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CALIFORNIA MISCELLANY IV

PHILIP A. MUNZ

Various nomenclatural changes and novelties are herewith presented in order to be used in the forthcoming book "A California Flora" by Munz and Keck, in which the various taxa are treated at some length. Paper number III of this California Miscellany series appeared in Aliso 3: 111-129, 1955.

Cheilanthes jonesii (Maxon) Munz, comb. nov.

Notholaena jonesii Maxon, Am. Fern Journ. 7: 108, 1917.

Following Copeland's recent reduction of *Notholaena* to *Cheilanthes*, I find it necessary to make the above new combination and the following one.

Cheilanthes sinuata (Lag.) Domin var. **cochisensis** (Goodding) Munz, comb. nov.

Notholaena cochisensis Goodding, Muhlenbergia 8: 93, 1912.

N. sinuata var. *cochisensis* Weatherby in Johnston, Journ. Arnold Arb. 24: 314, 1943.

Aleuritopteris cretacea (Liebm.) Fourn. subsp. **nigrescens** (Ewan) Munz, comb. nov.

Notholaena californica D.C. Eat. subsp. *nigrescens* Ewan, Am. Fern Journ. 32: 93, 1942.

Puccinellia erecta (Hitchcock) Munz, comb. nov.

Glyceria erecta Hitchcock in Jepson, Fl. Calif. 1: 161, 1912.

Panicularia erecta Hitchcock, Am. Journ. Bot. 2: 309, 1915.

Torreyochloa erecta Church, Am. Journ. Bot. 36: 163, 1949.

Puccinellia californica (Beetle) Munz, comb. nov.

Glyceria californica (Beetle) Munz, Madroño 8: 161, 1946.

Torreyochloa californica Church, Am. Journ. Bot. 36: 163, 1949.

Puccinellia pauciflora (Presl.) Munz, comb. nov.

Glyceria pauciflora Presl., Rel. Haenk. 1: 257, 1830.

Panicularia pauciflora Kuntze, Rev. Gen. Pl. 2: 783, 1891.

Torreyochloa pauciflora Church, Am. Journ. Bot. 36: 163, 1936.

Heleocharis montevidensis Kunth var. **parishii** (Britton) V. Grant, comb. nov.

H. parishii Britton, Journ. N. Y. Micros. Soc. 5: 110, 1889.

Heleocharis montevidensis Kunth var. **disciformis** (Parish) V. Grant, comb. nov.

H. disciformis Parish, Bull. S. Calif. Acad. Sci. 3: 81, 1904.

Heleocharis montevidensis Kunth var. **decumbens** (Clarke) V. Grant, comb. nov.

H. decumbens Clarke, Kew Bull., Add. Ser. 8: 23, 1908.

Heleocharis montevidensis Kunth var. **bolanderi** (Gray) V. Grant, comb. nov.

H. bolanderi Gray, Proc. Am. Acad. 7: 392, 1868.

Cyperus niger R. & P. var. **rivularis** (Kunth) V. Grant, comb. nov.

C. rivularis Kunth, Enum. 2: 6, 1837.

Calochortus coeruleus (Kell.) Wats. var. **fimbriatus** M. Ownbey, var. nov.

A var. *coeruleus* differt antheris lanceolatis brevi-apiculatis. *Type* (WS): M. & R. P. Ownbey 1724, collected in barren soil under conifers, Plaskett Meadows, 8 miles southeast of Mendocino Pass, Glenn Co., California, July 12, 1938. (*C. coeruleus* var. *nanus* Ownbey, Ann. Mo. Bot. Gd. 27: 416, 1940. Not *C. elegans* var. *nanus* Wood.)

Field studies in the mountains west of Yreka, the type locality of *C. elegans* var. *nanus*, identify its fragmentary type with the more recently described *C. elegans* var. *oreophilus* Ownbey. Thus, the widespread variety of *C. coeruleus* of the North Coast Ranges and vicinity of Mt. Shasta is left without a name. Apparently the two varieties are separated at their nearest approach to each other by a distance of about thirty miles.

Calochortus palmeri Wats. var. **munzii** M. Ownbey, var. nov.

A var. *palmeri* differt caule basi non bulbifero; pedicellis binis; bracteis oppositis; glandulis purpureis nullisve. *Type* (WS): Munz & Everett 14915, collected on exposed knolls and in shade of pines, 2 miles northwest of Pipe Creek, southern end of San Jacinto Mts., Riverside County, California, June 23, 1950.

These plants from the San Jacinto Mountains differ sharply from typical *C. palmeri* of the San Bernardino Mountains and northward with its basal bulblets, monochasial 1-4-flowered inflorescence, and yellow gland. They grow in drier habitats, var. *palmeri* being confined to low meadows and other moist to wet situations. It is possible or even probable that var. *palmeri* does not occur in the San Jacinto Mountains at all, the reports from there being based on specimens of var. *munzii*.

Trillium chloropetalum (Torr.) Howell var. **giganteum**
(H. & A.) Munz, comb. nov.

T. sessile var. *giganteum* H. & A., Bot. Beechey, 402, 1841.

T. giganteum Heller, Bull. S. Calif. Acad. Sci. 2: 67, 1903.

Trillium chloropetalum var. **angustipetalum** (Torr.) Munz, comb. nov.

T. sessile var. *angustipetalum* Torr., Pacif. R.R. Rep. 4: 151, 1857.

T. giganteum var. *angustipetalum* Gates, Ann. Mo. Bot. Gard. 4: 51, 1917.

Yucca brevifolia Engelm. in Wats. var. **herbertii**
(J. M. Webber) Munz, comb. nov.

Y. brevifolia forma *herbertii* J. M. Webber, U.S.D.A. Agric. Mon. 17: 32, 1953.

Brodiaea clementina (Hoover) Munz, comb. nov.

Triteleia clementina Hoover, Am. Mid. Nat. 25: 82, 1941.

Brodiaea crocea (Wood) Wats. var. **modesta** (Hall) Munz, comb. nov.

B. modesta Hall, Univ. Calif. Pub. Bot. 6: 166, 1915.

Triteleia modesta Abrams, Ill. Fl. Pac. States 1: 403, 1923.

Brodiaea dudleyi (Hoover) Munz, comb. nov.

Triteleia dudleyi Hoover, Am. Mid. Nat. 25: 86, 1941.

Brodiaea lutea (Lindl.) Morton var. **scabra** (Greene) Munz, comb. nov.

Calliprora scabra Greene, Erythea 3: 126, 1895.

B. scabra Baker, Gard. Chron. III, 20: 459, 1896.

B. ixiooides var. *scabra* Smiley, Univ. Calif. Pub. Bot. 9: 135, 1921.

Triteleia ixiooides var. *scabra* Hoover, Am. Mid. Nat. 25: 88, 1941.

