CONTRIBUTIONS FROM THE GRAY HERBARIUM OF HARVARD UNIVERSITY. — NEW SERIES, No. LIII

I. NEW OR OTHERWISE INTERESTING PLANTS, MOSTLY NORTH AMERICAN LILIACEAE AND CHENOPODIACEAE

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During the past year I have had the pleasure of studying various collections, mostly from western North America, which have been sent to the Gray Herbarium for determination. In the course of work of this nature one invariably discovers instances where species have been known under names no longer tenable in accord with those principles of nomenclature expressed in the International Rules. Also, especially in the case of collections from portions of the western United States where the flora is even yet imperfectly known, species apparently undescribed have from time to time come to light. Two collections have been particularly noteworthy in this respect. One was made by Mrs. Mary F. Spencer of San Diego and consists of some three hundred species largely from the Mohave and Colorado Deserts, regions long known as possessing a unique and interesting flora. Mrs. Spencer secured, in most instances, four duplicates of each species collected. The other collection was made by Mr. J. C. Nelson, principal of the high school at Salem, Oregon. Mr. Nelson, accompanied by Professor Peck of Willamette University, was able in late June to make a hurried trip to Curry Co., Oregon, a region which apparently has never been botanized. He found a number of species which are rare, at least in southwestern Oregon, several representing range extensions from California. Notable in this last respect was the discovery of *Zauschneria californica*.

The following pages, therefore, have resulted partly from determinative work as outlined above but the notes on the *Liliaceae* and the *Chenopodiaceae* have arisen from an attempt to order up, in accord with recent literature on the groups, certain material already in the herbarium. My observations on the *Chenopodiaceae*

are largely in the nature of criticism of the revision by Mr. Paul C. Standley of the North American representatives of this family (North American Flora xxi. 1916). I would say that, except for the tendency to assign specific rank to plants representing mere variants of earlier described forms, or, more especially, to maintain such variants as " species," Mr. Standley's work seems excellent, especially as he has succeeded, both in *Chenopodium* and *Atriplex*, in indicating the natural relationships of the specific units in so far as is possible in a lineal arrangement. This is a decided improvement over Watson's treatment (which was somewhat artificial) and is evidence of sincere work and inherent ability on the part of the monographer.

In thus calling attention in some detail to the *raison d'être* of this paper I have had in mind the miscellaneous character of the contents, — a condition which I have felt needed some prefatory remarks by way of explanation.

ZIGADENUS. In 1903 Dr. Rydberg, Bull. Torr. Club xxx. 271, wrote " It matters little how broad or narrow concepts we have of a genus, if only we are consistent and in the same family or tribe designate as genera equivalent natural groups of related species; i. e., not making in one case the limits of a genus too large and in another too narrow.

" I. An inconsistency of this kind exists, I think, in the usual treatments of the family Melanthaceae. *Chrosperma* and *Stenanthium*, *Melanthium* and *Veratrum*, are separated by rather trifling characters, while in *Zygadenus* are included species of no closer relationship. If we keep as distinct all of the first four genera, we must, if consistent, divide *Zygadenus* into at least three genera." Mr. M. E. Jones, Contrib. W. Bot. xiv. 22–23 (1912), has criticised this segregation of *Zigadenus* but his arguments, which in form too nearly approach a sarcastic tirade, fail to convince. The substance of Mr. Jones's objection would appear to be that Rydberg has divided the genus along unnatural lines since it consists of " two rather well defined groups (shading into each other), the large and white-flowered (often with a tinge of blue) forms with twin or V-shaped single gland which is morphologically a union of two glands at the lower edges, and the small yellow-flowered forms with a single obovate to oblong gland." By the indication of

further points of difference in the groups Jones shows clearly the fallacy of creating the genus *Toxicoscordion* Rydb. as distinct from *Anticlea* Kunth, a course which results in the placing of *Z. Fremontii*, because it has a free ovary, in a genus containing species to which it obviously is not very closely related. But Jones in thus disposing of *Toxicoscordion* as a segregate of *Anticlea* (with which it should be merged) has failed to show why the latter should not be maintained distinct from true *Zigadenus*, i. e. *Z. glaberrimus*, nor has he answered Rydberg's statement (quoted above) in regard to the relationship of other genera in the *Veratreae*. Obviously the status of *Zigadenus* as a genus rests upon the value for purposes of generic distinction of the differences existing between the original species (*Z. glaberrimus*) and those referable to *Anticlea*. Rydberg's statement of these points of difference may be repeated here.

Plant with a rootstock; each petal and sepal with two glands ..... *Zigadenus.*
Plant with a bulb; each petal and sepal with a single gland ..... *Anticlea.*

In spite of the fact that Jones would dispose of these differences as but modifications in each case of a single structural phenomenon their existence as distinct and stable characters must be acknowledged and therefore they must be dealt with solely from the standpoint of their value as generic characters. Since, according to Rydberg, *Amianthium* and *Stenanthium*, *Melanthium* and *Veratrum*, genera universally maintained, are no more distinct from each other than are *Zigadenus* and *Anticlea* it becomes necessary either to show that Rydberg is wrong in this assertion or to accept *Anticlea* as a valid generic segregate. Upon first acquaintance with the above genera their differences appear, as Rydberg says " rather trifling," but further study soon discloses the fact that, in reality, they are strong. *Amianthium* and *Stenanthium*, for instance, are ordinarily distinguished simply by the perfect (in the case of the former) and the polygamous flowers. But in addition they differ widely in the arrangement of foliage and in the type of inflorescence, differences which render them quite distinct in aspect. In like manner, investigation of the characters of *Melanthium* and *Veratrum* leaves no doubt in one's mind of the distinctness of these genera which, though somewhat similar in aspect, possess at least three very distinctive characters. It appears, then, that

we do not need to " divide *Zygadenus* into at least three genera " in order to be consistent in our treatment of the *Veratreae* since the other genera of the tribe are distinguishable by much stronger characters than exist between typical *Zigadenus* and the segregate genus *Anticlea*. Finally it may be remarked that nearly, if not all, modern botanists whose work is to be taken seriously have failed to see any offence to " consistency," much less to truth, in maintaining the genus *Zigadenus* in the larger sense.

✓**Zigadenus vaginatus** (Rydb.), comb. nov. *Anticlea vaginata* Rydb. Bull. Torr. Club xxxix. 108 (1912).

This Utah species is closely related to *Z. porrifolius* Greene. Besides the differences noted by Rydberg, mention should be made of the nearly white flowers. The statement, " This differs from the other species of *Anticlea* in its habit of growing in big clumps " is of no value if it is meant that many bulbs grow together in clusters, since I have often observed this in Idaho in the case of *Z. elegans*. A specimen from Quebec of *Z. chloranthus* (*Collins, Fernald,* and *Pease*) illustrates well this habit.

✓**Zigadenus virescens** (HBK.), comb. nov. *Helonias virescens* HBK. Nov. Gen. & Sp. i. 267 (1816). *Z. mexicanus* (Kunth) Hemsl. Biol. Cent.-Am. Bot. iii. 382 (1885). *Anticlea virescens* (HBK.) Rydb. Bull. Torr. Club xxx. 273 (1903).

ZIGADENUS VENENOSUS Wats. *Toxicoscordion arenicola* Heller, Muhl. ii. 182 (1906), I do not believe can be distinguished from Watson's plant. *Z. micranthus* Eastw. Bull. Torr. Club xxx. 483 (1905), however, which Jones, Contrib. W. Bot. xiv. 23 (1912), considers the same as *Z. Fremontii,* var. *brevibracteatus* Jones (which he regards as " an extreme form of *elegans* ") is, on the contrary, most nearly related to the entirely different *Z. venenosus* from which it is amply distinct. And Dr. Hall, in raising Jones's variety of *Z. Fremontii* to specific rank, Univ. Cal. Publ. Bot. vi. 165 (1915), has shown that its true relationship is rather with *Z. paniculatus*.

✓**Zigadenus texensis** (Rydb.), comb. nov. *Toxicoscordion texense* Rydb. in Small, Fl. S.E.U.S. 252 (1903).

This species is closely related to *Z. venenosus* of the Pacific coast. The floral parts are different, however, in shape and size. The claws of the perianth segments are unusually fleshy.

ZIGADENUS LEIMANTHOIDES (Gray) Wats. The most cursory examination of *Tracyanthus texanus* (Bush) Small, Fl. S.E.U.S. ed. 2. 1329 (1913) would have shown, since the perianth-segments bear well-developed glands, that it is a *Zigadenus* and that it cannot be distinguished from the above species. *Z. leimanthoides* has heretofore been known only from as far west as Louisiana. Small regards this species as meriting generic rank and has proposed for it the name *Oceanoros*, basing it on two characters, the polygamous flowers and the " fibrous-coated rootstocks." Unfortunately some specimens apparently have only perfect flowers and certainly the " rootstocks " of other Zigadeni are more or less fibrous-coated, the degree to which this attains being purely a relative matter. The genus *Tracyanthus* Small is separated from *Amianthium* on characters which likewise are merely relative, of slight extent, and therefore by no means to be considered as of generic value.

Oakesia floridana (Chapm.), comb. nov. *Uvularia floridana* Chapm. Fl. S.U.S. 487 (1860). *Oakesiella floridana* (Chapm.) Small, Fl. S.E.U.S. 272 (1903).

One of the salient features of this species does not appear to have been indicated, namely, the well-developed beak at the summit of the capsule. Harper has collected *O. floridana* in Georgia and Alabama.

Androcymbium gramineum (Cav.), comb. nov. *Melanthium gramineum* Cav. Anal. Cienc. Nat. iii. 49 (1801) & Icones Pl. Rar. vi. 64. t. 587 (1801). *A. punctatum* Baker, Journ. Linn. Soc. xvii. 445 (1879), not *Melanthium punctatum* L. Pl. Afr. Rar. 10 (1760); *A. punctatum* Baker, Gard. Chron. n. ser. i. 786 (1874), a name which must be revived to replace the more generally used but (as to specific name) later synonym *A. leucanthum* Willd. Ges. nat. Fr. Berl. Mag. ii. 22 (1808).

Tricyrtis maculata (D. Don), comb. nov. *Compsoa maculata* D. Don, Prod. Fl. Nepal. 51 (1825). *T. pilosa* Wall. Tent. Fl. Nepal. ii. 62 (1826).

In spite of the fact that Hooker, Baker and others have agreed on the identity of the plant of D. Don and that of Wallich they have failed to take up the former's name which has priority.

Tricyrtis clinata, spec. nov., erecta circa 6 dm. alta ubique mediocriter villosa; caulibus basi ad apicem plus minusve flexuosis et aequabiliter foliosissimis; foliis caulinis ovato-lanceolatis caudato-acuminatis, basi cordato-amplexicaulibus 5(–6)-nerviis

circa 15 cm. longis; floribus ut apud *T. hirtam*; ovario glabro; capsula circa 2 cm. longa 4 mm. diametro. — JAPAN: Nanokawa, Tosa, Oct. 9, 1889, *K. Watanabe* (TYPE, Gray Herb.).

This plant was distributed as *T. hirta* (Thunb.) Hook. and other collections have probably been taken for that species which is its nearest relative and to which it bears superficial resemblance. The very caudate-acuminate leaves, the nodding strictly solitary axillary flowers and the long narrow glabrous pods are the chief distinguishing features of *T. clinata*. Since Baker's revision of this genus appeared in Journ. Linn. Soc. xvii. 463–5 (1879) several species of the Orient have been proposed as new. It is noteworthy that two of these, *T. macrantha* Maxim. and *T. affinis* Makino (and its var. *albida* Makino) have come from Tosa, the type locality of *T. clinata*.

ORNITHOGLOSSUM VIRIDE (L.) Dryand., var. **undulatum** (Willd.), comb. nov. *Lichtensteinia undulata* Willd. Ges. nat. Fr. Berl. Mag. ii. 20 (1808). *O. undulatum* (Willd.) Spreng. Syst. Veg. iv. pt. 2, 143 (1827). *O. glaucum* Salisb., var. *undulatum* (Willd.) Baker, Journ. Linn. Soc. xvii. 449 (1879).

Durand and Schinz, Consp. Fl. Afr. v. 416 (1895) would maintain this plant as a distinct species. But it is connected directly with the typical form of *O. viride* by the var. *grandiflorum* Baker ex Durand & Schinz, l. c. Accordingly I think Baker's treatment of it as a variety is the correct one; but the proper specific name is not *glaucum* but *viride*, necessitating the above new varietal combination.

Clistoyucca brevifolia (Engelm.), comb. nov. *Yucca brevifolia* Engelm. Bot. King Exp. 496 (1871). *Y. Draconis*, var. *arborescens* Torr. Pacific Rail. Rep. iv. 147 (1857). *C. arborescens* (Torr.) Trelease, Rep. Mo. Bot. Gard. xiii. 41 (1902).

Ever since I first saw this species, the so-called Joshua tree, in its native habitat I have felt averse to calling it a Yucca. Some specimens sent by Mrs. Spencer have been the means of calling to my attention the fact that Dr. Trelease, l. c., has shown that good technical characters as well as aspect distinguish this curious plant from the true Yuccas. He failed, however, to take up the first specific name so I am making this necessary transfer.

CHORIZANTHE CALIFORNICA (Benth.) Gray, var. **Suksdorfii**, var. nov., foliis radicalibus obovatis vel late ovatis; internodiis valde

reductis; involucri tubo plus minusve angulato. — CALIFORNIA: among the dunes at Surf, Santa Barbara Co., June 12, 1913, *Suksdorf*, no. 146 (TYPE, Gray Herb.).

This plant is doubtless the same as one collected at Surf by Mrs. Brandegee to which Jepson, Fl. Calif. iv. 398 (1914) refers as " a singular form with somewhat angular and urceolate involucral tubes and very large bracts." The ample specimen secured by Mr. Suksdorf exhibiting the characters indicated shows the plant to be worthy at least varietal rank. Jepson, l.c., describes the involucre-tube of *C. californica* as " smooth." It is always more or less villous as in cotype material collected by Douglas.

CHENOPODIUM GLAUCUM L. *C. salinum* Standley, N. A. Fl. xxi. 29 (1916), cannot be distinguished satisfactorily. Examination of much material shows that at least two of the three characters Standley separates his species on, viz. the " dense short axillary spikes " and the " finely tuberculate seed " are, to greater or less degree, statements applicable to many specimens not only from North America but from the Old World. The other distinguishing feature Standley gives, the " sparsely villous inflorescence " is not discernable in some of the specimens in the Gray Herbarium referred to *C. salinum* by its author. In some cases the " villous hairs " can be made out but are far from obvious and furthermore a specimen from India possesses them. In fact the latter, so far as I can see, is good *C. salinum*. Standley's name, it would appear therefore, should pass into synonymy.

CHENOPODIUM FREMONTI Wats. Standley, N. A. Fl. xxi. 18 (1916), recognizes seven species in this group (*Fremontiana*), five of which are proposed by him. Two of these, *C. flabellifolium* Standley and *C. arizonicum* Standley, l. c. 19, are not represented in the Gray Herbarium. *C. incanum* (Wats.) Heller, described by Watson as a variety of *C. Fremonti*, is as well-marked as most species of this genus. Its low, much branched habit and dense inflorescence generally furnish good contrast with the tall loosely branched *C. Fremonti*. The inflorescence of the latter, however, is not always lax, as given by Standley, but is generally so. *C. Pringlei* Standley, l. c. 18, is not to be distinguished from this species. In the key to the group, l.c. 10, it is contrasted as follows:

" Leaf-blades coarsely sinuate-dentate . . . . . 20. *C. Pringlei*
Leaf-blades entire except for the hastate, usually spreading lobes at the base . . . . . 21. *C. Fremonti*."

But in the description of *C. Pringlei* we read the following modified statement of the degree of leaf-dentation: " leaf-blades . . . coarsely and irregularly sinuate-dentate or shallowly repand-dentate." This description applies nicely to Rydberg and Carleton's no. 6928 from Utah, but according to Standley, his *C. Pringlei* is confined to " hillsides, Hidalgo." Moreover, of two specimens in the Gray Herbarium labeled by Standley as *C. Pringlei* only one has " coarsely . . . sinuate-dentate " leaves and care must be taken to interpret liberally the descriptive term " coarsely." The leaves of the other specimen, also from Hidalgo, are scarcely as shallowly repand-dentate as are those of the Utah specimen of *C. Fremonti*. The next species in Standley's treatment is *C. neomexicanum* Standley, l. c. 19, which is not distinguishable from *C. paniculatum* Hook. This latter species is very closely related to *C. Fremonti* but appears to be distinct by reason of the adherent pericarp. *C. Palmeri* Standley, as its author states, has the pericarp more or less adherent to the seed and this character together with the open ample inflorescence marks the plant as probably a good species although it is known from but a single collection.

CHENOPODIUM LEPTOPHYLLUM Nutt. Three of the seven species recognized by Standley in this group are proposed as new. Only one of these, *C. pallescens* is represented at the Gray Herbarium. This is apparently a good species much resembling *C. subglabrum* but distinguished by the adherent pericarp. The latter species is well-marked by the open inflorescence and large seeds. Standley refers *C. leptophyllum* Nutt., var. *oblongifolium* Wats. Proc. Am. Acad. ix. 95 (1874) to *C. desiccatum* A. Nels. This is correct as regards the original of Watson's variety (Fendler's no. 717) but Wright's 1732 & 1733, referred by Watson to his variety, represent the broad-leaved form described by Rydberg, Bull. Torr. Club xxxix. 310 (1912), as *C. pratericola*. *C. desiccatum* is only a starved condition of the typical form of *C. leptophyllum* and should be treated, as by Watson, as a variety, or according to the ideals of the N. A. Fl. reduced to synonymy. *C. pratericola* is purely an herbarium species, the result of sorting into one pile specimens exhibiting oblong-elliptic leaves in which the three nerves near the base are more or less evident and the placing in another pile specimens with narrower leaves (rarely even linear) in which case, of

course, the lateral veins are apparently wanting or obscure. It is not surprising, I suppose, that exponents of the system should disagree as to the pile to which certain collections should be referred. For instance, Standley, in sorting the material in the Gray Herbarium has placed Bush's no. 367 and Nelson's no. 483 in the species cover of *C. leptophyllum*, although both these collections are referred to *C. pratericola* by Rydberg, l. c. Bush's plant was secured at Courtney, Mo., and he has collected a series of half a dozen specimens showing the degree of variation. Standley has labeled part of these as representing Rydberg's species and part as representing *C. leptophyllum*. With these specimens before one, the truth of the matter appears to be that all of them represent one slightly variable species.

BLITUM HASTATUM Rydb. Bull. Torr. Club xxviii. 273 (1901) is another species which Standley has maintained. But this name (*B. hastatum*) represents merely a leaf-form of *Chenopodium capitatum* (L.) Asch. (*B. capitatum*). Reference to a series of specimens will show that this plant, although usually having sinuate-dentate leaves frequently exhibits great variation in this respect, some of the leaves on a given plant being quite entire except for the hastately lobed base. When a plant has all or most of the leaves nearly entire it is *B. hastatum*. But strangely enough no European botanist has deemed this condition worthy even a varietal name although reference to almost any manual of central and southern Europe will give a description of *C. capitatum* which accounts for this variation by the statement " entire or weakly sinuate-dentate," " *mostly* slightly toothed " or similar phrase.

ATRIPLEX EXPANSA Wats., var. **trinervata** (Jepson), comb. nov. *A. trinervata* Jepson, Pitt. ii. 305 (1892).

Jepson, Fl. Cal. 437 (1914), reduces his species to *A. expansa*. He also gives *A. expansa*, var. *mohavensis* Jones, Contrib. W. Bot. xi. 20 (1903), as a synonym. Standley, N. A. Fl. xxi. 46–47 (1916), on the other hand, maintains Jepson's plant as a species and raises Jones's variety to specific rank. Neither of these treatments is quite satisfactory. *A. trinervata* Jepson differs from typical *A. expansa* in the repand-dentate leaves and the less united mostly sessile bracts; furthermore it replaces the typical form in central and northern California. *A. mohavensis* (Jones) Standley has the

sessile bracts of *A. trinervata* but they are united to above the middle and the leaves are entire as in true *A. expansa*. This form is most common in southern California but extends north where it meets the range of *A. trinervata*. Since these variations merge with and largely but not entirely replace *A. expansa* in California they are best treated as varieties of the latter.

ATRIPLEX CORONATA Wats. The meager but well-fruited co-type material in the Gray Herbarium of *A. sordida* Standley, N. A. Fl. xxi. 47 (1916) does not suggest that it is specifically distinct from Watson's plant.

ATRIPLEX MURICATA Humb. & Bonpl. *A. glomerata* Wats. ex Standley, l. c. 54, is not to be distinguished. It represents the form with reduced tubercles on the bracts, or these even obsolete, a variation occurring in many other species. *A. pueblensis* Standley, l. c. 56 is related to *A. muricata* but is apparently quite distinct by reason of the spicate staminate inflorescence. Standley describes the leaves as entire. Our specimen, a co-type and labeled by Standley as representing his species has some of the upper leaves distinctly denticulate.

ATRIPLEX OBOVATA Moq. Chenop. Enum. 61 (1840); DC. Prod. xiii. pt. 2, 99 (1849). *A. Greggii* Wats. Proc. Am. Acad. ix. 118 (1874). *A. sabulosa* Jones, Contrib. W. Bot. xi. 21 (1903). *A. Jonesii* Standley, N. A. Fl. xxi. 65 (1916).

Standley, l. c., distinguishes *A. Jonesii* from *A. obovata* by the "usually smooth bracts," the latter species (according to Standley) having the sides of the bracts "sparsely tuberculate or crested near the base or rarely smooth." In as much as most species exhibit this sort of variation, viz. in having the bracts either quite smooth or more or less tuberculate, one is not greatly impressed by the strength of *A. Jonesii* as a species. Furthermore *A. obovata* was originally described as having smooth bracts! As a matter of fact the species may have quite smooth and sparsely tubercled bracts on the same plant as is shown by a specimen from El Sauz, Arizona (*Hayes*) and also by one from Sonora, Mexico (*Thurber*). Standley has labeled the former as representing *A. Jonesii* and the latter as *A. obovata* although each shows approximately the same number of tubercled bracts. There is, however, a Texan specimen of this species collected by Havard the bracts of which are so copiously covered with elongate tubercles that it was determined as "*A.*

acanthocarpa Wats. ? " This extreme is so marked (none of the bracts being smooth or even approaching the short-tubercled condition of *A. obovata*) that it may be known as

ATRIPLEX OBOVATA Moq., var. **tuberata,** var. nov. Fructus utrinque copiose tuberculatus. — TEXAS: Fornillo Creek, Aug., 1883, *Havard,* no. 103 (TYPE, Gray Herb.).

ATRIPLEX GARDNERI (Moq.) D. Dietr., var. **tridentata** (Kuntze), comb. nov. *A. tridentata* Kuntze, Rev. Gen. ii. 546 (1891). *A. pabularis* A. Nels. Bull. Torr. Club xxv. 203 (1898).

This variety is often well marked, differing from the typical form in the nearly oblong leaves and triangular-cuneate usually irregularly dentate bracts. Since intermediate forms are not infrequent, however, as for instance Aven Nelson's no. 3667 from Sweetwater Co., Wyo., I am inclined to treat the plant as representing only a variety of *A. Gardneri.*

Atriplex dioica (Nutt.), comb. nov. *Kochia dioica* Nutt. Gen. i. 200 (1818). *Endolepis dioica* (Nutt.) Standley, N. A. Fl. xxi. 73 (1916).

Atriplex Covillei (Standley), comb. nov. *Endolepis Covillei* Standley, N.A. Fl. xxi. 73 (1916).

The genus *Endolepis* differs from the type species of the genus *Atriplex* only by the presence of a perianth in *all* of the pistillate flowers, this being absent in some of the pistillate flowers of true *Atriplices.* If this character is of generic value how can Standley, maintaining *Endolepis,* consistently regard species of *Atriplex* having *all* the pistillate flowers *without* a perianth as belonging to the genus *Atriplex* ? Yet he follows this obviously illogical reasoning in his interpretation of the genus *Atriplex,* l. c. 33. By all means let us have another genus to care for the 101 species in North America (according to Standley's treatment) referable to neither true *Atriplex* nor *Endolepis* for exactly the same reason, as indicated above.

Atriplex spinifera, spec. nov., fruticosa ramosa; ramis valde spinescentibus; foliis superioribus (inferioribus ignotis) alternis fere sessilibus oblongo-lanceolatis obtusis circa 7 mm. longis, 3–4 mm. latis lepidoto-farinosis; floribus ignotis; bractearum theca subsessili circa 3.5 mm. lata, circa 9 mm. longa subacuta margine integra. — CALIFORNIA: Maricopa hills, Kern Co., May 15, 1913, *Eastwood,* no. 3269 (TYPE, Gray Herb.).

This plant is evidently most closely related to *A. confertifolia* (Torr.) Wats. from which it is at once distinguishable by the narrow fruiting bracts. The bracts of *A. confertifolia* are usually suborbicular. The specimen is very mature, nearly all the leaves having fallen, but apparently these are not crowded as in Torrey's plant. The branches, too, are much more spiny.

Atriplex fera (L.), comb. nov. *Spinacia fera* L. Sp. Pl. ed. 2. ii. 1456 (1763). *Obione fera* (L.) Moq. in DC. Prod. xiii. pt. 2, 107 (1849).

KOCHIA CALIFORNICA Wats. Proc. Am. Acad. xvii. 378 (1882). In the N. A. Fl. xxi. 77 (1916) the place of publication of this species is given as " Proc. Am. Acad. 9: 93. 1874." This may be disposed of as a clerical error. But another error on the same page cannot be passed over so easily. This is the maintenance of *K. vestita* (Wats.) Rydb. as a species distinct from *K. americana* Wats. Even as reference to the volumes nine and seventeen of the " Proceedings " will verify the citations listed above so reference to material of *K. americana* will show that Watson knew what he was about when he treated the more pilose specimens as representing only a variety. Doubtless, too, Watson was aware of the analogous variability displayed by the Old World species, *K. prostrata*. This plant varies from essentially glabrous to inordinately long-villous and though the extremes are much more pronounced than in the case of *K. americana* and the variety *vestita*, no one has considered them other than as constituting one variable specific unit.

Enchylaena tamariscina (Lindley), comb. nov. *Suaeda tamariscina* Lindley in Mitchel Journ. Trop. Austr. 239 (1848). *E. microphylla* Moq. DC. Prod. xiii. pt. 2, 128 (1849). *Kochia microphylla* (Moq.) F. v. Muell. Fragm. Austr. viii. 148 (1874).

Apparently this unusual plant has never been properly christened. I follow Bentham, Moquin, and Volkens in maintaining the genus *Enchylaena* distinct from *Kochia*. It is true, as noticed by Bentham and also by Volkens, that it is not very sharply defined but on the other hand its reduction to *Kochia* would necessitate, in the interests of consistency, the abandoning as well of the long-established genera *Bassia* and *Chenolea*. But in general these four genera are satisfactorily distinct and surely should be maintained.

CORISPERMUM ORIENTALE Lam. *Coriospermum villosum* Rydb. Bull. Torr. Club xxiv. 191 (1897). A sometimes well-marked

variant of this species occurs in North America. This has been described as *C. emarginatum* Rydb., the author distinguishing it from *C. villosum* by the somewhat shorter bracts and entire lack of pubescence. Since it merges with the typical form, however, and since these are characters which are known to be inconstant in most if not all Old World species it may be regarded properly as

CORISPERMUM ORIENTALE Lam., var. **emarginatum** (Rydb.), comb. nov. *Coriospermum emarginatum* Rydb. Bull. Torr. Club xxxi. 404 (1904).

Halogeton souda (Loefl.), comb. nov. *Salsola souda* Loefl. It. 132 (1758). *S. sativa* L. Sp. Pl. ed. 2. 323 (1762). *Halogeton sativus* (L.) Moq. Chenop. Monog. 158 (1840).

This plant, a native of northern Africa and, according to some authorities sometimes cultivated in Middle Europe as a *Gemüsepflanze*, apparently has never been properly christened.

Oligomeris linifolia (Vahl), comb. nov. *Reseda linifolia* Vahl in Hornem. Hort. Hafn. 501 (1815). *O. subulata* Webb, Fragm. Aethiop. 26 (1854). *Reseda subulata* Delile, Fl. Aegypt. Ill. 15 (1813), nomen nudum.

For the complete synonymy of this much named plant see Durand and Schinz, Consp. Fl. Afr. i. pt. 2, 187 (1898). They overlooked the fact, however, that *R. subulata* is a name only and that the first name accompanied by description is *R. linifolia* Vahl. The distribution of this plant is rather remarkable. