

Vexillum obovatum subpubescens prope medium; alae 2-3 mm. latae minute pubescentes prope angulum superum ad apicem; carina arcuata ciliolata ad medium flexu infero aperto.

This is a new "outpost" of the "laxiflorus series".

Grant county
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LUPINUS LEPIDUS Douglas 1828
Thompson 9077, 1933 Jun., h Sm.
Sandy sagebrush slopes, near Vantage.

Lewis county
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- LUPINUS VOLCANICUS var. RUPESTRICOLA var. nov.
Type. Thompson 15210, 1940 Aug., h Sm.
Goat Rocks, Cascade Mountains, 8000 ft.

E L. volcanicus differt pilis pendentibus paucis et potius ascendentibus, carina ciliolata.

The longer hairs scant and rather ascending, instead of the foliage and stems conspicuously villous and keel strongly ciliate.

Okanogan county
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LUPINUS FIKERANUS sp. nov.
Type. Charles B. Fiker 887, 1932 Jun., h Sm.
At the head of Scotch Basin, dry hillside.

Plantae perennes ramosae suffruticosae ad basin 3-8 dm. altae; caules graciles solidi nervosi appresso-sericei.

Folia breve-petiolata caulina axillaria valde evoluta conferta sericea vel subsericea utrinque; stipulae 5-7 mm. longae paene liberae setaceae; petioli 6-35 mm. longi graciles pudentes; foliola 6 ad 9 maxima 35 mm. longa 6 mm. lata acuta lineare-oblongata conduplicata arcuata subradiata.

Pedunculi 15-25 cm. longi; racemi 6-8 cm. longi; verticilli 3 ad 5; bracteae 3-4 mm. longae lanceolatae deciduae; pedicelli ascendentes appresso-pubescentes.

Flores 8-10 mm. longi pudentes vel ascendentes.

Calyces appresso-sericei paene gibbosi; bracteolae non vidi; labium superum 2 mm. longum bidentatum dentibus gracilibus, inferum 4 mm. longum integrum.

Petala caerulea; vexillum obovatum 3-4 mm. reflexum sericeo-pubescentis dorso maculatum ad medium macula prius lutea serius purpurea; alae 3 mm. latae; carina valde ciliata arcuata flexu infero aperto.

Leguminae circa 30 mm. longae 8 mm. latae suberectae laxae subappresso-pubescentes; ovulae 4-5; semina non vidi.

Snohomish county
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- LUPINUS GLACIALIS sp. nov.
Type. Thompson 14705, 1940 Jun., h Sm.
By glacier at Big Four, 2200 ft.

Plantae aliquando 4-6 dm. altae herbescentes perennes eramosae vel tenuiter ramosae erectae; caules graciles tamen subfistulosi nervosi glabrati.

Folia sublongo-petiolata pauca caulina axillaria tenuiter evoluta super glabra subtus subsericea sed subvillosa praeter venam mediam; stipulae 5-10 mm. longae inconspicuae lineares circa 1/2-adnatae; petioli 40-70 mm. longi graciles pariles ad ter foliola sua; foliola 5 ad 7 maxima 40 mm. longa 8 mm. lata obtusa oblanceolata vel cuneata complanata suberecta.

Pedunculi 6-10 cm. longi; racemi 6-10 cm. longi; verticilli 6 ad 12 approximati 1-3-florentes; bracteae non vidi deciduae; pedicelli 6-9 mm. longi pendente-pubescentes pendentes vel ascendentes.

Flores 12-15 mm. longi pendentes aliqui serius penduli.

Calyces subappresso-sericei subcongruentes; bracteolae non vidi; labium superum 2-3 mm. longum integrum vel minute incisum ad apicem, inferum circa 3 mm. longum integrum vel subtridentatum.

Petala caerulea; vexillum suborbiculum glabrum 4-6 mm. reflexum ad medium prius luteum serius adustum; alae 5-6 mm. latae; carina eciliata arcuata acumine vel flexu infero aperto.

Leguminae seminaque non vidi.

Probably related to *L. arcticus* Watson, or possibly *L. latifolius* Agardh, and specimens may be found, perhaps, in covers labelled *columbianus* Heller, *alpicola* Henderson, and *subalpinus* Robinson.

Yakima county
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LUPINUS COTTONII C.P.Smith 1924
Thompson 15086, 1940 Jul., h Sm.
Mount Aix, east slope, 6500 ft.

LUPINUS DIVERSALPICOLA sp.nov.
Type. Thompson 15057, 1940 Jul., h Sm.
Mount Aix, west slope, 7000 ft.

Plantae 3-4 dm. altae herbescentes perennes erectae vix ramosae; caules caespitosi graciles nervosi appresso-sericei.

Folia pauca caulina infera longo-petiolata supera breve-petiolata secundaria tenuiter evoluta super subsericea viridia subtus canescento-subsericea; stipulae 3-5 mm. longae lineares inconspicuae subulatae circa 2/3-liberae; petioli 10-90 mm. longi graciles; foliola 7 ad 9 maxima 40 mm. longa 6 mm. lata acuta suboblanceolata vel latissima ad medium radiata cito complanata.

Pedunculi 4-8 cm. longi; racemi 8-10 cm. longi; verticilli sin definiti 8 ad 10 approximati; bracteae 2-4 mm. longae lineares deciduae; pedicelli ascendentes 3-5 mm. longi subappresso-pubescentes.

Flores 10-13 mm. longi pendentes interdum subverticillati.

Calyces appresso-sericei subcongruentes vel subgibbosi ad basin; bracteolae non vidi; labium superum 4 mm. longum bidentatum, inferum circa 3 mm. longum specie integrum.

Petala caeruleo-purpurea; vexillum suborbiculum glabrum valde reflexum macula prius lutea serius adusta ad medium; alae circa 3 mm. latae; carina eciliata arcuata acumine gracile et flexu infero aperto.

Ovulae forsitan 3 ad 5; leguminae seminaque non vidi.

This is another segregation from the mass dubiously referred to either (or both) *alpicola* and *columbianus* in the alpine or sub-alpine unbranched forms.

- LUPINUS YAKIMENSIS sp. nov.
Type. Thompson 14572, 1940 May, h Sm.
Cleman Mountain, 3000 ft.

Plantae 3-5 dm. altae perennes fruticulosae ad basin; caules herbescentes erecti graciles vix ramosi appresso-subsericei.

Folia pauca caulina infera longo-petiolata secundaria tenuiter evoluta super viridia subsericea subtus canescente-subsericea; stipulae 6-10 mm. longae circa 1/2-adnatae parte libera sublata; petioli 4-8 cm. longi graciles superi pariles foliola sua inferi bis ad ter sua; foliola 7 ad 10 maxima 35 mm. longa 5 mm. lata acuta vel obtusa oblanceolata vel latissima ad medium subradiata complanata.

Pedunculi 3-4 cm. longi; racemi 6-12 cm. longi; bracteae 3-4 mm. longae lineares deciduae; pedicelli 4-6 mm. longi ascendentes vel suberecti pendente-pubescentes.

Flores 8-9 mm. longi pendentes vel ascendentes subverticillati vel inconditi.

Calyces pendente-pubescentes gibbosi ad basin; bracteolae non vidi; labium superum circa 2 mm. longum plerumque opertum bidentatum, inferum circa 3 mm. longum flexo-subsaccatum integrum.

Petala caerulea; vexillum obovatum subpubescens dorso prope medium macula prius lutea serius adusta; alae angustae 2-3 mm. latae; carina ciliata operta alis vel flexu infero aperto. Leguminae seminaque non vidi.

Apparently another definitely local species, this time belonging to the variants related to *L. caudatus* Kellogg.

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P A P E R T W E N T Y Miscellany Four

G U A T E M A L A Two additional records

Amongst a number of lupines recently accepted by us for prompt determinations are two from Guatemala. One of these is easily placed with one of the common species of southern Europe and northern Africa, but the other seems to hold its own as distinct from all other species recorded by us from Guatemala (Sp.Lup.89-91), the other republics of Central America, and all Mexico.

LUPINUS ANGUSTIFOLIUS Linnaeus 1753
A.F.Skutch 584, 1933 Aug., h 66.
Dept. Chimaltenango, Plains near Tecpam.

Collector's notes: "fls. blue. Edge of cornfield. An Indian told me that this was introduced several years ago with foreign seed, but had no idea whence it came."

Common in cultivation in the Mediterranean Region.

LUPINUS SKUTCHIANUS sp.nov.

Type. A.F.Skutch 491, 1933 Jul., h 66.