Brodiaea lutea var. **analina** (Greene) Munz, comb. nov.

Calliprora scabra var. *analina* Greene, Erythea 3: 126, 1895.

Triteleia ixiooides var. *analina* Hoover, Am. Mid. Nat. 25: 90, 1941.

Brodiaea hyacintha (Lindl.) Baker var. **greenei** (Hoover) Munz, comb. nov.
Triteleia hyacinthina var. *greenei* Hoover, Am. Mid. Nat. 25: 94, 1941.

Brodiaea versicolor (Hoover) Munz, comb. nov.
Triteleia versicolor Hoover, Am. Mid. Nat. 25: 94, 1941.

Nemacaulis denudata Nutt. var. **gracilis** Goodman & L. Benson, var. nov.
Bracts narrowly lanceolate, these and the tomentum up to 3 mm. long; perianth-segments narrowly oblong, glabrous. (Bractea anguste lanceolatae, tomentosae, cum tomento ad 3 mm. longae; segmentibus perianthii anguste oblongis, glabris.)

Type: desert base of San Jacinto Mts., Riverside County, California, April 4-13, 1896, S. B. Parish 4140 (UC). Isotypes at DS, GH, MO, NY, OKL, PH, US.

In the type variety of *Nemacaulis denudata* the bracts are elliptic to obovate, they and the tomentum are one third shorter than in var. *gracilis*, and the slightly pubescent perianth has elliptic outer segments that are distinctly shorter than the inner.

Chorizanthe brevicornu Torr. subsp. **spathulata** (Small) Munz, comb. nov.
C. spathulata Small ex Rydb., Bull. Torr. Bot. Club 39: 309, 1912.

Chorizanthe polygonoides T. & G. var. **longispina** (Goodman) Munz, comb. nov.
Acanthogonum polygonoides var. *longispinum* Goodman, Leaf. W. Bot. 7: 236, 1955.

Chorizanthe cuspidata Wats. var. **villosa** (Eastwood) Munz, comb. nov.
C. villosa Eastwood, Bull. Torr. Bot. Club 30: 485, 1903.

Chorizanthe staticoides Benth. subsp. **chrysacantha** (Goodman) Munz, comb. nov.
C. chrysacantha Goodman, Ann. Mo. Bot. Gard. 21: 58, 1934.

Chorizanthe palmeri Wats. var. **biloba** (Goodman) Munz, comb. nov.
C. biloba Goodman, Ann. Mo. Bot. Gard. 21: 73, 1934.

Chorizanthe palmeri var. **ventricosa** (Goodman) Munz, comb. nov.
C. ventricosa Goodman, Leaf. W. Bot. 2: 193, 1939.

Eriogonum baileyi Wats. subsp. **elegans** (Greene) Munz, comb. nov.
E. elegans Greene, Pittonia 2: 173, 1891.
E. vimineum var. *elegans* Jepson, Fl. Calif. 1: 413, 1914.

Eriogonum caninum (Greene) Munz, comb. nov.
E. vimineum var. *caninum* Greene, Fl. Franciscana, 150, 1891.

Eriogonum deflexum Torr. subsp. **rixfordii** (Stokes) Munz, comb. nov.
E. rixfordii Stokes, Leaf. W. Bot. 1: 29, 1932.

Eriogonum gracile Benth. var. **citharaeforme** (Wats.) Munz, comb. nov.
E. citharaeforme Wats., Proc. Am. Acad. 23: 266, 1888.
E. vimineum subsp. *gracile* var. *citharaeforme* Stokes, Genus Eriogonum, 52, 1936.

Eriogonum gracile Benth. var. **polygonoides** (Stokes) Munz, comb. nov.
E. vimineum subsp. *polygonoides* Stokes, Genus Eriogonum, 52, 1936.

Eriogonum heermannii Dur. & Hilg. var. **argense** (Jones) Munz, comb. nov.
E. sulcatum var. *argense* Jones, Contr. W. Bot. 11: 15, 1903.

Eriogonum kennedyi Porter subsp. **alpigenum** (Munz & Jtn.) Munz, comb. nov.
E. kennedyi var. *austroriparianum* forma *alpigenum* Munz & Jtn., Bull. Torr. Bot. Club 51: 296, 1924.
E. kennedyi var. *alpigenum* Munz, Man. S. Calif. Bot., 123, 597, 1935.

Eriogonum latifolium Smith subsp. **grande** (Greene) Stokes var. **rubescens** (Greene) Munz, comb. nov.

E. rubescens Greene, Pittonia 1: 39, 1887.

E. grande var. *rubescens* Munz, Man. S. Calif. Bot., 123, 597, 1935.

Eriogonum proliferum T. & G. subsp. **anserinum** (Greene) Munz, comb. nov.

E. anserinum Greene, Pittonia 4: 320, 1901.

E. strictum subsp. *anserinum* Stokes, Genus Eriogonum, 67, 1936.

Eriogonum umbellatum Torr. subsp. **covillei** (Small) Munz, comb. nov.

E. covillei Small, Bull. Torr. Bot. Club 25: 42, 1898.

E. ursinum var. *covillei* Stokes, Genus Eriogonum, 115, 1936.

Eriogonum umbellatum Torr. subsp. **bahiaeforme** (T. & G.) Munz, comb. nov.

E. polyanthum var. *bahiaeforme* Torr. & Gray, Proc. Am. Acad. 8: 159, 1870.

E. stellatum var. *bahiaeforme* Wats., Proc. Am. Acad. 12: 257, 1877.

E. umbellatum var. *bahiaeforme* Jeps., Fl. Calif. 1: 425, 1914.

Eriogonum umbellatum Torr. subsp. **subaridum** (Stokes) Munz, comb. nov.

E. umbellatum subsp. *stellatum* var. *subaridum* Stokes, Leaff. W. Bot. 2: 53, 1937.

Suaeda californica Wats. var. **taxifolia** (Standl.) Munz, comb. nov.

Dondia taxifolia Standley, N. Am. Fl. 21: 91, 1916.

Suaeda taxifolia Standley, Field Mus., Bot. Ser. 8: 10, 1930.

Abronia nana Wats. subsp. **covillei** (Heimerl) Munz, comb. nov.

A. covillei Heimerl, Smiths. Misc. Coll. 52: 197, 1908.

A. nana var. *covillei* Munz, Man. S. Calif. Bot., 150, 598, 1935.

Abronia umbellata Lam. subsp. **breviflora** (Standley) Munz, comb. nov.

A. breviflora Standley, Contr. U. S. Nat. Herb. 12: 312, 1909.

Abronia umbellata Lam. subsp. **platyphylla** (Standley) Munz, comb. nov.

A. platyphylla Standley, Contr. U. S. Nat. Herb. 12: 314, 1909.

A. alba var. *platyphylla* Jepson, Fl. Calif. 1: 455, 1914.

A. umbellata var. *platyphylla* Munz, Man. S. Calif. Bot., 149, 598, 1935.

Abronia umbellata Lam. subsp. **variabilis** (Standley) Munz, comb. nov.

A. variabilis Standley, Contr. U. S. Nat. Herb. 12: 314, 1909.

A. alba Eastwood, Proc. Calif. Acad., ser. III, 1: 97, 1898.

Lewisia cotyledon (Wats.) Robinson in Gray var. **heckneri** (Morton) Munz, comb. nov.

Oreobroma heckneri Morton, Proc. Biol. Soc. Wash. 44: 9, 1931.

L. heckneri J. T. Howell, Leaff. W. Bot. 3: 139, 1942.

Montia perfoliata (Donn) Howell var. **utahensis** (Rydb.) Munz, comb. nov.

Limnia utahensis Rydb., Bull. Torr. Bot. Club 39: 314, 1912.

Montia utahensis Pax & Hoffm. in Engler & Prantl, Pflanzenfam., ed. 2, 16C: 259, 1934.

Anemone quinquefolia L. var. **minor** (Eastwood) Munz, comb. nov.

A. adamsiana Eastwood var. *minor* Eastwood, Proc. Calif. Acad. Sci., ser. IV, 20: 142, 1931.

Dendromecon harfordii Kell. var. **rhamnoides** (Greene) Munz, comb. nov.

D. rhamnoides Greene, Pittonia 5: 305, 1905.

D. arborea Greene, l.c.

Eschscholzia caespitosa Benth. subsp. **kernensis** Munz, subsp. nov.

Caulis crassi, foliosi; petalis valde aurantiaciis, 2.5-4 cm. longis; capsula 2.5-4 mm.

crassa; seminibus 1.3-1.5 mm. longis, subglobosis, cum superciliis striatis, prominentibus. *Type* from heavy black adobe, Tejon Hills, 2 miles northwest of Tejon Ranch Headquarters, Kern County, California, April 15, 1935, C. B. Wolf 6358, RSA 12994. This is the form that in wet years gives great splashes of vivid color to the hills along the north base of the Tehachapi Mts.

Dicentra formosa (Andr.) Walp. subsp. **oregana** (Eastwood) Munz, comb. nov.

D. oregana Eastwood, Proc. Calif. Acad. Sci., Ser. IV, 20: 144, 1931.

D. formosa forma *oregana* Van Melle, Torreya 41: 192, 1941.

Dicentra formosa subsp. **nevadensis** (Eastwood) Munz, comb. nov.

D. nevadensis Eastwood, l.c., 143.

Streptanthus glandulosus Hook. var. **niger** (Greene) Munz, comb. nov.

S. niger Greene, Bull. Torr. Bot. Club 13: 141, 1886.

Euclyisia nigra Greene, Leaf. Bot. Obs. & Crit. 1: 83, 1904.

Streptanthus glandulosus Hook. var. **niger** (Greene) Munz, comb. nov.

S. secundus Greene, Fl. Franciscana, 261, 1891.

Euclyisia secunda Greene, Leaf. Bot. Obs. & Crit. 1: 83, 1904.

Thlaspi glaucum A. Nels. subsp. **californicum** (Wats.) Munz, comb. nov.

T. californicum Wats., Proc. Am. Acad. 17: 365, 1882.

Lesquerella kingii Wats. subsp. **bernardina** (Munz) Munz, comb. nov.

L. bernardina Munz, Bull. S. Calif. Acad. Sci. 31: 62, 1932.

Berberis higginsae Munz, sp. nov.

With much the same habit as *B. fremontii* Torr., stiff, erect, 1-2.5 m. tall, glaucous; lvs. rigid, strongly crisped, spine-toothed with spines 2-3.5 mm. long; terminal leaflet squarish-ovate to lance-ovate, 1.5-3.5 cm. long, 1.5-2 cm. wide; lateral leaflets more or less squarish-ovate, 1-2.5 (-3) cm. long, 1-2 cm. wide; racemes about 3.5-6 cm. long; flowers yellow, about 5 mm. long; berries yellowish-red, about 6-7 mm. long; seeds dark red-brown, plump, 2.7-3.2 mm. long. (Frutex 1-2.5 m. altus, rigidus, glaucus; foliis rigidis, valde crispatis, spinoso-dentatis, spinis 2-3.5 mm. longis; foliolis 1-7, terminalibus quadrato-ovatis aut lanceo-ovatis, 1.5-3.5 cm. longis, lateralibus 1-2.5 (-3) cm. longis; racemis 3.5-6 cm. longis; floribus luteis, 5 mm. longis; baccis luteo-coccineis, 6-7 mm. longis; seminibus fusco-rubiginosis, 2.7-3.2 mm. longis.)

Type, dry rocky point at Boulevard, eastern San Diego County, California, July 12, 1929, growing at edge of chaparral and near *Quercus agrifolia*, Johnson & Stark 1351 (RSA sheet 1428). Other specimens seen: Dubber, northeast of Jacumba, San Diego Co., Ethel Higgins 15479; Walkers Ranch near Jacumba, Abrams 3693. Fifty miles southeast of Tecate on Laguna Hansen Road, Lower California, F. W. Peirson 5866 and Munz 9534; Cieneguita, Sierra Juarez, Lower California, Wiggins 9178; between Neji Rancho and Alaska, Lower California, Wiggins & Gillespie 4165; and Los Aguajitos, 18 miles n-nw. of Rosarito, Lower California, Wiggins 10,017. This proposed species grows in dry rocky places and on slopes at about 3000 to 4500 ft. It resembles *B. fremontii*, to which it has been referred, in foliage, but has juicy berries ca. 6-8 mm. in diameter instead of dry inflated ones 10-15 mm. in diameter; has red-brown seeds ca. 3 mm. long instead of almost black ones 4-5 mm. long. From *B. haematocarpa* Wooton, of somewhat similar appearance it differs in its yellowish-red rather than plum-colored berries and in its terminal leaflets being mostly not more than twice as long as wide, instead of 2 to 5 times as long as wide.

It is a pleasure to dedicate this species to Ethel Bailey Higgins of the Natural

History Museum in San Diego, who in a letter dated June 19, 1950, called my attention to the fact her Dubber collection was not like *B. fremontii*.

Philadelphus lewisii Pursh subsp. **californicus** (Benth.) Munz, comb. nov.

P. lewisii var. *californicus* Gray in Brewer & Watson, Bot. Calif. 1: 202, 1876.

P. californicus Benth., Pl. Hartw., 309, 1849.

Philadelphus lewisii subsp. **gordonianus** (Lindl.) Munz, comb. nov.

P. gordonianus Lindl., Bot. Reg. 24: Misc., 21, 1838.

P. lewisii var. *gordonianus* Jepson, Man. Fl. Pls. Calif., 466, 1925.

Ribes thacherianum (Jepson) Munz, comb. nov.

R. menziesii var. *thacherianum* Jepson, Fl. Calif. 2: 156, 1936.

Potentilla saxosa Lemmon ex Greene subsp. **sierrae** Munz, subsp. nov.

Planta viscida, dense glanduloso-pubescentis; staminibus 15-25. *Type* from granitic cliffs at lower edge of Jeffrey Pine Forest, on trail from Sage Flats to Olancha Pass, east slope of Sierra Nevada, at 8200 feet, Inyo County, California, July 12, 1950, *P. A. Munz 14951* (RSA No. 58638). Other specimens are: Little Cottonwood Creek, Inyo Co., at 9500 feet, Aug. 13, 1949, *J. T. Howell 26280*; Alabama Hills, Inyo Co., May 30, 1956, *Mary De Decker 326*; low hill southeast of summit of Sherman Grade, Mono County, California, at 6400 feet, *F. W. Peirson 10719*. In subsp. *saxosa* from farther south, the plants are less viscid and the stamens range from 28 to 40 in number.

Petrophytum caespitosum (Nutt.) Rydb. subsp. **acuminatum** (Rydb.) Munz, comb. nov.

P. acuminatum Rydb., N. Am. Fl. 22: 253, 1908.

Geum canescens (Greene) Munz, comb. nov.

Erythrocoma canescens Greene, Leaf. W. Bot. Obs. & Crit. 1: 178, 1906.

Sieversia canescens Rydb., N. Am. Fl. 22: 409, 1913.

Rubus vitifolius C. & S. var. **eastwoodianus** (Rydb.) Munz, comb. nov.

R. eastwoodianus Rydb., N. Am. Fl. 22: 460, 1913.

R. ursinus var. *eastwoodianus* J. T. Howell, Leaf. W. Bot. 5: 106, 1948.

Rubus glaucifolius Kellogg var. **ganderi** (Bailey) Munz, comb. nov.

R. ganderi Bailey, Gentes Herb. 5: 893, 1945.

Heteromeles arbutifolia (Ait.) Roem. var. **macrocarpa** (Munz) Munz, comb. nov.

Photinia arbutifolia var. *macrocarpa* Munz, Bull. S. Calif. Acad. Sci. 31: 64, 1937.

Lupinus densiflorus Benth. var. **aureus** (Kellogg) Munz, comb. nov.

L. menziesii Agardh var. *aureus* Kell., Proc. Calif. Acad. Sci. 5: 16, 1873.

L. menziesii Agardh, Syn. Gen. Lupinus, 2, 1835.

L. densiflorus var. *menziesii* C. P. Smith, Bull. Torr. Bot. Club 45: 176, 1918.

Lupinus sellulus Kellogg subsp. **ursinus** (Eastwood) Munz, comb. nov.

L. ursinus Eastwood, Leaf. W. Bot. 4: 283, 1946.

Lupinus excubitus Jones var. **medius** (Jepson) Munz, comb. nov.

L. albifrons var. *medius* Jepson, F. Calif. 2: 252, 1936.

L. grayi var. *medius* C. P. Smith, Species Lupinorum, 28, 1938.

Lupinus tidestromii Greene var. **layneae** (Eastwood) Munz, comb. nov.

L. layneae Eastwood, Leaf. W. Bot. 2: 86, 1938.

Lupinus andersonii Wats. var. **christinae** (Heller) Munz, comb. nov.*L. christinae* Heller, Leaf. W. Bot. 2: 279, 1940.**Lupinus croceus** Eastwood var. **pilosellus** (Eastwood) Munz, comb. nov.*L. pilosellus* Eastwood, Leaf. W. Bot. 2: 127, 1940.**Lupinus latifolius** Agardh var. **barbatus** (Henderson) Munz, comb. nov.*L. ligulatus* var. *barbatus* Henderson, Bull. Torr. Bot. Club 27: 345, 1900.*L. latifolius* var. *ligulatus* C. P. Smith, Contr. Dudley Herb. 1: 49, 1927.**Lupinus polyphyllus** Lindl. subsp. **superbus** (Heller) Munz, comb. nov.*L. superbus* Heller, Muhlenbergia 2: 209, 1906.**Lupinus polyphyllus** subsp. **bernardinus** (Abrams) Munz, comb. nov.*L. superbus* var. *bernardinus* Abrams ex C. P. Smith in Jepson, Man. Fl. Pls. Calif., 528, 1925.*L. bernardinus* Abrams ex Eastwood, Leaf. W. Bot. 2: 182, 1939.**Lotus neo-incanus** Munz, nomen nov.*Hosackia incana* Torrey, Pacif. R.R. Rep. 4: 79, 1856.*Lotus incanus* Greene, Pittonia 2: 147, 1890; not Dougl. ex Hook., Fl. Bor. Amer. 1: 134, 1830.**Lotus oblongifolius** (Benth.) Greene var. **nevadensis** (Gray) Munz, comb. nov.*Hosackia torreyi* var. *nevadensis* Gray, Proc. Am. Acad. 8: 625, 1873.*H. torreyi* Gray, l.c.*Lotus oblongifolius* var. *torreyi* Ottley, Univ. Calif. Pub. Bot. 10: 205, 1923.**Lotus argyraeus** (Greene) Greene subsp. **multicaulis** (Ottley) Munz, comb. nov.*L. wrightii* var. *multicaulis* Ottley, Univ. Calif. Pub. Bot. 10: 211, 1923.*Hosackia wrightii* subsp. *multicaulis* Abrams, Ill. Fl. Pac. States 2: 543, 1944.**Lotus purshianus** (Benth.) Clements & Clements var. **glaber** (Nutt.) Munz, comb. nov.*Hosackia elata* var. *glabra* Nutt. ex T. & G., Fl. N. Am. 1: 327, 1838.*Lotus americanus* var. *glaber* Ewan in Jepson, Fl. Calif. 2: 322, 1936.*L. americanus* var. *minutiflorus* Ottley, Univ. Calif. Pub. Bot. 10: 220, 1923.**Dalea mollissima** (Rydb.) Munz, comb. nov.*Parosela mollissima* Rydb., N. Am. Fl. 24: 64, 1919.*Dalea mollis* var. *mollissima* Munz, Man. S. Calif. Bot., 263, 598, 1935.**Oxalis oregana** Nutt. forma **smalliana** (Knuth) Munz, comb. nov.*O. smalliana* Knuth, Notizblatt 7: 308, 1919.**Polygala cornuta** Kellogg var. **pollardii** Munz, var. nov.

Flores viride-albi; aliis circa 7-8 mm. longis, dense puberulentis; carina circa 9-10 mm. longa. In shaded canyons below 2000 ft., Santa Barbara and Ventura counties, California. In var. *cornuta* the flowers tend to be more yellowish; the wings are about 10 mm. long; the keel 11-12 mm. long. It occurs from Fresno Co. in the Sierra Nevada north to Siskiyou, Trinity and Humboldt counties.

As a *type* for var. *pollardii* I designate a collection made by *H. M. Pollard* on Oct. 29, 1944 at Lyons Hot Springs, Matilija Canyon, Ventura County, California (RSA sheet 34978). It is a pleasure to dedicate this local variety to a man who has done such discriminating collecting in Ventura County.

Malvastrum kernense (Wolf) Munz, comb. nov.*Eremalche kernensis* C. B. Wolf, Occ. Papers Rancho Santa Ana Bot. Gard. 1: 66, 1938.

Malacothamnus fremontii (Torr.) Greene subsp. **cercophorum**
(Robinson) Munz, comb. nov.

Malvastrum fremontii var. *cercophorum* Robinson in Gray, Syn. Fl. N. Am. 1^o: 311, 1897.

Differing from subsp. *fremontii* by its longer calyx (10 mm.) with attenuate-caudate segments.

Fremontia californica Torrey subsp. **napensis** (Eastwood) Munz, comb. nov.

F. napensis Eastwood, Leafl. W. Bot. 1: 140, 1934.

F. californica var. *napensis* McMinn, Ill. Man. Calif. Shrubs, 355, 1939.

Fremontia californica subsp. **obispoensis** (Eastwood) Munz, comb. nov.

F. obispoensis Eastwood, Leafl. W. Bot. 1: 140, 1934.

Viola lobata Benth. subsp. **psychodes** (Greene) Munz, comb. nov.

V. psychodes Greene, Pittonia 3: 318, 1898.

Opuntia basilaris Engelm. & Bigel. subsp. **whitneyana** (Baxter) Munz, comb. nov.

O. whitneyana Baxter, Calif. Cactus, 37, 1935.

O. basilaris var. *whitneyana* Marshall & Bock, Cactaceae, 65, 1941.

O. basilaris var. *albiflora* Purpus, Mitt. Deutsch. Dendr. Ges. 1925: 58, 1925, nomen.

O. whitneyana var. *albiflora* Baxter, Calif. Cactus, 39, 1935.

Opuntia occidentalis Engelm. & Bigel. var. **megacarpa**
(Griffiths) Munz, comb. nov.

O. megacarpa Griffiths, Rep. Mo. Bot. Gard. 20: 91, 1909.

O. engelmannii var. *megacarpa* Fosberg, Bull. S. Calif. Acad. Sci. 33: 100, 1934.

Opuntia occidentalis var. **piercei** (Fosberg) Munz, comb. nov.

O. phaeacantha var. *piercei* Fosberg, Bull. S. Calif. Acad. Sci. 33: 102, 1934.

Opuntia occidentalis var. **vaseyi** (Coulter) Munz, comb. nov.

O. mesacantha var. *vaseyi* Coulter, Contr. U. S. Nat. Herb. 3: 431, 1896.

O. vaseyi Britton & Rose, Smithsonian. Misc. Coll. 50: 532, 1908.

Mamillaria dioica K. Brandegee var. **incerta** (Parish in Jeps.) Munz, comb. nov.

M. incerta Parish in Jeps., Fl. Calif. 2: 549, 1936.

Epilobium paniculatum Nutt. ex T. & G. var. **tracyi** (Rydb.) Munz, comb. nov.

E. tracyi Rydb., Bull. Torr. Bot. Club 40: 63, 1913.

E. paniculatum forma *tracyi* St. John, Fl. S. E. Wash., 275, 1937.

Epilobium paniculatum var. **tracyi** forma **fasciculatum** Munz, forma nova.

Pubescentia pedicelorum capsulorumque glandulosa. *Type*, Mono Creek, Fresno County, California, at 8200 ft., July 25, 1953, *Peter H. Raven 5822* (RSA No. 89991). Differing from var. *tracyi* in its glandular pubescence and more common, ranging from southern California to Washington and North Dakota.

Epilobium paniculatum var. **laevicaule** (Rydb.) Munz, comb. nov.

E. laevicaule Rydb., Bull. Torr. Bot. Club 40: 64, 1913.

E. paniculatum forma *laevicaule* St. John, Fl. S. E. Wash., 275, 1937.

Epilobium paniculatum var. **laevicaule** forma **altissimum**
(Suksdorf) Munz, comb. nov.

E. altissimum Suksdorf, Werdenda 1: 28, 1927.

Differing from var. *laevicaule* in the glandular pubescence in the inflorescence.

Epilobium pringleanum Hausskn. var. **tenuë** (Trelease) Munz, comb. nov.*E. delicatum* var. *tenuë* Trellease, Rep. Mo. Bot. Gard. 2:99, 1891.*E. brevistylum* var. *tenuë* Jepson, Man. Fl. Pls. Calif., 670, 1925.**Epilobium adenocaulon** Hausskn. var. **parishii** (Trellease) Munz, comb. nov.*E. parishii* Trellease, Zoe 1: 210, 1890.*E. californicum* var. *parishii* Jepson, Man. Fl. Pls. Calif., 670, 1925.*E. californicum* Hausskn., Mon. Epilobium, 260, 1884.**Epilobium adenocaulon** Hausskn. var. **holosericeum** (Trellease) Munz, comb. nov.*E. holosericeum* Trellease, Rep. Mo. Bot. Gard. 2: 91, 1891.*E. californicum* var. *holosericeum* Jepson, Man. Fl. Pls. Calif., 670, 1925.**Eryngium vaseyi** C. & R. var. **vallicola** (Jepson) Munz, comb. nov.*E. castrense* var. *vallicola* Jepson, Madroño 1: 108, 1923.*E. castrense* Jepson, l.c.*E. vaseyi* var. *castrense* Hoover ex Mathias & Constance, Am. Mid. Nat. 25: 387, 1941.**Arctostaphylos canescens** Eastwood var. **candidissima**
(Eastwood) Munz, comb. nov.*A. candidissima* Eastwood, Leaf. W. Bot. 3: 124, 1942.**Arctostaphylos glandulosa** Eastwood var. **adamsii** Munz, var. nov.

Ramulae puberulentae, non setosae; inflorescentia ovarioque non glandulosis; inflorescentia parva, cum bracteis deltoideis.—Dry slopes, at 800 to 6800 feet; eastern San Diego County to western Riverside County, California. *Type* from dry granitic slopes and benches, north end of Laguna Mts., on highway to Julian, at 5000 feet, *Munz & Balls 17958*, Aug. 20, 1952 (RSA No. 78251). Another collection is *Munz & Balls 17984* at 6800 feet, on road from Vandeventer Flat to Santa Rosa Peak, Riverside County. The name is in honor of J. E. Adams, author of a notable study of the genus *Arctostaphylos*.

As treated in our forthcoming book (A California Flora), *A. glandulosa* has eight varieties, var. *adamsii* falling in the group with branchlets not glandular-hairy, with light or yellow-green leaves, non-glandular inflorescence and ovary, and differs from the other varieties thus characterized by its more minute pubescence and more southern range.

Arctostaphylos intricata Howell var. **oblongifolia** (Howell) Munz, comb. nov.*A. oblongifolia* Howell, Fl. N. W. Am. 1: 416, 1901.**Arctostaphylos hookeri** G. Don subsp. **franciscana** (Eastwood) Munz, comb. nov.*A. franciscana* Eastwood, Bull. Torr. Bot. Club 32: 201, 1905.**Arctostaphylos manzanita** Parry subsp. **laevigata** (Eastwood) Munz, comb. nov.*A. laevigata* Eastwood, Leaf. W. Bot. 1: 76, 1933.**Arctostaphylos pungens** HBK. var. **montana** (Eastwood) Munz, comb. nov.*A. montana* Eastwood, Proc. Calif. Acad. Sci., Ser. III, Bot. 1: 83, 1897.**Arctostaphylos subcordata** Eastwood var. **confertiflora**
(Eastwood) Munz, comb. nov.*A. confertiflora* Eastwood, Leaf. W. Bot. 1: 122, 1934.**Arctostaphylos tomentosa** (Pursh) Lindl. var. **tomentosiformis**
(Adams) Munz, comb. nov.*A. crustacea* var. *tomentosiformis* Adams, Journ. Elisha Mitchell Sci. Soc. 56: 54, 1940.

Arctostaphylos tomentosa var. **trichoclada** (DC.) Munz, comb. nov.*Andromeda bracteosa* var. *trichoclada* DC., Prodr. 7: pt. 2: 607, 1839.**Dodecatheon pulchellum** (Raf.) Merrill subsp. **monanthum**
(Greene) H. J. Thompson, comb. nov.*D. pauciflorum* var. *monanthum* Greene, Pittonia 2: 73, 1890.*D. radicum* Greene subsp. *monanthum* H. J. Thompson, Contr. Dudley Herb. 4: 146, 1953.**Limonium californicum** (Boiss.) Heller var. **mexicanum**
(Blake) Munz, comb. nov.*L. mexicanum* Blake, Rhodora 18: 59, 1916.*L. commune* var. *mexicanum* Jepson, Fl. Calif. 3: 77, 1939.**Centaurium venustum** (Gray) Robinson subsp. **abramsii** Munz, subsp. nov.

Folia late lanceolata aut ovata, acuta; floribus parvis, lobis corollae 5-7 mm. longis, subacutis. *Type* from dry open flats at 800 ft.; Foothill Woodland; 6 miles north of Redding, Shasta County, California, Aug. 8, 1937, *C. B. Wolf* 9072 (RSA sheet 21712). Other representative collections: 4 miles east of Rosewood, Tehama Co., June 13, 1937, *Wolf* 8791; one mile north of Friant, Madera Co., May 29, 1941, *Ferris & Bacigalupi* 10374; Auberry Road, 0.5 mile above Meadow Lakes, at 4500 ft., Yellow Pine Forest, July 12, 1951, *C. H. Quibell* 144. Differing from subsp. *venustum* of southern California, which has obtusish ovate to oblong leaves and larger flowers with corolla-lobes 8-15 mm. long.

Cressa truxillensis HBK. var. **vallicola** (Heller) Munz, comb. nov.*C. vallicola* Heller, Muhlenbergia 8: 140, 1913.**Cressa truxillensis** HBK. var. **minima** (Heller) Munz, comb. nov.*C. minima* Heller, l.c.**Polemonium caeruleum** L. subsp. **amygdalinum** (Wherry) Munz, comb. nov.*P. occidentale* Greene subsp. *amygdalinum* Wherry, Am. Mid. Nat. 27: 750, 1942.

Arthur Cronquist has called our attention to the fact that this is an earlier sub-specific name than that used by Davidson (*P. caeruleum* subsp. *occidentale* J. F. Davidson, Univ. Calif. Pub. Bot. 23: 225, 1950.)

Phlox hoodii Richardson subsp. **lanata** (Piper) Munz, comb. nov.*P. lanata* Piper, Bull. Torr. Bot. Club 29: 643, 1902.**Microsteris gracilis** (Dougl. ex Hook.) Greene subsp. **humilis**
(Greene) V. Grant, comb. nov.*M. humilis* Greene, Pittonia 3: 301, 1898.*Pbiox gracilis* subsp. *humilis* H. L. Mason in Abrams, Ill. Fl. Pac. States 3: 413, 1951.**Linanthus nuttallii** (Gray) Greene subsp. **floribundus** (Gray) Munz, comb. nov.*Gilia floribunda* Gray, Proc. Am. Acad. 8: 267, 1870.*Linanthus floribundus* Greene ex Milliken, Univ. Calif. Pub. Bot. 2: 55, 1904.*Linanthastrum nuttallii* subsp. *floribundum* Ewan, Journ. Wash. Acad. Sci. 32: 141, 1942.**Nemophila menziesii** H. & A. subsp. **integrifolia** (Parish) Munz, comb. nov.*N. menziesii* var. *integrifolia* Parish, Erythea 6: 92, 1898.*N. integrifolia* Abrams, Flora Los Angeles, 321, 1904.**Phacelia curvipes** Torr. ex Wats. var. **macrantha** (Parish) Munz, comb. nov.*P. davidsonii* var. *macrantha* Parish, Erythea 6: 90, 1898.

Phacelia divaricata (Benth.) Gray var. **insularis** (Munz) Munz, comb. nov.*P. insularis* Munz, Bull. S. Calif. Acad. Sci. 31: 113, 1932.*P. curvipes* var. *insularis* Jepson, Fl. Calif. 3: 269, 1943.**Phacelia divaricata** var. **continentis** (J. T. Howell) Munz, comb. nov.*P. insularis* var. *continentis* J. T. Howell, Am. Mid. Nat. 33: 474, 1945.**Phacelia divaricata** var. **congdonii** (Greene) Munz, comb. nov.*P. congdonii* Greene, Pittonia 5: 22, 1902.*P. bumilis* var. *congdonii* Macbr., Contr. Gray Herb. 49: 38, 1917.**Phacelia ramosissima** Dougl. ex Lehm. var. **montereyensis** Munz, var. nov.

Caules crassi, ad 1 m. longi, puberulenti et nonnihil hirtelli; inflorescentia glandulosa. *Type* from sand hills bordering Carmel Bay, Carmel, Monterey County, California, Aug. 3, 1930, *John Thomas Howell 5434*, (RSA sheet 26545). Other representative specimens: about 2.5 miles east of Oso Flaco Lake, San Luis Obispo County, July 10, 1941, *C. B. Wolf 10971* and Carmel Highlands, April 15, 1948, *E. K. Balls 7898*. Ranging from Santa Rosa and Santa Cruz islands along coastal strand to Marin County.

Phacelia ramosissima Dougl. ex Lehm. var. **austrolitoralis** Munz, var. nov.

Varietate *montereyense* similis, sed pilis longis crassioribus et cum basibus pustulatis. *Type* near Laguna Beach, Orange County, California, July 17, 1927, *J. T. Howell 421* (RSA sheet 630). Other representative collections: Fullerton, Orange County, *C. B. Wolf 3716*; 11 miles north of Ventura, Ventura County, *Wolf 2042*. Near the coast from Lower California to Santa Barbara County.

These two varieties differ from var. *ramosissima* and from var. *suffrutescens* Parry, both of which are away from the coast, in lacking gland-tipped hairs on the main stems. In this respect they resemble var. *valida* Peck, a plant of the pine belt in the Sierra Nevada from Tulare County north and with slender stems mostly 2-4 dm. long, while the proposed varieties are coastal, coarse, and with stems to 1 m. or more long.

Lippia nodiflora Michx. var. **rosea** (D. Don) Munz, comb. nov.*Zappania nodiflora* var. *rosea* D. Don in Sweet, Brit. Fl. Gard. II, 3: pl. 225, 1834.*Phyla nodiflora* var. *rosea* Moldenke, Phytologia 2: 22, 1941.**Salvia dorrii** (Kellogg) Abrams subsp. **argentea** (Rydb.) Munz, comb. nov.*Audibertiella argentea* Rydb., Bull. Horr. Bot. Club 36: 683, 1909.*Salvia carnosa* subsp. *argentea* Epling, Ann. Mo. Bot. Gard. 25: 131, 1938.**Monardella hypoleuca** Gray subsp. **lanata** (Abrams) Munz, comb. nov.*M. lanata* Abrams, Muhlenbergia 8: 39, 1912.**Castilleja affinis** H. & A. subsp. **insularis** (Eastwood) Munz, comb. nov.*C. latifolia* subsp. *insularis* Eastwood, Leaf. W. Bot. 1: 238, 1936.*C. douglasii* subsp. *insularis* Pennell in Abrams, Ill. Fl. Pac. States 3: 841, 1951.**Castilleja hololeuca** Greene subsp. **grisea** (Dunkle) Munz, comb. nov.*C. grisea* Dunkle, Bull. S. Calif. Acad. Sci. 42: 31, 1943.**Castilleja martinii** Abrams subsp. **ewanii** (Eastwood) Munz, comb. nov.*C. ewanii* Eastwood, Leaf. W. Bot. 3: 89, 1941.**Castilleja miniata** Dougl. ex Hook. subsp. **elata** (Piper) Munz, comb. nov.*C. elata* Piper, Smith. Misc. Coll. 50: 201, 1907.

Castilleja pilosa (Wats.) Rydb. subsp. **jusselii** (Eastwood) Munz, comb. nov.

C. jusselii Eastwood, Leaf. W. Bot. 2: 243, 1940.

Castilleja pruinosa Fernald subsp. **gleasoni** (Elmer) Munz, comb. nov.

C. gleasoni Elmer, Bot. Gaz. 39: 51, 1905.

Castilleja stenantha Gray subsp. **spiralis** (Jepson) Munz, comb. nov.

C. spiralis Jepson, Fl. W. Mid. Calif., 412, 1901.

Castilleja wightii Elmer subsp. **inflata** (Pennell) Munz, comb. nov.

C. inflata Pennell, Proc. Acad. Phila. 99: 184, 1947.

Castilleja wightii subsp. **litoralis** (Pennell) Munz, comb. nov.

C. litoralis Pennell, Proc. Acad. Phila. 99: 183, 1947.

Collinsia heterophylla Buist ex Graham var. **austromontana** (Newsom) Munz, comb. nov.

C. bicolor Benth. var. *austromontana* Newsom, Bot. Gaz. 87: 277, 1929.

C. austromontana Pennell in Abrams, Ill. Fl. Pac. States 3: 775, 1951.

Cordylanthus littoralis (Ferris) Macbride subsp. **platycephalus** (Pennell) Munz, comb. nov.

C. platycephalus Pennell, Proc. Acad. Phila. 99: 195, 1947.

Cordylanthus palmatus (Ferris) Macbride subsp. **carnulosus** (Pennell) Munz, comb. nov.

C. carnulosus Pennell, Proc. Acad. Phila. 99: 191, 1947.

Cordylanthus pilosus Gray subsp. **diffusus** (Pennell) Munz, comb. nov.

C. diffusus Pennell, Proc. Acad. Phila. 99: 197, 1947.

Cordylanthus pilosus Gray subsp. **bolanderi** (Gray) Munz, comb. nov.

C. pilosus var. *bolanderi* Gray, Proc. Am. Acad. 7: 382, 1868.

C. bolanderi Pennell, Proc. Acad. Phila. 99: 198, 1947.

Cordylanthus ramosus Nutt. ex Benth. subsp. **eremicus** (Coville & Morton) Munz, comb. nov.

Adenostegia eremica Coville & Morton, Journ. Wash. Acad. 22: 161, 1932.

Cordylanthus eremicus Munz, Man. So. Calif. Bot., 483, 1935.

Cordylanthus rigidus (Benth.) Jepson subsp. **brevibracteatus** (Gray) Munz, comb. nov.

C. filifolius var. *brevibracteatus* Gray in Brewer & Watson, Bot. Calif. 1: 622, 1876.

C. rigidus var. *brevibracteatus* Macbride, Contr. Gray Herb. 49: 58, 1917.

Cordylanthus tenuis Gray subsp. **brunneus** (Jepson) Munz, comb. nov.

C. pilosus var. *brunneus* Jepson, Man. Fl. Pls. Calif., 946, 1925.

C. brunneus Pennell, Proc. Acad. Phila. 99: 199, 1947.

Hebe franciscana (Eastwood) Souster, comb. nov.

Veronica franciscana Eastwood, Leaf. W. Bot. 3: 221, 1943.

Mimulus aurantiacus Curtis subsp. **australis** (McMinn) Munz, comb. nov.

Diplacus australis McMinn, Madroño 11: 58, 1951.

Since McMinn gave no Latin diagnosis, the following statement may not be out of place: Folia leviter impresso-venosa; calyce tubuloso, supra vix dilatato; corolla lutea aut alba.

Mimulus aurantiacus subsp. **lompocensis** (McMinn) Munz, comb. nov.*Diplacus lompocensis* McMinn, Madroño 11: 62, 1951.**Mimulus guttatus** Fisch. ex DC. subsp. **arvensis** (Greene) Munz, comb. nov.*M. arvensis* Greene, Pittonia 1: 37, 1887.*M. guttatus* var. *arvensis* Grant, Ann. Mo. Bot. Gard. 11: 174, 1925.**Mimulus guttatus** subsp. **micranthus** (Heller) Munz, comb. nov.*M. micranthus* Heller, Muhlenbergia 8: 132, 1912.*M. nasutus* var. *micranthus* Grant, Ann. Mo. Bot. Gard. 11: 182, 1925.**Mimulus longiflorus** (Nutt.) Grant subsp. **calycinus**
(Eastwood) Munz, comb. nov.*Diplacus calycinus* Eastwood, Bot. Gaz. 41: 287, 1906.*Mimulus longiflorus* var. *calycinus* Grant, Ann. Mo. Bot. Gard. 11: 331, 1925.**Mimulus moschatus** Dougl. ex Lindl. var. **moniliformis**
(Greene) Munz, comb. nov.*M. moniliformis* Greene, Bull. Calif. Acad. Sci. 1:10, 1884.**Mimulus primuloides** Benth. subsp. **linearifolius** (Grant) Munz, comb. nov.*M. primuloides* var. *linearifolius* Grant, Ann. Mo. Bot. Gard. 11: 246, 1925.*M. linearifolius* Pennell in Abrams, Ill. Fl. Pac. States 3: 698, 1951.**Mimulus viscidus** Congdon subsp. **constrictus** (Grant) Munz, comb. nov.*M. subsecundus* var. *constrictus* Grant, Ann. Mo. Bot. Gard. 11: 287, 1925.*M. constrictus* Pennell in Abrams, Ill. Fl. Pac. States 3: 722, 1951.**Penstemon grinnellii** Eastwood subsp. **scrophularioides**
(Jones) Munz, comb. nov.*P. scrophularioides* M. E. Jones, Contr. W. Bot. 12: 65, 1908.**Scrophularia californica** C. & S. var. **desertorum** Munz, var. nov.

Folia pallido-viridia, aequale dentate; calyce 2-3 mm. longo; corolla maximum partem 5-7 mm. longa, valde bicolore. *Type* from dry loose gravelly wash, lower edge of pinyon belt, at 7500 ft., Silver Canyon, White Mts., Inyo County, California (RSA sheet 49561). Differing from typical *californica* which has deeper green foliage, leaves mostly longer, corolla mostly 7-12 mm. long and narrower. The proposed variety has a corolla almost as wide as long, strongly bicolored. It ranges at elevations of 5000 to 10,000 ft., east slope of Sierra Nevada and Panamint to White mts., into western Nevada.

Senecio douglasii DC. var. **tularensis** Munz, var. nov.

Folia 2-4 cm. longa, aequaliter pinnata; pinnis 0.5-1.5 cm. longis. *Type* from dry slopes of disintegrated granite, under oaks, on road from Springville to Camp Nelson, Tulare County, California, at 1850 feet, Oct. 12, 1947, *P. A. Munz* 12222 (RSA sheet 39638). Differing from var. *douglasii* in the shorter more regularly pinnate leaves with shorter pinnae. Growing in sandy and rocky places below 2500 feet, mostly in Foothill Woodland, from Tuolumne to Tulare counties in the Sierran foothills. Other collections are: 3.4 miles southwest of Three Rivers, Tulare Co., *Everett & Balls* 20215; 10 miles east of Visalia, Tulare Co., *E. Palmer* 2743, in 1892; Big Oak Flat Road, Tuolumne Co., *D. D. Keck* 1346; Iron Canyon, Stanislaus River, Tuolumne Co., *Mrs. W. J. Williamson* 214; Owens Mt., 6 miles southwest of Friant Dam, Fresno Co., *C. H. Quibell* 1889.

Senecio integerrimus Nutt. var. **major** (Gray) Cronquist, comb. nov.

S. eurycephalus var. *major* Gray, Pac. R.R. Rep. 4: 111, 1857.

S. major Heller, Muhlenbergia 1: 118, 1905.

S. lugens var. *megacephalus* Jepson, Man. Fl. Pls. Calif., 1152, 1925.

Stephanomeria virgata Benth. var. **tomentosa** (Greene) Munz, comb. nov.

S. tomentosa Greene, Bull. Calif. Acad. Sci. 2: 152, 1886.

Ptiloria tomentosa Greene, Pittonia 2: 131, 1890.

Stephanomeria pauciflora (Torr.) Nutt. var. **parishii** (Jepson) Munz, comb. nov.

S. runcinata var. *parishii* Jepson, Man. Fl. Pls. Calif., 998, 1925.

S. cinerea Blake, Journ. Wash. Acad. Sci. 33: 272, 1943.

Malacothrix saxatilis (Nutt.) T. & G. var. **commutata**
(T. & G.) Ferris, comb. nov.

M. commutata T. & G., Fl. N. Am. 2: 487, 1843.

Agoseris apargioides (Less.) Greene var. **eastwoodae** (Fedde) Munz, comb. nov.

A. eastwoodae Fedde, Just Bot. Jahrb. 31: 808, 1904.

BOOK REVIEW

BOTANICAL EXPLORATION OF THE TRANS-MISSISSIPPI WEST, 1790-1850. SUSAN DELANO MCKELVEY. 1144 pages, 11 maps. Arnold Arboretum. 1955.

This book seems to me not to have received the attention that it merits. Covering a period of sixty years and a region from the northern to the southern boundaries of the United States and from the Mississippi River to the Pacific Ocean, Mrs. McKelvey writes of the activities of the plant collectors whose findings formed the foundation on which was based the early knowledge of our western plants. One reads about the Lapérouse expedition, about Haenke and Née, Menzies, Lewis and Clark, Von Langsdorff, Bradbury, Nuttall, Eschscholtz and von Chamisso, James, Douglas and Douglass, Scouler, Berlandier, Coulter, Pitcher, Tolmie, Drummond, Wyeth, Parry, Geyer, Lindheimer, Hartweg, Fendler and many others. Mrs. McKelvey devotes her pages primarily to the botanical work of these collectors and cites long passages from their manuscript journals. She thus establishes the actual localities from which many species were obtained and makes available a vast amount of material heretofore accessible in only a few great libraries. The monographer can in many cases determine from her book type-localities which have been in doubt. Documented as it is, this volume is of inestimable value and will for many years be most useful to students of plants of western North America.

But the book is more than that! It has much general information about the botanists themselves, the auspices under which they travelled, the country they explored, their adventures and stories, the Indians they met—in short, much of general interest as well as botany and political history. It is beautifully printed on excellent paper and contains eleven carefully prepared maps. It covers a prodigious amount of research and should be available to every student of western botany. Mrs. McKelvey has earned the gratitude of all of us in bringing together so well, so accurately and so interestingly such a vast array of information.—PHILIP A. MUNZ.