. *De Cand. Prod.* 5. p. 569.

1. *Helianthus Californicus*. *De Cand. Prod.* 5. p. 589.



De Candolle, l. c. p. 590, names *H. longifolius*, of the Flor. Bor. Am., *H. Hookerianus*; and again, by some inadvertency, unites it, in the Mantissa, Prod. VII. p. 290, to *H. Californicus*. These two are, however, perfectly distinct, and probably belong to different genera. The Californian form of *H. longifolius*, Hook., or *H. Hookerianus*, DC., may perhaps be distinct from the North West Coast plant, but they agree nearly in the involucre and in the pappus.—We have also another species of *Helianthus*, with alternate upper leaves, which are petiolate, rhomboidal, ovate, bluntish, and, as well as the stem, scabrous with very short whitish hairs; pappus of one or two aristæ; achenia glabrous; the scales of the involucre foliaceous, patulous, and obtuse. This we cannot refer satisfactorily to any described species, but in the imperfect state of the specimen before us we decline offering any further remarks.

1. *Bidens Californica*. De Cand. Prod. 5. p. 599.

1. *Actinolepis multicaulis*. De Cand. Prod. 5. p. 656. Hook. Ic. Pl. v. 4. t. 325.

De Candolle states this to be only two inches high, but one of our specimens is at least six inches. The stems are diffuse and corymbosely branched at the extremity.

1. *Bahia stæchadifolia*.  $\beta$ . Californica. De Cand. Prod. 5. p. 656.

This species is certainly shrubby, at least at the base.

2. *B. gracilis*; herbacea? albo-tomentosa, foliis linearibus obtusis inferioribus spatulatis omnibus integris integerrimisque planis, ramis elongatis strictis gracilibus unifloris, involucri squamis oblongis.

The specimens are about 8 or 10 inches high, and appear to be taken from near the root; the branches spring out from about the same point, near the base of the specimen, and are slender, quite straight and erect, and all of nearly equal height. The flowers retain their bright yellow colour, while in almost all the other species there is a strong disposition to turn green.

HAB. Snake Fort, Snake Country. Mr Tolmie.

3. *B. artemisiæfolia*.—Less. Hook. et Arn. supra, p. 149.— $\beta$ . Douglasii. De Cand. Prod. 5. p. 657.

4. *B. confertiflora*. De Cand. Prod. 5. p. 657.

Mr Menzies also found this in California.

5. *B. tenuifolia*. De Cand. Prod. 5. p. 657.

This we have not seen.

6. *B. achillæoides*. De Cand. Prod. 5. p. 657.

1. *Chaenactis stevioides*; annua subglabra, caule corymbosim ramoso, foliis pinnatis, pinnis linearibus obtusis nunc pinnatifidis, involucre glanduloso-pubescente, floribus radii tubuloso-infundibuliformibus disco paullo majoribus, acheniis strigosis.

HAB. Snake Country. Mr Tolmie.

This approaches closely to *C. glabriuscula*, but is decidedly annual, with apparently white, not yellow flowers, smaller capitula, and the ray-florets not so conspicuously palmatifid. The whole plant is from three to four inches high, while *C. glabriuscula* is from eight to sixteen; it is also more glabrous than *C. gla-*

*briviscula*. The pappus of the floret of the ray, in all the species, is at least a half shorter than the corolla, while that of the disk is almost as long as the corolla. We have some doubts whether this genus ought to be placed next *Palafoxia*, among the *Eupatoriaceæ*, or next *Hymenopappus*, as has been proposed by De Candolle. The branches of the style are long, linear, and acuminate, and we have not perceived any trace of the "short obtuse cone" which De Candolle describes; the branches are hirsute from a little above their separation to the very apex: all this agrees with *Eupatoriaceæ*, but here, if we mistake not, the stigmatic lines run on to the summit.

2. *C. glabriuscula*. De Cand. Prod. 5. p. 659.

3. *C. lanosa*. De Cand. Prod. 5. p. 659.

4. *C. achilleæfolia*; perennis? erecta, caule cano-lanato sursum corymbosim ramoso, foliis pinnatis cano-tomentosis, pinnis linearibus pinnatifidis, lobis oblongis minutis, involucri pubescente obconico, floribus radii tubuloso-infundibuliformibus disco vix majoribus, acheniis adpresse albo-hirsutis, styli ramis paullo exsertis recurvatis.

Нав. Dry plains in the Snake Country. *Mr Tolmie*.

Very closely allied to *C. Douglasii* or *Hymenopappus Douglasii*, Hook. Flor. Bor. Am. 1. p. 316, which is still retained in the latter genus by De Candolle, although it has the short outer pappus and the widened florets of the ray of *Chaenactis*. *C. Douglasii* is more glabrous than the present species, has the pinnæ of the leaves larger and less divided, the involucre large and nearly hemispherical, and very densely or almost tomentosely pubescent, the pappus, as well as the hairs of the hirsutely villous achenia, tawny, and the branches of the style straight and much exserted. The first three species have the tube of the corolla glabrous, and the scales of the pappus about five or six; but in *C. achilleæfolia* and *C. Douglasii*, the tube is more or less glandular, and the scales of the pappus from eight to twelve.

1. *Burrielia gracilis*. De Cand. Prod. 5. p. 664. *Burth. in Linnea*, XII. Litt. p. 80.

This is frequently cultivated under the name of *Lasthenia Californica*, but has the involucre of 10 or 12 distinct scales.

2. *B. tenerrima*. De Cand. Prod. 5. p. 664.

We have not seen this plant; perhaps it is a mere variety of the preceding.

3. *B. microglossa*. De Cand. Prod. 5. p. 664.

A species with quite the habit of *Pectis*.

1. *Lasthenia glaberrima*. De Cand. Prod. 5. p. 664. (*excl. syn.*)

This species has a pappus, but *L. Californica*, Lindl., referred here by De Candolle, has none, and is, we conceive, a mere form of the following. Under the name of *L. Californica* we have received both *Burrielia gracilis* and also *Lasth. glaberrima*.

1. *Hologymne glabrata*. *Burth. Ind. Sem. Gott.* 1837. *Linnea*, XII. Litt. p. 81.—*Lasthenia glabrata*. *Lindl. Bot. Reg.* t. 1780. *De Cand. Prod.* 5. p. 665.—*L. glaberrima*. *Lindl. Bot. Reg.* t. 1823. (*non DC.*)

1. *Baeria chrysostoma*. *Fisch. et Meyer, Ind. Sem. Petrop.* 1835. *Don in Sweet, Br. Fl. Gard. N. S.* t. 395. *De Cand. Prod.* 7. p. 254.

Of this we have received one specimen, from the herbarium of the Hort. Soe. of London, under the name of *Lasthenia glabrata*. Indeed, *Hologymne glabrata*, *Lasthenia glaberrima*, *Burrielia gracilis*, and the present plant, are so similar in appearance, as to be often confused in herbaria and in gardens. The four may, however, at all times, and under all aspects, be readily distinguished by attending to the involucre and pappus. *Burrielia* and *Lasthenia* have a paleaceous pappus—*Hologymne* and *Baeria* none;—on the other hand, in *Burrielia* and *Baeria* the leaflets of the involucre are distinct from each other, in *Lasthenia* and *Hologymne* they are united.

1. *Helenium pubescens*. Ait. ?—Hook. et Arn. supra, p. 149.—*H. puberulum*. De Cand. Prod. 5. p. 667.—*Cephalophora decurrens*. Less. in Linn. 6. p. 517. De Cand. Prod. 5. p. 663.

The specimens collected by Mr Douglas, and named by De Candolle *H. puberulum*, are younger, taller, less branched, and not so dark coloured when dry, as those from Chamisso's and Beechey's collection; but they all appear to us to belong to the same species. De Candolle says the lower leaves are incised, but these we have not seen.

1. *Madia sativa*. Mol.—De Cand. Prod. 5. p. 691.—*M. viscosa*. a. Hook. et Arn. supra, p. 145.—*Sclerocephalus gracilis*. Smith in Rees' Cycl. n. 2. De Cand. Prod. 5. p. 666.

1. *Madaria elegans*. De Cand. Prod. 5. p. 692.—*Madia elegans*. Don in Bot. Reg. t. 1458.—*M. viscosa*,  $\beta$ . Hook. Fl. Bor. Am. 2. p. 24. Hook. et Arn. supra, p. 145.

2. *M. corymbosa*. De Cand. Prod. 5. p. 692.— $\beta$ .? *hispida*. De Cand. l. c.

The Californian plant belongs to the var.  $\beta$ . Besides those mentioned by De Candolle, *Sclerocephalus cxi-gmus*, Sm. in Rees' Cycl. (De Cand. Prod. 5. p. 566), belongs to the present genus. It is a slender species, about four inches high; leaves free from glands, half an inch long and half a line broad; branches filiform, few, leafless, one-flowered, about an inch and a half long, with a few glandular hairs near the apex; involucre of few leaves, covered with glandular hairs; flowers of the ray from four to seven; the ligula small and inconspicuous; the florets of the disk are quite abortive.

1. *Hemizonia congesta*. De Cand. Prod. 5. p. 692.

Our specimen is shrubby at the base, the leaves linear-lanceolate and quite entire. The first section of this genus is so closely allied to *Madaria*, both in character and habit, that we can point out no mark by which it may be readily distinguished, except that the achenia are obovate trigonous, the flat face being towards the disk; while in *Madaria*, the achenia are laterally compressed. The stipes is remarkably curved up against the face of the achenium.

2. *H. multicaulis*; herbacea multicaulis, caulibus simpliciusculis vel apice corymbosa ramosis pilis patentibus mollibus hirsutis, foliis radicalibus lineari-lanceolatis serrulatis plurinerviis glabriusculis, caulinis villosiusculis longe linearibus, inferioribus oppositis serrulatis villosiusculis, superioribus alternis subintegerrimis, capitulis bracteatis 2-3-nis congestis, acheniis obovatis obtusis stipite rostelloformi inflexo.

We cannot persuade ourselves that this is a mere form of the preceding, to which, however, it is very closely allied, except in habit. The root seems annual, or rather biennial, while *H. congesta* appears quite woody at the base. To the description given by De Candolle of *H. luzulefolia*, this certainly approaches; but there is no corymb, and we do not find paleæ over the whole receptacle.

3. *H. angustifolia*. De Cand. Prod. 5. p. 692.

We have seen no specimen according with the description given of this.

4. *H. (Olocarpha) sericea*; caule herbaceo erecto cano-tomentoso apice corymboso, foliis lineari-lanceolatis utrinque attenuatis 3-5-nerviis subdenticulatis cano-sericeis eglandulosis, involucre ebracteato hispidulo, acheniis estipitatis obovatis gibbis muticis, receptaculi paleorum serie exteriori basi gamophyllo.

We cannot refer this satisfactorily to any of De Candolle's species; it may be perhaps his *H. luzulaefolia*, but the stem and leaves can neither be called villous nor hirsute.

5. *H. (Olocarpha) luzulaefolia*. De Cand. Prod. 5. p. 693.

This we are not acquainted with.

6. *H. (Olocarpha) filipes*; caule suffruticoso erecto simplici pilis mollibus hirsuto, foliis integerrimis linearibus uninerviis pilis mollibus hirsutulis eglandulosis, inferioribus elongatis acuminatis in axillo fasciculos foventibus, superioribus multo minoribus bracteiformibus nigro-glandulosis, corymbo laxo, ramis glabris filiformibus rigidulis, capitulis solitariis longe pedicellatis paucifloris, involucre obconico hirsuto ebracteato oligophyllo, receptaculis palearum serie exteriori gamophyllo, achenio oblongo basi attenuato.

The corymb is lax, the primary branches bear a few glanduliferous bractees or leaves, but the stalk that supports the capitulum is slender, quite naked, and rigid. In habit it is very dissimilar to the other species.

7. *H. (Olocarpha) macradenia*. De Cand. Prod. 5. p. 693.

To this we presume a specimen we have from Mr Douglas belongs, but it differs considerably from the definition given by De Candolle. In that before us the stem seems to have been decidedly shrubby, branched only towards the extremity, the branches simple, or sometimes bearing again a couple of branches at the apex; these, as well as the foliage, are slightly hairy; leaves linear, lower ones about an inch and a half long, and decreasing upwards to scarcely half an inch; about half a line broad, quite entire, often bearing fascicles of young leaves in their axils. Capitula sessile, solitary, terminal, or on very short leafy axillary opposite nearly terminal branchlets; involucre bracteate; bractee and uppermost leaves terminated by a sessile brown shining gland; leaves of the involucre terminated by a large thick cylindrical gland, concave at the apex, the margin serrated, the serratures thick, cylindrical, and resembling callous glands. Achenium obovate, gibbous, without any beak; receptacle covered with paleæ, which are curiously and irregularly united together, like honeycomb, at the base.—De Candolle says of his plant, "Priori (*H. luzulaefolia*) prima fronte simillima," whereas ours bears no resemblance to any other of the genus.

1. *Oxyura chrysanthemoides*. De Cand. Prod. 5. p. 693. Lindl. in Bot. Reg. fol. 1850 (quoad descriptionem).

De Candolle's description agrees well with our wild specimens from Douglas, but not with the figure in the *Bot. Register*, which, however, appears to be the plant generally, if not solely, cultivated under this name. Lindley, indeed, says, that the pappus there represented to the florets of the disk, was introduced by an inadvertency of the draughtsman; but seeds sent to the gardens of St Petersburg and Breslau, produced plants with a pappus. The branches of the style of the florets of the disk present also a different appearance.

1. *Calliglossa Douglasii*.—*Oxyura chrysanthemoides*. Bot. Reg. t. 1850 (quoad

tubulam). *Fisch. et Mey. Ind. 3. Sem. Petrop. 1837. n. 1449. Linnæa, XII. Litter. p. 102. Schauer, Del. Sem. H. Vrat. 1837. p. 3. Linnæa, XII. Litt. p. 89.*

This genus differs from *Oxyura* by the achenia of the disk having a pappus and being pubescent; from *Callichroa*, by the form of the achenia, the entirely paleaceous receptacle, and the pappus being unequal in length and rather more paleaceous; from *Hartmannia*, by the paleæ of the pappus not being membranous, and the form of the achenia of the ray; and from *Madaraglossa*, by the paleæ of the pappus not plumosely ciliated or villous at the base. It is unnecessary to propose a new generic character, as that given by Fischer and Meyer, combined with Schauer's observations, i. e., under *Oxyura* and *Callichroa*, is sufficient.

1. *Callichroa platyglossa. Fisch. et Mey. Ind. 2. Sem. Petrop. p. 31. et Ind. 3. n. 347. Schauer Del. Sem. H. Vrat. 1837. p. 3. Don in Sweet, Br. Fl. Gard. p. 1. t. 373. De Cand. Prod. 7. p. 294.*

Very similar in habit to the two preceding; our wild specimens were collected by Mr Douglas, although unnoticed as such by De Candolle.

1. *Hartmannia fasciculata. De Cand. Prod. 5. p. 693.*

The paleæ to the florets of the disk are about eight in number (not five as in De Candolle's generic character), equal in length, but unequal in breadth, and are irregularly inciso-serrated towards the apex; the terminal tooth or segment being very acute, so that the paleæ can scarcely be called obtuse as they are described in De Candolle's Prodromus.

2. *H. corymbosa. De Cand. Prod. 5. p. 694.*

With this we are unacquainted.

3. *H. ciliata. De Cand. Prod. 5. p. 694.*

This also we have not seen; the want of a pappus seems to remove it from the genus; perhaps it ought to be united to *Oxyura*.

4. *H. ? pungens*; herbacea basi sublignosa confertim foliosa, caule parce ramoso pilis albidis setoso, foliis inferioribus pinnatifidis, lobis oblongis vel oblongo-lanceolatis spinosomucronatis, superioribus ac fasciculorum axillarum linearibus integris rigidis spinescentibus margine recurvis papilloso-pilosis, capitulis subsolitariis bracteatis, involucri squamis spinescentibus glandulosis ligulas radii bifidas subæquantibus, acheniis epapposis radii gibbis areola terminali valde obliqua, receptaculo toto paleaceo, paleis lanceolato-subulatis spinescentibus. *Hook. Ic. Pl. v. 4. t. 334.*

This is a very remarkable plant, more like a species of *Navarretia* among the *Polemoniaceæ* than one of the present Order. We can find no trace of it in De Candolle's Prodromus.

1. *Layia gaillardoides*; decumbens setis patentibus rigidulis undique hispida, foliis oblongo-lanceolatis inferioribus inciso-serratis superioribus integris, ramulis floribus monocephalis subelongatis, ligulis 12-15 obovatis apice trifidis discum duplo superantibus, pappo disci fulvo.—*Layia galardioides. De Cand. Prod. 7. p. 294.*—*Tridax? Hook. et Arn. supra, p. 148.*

The genus *Layia*, which we had suggested for this plant, is the same as *Madaraglossa*, the only difference being that in the latter the paleæ of the receptacle are all placed between the ray and the disk, not spread over it. The above species we have not received from Douglas. *Layia* we retain to a leguminose plant described supra, p. 182.

2. *L. hieracioides*; caule erecto, ligulis integris.—Madaraglossa hieracioides. *De Cand. Prod. 5. p. 694.*

There are certainly no paleæ among the florets of the disk. The flowers of this and the preceding are yellow; in the following white.

(*L. Douglasii*; subdecumbens pilis albidis eglandulosis setosa, foliis inferioribus pinnatifido-dentatis, superioribus integris, pappo disci fulvo, ligulis (albis) trifidis discum subduplo superantibus.

HAB. On the gravelly islands of the river Columbia, between the "Narrows" and "Great Falls." *Douglas*.—We have introduced this here in order to complete the account of the genus, it having been, by an oversight, omitted in the *Flor. Bor. Am.*)

3. *L. glandulosa*.—Blepharipappus glandulosus. *Hook. Fl. Bor. Am. 1. p. 316. De Cand. Prod. 5. p. 679.*—Eriopappus glandulosus. *Arn. in Lindl. Nat. Syst. p. 443.*—Madaraglossa angustifolia. *De Cand. Prod. 5. p. 694.*

HAB. California. *Douglas*.—Snake Country. *Mr Tolmie.*

The flowers are white. The upper leaves, peduncles below the capitulum, and involuere, are furnished with a few stipitate black glands among the coarse short bristles, which have been overlooked by De Candolle. There are no paleæ on the receptacle, except those which separate the disk from the ray. De Candolle has inadvertently said, that the achenia of the ray are villous; those of the disk are so, but of the ray glabrous. The name *Blepharipappus* may be retained to *B. scaber*, Hook. The present has quite a different habit, a paleaceous receptacle apparently abortive, florets to the disk, achenia of the ray as well as of the disk villous and crowned with a pappus composed of about fifteen so densely plumose paleæ, that they might almost be termed oblong membranaceous, with a strong midrib, and pectinately divided. The style has two short branches. In the genus *Layia* (*Eriopappus* or *Madaraglossa*.) however, the pappus of the disk consists of 8 or 10 aristæform paleæ, nearly naked at the apex, but plumosely ciliated with long soft hairs at the base, and the branches of the style are long and slender; these last are not included, as De Candolle states, but exerted and recurved.

4. *L. heterotricha*.—Madaraglossa heterotricha. *De Cand. Prod. 5. p. 694. Hook. Ic. Pl. v. 4. t. 326.*

The flowers in the dried plant appear pale yellow, but may have been white, as in the two preceding. The receptacle of the disk is free from paleæ, and the pappus pure white, as in *L. glandulosa*. The achenia of the ray are glabrous; not so, however, those of the disk, as mentioned by De Candolle. These are covered, in the matured fruit sparingly with adpressed greyish hairs.

1. *Calycadenia truncata*. *De Cand. Prod. 5. p. 695.*

2. *C. villosa* (*De Cand. Prod. 5. p. 695*); caule stricto pilis albis hirsutulo, foliis inferioribus prope caulis basin approximatis caulisque linearibus obtuse mucronatis margine revolutis sparsim setoso-ciliatis floralibus hirto-ciliatis apice glandulam calyciformem pedicellatam gerentibus, ramulis floriferis axillaribus brevissimis monocephalis, involucre pilis albis longis hirto squamis acutis.

De Candolle's specimens do not seem to have been so perfect as those before us, which has induced us to give a new specific character.

3. *C. multiglandulosa*. *De Cand. Prod. 5. p. 695.*

4. *C. cephalotes*. *De Cand. Prod.* 5. p. 695.

1. *Achyrachæna mollis*, Schauer, del. sem. *H. Vrat.* 1837, p. 3. *Linnaea* XII. *Litt.* p. 87. *De Cand. Prod.* 7. p. 292. *Hook. Ic. Pl.*—*Lepidostephanus madioides*. *Bartl. ind. sem. Gott.* 1837. *Linnaea* XII. *Litt.* p. 82.

1. *Venegasia carpesioides*. *De Cand. Prod.* 6. p. 43.1. *Monolopia major*. *De Cand. Prod.* 5. p. 74. *Hook. Ic. Pl. v. 4. t. 344.*

The tube of the ray has a small toothed appendage on the opposite side from the ligule, so that the florets may almost be called bilabiate. The involucre is of one piece, and divided scarcely down to the middle.

2. *M. minor*. *De Cand. Prod.* 5. p. 74. *Hook. Ic. Pl. v. 4. t. 343.*

The florets of the ray are destitute of the appendage found in the first species, and the involucre is divided to near the base.

1. *Tanacetum*? *suaveolens*. *Hook. Flor. Bor. Am.* 1. p. 327. t. 110.—*T. matricarioides*. *Less. Syn. Gen. Compos.* p. 265.—*T. pauciflorum*. *De Cand.* 6. p. 131 (vix *Rich.*). *Santolina suaveolens*. *Pursh, Fl. Bor. Am.* 2. p. 520. *Nutt. Gen.* 2. p. 141. *De Cand. Prod.* 6. p. 37.—*Artemisia matricarioides*. *Less. in Linnaea*, 6. p. 210.—*Cotula matricarioides*. *Bong. Veg. Sitch.* p. 29.—*Matricaria discoidea*. *De Cand. Prod.* 6. p. 50.

This was originally found by Lewis on the banks of the Kooksoske River, one of the tributaries of the Columbia; but it extends to North California on the south, and to Unalashka on the north. *T. pauciflorum*, *Rich.*, has villous leaves, and appears, from the character given, more allied to *Pygrrhtrum discoideum*. We are still in doubt about the proper genus to which our plant ought to be referred; the florets are four-angled, slightly bilabiate, and usually 4-toothed; the last character approaches it to *Tanacetum*, in which the same structure is frequently found; in many particulars it agrees with the *Cotula*, from all which it differs by the conical receptacle. It thus forms a link between several genera. The receptacle, on a more recent examination, is not paleaceous, unless the inner scales of the involucre can be so called.

1. *Artemisia vulgaris*. *Linn.*2. *A. pachystachya*. *De Cand. Prod.* 6. p. 114.3. *A. frigida*. *Willd. De Cand. Prod.* 6. p. 125.

HAB. Snake Country. *Mr Tolmie.*

1. *Gnaphalium decurrens*. *Ives in Sill. Journ. De Cand. Prod.* 6. p. 226. *Hook. et Arn. supra*, p. 151.—*G. Californicum*. *De Cand. l. c.* p. 224.

We do not see how Mr Douglas' plant, which is quite the same as that we have already noticed in this work, can be satisfactorily distinguished from *G. decurrens*.

2. *G.*? *flaginoides*; totum albido-lanatum, caule erecto apice subramoso, foliis linearibus basi attenuatis apice nigro-mucronatis, capitulis ovato-conicis in glomerulos ad dichotomias aut apices ramorum sitos aggregatis, involucri squamis obtusiusculis exterioribus ovatis lanuginosis interioribus ovato-lanceolatis scariosis dorso linea villosa notatis, receptaculo conico papillis cylindricis retusis onusto, acheniis teretiusculis glanduloso-puberulis.

This has quite the appearance of a *Filago*, but the structure of the capitulum is that of *Gnaphalium* in every particular, except as regards the receptacle, which is here conical and densely covered with large cylindrical papillæ that are concave at the apex. The filiform female florets form about two rows, within which are the bisexual ones.

1. *Senecio arnicoides*. *De Cand. Prod.* 6. p. 426.

This we have not seen.

2. *S. Californicus*. *De Cand. Prod.* 6. p. 426.

3. *S. ? flocciferus*. *De Cand. Prod.* 6. p. 426.

The flowers are reddish, the ligulate florets appear to be in several rows and gradually to pass into the tubular ones.

4. *S. Douglasii*. *De Cand. Prod.* 6. p. 429.

With this we are unacquainted.

TETRADYMIA. *De Cand.* LAGOTHAMNUS, *Nutt. ms.*

*Capitulum* homogamum pauciflorum. *Involucri* squamæ subbiseriales, ovali-oblongæ, coriaceo-paleaceæ. *Receptaculum* angustum nudum epaleaceum. *Corollæ* tubulosæ 5-fidæ, lobis linearibus recurvis. *Antheræ* exsertæ cæcudatæ. *Styli* rami teretiusculi apice incrassati cono brevi superati. *Achenia* erostris villosa. *Pappus* corollæ tubum æquans pluriserialis, pilis mollibus basi fragilibus candidissimis spinuloso-denticulatis.—*Herbæ vel frutescens*. *Caules folia primaria pedunculi et involucri tomentoso-canæ*. *Folia alterna rigide mucronata*. *Capitula 5-8 ad apices caulis vel ramulorum in racemum conferta*. *Flosculi "lutei multo majores quam in Senecionum genere ad quod genus nostrum accedit."*

1. *T. canescens* (*De Cand.*); herbacea, foliis omnibus linearibus planis erectis mucronulo brevi apiculatis cano-tomentosis in axilla nullis, involucri 4-phylo 4-floro.—*De Cand. in De Less. Ic. Sel.* 4. t. 60 (ined.). *Prod.* 6. p. 440.—*Lagothermus. Nutt. Mst. fide herb. Dougl.*

We do not know where Douglas and Nuttall collected their specimens; De Candolle says they are from the Columbia River, but they came to us with plants from California.

2. *T. spinosa*; fruticosa, foliis primariis (seu rameis) tomentosis subteretibus recurvis rigidis spinoso-mucronatis senioribus glabrescentibus omnino spiniformibus, axillaribus fasciculatis carnosulis glabris obtusiusculis, involucri 5-(nunc 4)-phylo 8-floro.

HAB. Snake Country. *Mr Tolmie.*

1. *Centaurea Melitensis*. *Linn.—De Cand. Prod.* 6. p. 593.—*C. apula. Lam.? De Cand. l. c.*—*C. Patibicensis. De Cand. l. c.*

Between the above three supposed species, as defined by De Candolle, we can perceive no difference. *C. Melitensis* is said to have capitula solitary and tomentose, and the cauline leaves toothed; in *C. apula* the capitula are usually aggregated and glabrous, and the cauline leaves quite entire; while *C. Patibicensis* has the leaves of the latter and involucri of the former. But from a comparison of specimens, from Europe, the Cape of Good Hope, the Canary Isles, Monte Video, Chili, and California, these characters vary on the same specimen; and we have no doubt whatever that the species has migrated with grain from the south of Europe. De Candolle refers Douglas' plant to his *C. Melitensis*, although the cauline leaves (in our specimen) are quite entire.



1. *Acourtia microcephala*. *De Cand. Prod.* 7. p. 66.

1. *Calais Douglasii* (*De Cand.*); scaposa glabriuscula, foliis lineari-lanceolatis remote pinnatifidis, segmentibus linearibus brevibus, pappi paleis 5 basi dilatatis adpresse villosis sensim in aristam longam acuminatis, acheniis disci adpresse villosis radii ad costas scabris.—*De Cand. Prod.* 7. p. 85.

*De Candolle* refers to this genus the *Hymenomena* of *Hooker Flor. Bor. Am.* The two species, however, which are there described, differ from *De Candolle's* character, by having the paleæ of the pappus at least twice as numerous, the dilated part at the base not scarious, much smaller and nearly inconspicuous, while the bristle into which it passes is more slender, much longer, and pure white; the involucre, moreover, is decidedly imbricated, like that of *Scorzonera* or *Troximon*, and the achenia short, glabrous, and not attenuated at the apex.

2. *C. linearifolia* (*De Cand.*); subscaposa vel caulescens basi foliosa puberula, foliis linearibus integerrimis vel pinnatifidis laciniis lineari-acuminatis, pappi paleis albis glabris longe scariosis apice bifidis e sinu setum brevem proferentibus, acheniis striatis omnibus glaberrimis muriculatis.—*De Cand. Prod.* 7. p. 85 (excl. syn.).—*C. Lindleyi*. *De Cand.* ? l. c. (excl. syn.).