Dept. Chimaltenango, Plains near Tecpam, 2100 m.

Plantae probabiliter 6-10 dm. altae specie annuae vel fortasse perennēs erectae herbescētes ramosae supra; caules graciles solidi glabrati.

Folia breve-petiolata copiosa secundaria tenuiter evoluta super glabra subtus vix subsericea; stipulae 3-7 mm. longae 1/2-1/4-adnatae parte libera pendente; petioli 30-45 mm. longi graciles pariles foliola sua; foliola 5 ad 7 maxima 4.0 mm. longa 8 mm. lata acuta lineare-oblongata vel latissima ad medium radiata complanata.

Pedunculi 4-6 cm. longi; racemi 5-10 cm. longi axibus suis lanuginosis; verticilli vix definiti; bracteae deciduae non vidi; pedicelli 4-6 mm. longi paene pendente-pubescentes prius ascendentes serius late pendentes.

Flores 10-13 mm. longi prius pendentes serius penduli.

Calyces sericei; bracteolae non vidi; labium superum integrum 2-3 mm. longum late ovatum opertum vexillo, inferum integrum 3-4 mm. longum lanceolatum.

Petala purpurea; vexillum suborbiculatum glabrum 3-4 mm reflexum; alae 4-5 mm. latae; carina arcuata eciliata plerumque aperta alis.

Leguminae immaturae ascendentes graciles; ovulae 9 ad 11; semina non vidi.

Perhaps related to *L. chiapensis* Rose and/or *L. leptocarpus* Bth., but certainly not identical with either. Another possible relative may be our var. *erectocarpus* of *L. glabratus* (Sp.Lup.37), or even *L. glabratus* Agardh (Sp.Lup.49). Again, it could be a hybrid, persisting after semicultivation.

Collector's notes: "fls. purple. Open ground."

W A S H I N G T O N Another local species

- LUPINUS OSTIOFLUMINIS sp.nov.

Type. H.T.Rogers 390, 1940 ..., h Sm.

Lincoln county, Lincoln, mouth of the Spokane River, confluence with the Columbia.

Plantae perennes herbescētes erectae caespitosae perramosae ad basin 3-6 dm. altae; caules graciles paucifoliati subsericei.

Folia multa longo-petiolata conferta ad basin super subsericeo-viridia subtus albo-sericea; stipulae 8-16 mm. longae lineares circa 1/2-liberae; petioli 8-18 cm. longi graciles erecti; foliola 7 ad 10 maxima 50 mm. longa 5-6 mm. lata acuta linearia vel suboblongata maxime complanata suberecta raro radiata.

Pedunculi 4-6 cm. longi; racemi 15-30 cm. longi; verticilli indefiniti; bracteae 8-10 mm. longae lineares villosae persistentes pariles pedicelli; pedicelli 8-10 mm. longi ascendentes pendente-pubescentes.

Flores 10-12 mm. longi pendentes vel ascendentes vix verticillati approximati vel conferti.

Calyces laxae subsericei vel subvillosi subcongruentes ad basin; bracteolae perminutae; labium superum bidentatum 2-3 mm. longum 3-4 mm. latum saepe apertum, inferum integrum vel minute tridentatum 3-5 mm. longum.

Petala caerulea; vexillum vix suborbiculum latiore quam longum umbone conspicuo ad medium ubi maculatum macula adusta serius; alae 4-5 mm. latae; carina arcuata eciliata operta alis. Leguminae immaturae 25-30 mm. longae 7-8 mm. latae pendentes ad suberectae subvelutinae; ovulae 6 ad 7; semina non vidi.

Apparently most like *L. biddleii* Henderson (Sp.Lup.108), of central eastern Oregon; but the flowers are much as in *L. leucopsis* Agardh (Sp.Lup.110), of Grant and Douglas counties, Washington.

Ostiofluminis, genitive singular, of the river-mouth.

C A L I F O R N I A An unexpected stranger

LUPINUS MILO-BAKERI sp.nov.

Type. Milo S. Baker 9794, 1940 Aug. 12, h Sm.

Mendocino county, Covelo, 2 mi. east, Ranger Station road.

Plantae 9-15 dm. altae annuae erectae perramosae; caules graciles solidi glabri glabrati vel subsericei.

