

ALETRIS PAUCIFLORA (Klotsch) Franchet, var. *khasiana* (Hook. f.), comb. nov. *A. khasiana* Hook. f. Fl. Brit. Ind. vi. 265 (1892). *A. lanuginosa* Bur. & Franchet, var. *khasiana* (Hook. f.) Franchet, Journ. de Bot. x. 202 (1896).

I think there is no doubt as to the identity of *A. pauciflora* and *A. lanuginosa*. Since the former is the earlier name the new varietal combination given above becomes necessary. The variety differs in the pyramidal gradually acute rather than ovate-oblong, abruptly rostrate capsule.

Luzuriaga polyphylla (Hook.), comb. nov. *Callixene polyphylla* Hook. Ic. vii. t. 674 (1844). *L. erecta* Kunth, Enum. Pl. v. 280 (1850).

It is not clear why Kunth, in describing this plant under *Luzuriaga*, failed to adopt Hooker's name which seems quite applicable. However this may be, the latter name being the older, must, of course, take precedence.

II. A REVISION OF MIRABILIS, SUBGENUS HESPERONIA

MIRABILIS L., subgenus *HESPERONIA* (Standley) Jepson, Fl. of Calif. pt. iv. 457 (1914). *Hesperonia* Standley, Contrib. U. S. Nat. Herb. xii. 360 (1909).

The treatment by Standley, N.A. Fl. xxi. 233-237 (1918), of those species of *Mirabilis* referable to the subgenus *Hesperonia* seems to me, in many regards, unsatisfactory, but nevertheless there is a distinctly useful purpose served in the bringing together of a rather difficult synonymy and in the indication of certain characters that may be used in defining the several components of the group. Then there is the treatment by Jepson, l. c., of the Californian species. Here the variability of *M. californica* is recognized but there is error in the application of certain names.

As Jepson has hinted, l. c. 459, one encounters a genuine difficulty in attempting to discriminate between the species because the form first described is so meagerly known. This is *M. laevis* (Benth.) Curran and seemingly only two or three collections have been made. One of these is represented in the Gray Herbarium, — an ample specimen secured by Brandegee, Jan. 18, 1889, on Magdalena Island, the vicinity of the type-locality. This plant is essentially glabrous. Even the most glabrate forms of other

species (known to be variable in the degree of pubescence) are never so nearly smooth throughout. But the diagnostic feature of *M. laevis* is not to be found alone in the lack of pubescence but rather consists of this character taken in conjunction with the nature of the involucre. The involucre lobes are ovate-lanceolate, attenuate and usually longer than the tube. They thus suggest those of *M. tenuiloba* but are shorter and broader at base. There is a form of *M. californica* which has somewhat elongate acute involucre lobes but the involucre is relatively short-campanulate in the manner of typical *M. californica* and I have seen no specimens I should regard as transitional to *M. laevis*. For the present, then, or until there is definite evidence that *M. laevis* is variable in one or the other of the characters discussed above it seems desirable to regard it as a local species confined to the region of Magdalena Bay rather than to refer to it as a mere variant the more distinctly pubescent *M. californica* variable as the latter is in the matter of pubescence but fairly constant in the character of involucre. Besides *M. tenuiloba*, *M. laevis* and *M. californica* it seems possible to distinguish two other plants as species, *M. Heimerlii* and *M. oligantha*. The salient feature of the former is found in the fruit. This is remarkably spherical so that it resembles a tiny marble. Although it is true that there seems to be some variation in the shape of the fruit of *M. californica* in the examination of considerable fruiting material I have found no anthocarps that were not definitely longer than thick. The latter species (*M. oligantha*), on the other hand, has greatly elongate fruits and moderately slender involucre lobes; it is apparently a distinct species. Its involucre suggests a relationship to *M. tenuiloba*. This plant occurs in two forms. The typical state is viscid-pubescent to the base and the fruiting involucre is mostly 13–15 mm. long. The other form, described by Standley as *M. polyphylla*, is glabrous below and the involucre is usually somewhat shorter even in fruit (10–12 mm. long). Standley in his key character, l. c. 233, separates these plants not only upon the characters just noted but also upon the relative size of leaves and thickness of stems. It seems evident even from the rather few specimens I have seen that these supposed differences are individual in character and are not concomitant with the extent of pubescence or the size of the involucre. *M. polyphylla* at best there-

fore is no more than a variety of *M. tenuiloba* and typifies the same sort of variation that is found in *M. californica*.