*C. Lindleyi* seems merely a cultivated form of this species. In the native specimens the leaves are either quite entire or almost pinnati-partite. The pappus is so different from that of *C. Douglasii*, that we should scarcely have referred the two plants to the same genus; or if they be considered congeners, the character might be so modified as to admit also the two species of the *Flor. Bor. Am.*

1. *Macrorhynchus Lessingii* (*Hook. et Arn.*).—*Borkhausia Lessingii*. *Hook. et Arn. supra*, p. 145.—*Troximon apargioides*. *Less.*—*De Cand. Prod.* 7. p. 252.

In addition to the description we have already given in this work, we may state that the achenia are fusiform, deeply striated with ten furrows, the ribs obtuse and not winged; the filiform stipes of the pappus is nearly thrice the length of the achenium, and dilated at the apex into a small disk. The achenia and pappus of the outer and inner florets are precisely alike. Having published our former notice before we were acquainted with *Lessing's* Synopsis of the genera of this order, we placed this in *Borkhausia*; but now that that genus has been separated into others, the Californian plant must unquestionably be removed to the same as the Chilian species. We may here state, that under the name of *M. Chilensis*, we, in the *Comp. to the Bot. Mag.*, I. p. 31, and II. p. 42, intended to include all the Chilian species of DC., nor are we yet certain that they are really distinct; but, with reference to *Fischer and Meyer*, as well as *De Candolle*, our specimens from Valparaiso (*Mathews*, No. 306, and *Cuming*, No. 745), as also from Falkland Island, belong to *M. pterocarpus*, and that from Viña de la Mar, near Valparaiso, marked "Bridges, No. 500," is *M. levigatus*. As to *Bridges' No. 501*, the achenia are too young to show whether the costæ ought to be considered alate or not. In several achenia in *Mathews*, No. 306, we have observed some of the costæ quite obtuse and corky, while others were alate.

1. *Melanothrix Californica*. *De Cand. Prod.* 7. p. 192.

1. *Sonchus? Californicus*; herbaceus glaber, caule elato fistuloso simpliciter ramoso striato, ramis longiusculis monocephalis, foliis lanceolato-linearibus attenuatis denticulatis, rameis integerrimis, involucre hemispherico, squamis interioribus subæqualibus erectis subbiserialibus, exterioribus minoribus squaroso-patulis, pedunculo apice squamato.

This belongs to the *Lactuceæ*, but the true genus is very uncertain, as we have only seen the immature achenia; these are oblong-cylindrical, striated, and truncate at the apex, without any beak; pappus soft and pure white; hairs linear, apparently in a single series, closely denticulated or almost plumose at the base; flowers purple; capitula, when young, campanulate, afterwards expanding and somewhat hemispherical, never dilated at the base.

ORD. XXXI. LOBELIACEÆ. *Juss.*

1. *Clintonia pulchella* (*Lindl.*); foliis sepalsique obtusis, corollæ laciniis superioribus ovatis acutis divaricatis labelli lacinia intermedia productiore. *Lindl. in Bot. Reg. t. 1909.*

1. *Lobelia carnosula*; nana glaberrima ramosissima diffusa basi subrepens, caulibus exsiccatione alato-marginatis, foliis linearibus integerrimis acutis, pedunculis axillaribus fructiferis patenti-recurvis, pedicello folium superantibus, laciniis calycinis linearibus ovarium corollæque tum æquantibus, capsula oblongo-obovata.

HAB. Blackfoot River, Snake Country. *Mr Tolmie.*

A small tufted plant, with pale blue flowers, evidently growing in very wet muddy places, bearing flowers numerous in proportion to its size, of which the peduncles become more elongated, patent, and at length recurved, as the fruit advances towards maturity. It is somewhat allied to *L. alata*, Labill., but is much smaller.

ORD. XXXII. ERICEÆ. *Juss.*

1. *Rhododendron calendulaceum*. *Torr. Fl. Un. St. 1. p. 425.*—*Azalea calendulacea*. *Mich.*

The tube of the corolla is scarcely so long as the segments, pubescent, but apparently not at all viscid; stamens much exerted; calyx small, segments oblong, and, together with the pedicels, covered with glandular hairs; ovary and lower part of the style villous. Leaves oblong-obovate, nearly glabrous, deciduous. —The forms of the pentandrous species have been so much multiplied of late years in our gardens, that we scarcely know to what to refer our native specimens, and among others the present is attended with considerable difficulty; we have, however, in the mean time, referred it to *R. calendulaceum*.

1. *Arbutus tomentosa*. *β. Hook. et Arn. supra, p. 144. Hook. Fl. Bor. Am. 2. p. 37. t. 130. f. 4.*

ORD. XXXIII. VACCINEÆ. *De Cand.*

1. *Vaccinium ovatum*. *Pursh. Hook. et Arn. supra, p. 144. Hook. Fl. Bor. Am. 2. p. 34. Lindl. Bot. Reg. t. 1354.*—*β. angustifolium*; foliis lanceolatis basi acutis.

Both varieties are in this collection.

ORD. XXXIV. JASMINEÆ. *Juss.*

1. *Fraxinus* (*Ornus*) *dipetala*; foliis 3-jugis, foliolis ovalibus obtusis acute serratis glabris basi cuneatis, inferioribus in petiolulum longiusculum attenuatis superioribus duobus sessilibus, supremo longe petiolulato, paniculis multifloris longitudine fere foliorum ac infra folio ortis, petalis 2 obovato-oblongis obtusis unguiculatis. (TAB. LXXXVII.)

This appears to be allied to *F. Schiedianus*, Schlect. in Linn. 6. p. 391, a Mexican plant, but the petals of that species have not yet been observed. In our plant, the anthers are remarkably large, rather longer than the petals, and the filaments are so very short as to be enclosed within the calyx.

Tab. LXXXVII. Fig. 1. 2. Flowers; fig. 2. Stamen; fig. 3. Pistil:—*magnified*.

ORD. XXXV. ASCLEPIADEÆ. *R. Brown.*

1. *Asclepias Mexicana*. Cav. ?  *Ic. 1. p. 42. t. 58.*

Our plant agrees well with Cavanilles' figure, but the flowers have a faint tinge of purple, and are by no means white. The structure of the inflorescence is precisely that of *A. incarnata*; and Douglas found both growing together on the banks of the Walla-wallah. But in this the leaves are always narrow and in fours, while in *A. incarnata* they are opposite and much broader.

2. *A. vestita*; tota arachnoideo-tomentosa, foliis oppositis oblongo-lanceolatis inferioribus acutis superioribus longe acuminatis, umbellis in axillis superioribus breviuscule pedunculatis, corolla calyce pedunculisque albo-lanatis, columna perbrevis, coronæ foliolis erectis late ovatis obtusissimis supra medium biauriculatis cornu subulatum incurvum longe adnatum superantibus.

ORD. XXXVI. GENTIANEÆ. *Juss.*

1. *Gentiana detonsa*. Fries.—*Griseb. in Hook. Fl. Bor. Am. 2. p. 64. Id. Gentian. p. 256 (cum synonym.)*.

1. *Erythræa tricantha* (*Griseb.*); caule adscendenti ramosissimo fastigiato, foliis oblongo-lanceolatis acutiusculis, cymis aggregatis semel-ter-dichotomis, floribus foliis floralibus suffultis, alari subsessili corollæ tubo sub-anthesi calycem fere duplo superante, posthac subæquante, lobis linearibus acuminatissimis. *Griseb. Gen. et Sp. Gent. p. 146.*

2. *E. Muhlenbergii* (*Griseb.*); caule inferne simplici, foliis ovato-oblongis obtusiusculis, cymis laxis semel-ter-dichotomis, floribus lateralibus a foliis summis remotiusculis, alari pedicellato, corollæ tubo sub-anthesi calycem paullo excedente, lobis oblongo-lanceolatis acutiusculis.

*E. Centaurium*, Beck, from Oswego, is perfectly distinct from this species, and appears to be the true *E. Centaurium*.

ORD. XXXVII. CONVULVULACEÆ. *Juss.*

1. *Calystegia Soldanella*. Br.—*Convolvulus. L.*

2. *C. subacaulis*; annua humillima pubescenti-sericea, caule perbrevis, foliis longe petiolatis ovato-hastatis obtusis cum mucronulo, pedunculis unifloris axillaribus petiolo duplo brevioribus, sepalis late ovalibus mucronatis bracteis ovals superantibus, corolla campanulato-infundibuliformi.

Flowers in the dry state pale sulphur-coloured, large, and, together with the peduncle, about the height of the foliage.

1. *Cuscuta Californica*; pedunculis unifloris solitariis, sub flore dilatato-infundibuliformi, calycis lobis acutis corolla multo brevioribus, corollæ tenui-membranaceæ tubo brevi, laciniis lanceolato-subulatis elongatis, squamis nullis, staminibus quinque fauci corollæ insertis laciniis dimidio brevioribus, stylis duobus, stigmatibus capitatis.

ORD. XXXVIII. HYDROLEACEÆ.

1. *Wigandia*? *Californica*; fruticosa gummifera, foliis elliptico-lanceolatis in petiolum brevem attenuatis coriaceis integerrimis supra glabris subtus reticulatis in areolis albo-canescensibus, staminibus inclusis. (TAB. LXXXVIII.)

Different as the present plant appears, at first sight, from the *Wigandia Caracasana* figured in the *Bot. Register*, tab. 1966, yet the inflorescence and the structure of the flowers are so similar, that without mature fruit we dare not venture to separate it. It is quite shrubby, the glabrous stem exuding a gum-resin. Leaves 3-4 inches or more long, alternate, coriaceous, elliptical-lanceolate, tapering gradually into a short petiole, quite entire, above glabrous, rather indistinctly reticulated with depressed veins; below strongly reticulated with prominent veins, which are rendered more conspicuous by the areolæ being filled with very short whitish down. In two or three of the upper leaves, and at the apex of the branch, the small flowers, (scarcely more than half an inch long) are collected into dense capitate circinnate racemes. Corolla infundibuliform, thrice as long as the deeply divided linear-oblong calyx-segments. Stamens included. Filaments unequal, inserted below the middle of the tube, and then decurrent to the base of the tube; the decurrent portion alone slightly hairy. Anthers of two oval cells, not mucronate. Ovary ovate, slightly hairy, with no evident hypogynous disk, 1-celled, with two opposite parietal placentæ ( $\frac{1}{2}$ ), resembling two T's, to the free edges of which several ovules are attached, exactly as in *W. Caracasana* (see Dr Lindley's excellent figure above quoted.) Styles 2, nearly as long as the filaments. Stigmas capitate, depressed at the top.

TAB. LXXXVIII. *Wigandia*? *Californica*. Fig. 1, 2. Flowers; fig. 3. Corolla laid open; fig. 4. Pistil; fig. 5. Section of the ovary;—*magnified*.

ORD. XXXIX. POLEMONIDEÆ. *Juss.*

1. *Polemonium cæruleum*. *Link.*—*a. vulgare*. *Hook. Fl. Bor. Am. 2. p. 71.*

HAB. Pine Creek, Snake Country. *Mr Tolmie.*

1. *Phlox speciosa*. *Pursh.*—*a. glabriuscula*, foliis basi ciliatis. *Hook. Fl. Bor. Am. 2. p. 72.*—*β. caule foliisque dense pubescentibus*. *Hook. l. c.*

HAB. *a.* Near the Blue Mountains; *β.* Grand Rond—both in the Snake Country. *Mr Tolmie.*

HUGELIA. *Benth.*

*Calyx* tubuloso-campanulatus, semi-5-fidus, sinus vix membranaceis, laciniis subinæqualibus linearibus rigidis subspinosis. *Corolla* infundibuliformis, tubo breviter exserto, limbo 5-partito, laciniis oblongis integerrimis. *Stamina* ad faucem inserta. *Antheræ* lineares, sagittatæ. *Capsule* loculi polyspermi.—*Herbæ annuæ vel perennes plus minusve albo-lanatæ. Folia alterni-linearia, integra vel pinnatifida. Flores dense corymboso-capitati; calycibus bracteisque imbricatis lana densa basi immersis. Benth.*

1. *H. densifolia* (*Benth.*); *humilis*, caule glabriusculo, foliis crebris fere omnibus pinnatifidis glabratis, segmentis utrinque 2-3 acerosis, corollæ (cæruleæ) tubo exserto, staminibus corollam subæquantibus. *Benth. in Bot. Reg. sub folio 1622; in Ann. Sc. Nat. N. Ser. 2. p. 84.*

2. *H. elongata* (Benth.); ramis elongatis divaricatis vel procumbentibus tomentosis, foliis brevibus simplicibus vel utrinque segmentis 1-2 anctis omnibus albo-tomentosis vel demum vix glabratiss, corollæ (intense cæruleæ) tubo exserto, staminibus corollam superantibus. *Benth. l. c.*

3. *H. virgata* (Benth.); erecta stricta, foliis elongatis simplicibus vel pinnatifidis laxè albo-lanatis, corollæ (intense cæruleæ) tubo exserto, staminibus corolla brevioribus. *Benth. l. c. Hook. Ic. Pl. 2. t. 200.*

4. *H. lutea* (Benth.); erecta, foliis inferioribus elongatis simplicibus glabratiss, superioribus abbreviatis pinnatifidis albo-lanatis, corymbis parvis, corollæ (luteæ) tubo incluso, staminibus corollam æquantibus. *Benth. l. c.*

LINANTHUS. *Benth.*

*Calyx* tubulosus membranaceus, nervis 5 viridibus validis apice in dentes subulatos recurvos productis. *Corolla* infundibuliformis, tubo brevi, limbo 5-fido, laciniis obovatis apice erenulatis. *Stamina* tubo inclusa. *Antheræ* filiformes, basi vix sagittatæ. *Capsulæ* loculi polypermi.—Herba annua, glaberrima. Folia opposita, sessilia, palmatisecta, segmentis 3-5, lineari-subulatis. Flores in dichotomiis solitariis, subsessiles, bracteati, versus apicem ramorum plurimi approximati. Corollæ magnitudinæ et forma et fere colore Lini suffruticosi.

1. *L. dichotomus*. *Benth. l. c.*

LEPTOSIPHON. *Benth.*

*Calyx* tubuloso-campanulatus, æqualis, semi-5-ridus, lobis lineari-subulatis acutis, sinibus membranaceis. *Corolla* infundibuliformis, tubo longe exserto tenuissimo, limbo campanulato 5-fido, lobis ovalibus obtusis integerrimis. *Stamina* ad faucem inserta. *Antheræ* oblongæ basi sagittatæ.—Herba annua basi glabræ, apice pubescentes. Folia opposita, sessilia, palmatisecta, segmentis linearibus vel subulatis. Flores dense corymboso-capitati, axi sublanato. Bractæa imbricatæ foliis conformes, segmentis citatohirsutis. *Benth.*

1. *L. grandiflorus* (Benth.); subsimplex, foliis 7-11-fidis, laciniis subulatis strictis margine revolutis, corollæ tubo limbo vix duplo longiore, filamentis brevissimis. *Benth. l. c.*

Corolla blue; the orifice of the tube yellow or purple.

2. *L. androsaccus* (Benth.); foliis 5-7-fidis, laciniis oblongo-linearibus, corollæ tubo limbo 2-3-plo longiore, staminibus corollæ limbo triplo brevioribus. *Benth. l. c. Bot. Reg. t. 1710. Hort. Sec. Trans. N. Ser. 1. p. 477. t. 18. f. 1.*

Corolla smaller and more intensely coloured than the preceding.

3. *L. luteus* (Benth.); foliis 5-7-fidis, laciniis oblongo-linearibus, corollæ tubo limbo sub-4-plo longiore, staminibus limbo corollæ sub-3-plo brevioribus, stylo corollam vix æquante. *Benth. l. c.*

Corolla yellow, deeper coloured in the throat.

4. *L. parviflorus* (Benth.); foliis 5-7-fidis, laciniis oblongo-linearibus, corollæ tubo

limbo 4-plo longiore, staminibus limbo corollæ vix dimidio brevioribus, stylo subexserto. *Benth. l. c.*

Corolla pale yellow, the throat deep yellow.

5. *L.?* *densiflorus* (*Benth.*); foliis 9-11-fidis, laciniis subulatis striatis margine revolutis, corollæ tubo limbo brevioribus. *Benth. l. c. Bot. Reg. t. 1725. Hort. Soc. Trans. N. Ser. 1. p. 477. t. 18. f. 2. Hook. Bot. Mag. t. 3587.*

FENZLIA. *Benth. (non Endl.)*

*Calyx* tubuloso-campanulatus, profunde 5-fidus, sinibus membranaceis, laciniis linearibus acutiusculis erectis. *Corolla* subinfundibuliformis, tubo brevi, limbo 5-partito, laciniis obovatis dentatis. *Antheræ* ovatae, sagittatae, e tubo breviter exsertæ. *Capsule* loculi polyspermi.—Herba *pusilla, subsimplex, 2-3-pollicaris, glabra vel leviter pubescens. Folia opposita, linearia, integerrima. Flores 1-3, pedunculati. Corolla fere pollicaris, purpurascens, fundo luteo.*

1. *F. dianthiflora. Benth. l. c.—Hook. Ic. Pl. 2. t. 199.*

*Fenzlia* of Mr Bentham was published in 1833; that of Endlicher (*Atakta, p. 19. t. 17 et 18*) in 1834; so that our plant has the priority of name. It is but fair, however, to observe, that Endlicher considers it only a species of *Gilia* (*Atakta, t. 29*), and has bestowed the name of *Fenzlia* on a genus of New Holland plants, which, with *Olinia* and *Myrrhinium* (Schott), form a small group intermediate between *Memeylea* and *Myrtaceæ*.

GILIA. *Cav. Benth. l. c.*

*Calyx* campanulatus, 5-fidus, margine et sinibus membranaceis. *Corolla* infundibuliformis vel subcampanulata, limbo 5-partito, laciniis obovatis integris. *Stamina* ad faucem vel vix intra tubum inserta. *Antheræ* ovato-subrotundæ. *Capsule* loculi polyspermi.—Herbæ. *Folia vel alterna pinnatisecta, segmentis integris dissectisve, vel opposita palmatisecta, segmentis integris subulatis. Benth.*

SECT. 1. DACTYLOPHYLLUM. *Folia inferiora opposita, omnia sessilia palmatisecta. Flores solitarii, longe pedunculati. Corollæ tubus brevissimus, limbus pateus.*

1. *G. liniflora* (*Benth.*); foliis inferioribus oppositis omnibus sessilibus palmatisectis, corollis calyce triplo longioribus. *Benth. l. c.*

2. *G. pharnaceoides* (*Benth.*); foliis inferioribus oppositis omnibus sessilibus palmatisectis, corollis calyce duplo longioribus. *Benth. l. c.—Hook. Fl. Bor. Am. 2. p. 74. t. 152.*

Flowers only half the size of the preceding.

SECT. 2. IPOMOPSIS. *Folia alterna, pinnatisecta, vel pinnatifida. Flores solitarii vel subglomerati. Corollæ tubus elongatus longe exsertus.*

3. *G. pulchella* (*Dougl.*); caulibus strictis superne paniculatis, foliis carnosis arachnoideis pinnatifidis laciniis remotis linearibus planis acutis, corollæ elongatæ tubulosæ limbo patentireflexo laciniis ovato-lanceolatis. *Benth. l. c. Hook. Flor. Bor. Am. 2. p. 74.—Ipomopsis elegans. Lindl. in Bot. Reg. t. 1281 (non Sm.).*

HAB. Bamock Defile between Snake and Bear Rivers. *Mr Tobnie.*

4. *G. tenuiflora* (*Benth.*); caule erecto elato superne viscoso subnudo paniculato, foliis

bipinnatisectis glabris, floribus subsolitariis, corymbis laxis longe pedunculatis, corollis (cæruleis) calyce 4-plo longioribus. *Benth. l. c. Lindl. in Bot. Reg. t. 1888.*

5. *G. arenaria* (*Benth.*); caule humili viscoso subnudo, foliis pinnatifidis, lobis ovatis, floribus subglomeratis, corollis (cæruleis) calyce triplo longioribus. *Benth. l. c.*

This we have not received.

SECT. 3. EUGILIA. *Folia alterna pinnatifida vel pinnatisecta. Flores subsolitarii vel saepius glomerati Corollæ tubus calyce subbreuior.*

6. *G. tricolor* (*Benth.*); caule erecto glabro folioso, foliis bipinnatisectis, segmentis lineari-subulatis, corymbis 3-6-floris virgato-paniculatis, corollis calyce subtriplo longioribus. *Benth. l. c. Bot. Reg. t. 1704. Hort. Soc. Trans. N. Ser. p. 478. t. 18. f. 3. Hook. Bot. Mag. t. 3463.*

Tube of the corolla yellow, throat deep purple, limb pale bluish-purple.

7. *G. laciniata* (*Ruiz et Pav.*); caule erecto glanduloso-pubescenti, foliis bipinnatisectis glabriusculis, segmentis linearibus, corymbis paucifloris longissime pedunculatis subpaniculatis, corollis calycem vix duplo superantibus, staminibus corolla brevioribus. *Ruiz et Pav. Fl. Per. et Chil. 2. p. 17. t. 123. Benth. l. c.—Mathews, No. 246. Cuning, No. 729. Bridges, No. 213.*

8. *G. multicaulis* (*Benth.*); caule erecto parce glanduloso-pubescenti, foliis bipinnatisectis glabriusculis, segmentis linearibus, corymbis subcapitatis 3-18-floris longissime pedunculatis vix paniculatis, corollis calycem vix duplo superantibus, staminibus corollam æquantibus. *Benth. l. c.*

9. *G. achilleæfolia* (*Benth.*); caule erecto puberulo, foliis bi-tripinnatisectis glabriusculis, segmentis radicalium linearibus caulinum linearibus vel lineari-subulatis, corymbis capitatis fasciculatisve solitariis vel subpaniculatis, corollis calyce subtriplo longioribus, staminibus corolla brevioribus. *Benth. l. c. Bot. Reg. t. 1682. Hook. in Bot. Mag. t. 3440.*

In the wild plant the flowers are densely capitate, nearly sessile, and the calyx almost woolly; but when cultivated, the former are fascicled and on long pedicels, while the latter are merely pubescent. It therefore becomes a matter of great difficulty to distinguish the present from the two preceding species; and if the relative length of the calyx and corolla, and of the corolla and stamens, prove not constant, we fear that all must be reduced as varieties to *G. laciniata* of Ruiz and Pavon.

NAVARRETIA. *Ruiz et Pav.—EGGCHLOA. Benth. l. c.*

*Calyx* tubuloso-campanulatus, bas. membranaceus, apice 5-fidus, laciniis inæqualibus rigidis integris multifidis spinosis. *Corolla* subhypo crateriformis, tubo calycem subæquante, limbo 5-partito, laciniis oblongis integris. *Stamina* intra partem superiorem tubi inserta. *Antheræ* ovato-subrotundæ. *Capsula* loculi polyspermi.—*Herbæ plerumque glutinosæ fetidæ. Folia pinnatisecta, segmentis incisis acutissimis. Flores dense capitati, bracteis inciso-multifidis spinosis suffulti. Benth.*

1. *N. intertextata* (*Hook.*); erecta ramosa, foliis glabris pinnatisectis, segmentis lineari-subulatis acutissimis incisis divaricatis subspinosis, calycis sublanati dentibus plerumque

multifidis, corollis calyce subbrevioribus, staminibus exsertis. *Hook. Fl. Bor. Am. 2. p. 75.*—*Ægochloa intertexta. Benth. l. c.*

2. *N. cotulaefolia*; erecta stricta, foliis glabris bipinnatisectis, segmentis lineari-subulatis acutissimis foliorum superiorum floraliumque spinosis, bracteis villosulis, dentibus calycinis subintegris, corollis calycem æquantibus, staminibus exsertis.—*Ægochloa cotulaefolia. Benth. l. c.*

3. *N. pubescens*; molliter pubescens, caule ramoso, foliis pinnatisectis, laciniis inciso-pinnatifidis, lobulis divaricatis subspinosis, calycibus bracteisque basi membranaceis glabris apice inciso-pinnatifidis villosis, corollis calyce subduplo longioribus, staminibus et tubo exsertis.—*Ægochloa pubescens. Benth. l. c.*

4. *N. squarrosa*; viscosa-pubescens, foliis pinnatisectis segmentis integris incisive, laciniis lanceolato-linearibus acutissimis spinosis, bracteis ciliato-hirtis basi dilatatis, dentibus calycinis lanceolatis subintegris, corollis exsertis, staminibus tubo inclusis.—*N. pungens. Hook. Fl. Bor. Am. 2. p. 75.*—*Gilia pungens. Dougl. in Bot. Mag. t. 2977.*—*G. squarrosa. Hook. et Arn. supra, p. 151.*—*Ægochloa pungens. Benth. l. c.*—*Hoitzia squarrosa. Eschscholtz (1826).*

5. *N. atractyloides*; viscosissima, foliis pinnatifidis rachi dilatata, lobis subulatis divaricatis spinosis, floralibus ovatis imbricatis spinoso-dentatis flores amplectentibus, dentibus calycinis subulatis integris.—*Ægochloa atractyloides. Benth. l. c.*

COLLOMIA. *Nutt. Benth. l. c.*

*Calyx* campanulatus 5-fidus vel sub 5-partitus, lobis lanceolatis linearibusve æqualibus integris. *Corolla* hypocrateriformis, tubo tenui exserto, limbo patente 5-partito, laciniis oblongis integris. *Stamina* versus medium tubi inserta. *Atheræ* ovato-subrotundæ. *Capsulæ* loculi 1-2-spermi.—*Herbæ. Folia alterna rarius inferiora opposita integra inciso-dentata vel rarius pinnatifida. Flores dense capitati bracteis lato-ovatis integerrimis suffulti. Benth.*

1. *C. gilioides (Benth.)*; foliis pinnatisectis, segmentis linearibus integris, calycibus profunde 5-fidis, staminibus tubo corollæ inclusis, capsulæ loculis monospermis. *Benth. l. c.*

2. *C. glutinosa (Benth.)*; procumbens, foliis subpinnatisectis, segmentis oblongo-linearibus integris vel subincisis, calycibus sub-5-partitis, staminibus corolla longioribus, capsulæ loculis monospermis. *Benth. l. c.*

3. *C. linearis (Nutt.)*; simplex vel ramosa, foliis lineari-lanceolatis lato-lanceolatisve opacis plerumque glabris, ramis superioribus patentissimis pubescentibus, corollæ limbo patente tubo gracillimo triplo brevior. *Benth. l. c. Hook. Flor. Bor. Am. 2. p. 76. Bot. Rep. t. 1166. Bot. Mag. t. 2924.*

*HAB.* Green River (one of the head waters of the Rio Colorado), Snake Country. *Mr. Tobnie.*

4. *C. nudicaulis*; simplex gracilis glaberrima, caule basi bifoliato, foliis minutis squamæformibus (cotyledonum vestigiis?) citissime marcescentibus, floribus subcapitatis, foliis



floralibus e basi lata anguste linearibus obtusis involucre, corollæ limbi laciniis patentibus obovatis apiculatis tubo gracili duplo brevioribus.

HAB. Green River, Snake Country. *Mr Tolmie.*

5. *C. gracilis* (*Benth.*); glanduloso-pubescentis, caule valde ramoso, foliis lineari-oblongis obtusis, calycis segmentis longis subulatis. *Benth. l. c. Hook. Fl. Bor. Am. 2. p. 76.*—*Gilia gracilis. Hook. in Bot. Mag. t. 2924.*

LEPTODACTYLON. *Hook. et Arn.*

*Calyx* tubuloso-campanulatus, subæqualis, semiquinquefidus, lobis subulatis spinescentibus, simbus membranaceis. *Corolla* infundibuliformis, limbo patente, lobis obovatis obtusis. *Stamina* intra partem superiorem tubi inserta, æqualia. *Antheræ* oblongæ. *Stylus* cum *stigmatibus* tubo corollæ duplo brevior. *Capsula* subligulosa apice delibescens, loculis polyspermis, columna centrali crassiuscula.—Frutices humiles, ramosis. Folia alterna profunde palmatisecta, laciniis subulatis rigidis spinescentibus; alia axillaria, integra, fasciculata. Flores terminales, speciosi, Phloem simulantibus.

1. *L. Californicum*; foliis patentibus, floribus subcapitatis, corollæ tubo calycem subæquante, stigmatibus stylo duplo longioribus. (TAB. LXXXIX.)

The corolla is large. Another species of this genus is *Phlox Hookeri*, Dougl. in Hook. Flor. Bor. Am. 2. p. 73. t. 159, which may be distinguished as follows: foliis erectis, floribus subsolitaris, corollæ tubo calycem superante, stigmatibus stylo æquantibus.

TAB. LXXXIX. *Leptodactylon Californicum.* Fig. 1. Flower-bud and flower; fig. 2. Corolla; fig. 3. Stamens; fig. 4. Pistil; fig. 5. Capsule enclosed in the calyx; fig. 6. Capsule bursting open, and showing the central receptacle with attached sides; fig. 7. Seed; fig. 8. Portion of the receptacle from which the seeds have been removed; fig. 9. Leaf:—magnified.

ORD. XL. BORAGINEÆ. *Juss.*

1. *Heliotropium Curassavicum.* *Linn.—Hook. et Arn. supra, p. 152. Hook. Flor. Bor. Am. 2. p. 81.*

1. *Myosotis flaccida.* *Dougl. in Hook. Flor. Bor. Am. 2. p. 82.*

Our specimens are more leafy and not so much advanced as those from Columbia; but they appear to be the same species. *M. versicolor*, of the Flor. Bor. Am., with small flowers, seems to be *M. verna* of Nutt., and has its calyx oblique; the larger-flowered specimens are perhaps referrible to *M. flaccida*.

2. *M. muricata*; caule erecto stricto foliisque linearibus obtusis ubique piloso-hispidis, racemis densis bi-trifidis terminalibus ebracteatibus, calycibus hispidis, nucibus ovatis obtusiusculis dense muriculatis.

From six inches to a foot high, erect, straight, rather stout, throwing out numerous lateral leafy branches, which, in our specimens, are short, from not being sufficiently developed. Flowers white; limb flat; segments as long as the tube. The hairs on the calyx and raceme are yellowish-white.

3. *M. fulva.* *Hook. et Arn. supra, p. 38.—Hook. Flor. Bor. Am. 2. p. 83.—Cuming (Chil.) No. 707. Bridges (Chil.) No. 309.*

The flowers are white; the limb flat and broad; the segments about the length of the tube. The achenia are wrinkled, but not always black, and not in the slightest degree hispid or muricated.

4. *M. Chorisiana*. Cham. et Lehm. in Linn. 4. p. 444. Hook. et Arn. supra, p. 152. (non Lehm. in Hook. Fl. Bor. Am. 2. p. 83.)

The flowers here are on pretty long pedicels, while the Columbia plant has them shortly pedicellate; the latter presents, besides, a different aspect, and may be called *M. Scouleri*; it appears very closely allied to *M. Californica*, Fisch. et Meyer, but the corolla is longer than the calyx.

5. *M. glomerata*. Nutt.—Hook. Flor. Bor. Am. 2. p. 82. t. 162.—*Cynoglossum glomeratum*. Fraser. Pursh.

HAB. Green River, Snake Country. Mr Tolmie.

1. *Echinosperrum Lappula*. Lehm. in Hook. Flor. Bor. Am. 2. p. 84.

HAB. Pine Creek, near Green River, one of the tributaries of the Colorado, Snake Country. Mr Tolmie.

1. *Lithospermum?* *circumscissum*; annuum nanum diffusum ramosum, totum pilis albis rigidis hispidum ad apicem usque foliosum, foliis anguste linearibus, floribus axillaribus, calyce 5-fido basi membranaceo fructifero transversim circumscisso deciduo, corollæ tubo calycem æquante ad faucem nudo, nucibus ovatis acutis nitidissimis lævibus dorso convexis intus subcarinatis.

HAB. Snake Fort, Snake Country. Mr Tolmie.

The flowers are very minute, and white with a yellow eye; the calyx is 5-angled; the segments are about as long as the tube, and in fruit are patulous or somewhat recurved; the base of the tube is membranaceous between the ribs or angles, and separates transversely with five teeth. The nuts do not appear to be at all perforated at the base, and are inserted into the bottom of the calyx.

1. *Amsinckia vernicosa*; corolla fauce nuda glabra, limbo tubo triplo brevior, staminibus ad faucem insertis, antheris exsertis, nucibus ovato-oblongis acutis acute triquetris dorso planis lævibus nitidissimis.

This approaches closely to *A. angustifolia*, Lehm. (Fisch. et Mey. Ind. Sem. Hort. Petrop. Secundus, p. 26), but that we believe to be a Chilian species, transmitted by Bertero, and therefore probably the same with Cuming's No. 512, and Bridges' No. 311. In the Chilian plant, the flowers are almost entirely the same as in *A. vernicosa*, but the nuts are ovate, keeled and transversely wrinkled on the back, and all over minutely muricated, the points on the keel and wrinkles being much larger than the others; of this Mathews' No. 193 is perhaps a mere variety, but the leaves are much broader, and, when dry, of a blackish colour. *Lithospermum lycopsoides*, Lehm. in Hook. Flor. Bor. Am. 2. p. 89, is the same with *Amsinckia lycopsoides*, Lehm. Del. Sem. H. Hamb. 1831.

2. *A. spectabilis*; corolla fauce glabra plicis intrusis semiclausa, limbo longitudine tubi, staminibus ad faucem insertis.—Species pulchritudine florum insignis atque distinctissima. Corolla aurea, limbo 6 lin. in diametro, ad faucem plicis 5, squamulas simulantibus. Fisch. et Mey. Ind. Sem. Hort. Petrop. Secund. p. 26.

We do not possess the fruit of this species, but in habit it accords with *Amsinckia*, and in specific character with *A. spectabilis*, F. and M. It certainly is an extremely handsome plant, with large yellow flowers; the corollas much exserted, and the calyx thickly clothed with white and golden-coloured hairs. Leaves 2-3 inches long.

The genus *Amsinckia* is not, so far as we know, as yet further characterized, than by having four cotyle-

dons. It was noticed by Lindley in his first edition of the *Introduction to the Natural System*, and called there *Benthamia*; as however no reasons were assigned for reducing the genus of Richard of that name, Lehman supposed it to be an oversight, and altered it to *Ansinchia*. Since then, Dr Lindley has bestowed the name *Benthamia* on an East Indian plant. This confusion is to be regretted; and now that Richard's genus has been ascertained to be *Peristylus* of Blume, it were better that *Ansinchia* should bear the appellation originally given to it.

1. *Cynoglossum grande* (Dougl.); caule erecto glabro superne nudo, foliis petiolatis subtus pilosis, inferioribus maximis cordato-ovatis undulatis, superioribus oblongo-lanceolatis, racemis ebracteatis glabris pedunculatis paucifloris, calyce villosa.—*Lehm. Pugill.* 2. p. 25. in *Hook. Flor. Bor. Am.* 2. p. 85.—C. officinale. *Hook. et Arn. supra*, p. 152.

2. *C. penicillatum*; annum diffusum multicaule basi ramosum ubique pilis adpressis canescens, foliis remotis anguste linearibus, floribus solitariis in omnibus axillis brevissime pedicellatis, fructus nucibus lineari-oblongis patentissimis per paria subparallelo-approximatis disco planis marginibus membranaceis inflexis nudis apice ciliatis.

This ought, perhaps, to be removed from the genus: it is so extremely allied to *C. lateriflorum*, Lam., or *C. lineare*, Ruiz et Pav. (Mathews, No. 332, Bridges, No. 253, and Cuming, No. 721), that it can only be distinguished by a close examination of the nuts, which, in the Chilian plant, are pectinately toothed all round the margin. Lehman places this last in *Rindera*, an arrangement to which we can scarcely assent. Another plant of the same group is *C. pilosum*, Ruiz et Pav. (Mathews, No. 989, and Cuming, No. 1070).

ORD. XLI. HYDROPHYLLÆ. R. Brown. *Benth. in Linn. Soc. Trans.* 17. p. 272.

HYDROPHYLLUM. Linn. *Benth. l. c.*

*Squamæ corollinæ* 5, lineares, dorso adnate, apice marginibusque liberæ. *Stamina* longe exserta. *Placenta* maximæ, dorso liberæ, ovarium implentes, 2-ovulate.—*Folia radicalia numerosa; caulina pauca alternata pinnatim vel palmatim dissecta. Racemi scorpioideo-dichotomi vel capitati, ebracteati.*

1. *H. capitatum* (Dougl.); foliis pinnatisectis, segmentis inciso-dentatis subtus canescentibus, floribus dense capitatis, laciniis calycinis lanceolato-linearibus ciliato-hispidis.—*Benth. in Linn. Soc. Trans.* 17. p. 273. *Hook. Flor. Bor. Am.* 2. p. 78.

The Californian specimens have quite a different appearance from those gathered at Fort Vancouver; both are canescent on the under side of the leaves, from the presence of adpressed white rather soft hairs; but these are much more numerous in the Californian form than in the other. The hairs on the branches and petioles are whitish and somewhat soft to the touch. In *H. macrophyllum* (Nutt. Indig. Pl. Un. St. p. 111), which Mr Bentham seems to think may be the same, the hairs on the stem, branches, and petioles, are longer and much more harsh; the under side of the leaves is only sprinkled with a few bristly hairs, and these exist chiefly on the nerves and veins; the flowers are either capitate (as in a specimen from Drummond found in the Alleghanies) or they form a corymbose compact cyme (as in the specimens from Dr Short), with the pedicels thick and stout, and shorter than the calyx; divisions of the calyx attenuated from a broad ovate base. Nuttall's species approaches, in some respects, to *H. Virginicum*, but that has a loose dichotomous inflorescence, with slender pedicels that are often longer than the calyx; the calyx-segments narrow-linear; and the stem is much more free from hairs, often nearly quite glabrous.

ELLISIA. Linn.—*Benth. l. c.*

*Calyces* exappendiculati. *Squamæ corollinæ* 10, breves, vel nullæ. *Stamina* corolla subbrevia. *Placenta*

maximæ, dorso liberæ, ovarium implentes, 2-ovulatæ.—Folia *pinnatim dissecta, inferiora opposita*. Pedunculi *inferiores oppositifolii, superiores in racemo lazo unilateraliter simplici dispositi*.

1. *E. membranacea* (Benth.); glaberrima, petiolis exappendiculatis, foliis pinnatifidis segmentis integerrimis, calycibus vix auctis. Benth. l. c. p. 274.

Mr Bentham describes the lobes of the leaves as broadly lanceolate, but in all our specimens they are broadly linear and obtuse.

2. *E. chrysanthemifolia* (Benth.); hispido-scabra, petiolis basi auriculato-dilatatis, foliis sublipinnatifidis, lobis inciso-dentatis obtusis, calycibus fructiferis parum auctis. Benth. l. c. p. 274.

NEMOPHILA. Barton. Benth. l. c.

Calycis sinus dentibus reflexis appendiculati. Squamæ corollinæ 10, breves, vel nullæ. Stamina corollæ subbrevia. Placenta maximæ, dorso liberæ, ovarium implentes, 2-12-ovulatæ.—Herbæ annuæ diffuse fragiles. Folia inferiora opposita, omnia pinnatifida. Pedunculi nunc azillares, uniflori, nunc paucos ad apices ramorum in racemis brevibus dispositi. Benth.

1. *N. parviflora* (Dougl.); foliis pinnatifidis, lobis paucis latis subdentatis, calycis sinibus brevissime appendiculatis, corollis calycem vix superantibus, placentis 2-ovulatis. Benth. l. c. p. 275.

HAB. California. Mr Menzies.

2. *N. pedunculata* (Dougl.); foliis pinnatifidis, lobis paucis latis subintegerrimis, calycis sinibus brevissime appendiculatis, corollis calycem vix superantibus, placentis 6-ovulatis. Benth. l. c.

In the Columbia plant, the leaves are almost as broad as in *N. parviflora*; in that from California they are narrower, the lobes shorter, more distant from each other, and quite entire. The calycine appendages are so very minute as not to be detected without careful examination.

3. *N. aurita* (Lindl.); petiolis basi auriculato-dilatatis, calycis sinuum appendiculis elongatis, corollis calyce duplo longioribus, placentis 2-ovulatis. Benth. l. c.

4. *N. Menziesii* (Hook. et Arn.); petiolis exappendiculatis, foliis pinnatifidis, segmentis approximatis ovatis integerrimis vel bi-tridentato-lobatis, pedunculis oppositifoliis elongatis, corollæ (cæruleæ parce nigro-punctatæ) rotatæ fundo pilosæ laciniis obovatis calyce subduplo longioribus, placentis sub-10-ovulatis.—*α*. corollæ calycem vix duplo superante.—*N. Menziesii*. Hook. et Arn. supra, p. 152. Benth. l. c. p. 276.—*β*. corolla calycem plus duplo superante.—*N. insignis*. Dougl. ms. Benth. l. c. p. 276 (excl. syn.). Hort. Soc. Trans. N. Ser. 1. p. 643. Lindl. in Bot. Reg. t. 1713. Hook. in Bot. Mag. t. 3485.

Our first variety has the flowers considerably smaller than *β*., as small indeed as in *N. atomaria*, Fisch. et Meyer, Ind. Sem. Hort. Petr. 2. p. 43 (Lindl. in Bot. Reg. t. 1940), but the flowers of the latter are white, and strongly marked with numerous dull lead-blue specks, and therein seems to lie the principal difference between the two species. Dr Lindley states that in *N. atomaria* the peduncles are hairy, and in *N. insignis* glabrous; but in our specimens of the latter, the peduncles vary from almost glabrous to perfectly hairy. We fear that the two species ought to be united. *N. phacelioides*, of the Bot. Reg. t. 740, appears to us a large cultivated form of the true *N. phacelioides* of Barton.

## EUTOCA. R. Br.

*Corolla* decidua. *Ovarium* ovoideo-globosum, piloso-hispidum. *Placentæ* lineares, dorso parietibus ovarii adnatæ, 4-multi-ovulate. *Capsula* dissepimentis incompletis, semi-bilocularis.—Herbæ annuæ? sæpius erectæ, habitu Phacellæ, rarius diffusæ vel divaricatæ. Flores racemosi densi sessiles, vel laxi pedunculati, cymis unilateralibus simplicibus vel dichotomis. *Benth.*

1. *E. Douglasii* (*Benth.*); diffusa, foliis omnibus pinnatifidis, lobis ovatis subintegerrimis, placentis 12-20-ovulatis. *Benth. l. c. p. 276.*

2. *E. brachyloba* (*Benth.*); erecta scabro-pubescentis, foliis elongatis pinnatifidis, lobis ovatis obtusis subincisis, placentis 6-8-ovulatis. *Benth. l. c.*

3. *E. lasæfolia* (*Benth.*); erecta hispidissima, foliis ovatis pinnatifidis, lobis latis acutis inciso-dentatis, corollis calycem vix excedentibus, staminibus exsertis, placentis 6-8-ovulatis. *Benth. l. c. p. 277.*

4. *E. Franklinii* (*Brown*); foliis pinnatifidis bipinnatifidisve pilosis, laciniis lanceolatis integerrimis dentatisve ciliatis, spicis racemosis in summo caulis confertis, staminibus corolla sublongioribus, placentis multiovulatis.—*Brown App. to Frank. Jour. ed. 2. p. 51. t. 27. Hook. Bot. Mag. t. 2985. Flor. Bor. Am. 2. p. 79. Benth. l. c.*

HAB. Pine Creek, Snake Country. *Mr Tolmie.*

5. *E. Menziesii* (*Benth.*); erecta, foliis linearibus lanceolatisve integerrimis quandoque trifidis pinnatifidisve, placentis 20-multi-ovulatis. *Benth. l. c.*

6. *E. grandiflora* (*Benth.*); ascendens, foliis lato-ovatis dentatis basi subcordatis, placentis ultra 50-ovulatis. *Benth. l. c. p. 278.*

7. *E. viscida* (*Benth.*); glanduloso-pilosa viscosa, caule erecto ramoso, foliis cordato-ovatis subangulatis serratis, racemis elongatis furcatis simplicibusque, placentis multiovulatis. *Benth. in Bot. Reg. t. 1808. Hook. in Bot. Mag. t. 3572. Don in Sweet Br. Fl. Gard. N. S. t. 368.*

8. *E. divaricata* (*Benth.*); diffusa ramosissima, caule dichotomo-divaricato, foliis ovatis indivisis radicalibus nunc trifidis, placentis 8-20-ovulatis. *Benth. l. c. p. 278.—Bot. Reg. t. 1784. Bot. Mag. t. 3706.—E. Wrangeliana. Fisch. et Mey. Ind. Sem. Hort. Petr. 2. p. 37. Sweet Br. Fl. Gard. N. S. t. 362.*

9. *E. phacelioides* (*Benth.*); erecta ramosa, foliis omnibus ovatis indivisis integerrimis, placentis 4-ovulatis. *Benth. l. c. p. 279.*

10. *E. ? lutea*; nana diffusa scabro-pubescentis ramosa, radice multicipiti annua, foliis petiolatis subrotundo-obovatis basi cuneatis crenato-lobatis superioribus subintegerrimis, ovarii 8-ovulatis, corolla campanulata marcescente persistente (lutea) calycem paullo superante.

HAB. Snake Fort, Snake Country. *Mr Tolmie.*

This is a very remarkable species, having bright yellow flowers. The seeds are deeply wrinkled on the back. It differs from *Eutoca* by the persistent but marcescent corolla; and from *Emmenanthe* by its habit and absence of scales to the corolla.

11. *E.?* *aretioides*; nana diffusa hispido-pilosa trichotome ramosa, radice multicipiti annua, foliis petiolatis spathulato-lanceolatis basi longe attenuatis integerrimis, ramulis ultimis brevibus congestis, floribus sessilibus terminalibus et in dichotomiis, calycis profunde 5-partiti laciniis anguste linearibus hispidis tubo corollæ infundibuliformis (purpureæ) duplo brevioribus, ovario multiovulato.—var.  $\beta$ . *perpusilla*; caule subnullo paucifloro.

HAB.  $\alpha$ . Between Burnt and Malheur Rivers.— $\beta$ . Burnt River, Snake Country. *Mr Tolmie*.

This beautiful species will probably yet be separated from *Eutoca*, to which it bears no external resemblance; but we have placed it here as agreeing almost entirely with Bentham's character of the genus.

PHACELIA. *Juss. Benth. l. c.*

*Corolla* decidua. *Ovarium* ovoideo-globosum, piloso-hispidum. *Placentæ* lineares, sæpius dorso parietibus ovarii adnatæ, 2-ovulatæ. *Capsula* dissepimentis subcompletis pseudo-bilocularis.—Herbæ *annuæ vel perennes, erectæ vel diffusæ*. Flores *racemosi, densi, sessiles vel lazi pedunculati, cymis unilateratibus simplicibus vel dichotomis*. *Benth.*

1. *P. circinnata* (*Jacq.*); foliis pinnatisectis quandoque indivisis, lobis oblongis ovatisve integerrimis inæqualibus, corollis calyce plus dimidio longioribus, staminibus exsertis. *Benth. l. c. p. 279.*

Mr Bentham adduces the following synonyms to this species:—*Heliotropium pinnatum*, Vahl.—*Hydrophyllum Magellanicum*, Lam.; *H. Aldea*, Rœm. et Schult.—*Aldea pinnata*, Ruiz et Pav.; *A. circinnata*, Willd.—*Phacelia Peruviana*, Spreng.; *P. Californica*, Cham.; *P. heterophylla*, Pursh; *P. rudis*, Dougl.

2. *P. ciliata* (*Benth.*); scabro-pubescent, foliis pinnatisectis, segmentis oblongis obtusis subpinnatifidis, calycis laciniis ovatis submembranaceis reticulatis margine ciliatis, staminibus corollam subæquantibus. *Benth. l. c. p. 280.*

3. *P. ramosissima* (*Dougl.*); scabro-pubescent vel hispida, foliis pinnatisectis, segmentis ovatis obtusis subpinnatifidis, calycis laciniis oblongis viridibus hispidis fructiferis spathulatis, staminibus exsertis. *Benth. l. c. p. 280.*

We have an allied species, or perhaps a mere variety, from Dr Gillies, under the name of *P. Brunoniana*, collected on El Cerro del Diamante and Andes of Mendoza, and it only differs by being more covered with glutinous hairs, and having a nearly simple stem.

4. *P. tanacetifolia* (*Benth.*); scabro-pubescent vel hispida, foliis bipinnatifidis, segmentis oblongis dentato-pinnatifidis, calycis laciniis oblongo-linearibus hispidis, staminibus exsertis. *Benth. l. c. Lindl. in Bot. Reg. t. 1696.*

A closely allied species has been sent us by Mr Darwin, who found it at Bahía Blanca, on the coast of Patagonia (No. 202), but the hairs on its stem are all glutinous.

EMMENANTHE. *Benth. l. c.*

*Corolla* persistens. *Ovarium* oblongo-compressum, glanduloso-pubescent: placentis linearibus, dorso adnatæ

(8-) ovulatis. *Capsula* dissepimentis semi-completis ad axin incrassatis pseudo-bilocularis.—Herba *erecta ramosa*. Folia *alterna pinnatifida, semiamplexicaulia, exauriculata*. Racemi *numerosi erecti graciles*. Flores *penduli, tenuiter pedicellati*. Corolla *campanulata, squamis 10 minutis ad basin*.

1. *E. penduliflora*. *Benth. l. c. p. 281*.

The genus *Emmenanthus*, supra, p. 217, was named and described long before the present one of Mr Bentham, but as it was not published till after his was, it must receive a new appellation.

ORD. XLII. SOLANEÆ. *Juss.*

1. *Nicotiana rustica*. *Linn.*

1. *Solanum nigrum*. *Linn.*—*var. pubescens*. *Hook. et Arn. supra, p. 152*.

2. *S. umbelliferum*. *Escholtz in Linnaea, 3. Litter. p. 148. Hook. et Arn. supra, p. 152*.

Of this plant we have two forms, the one three times the size of the other in all its parts, more succulent and tomentose. The lesser one has wiry branches, with the angles on them more conspicuous from the tomentum being nearly absent.

ORD. XLIII. SCROPHULARINEÆ.

1. *Linaria Canadensis*. *Spr.*—*Antirrhinum Canadense*. *Linn.*

1. *Antirrhinum glandulosum* (*Benth.*); undique pilis capitatis subviscidis conspersum, foliis alternis petiolatis anguste ovato-lanceolatis, racemo denso folioso, calycis lobis lineari-lanceolatis inæqualibus. *Lindl. in Bot. Reg. t. 1893*.

1. *Maurandia* (?) *stricta*; erecta ramosa annua glabra basi solummodo pubescens, foliis infimis parvis ovatis petiolatis, reliquis lanceolatis linearibusque sessilibus omnibus integerrimis, pedunculis solitariis axillaribus unifloris elongatis recurvis apice sursim curvatis.

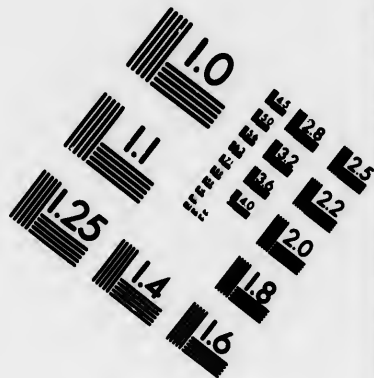
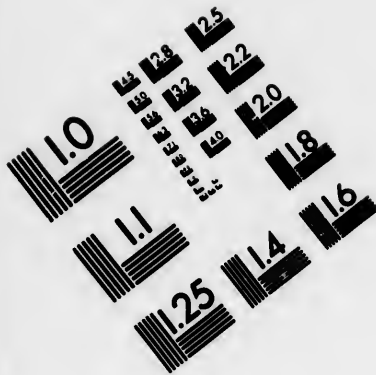
A foot to a foot and a half high, slender, branched, annual; the lower leaves small ( $\frac{1}{2}$  an inch long), ovate, petiolate, gradually becoming more and more remote, upwards on the stem lanceolate or the superior ones linear, all entire. Peduncle from the axils of the narrow upper leaves, 2-4 inches long, at first reflexed, then towards the apex bent upwards. Flower scarcely an inch long. Calyx gibbous below, of 5 deep lanceolate segments, curved up a little, nearly equal. Cor. ovate-oblong, also curved upwards, the limb 2-lipped. Capsule globose, terminated by a moderately long tapering style, and that by a capitate stigma. Cells 2. Seeds attached to each side of a central dissepiment.

A singular looking plant, which, from the withered state of the flowers, we are unable satisfactorily to refer to any known genus. The general form of the blossoms, however, the long curiously curved peduncle, destitute of bracteas, the shape of the calyx, of the capsule, and style, are quite those of *Maurandia*, but the stems are not scandent, and the leaves (except those near the root) are very narrow, lanceolate or linear.

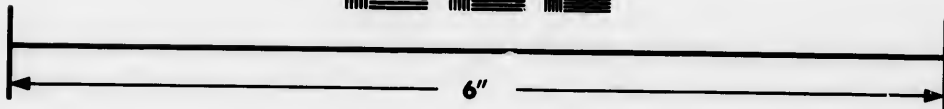
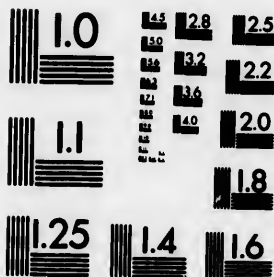
1. *Collinsia bicolor* (*Benth.*); foliis ovato-lanceolatis serratis basi subcordatis, nervis subparallelis, verticillis (infimis exceptis) aphyllis, calycis laciniis ovatis acuminatis.—*Benth. in Hort. Soc. Trans. N. Ser. 1. p. 480. Lindl. in Bot. Reg. t. 1734. Hook. in Bot. Mag. t. 3488*.







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2. *C. parviflora* (Lindl.); caule glabriusculo prostrato adscendente vel erecto, foliis oblongo-lanceolatis integris vel paucidentatis infimis ovatis petiolatis, pedunculis axillariibus solitariis flore multo longioribus, corollæ calycem pubescentem subæquantes vel paullo superantes laciniis integris subacutis.—Lindl. in *Bot. Reg. t.* 1082. Hook. *Fl. Bor. Am.* 2. p. 94.

HAB. Between Bruneau and Onyhee Rivers, Snake Country. *Mr Tolmie*.—California. *Mr Douglas*.

1. *Salpiglossis prostrata*. Hook. et Arn. *supra*, p. 153.

The plant before us may prove a distinct species; it is not prostrate, has apparently an annual root, and a few short ascending simple stems; we incline, however, to think that the specimens being in a younger state may cause these differences. Bentham has remarked, in the *Bot. Reg.*, under t. 1882, that this and some others from the West Coast of America, will probably form a new genus.

1. *Pentstemon cordifolius* (Benth.); caule pruinoso, foliis breviter petiolatis lato-ovatis obtusis integerrimis basi cordatis bullatis subtus nervosis, panicula laxa, corollis tubulosis profunde bilabiatis, labio superiore emarginato inferiore trifido, filamento sterili barbato, antheris glabris. *Benth. Scroph. Ind. p.* 7.

2. *P. staticifolius* (Lindl.); caule adscendente pubescente, foliis radicalibus oblongo-lanceolatis in petiolum longum angustatis integerrimis glabris, caulinis sessilibus cordato-ovatis dentatis pubescentibus, cymis subsessilibus calycibusque tomentosis, corollæ ventricosæ pubescentis labiorum laciniis ovatis obtusis subæqualibus. *Lindl. in Bot. Reg. t.* 1770.

With this we are wholly unacquainted, except from Mr Lindley's figure and description; we fear that it was sent from Columbia, and that it is a mere variety of *P. glandulosus*. *Dougl.*

3. *P. breviflorus* (Lindl.); annuus, foliis lanceolatis serratis glabris summis sessilibus, panicula laxa brachiata, calyce pubescenti, corollæ labio superiore lineari arcuato emarginato villosa inferiore deflexo 3-partito tubo calyce breviori, staminibus fertilibus basi villosis, sterili glabro. *Lindl. in Bot. Reg. t.* 1946.

4. *P. heterophyllus* (Lindl.); suffruticosus, foliis glaucescentibus integerrimis inferioribus lineari-lanceolatis superioribus linearibus, racemo virgato, pedicellis subflore bibracteolatis, sepalis ovatis, corolla glaberrima superne ventricosa imberbi, stamine sterili glabro, antheris sagittatis apice fimbriatis.— $\alpha$ . sepalis ovatis acuminatis.—*Lindl. in Bot. Reg. t.* 1899.— $\beta$ . sepalis orbiculari-ovatis cuspidatis.

The leaves, as in almost all the species, are broader below; but since these pass, by insensible gradations, into the linear ones at the top of the stem, we scarcely think the specific name appropriate.

5. *P. laricifolius*; perennis cæspitosus humilis glaucescens glaberrimus, foliis angustissime linearibus obtusiusculis integerrimis nitidis ad caulium basin dense congestis superioribus remotiusculis, racemis foliosis, pedicellis folio florali brevioribus supra basin bibracteolatis, sepalis ovatis acuminatis; margine membranaceis, corolla glaberrima superne ventricosa labio inferiore ad faucem piloso, stamine sterili piloso, antheræ loculis divaricatis glaberrimis.

HAB. Snake Fort, Snake Country. *Mr Tolmie*.

6. *P. procerus*. Dougl. in *Bot. Mag. t. 2954. Hook. Flor. Bor. Am. 2. p. 97.*

HAB. Common throughout the Blue Mountains, Snake Country. *Mr Tolmie.*

1. *Chelone centranthifolia* (*Benth.*); glaberrima glauca, foliis ovato-lanceolatis integerrimis basi cordato-amplexicaulibus, panicula elongata, corollis tubulosis pendulis glabris fauce nudis, filamentis quinto imberbi. *Benth. in Hort. Soc. Trans. N. S. 1. p. 481. Bot. Reg. t. 1737.*

1. *Herpestes (Matourea) pilosa* (*Benth.*); erecta viscosa mollissime piloso-lanata, foliis sessilibus oblongis subintegerrimis, pedunculis folio brevioribus solitariis ebracteatis, sepalo externo late ovato, (corollæ labio superiore subintegro, capsulæ acuminatæ valvulis integris).—*Benth. in Comp. Bot. Mag. 2. p. 57.*

The capsule is oblong and acuminate, splitting at the apex into two quite entire valves, the margins of which do not appear to be at all inflexed.

1. *Mimulus linearis* (*Benth.*); suffruticosus viscosissimus, caule erecto ramoso, foliis linearibus integerrimis margine revolutis, pedunculis subracemosis, calycibus elongatis plicatis, dentibus lanceolato-linearibus obtusis inæqualibus. *Benth. Scroph. Ind. p. 27.—M. glutinosus. Hook. et Arn. supra, p. 152 (excl. syn.).—Diplacus leptanthus. Nutt. in Tayl. Ann. Nat. Hist. 1. p. 138.*

2. *M. glutinosus* (*Wendl. ?*); suffruticosus viscosus, caule erecto pubescente, foliis supra glabris oblongis lanceolatisve basi angustatis eroso-dentatis integerrimisve, pedunculis folio brevioribus, calycibus elongatis plicatis dentibus lanceolato-linearibus inæqualibus. *Benth. Scroph. Ind. p. 28.*

Mr Douglas's specimen has the peduncle slender and rather longer than the calyx, in which respect it differs from *Diplacus latifolius*, Nutt. l. c.; but as the *M. glutinosus* of our gardens (*M. aurantiacus* of the Bot. Mag. t. 354), varies much in this respect, it is probable that Nuttall's plant is a mere form of our present one.

3. *M. brevipes* (*Benth.*); pubescens, caule erecto viscoso, foliis oblongo-lanceolatis linearibusve subdentatis basi angustatis subsessilibus vel superioribus amplexicaulibus, floribus brevi-pedunculatis, calycibus ovatis plicatis hinc fissis, dentibus lanceolatis inæqualibus. *Benth. l. c.*

4. *M. cardinalis* (*Dougl.*); villosus, foliis amplexicaulibus ovatis margine eroso-dentatis, pedunculis folio longioribus, calycibus amplis inflato-tubulosis vix plicatis, dentibus ovatis acutis, antheris villosis. *Benth. l. c.—Sweet Br. Fl. Gard. N. S. 4. t. 358. Hook. in Bot. Mag. t. 3560. Lindl. in Hort. Soc. Trans. N. S. 2. p. 70. t. 3.*

5. *M. lyratus* (*Benth.*); basi glaber apice pubescens, viscosus, foliis eroso-dentatis inferioribus sublyratis petiolatis superioribus cordato-amplexicaulibus, calycibus ovatis fructiferis inflato-campanulatis ore patulo, dentibus ovatis acutis supremo maximo, corolla calycem duplo superante. *Benth. l. c.—M. guttatus. Hook. et Arn. supra, p. 152 (ex parte).*

Mr Bentham says that (all?) the leaves are cordato-amplexicaul, but our specimens we can only distinguish from *M. guttatus* by their being pubescent towards the extremity, and somewhat viscous, with the calyx less inflated and not contracted at the mouth.

6. *M. guttatus* (*De Cand.*); glaber, foliis eroso-dentatis inferioribus petiolatis sublyratis superioribus rotundatis cordato-amplexicaulibus, calycibus ovatis fructiferis inflatis ore contracto, dentibus ovatis supremo latissimo, corolla calycem duplo superante. *Benth. l. c. Hook. et Arn. supra, p. 152 (ex parte)*.—*M. luteus*. *Pursh.*—*Bot. Mag. t. 1501*.

7. *M. floribundus* (*Dougl.*); diffusus laxè pilosus viscosus, foliis petiolatis lato-ovatis subdentatis basi truncatis rotundatisve, calyce (parvo) ovato tubuloso subæqualiter truncato brevissime et acute dentato. *Benth. l. c. p. 29. Lindl. Bot. Reg. t. 1125*.

We have not received this from Douglas, but Mr Bentham mentions it as having been found by him in California.

8. *M. nanus*; annuus puberulus, caule perbrevis paucifloro, foliis spatulato-ovatis subintegerrimis nervosis, calyce fere sessili oblongo 5-costato ore obliquo breviter 5-dentato, corolla (purpurea) calycem 2-4 plo superante basi longe attenuata, capsula chartacea oblongo-lineari calycem superante. *Hook. Ic. Pl. ined.*—*α. pluriflorus*; corollæ tubo calycem duplo superante.—*β. subuniflorus*; corollæ tubo calycem 3-4 plo superante.

A beautiful dwarf species, the length of the flower in  $\beta$  ( $1\frac{1}{2}$  to 2 inches), in almost every instance, exceeding that of the stem. The corolla is attenuated below into a long and slender almost colourless tube, the upper part deep purple. Upper lip much larger and longer than the lower one. Style almost the length of the corolla. Stigma bilamellate. Stamens didynamous, anther part cruciately approximated and cohering. The capsule agrees in the form with *Diplacus*, Nutt., but is not woody as in that subgenus; although the dehiscence and placenta resemble it more than a true *Mimulus*.

1. *Veronica serpyllifolia*. *Linn.*—*Hook. Flor. Bor. Am. 2. p. 101*.

HAB. Between Henry's and Smith's Rivers, Snake Country. *Mr Tolmie*.

1. *Orthocarpus pusillus* (*Benth.*); humilis ramosissimus glabriusculus, foliis apice multifidis laciniis divaricatis setaceis, dentibus calycinis linearibus viridibus corollam subæquantibus. *Benth. Scroph. Ind. p. 12*.

2. *O. gracilis* (*Benth.*); caulibus numerosis ramosissimis apice pubescentibus, foliis apice multifidis laciniis divaricatis lineari-subulatis, dentibus calycinis lanceolato-subulatis acutissimis vix coloratis, corollæ (purpurascens?) tubo exserto pubescente, staminibus galea brevioribus. *Benth. l. c.*

In this the lower lip is 3-dentate at the apex; it is also 3-lobed, each lobe being saccate or forming a little inflated bag. On account of this structure, it ought perhaps to be placed in the genus *Triphysa* of Fischer and Meyer, but the lower lip is only lobed, not tripartite as described, perhaps inadvertently, by these botanists.

3. *O. floribundus* (*Benth.*); glabriusculus ramosissimus, foliis apice pinnatifidis laciniis linearibus divaricatis, dentibus calycinis linearibus viridibus, corollæ (luteæ) tubo subexserto glabro, antheris exsertis. *Benth. l. c.*

This we have not seen.

4. *O. erianthus* (Benth.); basi pubescens apice tomentosus ramosissimus, foliis apice multifidis laciniis lineari-setaceis divaricatis, calycibus tomentosis dentibus lanceolatis acutissimis viridibus, corollæ (luteæ) tubo longe exserto tomentoso, antheris galea brevioribus. *Benth. l. c.*

The upper lip of the corolla is purple and subulate; the lower exhibits the same structure we have observed in *O. gracilis*, but it is wider, the lateral lobes being more divaricated.

5. *O. densiflorus* (Benth.); glabriusculus ramosissimus, foliis apice trifidis laciniis linearibus, spicis densis imbricatis (flavescentibus), laciniis calycinis lineari-subulatis subcoloratis corollæ pubescentis tubum æquantibus, staminibus galea brevioribus. *Benth. l. c. p. 13.*—Castilleja ambigua. *Hook. et Arn. supra, p. 154.*

The lower lip of the corolla has three subulate processes or teeth at the apex; it is 3-lobed, the lobes concave and slightly saccate, thus intermediate between the structure of *Triphysa* and the true *Orthocarpus*.

6. *O. purpurascens* (Benth.); ramosissimus piloso-hirtus, foliis pinnato-multifidis laciniis linearibus divaricatis, spicis densis imbricatis (purpurascensibus), laciniis calycinis bractearumque lineari-spathulatis apice coloratis corollæ pubescentis tubum æquantibus. *Benth. l. c.*

Lower lip sharply 3-toothed at the apex, the lateral lobes slightly concave, the middle one saccate near the apex.

7. *O. Tolmiei*; puberulus, caule stricto ( sæpius e basi) ramoso, foliis lineari-acuminatis integris, floribus breviter spicatis, bracteis divaricato-trifidis corollam superantibus laciniis linearibus, dentibus calycinis lanceolatis acuminatis tubo membranaceo subduplo brevioribus viridibus, corolla (lutea) glabra, tubo longe exserto, labio superiore apice uncinato inferiorem trilobum erectum adpressum paullo superante.

HAB. Between Henry's and Smith's Rivers, Snake Country. *Mr Tolmie.*

This is so closely allied to *O. strictus* that we at first proposed to unite it as a variety. The leaves, however, are always entire and narrower, the spikes shorter, the whole plant smaller and rather puberulous than hispid, the calyx-lobes longer, and the upper lip of the corolla narrower and hooked at the apex, and slightly longer than the lower. Like it, the flowers are yellow, the tube of the calyx membranaceous, and the lower lip erect and close pressed to the upper, as in *Melampyrum*.

8. *O. lithospermoides* (Benth.); erectus durus ramosus basi pubescens apice hispidus, foliis trinerviis apice inferioribus integris superioribus 3-5-fidis laciniis lanceolatis, spicis densis flavescentibus hispidis, dentibus calycinis lanceolato-linearibus flavescentibus hispidis tubo corollæ glabriusculo brevioribus. *Benth. l. c.*

The lower lip of the corolla has precisely the structure of that of *O. erianthus*.

9. *O. castillejoides* (Benth.); humilis pilosiusculus, foliis oblongis superioribus cuneatis breviter trifidis, floribus laxè spicatis, calycibus tubulosis dentibus brevibus viridibus, corollæ (purpurascens) tubo breviter exserto. *Benth. l. c.*

This we have not seen.

1. *Castilleja purpurea*. Nutt. in *Trans. Am. Phil. Soc.* 5. p. 180.

Our specimen, for we have seen but one from Mr Douglas, has smaller and brighter red flowers than in that we have obtained from Nuttall himself, but in almost all other respects they seem to agree.

2. *C. hispida*. Benth. in *Hook. Fl. Bor. Am.* 2. p. 105?

HAB. Bruneau, Snake Country. *Mr Tolmie*.

The height of our plant is, according to Mr Tolmie, one to three feet. The leaves are divided as in *C. coccinea*, but the calycine segments are ovate-oblong, almost like those of *C. septentrionalis*. It is hispid, as the original *C. hispida*, but the calycine lobes are shorter, not oblong-linear, as in *C. pallida*. The flowers and bracteas appear to have been red.

3. *C. septentrionalis*. Kunth.—Benth. in *Hook. Fl. Bor. Am.* 2. p. 105.

This Californian plant may perhaps be very different. The lobes of the calyx are broader and shorter than in North American specimens; the bracteas and calyx, although pale, have a tinge of red, and may have been deep red when fresh; the leaves on the young branches are linear and obtuse; those on the stem, at the origin of the branches, trifid to about the middle, their segments linear and obtuse; bracteas (at least the lower ones) cuneate and trifid; flowers subsessile. The habit is somewhat that of *C. lithospermoides*.

4. *C. affinis*. Hook. et Arn. *supra*, p. 154.5. *C. latifolia*. Hook. et Arn. *supra*, p. 154.—*C. macrocarpa*. Benth. *Scroph. Ind.* p. 13.

The upper lip of the corolla is shortly exerted beyond the calyx.

6. *C. foliolosa*. Hook. et Arn. *supra*, p. 154.

Our original form of this plant has the leaves approximated, the axils bearing tufts of similar leaves, so that the whole merited well the name we gave. But in Douglas' collection are specimens of two other varieties or forms, which assume a considerably different appearance. The first of these has the leaves twice the length of Beechey's specimens, and their secondary leaves in the axils are very small and few. The second has the primary leaves still larger, less tomentose, and sometimes trifid to beyond the middle; the secondary leaves are copious, as in Beechey's plant; the spike is partly in fruit, and much more elongated and lax than in the other specimens. In Beechey's and the last mentioned form, the stems seem decidedly woody, in the other one somewhat herbaceous; so that we have no doubt but the above different appearances arise from the plants having been in different stages of growth, and from the specimens having been taken, in the one case, from the old branches, in the other from the young shoots.

ADENOSTEGIA. Benth. in *Lindl. Nat. Syst.* p. 445.

*Calyx* bifidus. *Corollæ* labia subæqualia, superius oblongum galeatum erectum breviter bifidum. *Stamina* didynama. *Antherarum* loculi disjuncti altero medifixo terminali, altero filamento infra affixo.—*Herba tenuiter glanduloso-pubescentis. Folia anguste linearia, sæpius trifida. Flores ad apices ramorum paucis capitatis, bracteis adpressis trifidis obtusis glandulosis ciliatis, calycinis lobis integris acutis corollam subsuperantibus, filamentis antherisque villosis. Capsula* Castilleja et Orthocarpi, quibus generibus *Adenostegia affinis* est. Benth. *l. c.*

1. *A. rigida*. Benth. *l. c.*—*A. filifolia*. Benth. *ms. in Herb. Hook.*

1. *Pedicularis* (Edentula) *densiflora* (Benth.); erecta elata glabra, foliis amplis profunde pinnatifidis pinnatisectisve segmentis ovato-oblongis pinnatifidis, laciniis oblongis

inciso-dentatis, spica dense multiflora, calyce inæqualiter 5-dentato, corollæ galea recta obtusa antice hiante, labio minimo. *Benth. in Hook. Flor. Bor. Am. 1. p. 110.*

There is also a variety of this, if not a distinct species, in the collection, which differs by the whole plant not being more than six inches high, while *P. densiflora* is at least a foot and a half; the leaves are proportionately smaller; the stem is hirsutely pubescent, not glabrous.

2. *P. (Rostrata) surrecta (Benth.)*; erecta glabra, foliis pinnatisectis segmentis lanceolato-linearibus subcartilagineo-serratis, spicis elongatis multifloris, calycibus tubulosis 5-dentatis, dente supremo minore lateralibus altius crenatis, corollæ galea fornicata calycem subduplo superante in rostrum subulatum surrectum calycem plus triplo superantem desinente. *Benth. in Hook. Flor. Bor. Am. 2. p. 107.*

HAB. Swamp at Green River, one of the head-waters of the Rio Colorado. *Mr Tolmie.*

#### ORD. XLIV. LABIATÆ. *Juss.*

1. *Salvia (Echinosphece) carduacea (Benth.)*; caule herbaceo erecto subsimplici albo-lanato, foliis petiolatis oblongis pinnatifidis subtus laxe lanatis, lobis ovatis sinuato-dentatis, dentibus spinoso-acuminatis, floralibus bracteisque imbricatis spinosissimis, verticillastris remotis dense multifloris, calycibus inflatis lanatis, labio superiore elongato tridentato inferiore bifido dentibus omnibus spinosis, corollæ tubo subincluso labii inferioris lobo medio fimbriato, connectivis postice liberis antheræ loculum subcassum ferentibus. *Benth. Lab. p. 202.*

2. *S. (Pycnosphace) columbariæ (Benth.)*; herbacea erecta parum ramosa, foliis profunde pinnatifidis rugosis glabriusculis, lobis oblongo-linearibus obtusis eroso-dentatis incisive, extremo vix latiore, floralibus bractæformibus, verticillastris solitariis binisve dense multifloris hemisphæricis, bracteis lato-ovatis membranaceis acuminatis imbricatis, calycis ovati pubescentis labio superiore elongato concavo breviter tridentato, inferiore breviter bifido, corollæ tubo incluso, labii inferioris lobo medio crenulato, connectivis postice liberis subporrectis antheræ loculum cassum ferentibus. *Benth. Lab. p. 202.*

#### AUDIBERTIA. *Benth.*

*Calyx* ovatus, bilabiatus, labio superiore concavo integro vel breviter tridentato, inferiore bifido, intus fauce nuda. *Corolla* tubo calycem æquante vel exserto, limbo bilabiato, labio superiore bifido lobis patentibus, inferiore trifido lobis lateralibus ovatis oblongiavo patentibus, medio latissimo emarginato. *Stamina fertilia* duo (inferiora) adscendentia, sæpius exserta, superiorum rudimenta parva claviformia vel nulla. *Antheræ* dimidiatæ, connectivo lineari in filamentum articulado adscendente, apice antheram linearem unilocularem ferente postice non producto vel brevissime acuminato. *Stylus* breviter subulato-bifidus. *Benth.*

1. *A. grandiflora (Benth.)*; caule elato villosa, foliis oblongo-ellipticis sinuato-crenatis basi cordatis rugosis, verticillastris densis multifloris, bracteis lato-ovatis calycibusque amplis membranaceis coloratis villosis, staminibus longe exsertis. *Benth. Lab. p. 313.*

2. *A. humilis*; suffruticosa, foliis ad basin caulis approximatis petiolatis oblongo-lan-



ceolatis obtusis crenulatis basi longe angustatis rugosis canescentibus, floralibus bracteis lanceolatis acutis villosis, genitalibus exsertis. *Benth. Lab. p. 313.*

3. *A. stachyoides*; suffruticosa, ramis rigidis foliosis, foliis breviter petiolatis oblongo-lanceolatis obtusis crenulatis basi angustatis rugosis subtus canescentibus, floralibus bracteis ovatis acuminatis, genitalibus corolla subbrevioribus. *Benth. Lab. p. 313.*

4. *A. nivea*; suffruticosa, ramis rigidis superne niveo-tomentosis, foliis subsessilibus lanceolatis obtusis basi rotundatis rugosis utrinque niveo-tomentosis, floralibus bracteis ovato-lanceolatis, racemo simplici, genitalibus exsertis. *Benth. Lab. p. 313.*

5. *A. polystachya*; suffruticosa cano-tomentosa, foliis petiolatis oblongo-lanceolatis obtusis crenulatis, basi angustatis rugosis utrinque incanis, floralibus bracteis laxis lanceolatis, racemulis numerosis in paniculam elongatam densam approximatis, genitalibus longe exsertis. *Benth. Lab. p. 314.*

#### MONARDELLA. *Benth.*

*Calyx* ovato-tubulosus, sæpe elongatus, 10-13-nerviis, 5-dentatus, dentibus brevibus subæqualibus rectis, fauce intus nuda. *Corolla* tubo calycem æquante vel breviter exserto, fauce intus glabra, limbo subbilabiato, labio superiore bifido, inferiore trifido, lobis omnibus oblongis linearibusve planis subæqualibus. *Stamina* 4, subæqualia, vel inferiora longiora, recta, divergentia, exserta. *Antheræ* biloculares, loculis parallelis, demum divergentibus vel divaricatis. *Stylus* apice brevissime bifidus, stigmatibus minutis. *Achenia* sicca.—Herbæ perennes. Verticillastri magni subglobosi, bracteis latis suffulti, solitarii, terminales. *Benth.*

1. *M. undulata*; caule basi procumbente, ramis adscendentibus, foliis oblongo-linearibus obtusis margine undulato-crispis basi in petiolum brevem angustatis utrinque viridibus glabris, verticillastris dense globosis magnis solitariis, bracteis exterioribus lato-ovatis acutis membranaceis muticis, calycibus tubulosis elongatis subæqualiter dentatis muticis. *Benth. Lab. p. 332.*

2. *M. Douglasii*; caule basi procumbente, foliis petiolatis lanceolatis linearibusve utrinque angustatis viridibus pubescentibus, verticillastris dense globosis magnis solitariis, bracteis exterioribus ovato-lanceolatis calyces superantibus aristato-acuminatis, calycibus ovato-tubulosis inflatis villosis dentibus subæqualibus aristatis. *Benth. Lab. p. 333.*

1. *Micromeria Douglasii*. *Benth. Lab. p. 372.*—*Thymus Douglasii*. *Benth. in Linn. v. 6. p. 80.*—*T. Chamissonis*. *Id. l. c. Hook. et Arn. supra, p. 155.*

#### POGOGYNE.

*Calyx* sub 15-nerviis, campanulatus, striatus, dentibus rectis lanceolatis, 2 inferioribus 3 superiores duplo superantibus, fauce intus nuda. *Corolla* tubo exserto recto intus nudo, bilabiata, labio superiore erecto subplano integro, inferiore patente trifido, lobis planis integris. *Stamina* 4, didynama, inferioribus longioribus, adscendentia, apice approximata. *Antheræ* biloculares, loculis parallelis distinctis muticis. *Stylus* villosus, apice bifidus, lobis subulatis æqualibus apice stigmatiferis.—Herbæ. Verticillastri ad apices ramorum dense spicati, foliis floralibus, bracteis, calycibusque pilis longis albidis ciliatis. *Benth.*

1. *P. Douglasii*; foliis floralibus bracteisque flores superantibus, staminibus corolla brevioribus, dentibus calycinis inferioribus tubo plus duplo longioribus. *Benth. Lab. p. 414.*

2. *P. multiflora*; foliis floralibus bracteisque corolla brevioribus, staminibus exsertis. *Benth. Lab. p. 414.*

3. *P. parviflora*; foliis floralibus flores superantibus, staminibus corolla brevioribus, dentibus calycinis inferioribus vix tubo longioribus. *Benth. Lab. p. 414.*

1. *Scutellaria* (Sect. *Galericularia*) *tuberosa*; caule humili simplici erecto villosa, foliis petiolatis lato-ovatis obtusis grosse crenatis basi rotundato-truncatis, floralibus oblongis omnibus utrinque villosis, floribus axillaribus oppositis secundis, corollis villosis calyce plus quadruplo longioribus. *Benth. Lab. p. 442.*

1. *Stachys ajugoidea*. *Benth. in Linn. v. 6. p. 80. Hook. et Arn. supra, p. 155.*

1. *Sphacele calycina*; suffruticosa? ramis molliter villosis, foliis petiolatis ovato-oblongis basi rotundatis subrugosis villosis, racemis subsimplicibus secundis, verticillastris bifloris remotis, calycibus amplis villosissimis, corollis amplis calyces breviter superantibus. *Benth. Lab. p. 568.*

1. *Marrubium vulgare*. *Linn. Sp. Pl. p. 816.*—*M. hamatum*. *Humb. et Kunth, Nov. Gen. et Sp. v. 2. p. 310.*—*M. Germanicum*. *Steud. Nom. Bot. p. 510.*

1. *Trichostemma* (Sect. *Orthopodium*) *lanatum*; foliis linearibus margine revolutis, floribus racemosis lanatis, calycibus subæqualiter 5-fidis, corollæ tubo longe exserto. *Benth. Lab. p. 659.*

2. *T.* (*Orthopodium*) *lanceolatum*; villosum, foliis lanceolatis, cymis axillaribus, calycibus subæqualiter 5-fidis, corollæ tubo exserto. *Benth. Lab. p. 659.*

#### ORD. XLV. VERBENACEÆ. *Juss.*

1. *Verbena lasiostachys*. *Link?—Hook. et Arn. supra, p. 156.*

Although a less diffuse specimen than that which we characterized in Captain Beechey's collection, the two are precisely the same species.

#### ORD. XLVI. PRIMULACEÆ. *Vent.*

1. *Anagallis arvensis*. *L.*

This is the common red-flowered variety.

1. *Dodecatheon integrifolium*. *Mich.*—*Hook. Fl. Bor. Am. v. 2. p. 119. Bot. Mag. t. 3622.*—*α.* tubo stamineo flavo. *Hook. Fl. Bor. Am. l. c.*—*γ.* tubo stamineo atro-purpureo. *Hook. Flor. Bor. Am. l. c.*

*α.* Grand Road in the Snake Country. *Tolmie.*—*γ.* *Douglas.*—In the *Flor. Bor. Am.* the character of *var. γ.* was made to depend on the much greater breadth of the leaves, as well as upon the different colour

of the staminal tube; in our present individual the leaves do not materially differ, nor do we find any other difference from *a.*, except that the bractæa of the involucre are larger and almost foliaceous.

1. *Glaux maritima*? *L.*

A singular state of this plant, as it appears to us, without flowers, with small imperfect leaves, and with the stem singularly inflated at the joints, is in Mr Douglas' collection.

ORD. XLVII. PLANTAGINÆÆ. *Juss.*

1. *Plantago gnaphalioides*. *Nutt. Gen. Am.* 1. p. 100. *Hook. Fl. Bor. Am.* v. 2. p. 124.  
—*P. lagopus*. *Ph.* (non *Linn.*).

ORD. XLVIII. NYCTAGINÆÆ. *Juss.*

1. *Abronia mellifera*. *Dougl. in Bot. Mag. t.* 2879. *Hook. Fl. Bor. Am.* v. 2. p. 125.  
2. *A. arenaria*. *Menz.—Hook. Ex. Fl. t.* 193. *Fl. Bor. Am.* 2. p. 125.

Found in California first by *Mr Menzies*.

1. *Chenopodium*? *spinosum*. *Hook. Fl. Bor. Am.* v. 2. p. 127.

North California. *Douglas*. 1826.

ORD. XLIX. POLYGONÆÆ. *Juss.*

ERIOGONUM. *Mich.*

*Involucrum* tubulosum, campanulatum v. cyathiforme, vix angulatum, subæqualiter 6-dentatum, multiflorum. *Receptaculum* bracteolis intra pedicellos instructum. *Perianthia* exserta, profunde 6-fida. *Benth. in Linn. Trans.* v. 17. p. 407.

§ FASCICULATA. *Benth.*

1. *E. parvifolium* (*Sm. in Rees' Cycl.*); fruticosum, foliis brevissime petiolatis ovatis margine revolutis undulatis subtus lanatis, involucris sublanatis. *Benth. l. c.* p. 411. *Hook. et Arn. supra*, p. 158.

Upper California. *Menzies. Douglas.*

*Folia*  $\frac{1}{2}$ - $\frac{3}{4}$  pollicaria, basi truncata vel subcordata. *Pedunculi* omnes simplices vel terminalis ramosus. *Capitula* pauca lateralia et terminalia, fructifera rubescentia. *Bractea* sub capitulo pauca, parva, ovata vel oblonga. *Involucra* in capitulo plurima, sessilia, tubuloso-campanulata. *Bracteola* intra involucrum plurimæ. *Perianthii lacinia* inter se subæquales. *Benth.*

2. *E. fasciculatum* (*Benth.*); fruticosum, foliis oblongo-ellipticis linearibusve basi angustatis margine revolutis glabris vel subtus tenuiter albo-tomentosis, involucris glabriusculis. *Benth. l. c.* p. 411.

Upper California. *Menzies. Douglas.*

*Folia*  $\frac{1}{2}$ - $\frac{3}{4}$ -pollicaria, demum glabra. *Pedunculi* longiores quam in *E. parvifolio*, terminalis sæpissime umbellifer, radiis 2-3 inæqualiter elongatis, 1-2 brevissimis vel uno alterove intra radios sessilibus. *Bractea* sub capitulis numerosa, oblongo-lineares. *Bracteola* intra involucra minutissimæ. *Involucra* et *flores E. parvifolii*. *Benth.*

*Polygonæ.*

any other

and with the

l. p. 124.

p. 125.

multiflorum.

l. in *Linn.*

is ovatis

l. *Hook.*

ramosus.

ovatae vel

crum plu-

ve basi

ris gla-

aeppissime

*Bractea*

*flores E.*