Folia copiosa caulina alterna vel aliqui paene adversa super pallido-viridia subsericea subtus subsericea vel canescente-sericea; stipulae 3-6 mm. longae inconspicuae circa 1/2-adnatae parte libera subulata recurvata; petioli 20-40 mm. longi graciles pariles vel bis foliola sua; foliola 6 ad 9 maxima 25 mm. longa 8-10 mm. lata obtusa suboblanceolata vel cuneata radiata vel suberecta maxime conduplicata pauca complanata.

Pedunculi 5-10 mm. longi; racemi 10-20 cm. longi; verticilli 6 ad 10 approximati vel separati; bracteae circa 5 mm. longae persistentes recurvati carnosopuniceae; pedicelli ascendentes pendente-pubescentes 1-2 mm. longi.

Flores 13-14 mm. longi pendentes in anthesin ascendentes serius. Calyces pendente-pubescentes; bracteolae non vidi; labium superum 2-3 mm. longum bidentatum apertum erectum, inferum circa 5 mm. longum arcuatum reflexum tridentatum.

Petala caerulea et pallido-lutea; vexillum subovatum glabrum valde reflexum ad apicem laterosque subcaeruleum alioqui luridum; alae 4-5 mm. latae caeruleae specie eciliatae prope unguis; carina lurida vel serius subcaerulea arcuata flexu infero aperto copiose ciliata ad basin et supra et infra.

Leguminae 10-12 mm. longae 6-8 mm. latae subovatae ascendentes; ovulae 1 ad 2; semina non vidi.

Collector's notes: "Narrow cylindrical spikes, verticillate but close together prevailing color blue; spikes 4 to 6 in. long. Small blunt leaflets less than 1 inch. Stems glabrous. Pods nearly spherical, densely villous, 1 seed. Bracts persistent, lanceolate. Flowers medium size."

Certainly nearest to *L. luteolus* Kellogg, in which the keel-blades are also strongly ciliate at juncture with claws, both above and below; but the wing-blades here seem to be free of ciliation, while those of *L. luteolus* are ciliate as in the keel.

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Charles Piper Smith, Saratoga, California

Flores 6-8 mm. longi patuli vel ascendentes raro penduli maxime inconditi.

Calyces sericei subcongruentes ad basin; bracteolae non vidi; labium superum vix 2 mm. longum bidentatum, inferum circa 3 mm. longum integrum subsaccato-reflexum.

Petala pallido-caerulea; vexillum suborbiculatum paulo reflexum paulo pubescens dorso prope medium macula prius lutea serius rubida ad medium; alae circa 5 x 2 mm. subobliquae ad apicem; carina arcuata ciliolata maxime aperta alis.

Leguminae circa 20 x 6 mm. suberectae sericeae luridae; ov. 3-4.

L. A C C L I V A T A T I S sp. nov.

Type. Clokey 5520; h Cl.

Charleston Park, north slope among pines, 2400 m. (7872'),
1935 Jul 29; h Cl.

Plantae 5-8 dm. altae perennes suffruticosae erectae; caules caespitosi graciles vix ramosi ultra basin paene glabrati.

Folia caulina vix numerosa subsericea utrinque humillima longo-petiolata; stipulae 5-6 mm. longae lineare-lanceolata maxime liberae; petioli 20-65 mm. longi maxime pariles foliola sua; foliola 5 ad 9 maxima 45 x 5 mm. acuta submucronulata latissima ad medium late linearia subradiata complanata.

Pedunculi 2-3 cm. longi excessi fronde; racemi 5-6 cm. longi maxime ultra frondem; verticilli vix subdefiniti approximati; bracteae 2-3 mm. longae lanceolatae deciduae; pedicelli ascendentes appresso-pubescentes.

Flores 6-8 mm. longi patuli vel ascendentes.

Calyces laxi sericei subgibbosi; bracteolae non vidi; labium superum circa 2 mm. longum bidentatum, inferum circa 4 mm. longum integrum subsaccatum paulo reflexum.

Petala pallido-caerulea; vexillum suborbiculatum specie glabrum dorso macula rubida prope medium; alae circa 5 x 3 mm. subrotundae ad apicem; carina arcuata ciliata cacumine acuminis aperta.

Leguminae 25 x 6 mm. ascendentes luridae sericeae; ovulae 4 ad 5; semina non vidi.

Acclivatatis - Latin, genitive singular, of a steep slope.