There remains to be noted the variants of *M. californica*. On the whole I agree with Jepson's treatment of these forms except that (as indicated by Standley, l. c. 236) the var. *glutinosa* and the var. *retrorsa* represent one and the same plant. In spite of the fact that Jepson writes that *Hesperonia cedrosensis* Standley "seems no more than a form of *M. californica*" he makes the combination *M. cedrosensis* (Standley) Jepson, l. c. 459. It is indeed only a variant of Gray's plant as is shown by some specimens from San Diego county which are evidently transitional since they exhibit in no small part the same peculiar scabrous pubescence of short conic hairs that characterizes Standley's species.

The plants here discussed may be summarized as follows:

- a. Plants evidently more or less pubescent at least above.
- b. Fruit never truly globose, longer than broad.
- c. Involucre (10-) 13-15 mm. long, in fruit the lanceolate or oblong-lanceolate lobes distinctly longer than the tube.
 - Stems pubescent to the base; typical. 1. *M. tenuiloba*.
 - Stems glabrous toward the base. 1a. var. *polyphylla*.
- c. Involucre not over 10 mm. long, the usually ovate lobes often shorter than the tube.
- d. Fruit oblong-cylindrical, 7-8 mm. long; involucre 9 mm. long. 2. *M. oligantha*.
- d. Fruit subglobose but evidently longer than thick, 4-5(-6) mm. long; involucre 5-7(-8) mm. long.
- e. Pubescence villous or at least the hairs mostly slender, not predominantly short-conic.
- f. Plant somewhat villous, at least above; peduncles, at least all the upper, much shorter than the involucre; perianth usually red-purple.
 - Stems glabrate below; lower leaves acutish or at least not broadly rounded at apex; typical. 3. *M. californica*.
 - Stems villous nearly or quite to the base; leaves broadly rounded at apex. 3a. var. *aspera*.
- f. Plant scabrous with fine retrorse pubescence, especially above, scarcely if at all villous; peduncles even the upper often as long, or half as long, as the involucre; perianth white. 3b. var. *glutinosa*.
- e. Pubescence for the most part consisting of short conic hairs. 3c. var. *cedrosensis*.
- b. Fruit truly globose; known only from Guadalupe Island. 4. *M. Heimerlii*.
- a. Plant glabrous or the inflorescence minutely and sparsely pubescent; known only from Magdalena Bay. 5. *M. laevis*.

1. *M. TENUILOBA* Wats. Proc. Am. Acad. xvii. 375 (1882). *Hesperonia tenuiloba* (Wats.) Standley, N.A. Fl. xxi. 234 (1918). — Extreme southern California and northern Lower California. — CALIFORNIA: 1880, *Wright*, 106; West Cañon, Colorado Desert, *Parish*, 6072.

1a. *M. TENUILOBA* Wats., var. *polyphylla* (Standley), comb. nov. *Hesperonia polyphylla* Standley, Contrib. U.S. Nat. Herb. xii. 364 (1909). — San Diego Co., California and Lower California. — CALIFORNIA: Escondido, *Chandler*, 5332. LOWER CALIFORNIA: Los Angeles Bay, *Palmer*, 600; San Borgia, May 6, 1889, *Brandege*.

2. *M. oligantha* (Standley), comb. nov. *Hesperonia oligantha* Standley, Contrib. U.S. Nat. Herb. xii. 363 (1909). — Known only from Calmulli, Lower California.

3. *M. CALIFORNICA* Gray in Torr. Bot. Mex. Bound. 173 (1859). *Hesperonia californica* (Gray) Standley, Contrib. U. S. Nat. Herb. xii. 364 (1909). *M. californica* Gray, var. *glutinosa* Jepson, Fl. Calif. iv. 458 (1914), in part. — Southern California and Lower California. — CALIFORNIA: San Diego, *Thurber*, 569, *Brandege*, 826; San Bernardino, *Parish*, 4159; Pampa Station, *Heller*, 7644; Whitewater, *Wright*, 151; La Jolla, *Clements*, 61; Sweetwater Valley, *Cleveland*; Sweetwater, *Orcutt*, 1049; Winchester, *Hall*, 418; Palm Springs, *Mary F. Spencer*, 759; Los Angeles, *Nevin*, *Gray*, *Abrams*, 2504; Tia Juana, *Abrams*, 3506; Azusa, *Macbride & Payson*, 732; Santa Lucia Mts., *Plaskett*, 93; Riverside, *Boyd*; Santa Barbara, *Elmer*, 3764; Pasadena, *Grant*; Santa Catalina Island, *Macbride & Payson*, 847. LOWER CALIFORNIA: Guadalupe Island, *Palmer*, 82; Los Angeles Bay, *Palmer*, 601.

3a. *M. CALIFORNICA* Gray, var. *ASPERA* (Greene) Jepson, Fl. Calif. iv. 458 (1914); subsp. *aspera* (Greene) *Parish*, Muhl. iii. 125 (1907). *M. Bigelovii* Gray, Proc. Am. Acad. xxi. 413 (1886). *M. aspera* Greene, Eryth. iv. 67 (1896). *Hesperonia Bigelovii* (Gray) Standley, N.A. Fl. xxi. 235 (1918). *H. aspera* (Greene) Standley, Contrib. U.S. Nat. Herb. xii. 362 (1909). — Eastern San Diego Co., Calif. to Arizona. — ARIZONA: *Pringle*, 181; Grand Cañon, *Gray*; Tempe, *Ganong & Blaschka*. CALIFORNIA: Mojave Desert, *Parish*, 3757; Argus Mts., *Coville & Funston*, 741, *Purpus*, 5432; *Bigelow*.

3b. *M. CALIFORNICA* Gray, var. *GLUTINOSA* (A. Nels.) Jepson, Fl. Calif. iv. 458 (1914); var. *retrorsa* (Heller) Jepson, l. c.; var. *aspera* Jepson, l. c. in part. *Hesperonia retrorsa* (Heller) Standley, N.A. Fl. xxi. 236 (1918). — Southeastern California to southern Utah and Nevada. — UTAH: St. George, *Goodding*, 778, *Parry*, 211. NEVADA: Pah Ute Mts., *Watson*, 963; Truckee Pass, *Kennedy*, 2011, 1585, *Heller*, 8643; Las Vegas, *Goodding*, 2347; Rhyolite, *Heller*, 9662; Mount Grant, *Heller*, 10908; Pyramid Lake,

Kennedy, 1977. CALIFORNIA: Bishop, Heller, 8248; Parry & Lemmon, 349; Southern Belle Mine, Heller, 8336; Mojave Desert, Abrams & McGregor, 417.

3c. *M. CALIFORNICA* Gray, var. *cedrosensis* (Standley), comb. nov. *Hesperonia cedrosensis* Standley, Contrib. U. S. Nat. Herb. xii. 362 (1909). *M. cedrosensis* (Standley) Jepson, Fl. Calif. iv. 459 (1914). — LOWER CALIFORNIA: San Quentin, Palmer, 640; Cerros Island, Dr. Street; Cedros Island, Palmer, 737.

4. *M. Heimerlii* (Standley), comb. nov. *Hesperonia Heimerlii* Standley, Contrib. U.S. Nat. Herb. xiii. 412 (1911). — LOWER CALIFORNIA: Guadalupe Island, Palmer, 886.

5. *M. LAEVIS* (Benth.) Curran, Proc. Calif. Acad. ser. 2. i. 235 (1888). *Hesperonia laevis* (Benth.) Standley, Contrib. U. S. Nat. Herb. xii. 363 (1909). — LOWER CALIFORNIA: Magdalena Island, Brandegee.

III. A REVISION OF MENTZELIA, SECTION TRACHYPHYTUM

My attention has been called to this group because of some excellent specimens collected by Mr. I. M. Johnston in southern California where this section (*Trachyphytum*), by a few botanists recognized as a genus under the name *Acrolasia*, of the genus *Mentzelia* culminates in a number of closely allied and somewhat variable forms. The group has been subjected to revision by Urban & Gilg in their, on the whole helpful, Monographia Loasacearum but unfortunately these authors failed in this instance to discriminate certain plants (notably *M. dispersa* and *M. albicaulis*) which are evidently distinct species. Dr. Davidson in the Bull. So. Calif. Acad. Sci. v. 13-18 (1906) has called attention to Urban & Gilg's misinterpretation of *M. albicaulis* but he in turn has failed in the correct application of certain names. His revision, furthermore, loses much from the standpoint of usefulness because of drawing specific lines too finely and more especially because of the failure to include *M. Veatchiana* and other species, although the title of the paper "A Revision of the Western *Mentzelias*" is promising and would seem to call for something more than an account of the species supposed to grow in southern California. Dr. Rydberg (of course under the generic name *Acrolasia*) attempts to distinguish, in his Flora of the Rocky Mts. and Adj. Plains, 573 (1917), nine species for the area covered by his flora. He con-



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