Populorum - Latin, gen. plu., of the aspens (*Populus tremuloides*).

- L. C H A R L E S T O N E N S I S sp. nov.

Type. Clokey 7560; h Cl.

Charleston Park, brushy and wooded hillside, yellow pine belt,
2270 m. (7446'), 1937 Jun 24; h Cl.

Plantae 4-6 dm. altae perennes suffruticosae erectae; caules caespitosi appresso-pubescentes pilis tenuiter perminutis et perpaucis longioribus subramosae ultra medium.

Folia caulina subpauca viridia subsericea utrinque; stipulae 8-10 mm. longae conspicuae lineares maxime liberae parte libera varie divergente et curvo; petioli superi 25-40 mm. longi pariles foliola sua humiliores et mediis 50-70 mm. longi circa ter foliola sua; foliola 5 ad 7 maxima 45 x 5 mm. acuta mucronulata late linearia maxime erecta conduplicata.

Pedunculi 3-6 cm. longi excessi fronde; racemi 5-8 cm. longi maxime ultra frondem; verticilli subdefiniti vel indefiniti; bracteae circa 3 mm. longae lanceolatae deciduae; pedicelli 4-5 mm. longi ascendentes appresso-sericei.

Flores 7-9 mm. longi patuli vel maxime ascendentes saepe aspersi. Calyces sericei subcongruentes ad basin; bracteolae non vidi; labium superum vix 2 mm. longum bidentatum, inferum circa 3 mm. longum integrum subsaccatum reflexum.

Petala pallido-caerulea; vexillum suborbiculum pilis nullis vidi macula lutea parva ad medium; alae circa 6 x 3 mm. subrotunda ad apicem; carina arcuata valde ciliata cacumine acuminis solus aperto.

Leguminae et semina non vidi.

L. L A R I V E R S I A N U S sp.nov.
Type. I.LaRivers & N.F.Hancock 486 (b); h Cl.

Deer Creek, 6 mi. NE of Mt. Charleston, Spring Mts., earthy soil of limestone area in yellow pine forest, 8700' (cir. 2650 m.), transition zone, 1937 Jun 2; h Cl.

Plantae 6-8 dm. altae perennes suffruticosae erectae; caules caespitosi graciles ramosi ultra basin minute subpubescentes. Folia caulina vix numerosa axillaria pauca paene glabrata sed pilis inconditis paucis; stipulae 6-12 mm. longae inconspicuae lineares paene liberae; petioli 50-80 mm. longi graciles humillimi circa bis foliola sua superi pariles foliola sua; foliola 5 ad 10 maxima 50 x 8 mm. acuta mucronulata sublinearia suberecta complanata.

Pedunculi 5-6 cm. longi excessi fronde; racemi 8-12 mm. longi verticillo humillimo solus aequato fronde; verticilli maxime incompositi; bractee circa 3 mm. longae lineares deciduae; pedicelli 4-6 mm. longi ascendentes appresso-pubescentes.

Flores 8-10 mm. longi maxime patuli pauci ascendentes. Calyces appresso-sericei subcongruentes ad basin; bracteolae non vidi; labium superum circa 3 mm. longum bidentatum, inferum 4-5 mm. longum integrum arcuato-reflexum.

Petala caerulea; vexillum suborbiculum subpubescens dorso prope medium macula lutea serius rubida; alae circa 8 x 5 mm. subtruncatae ad apicem; carina valde arcuata ciliata aperta alis nisi cacumen acuminis.

Leguminae et semina non vidi.

KEY TO SPECIES

- a Plants annual (b)
Plants perennial (d)
- b Racemes elongated with scattered flowers (c)
Racemes capitate or short with crowded flowers, at least in blossom shorter than peduncles, but equalled or surpassed by the foliage ----(BREVICAULIS)----391
- c Racemes usually equalled or surpassed by the foliage; legumes oblong-lanceolate ----(PUSILLUS)----392
Racemes usually surpassing the foliage; pods ovate ----(RUBENS)----391
- d Pedicels strictly spreading-pubescent (at right-angles with the pedicel); floral bracts deciduous (e)
Pedicels silky, loosely or closely appressed-pubescent (h)
- e Stems and all petioles slender (f)
Stems and lower petioles subcorpulent and subfistulous, the latter 3-4-times as long as their leaflets ----(CLOKEYANUS)----392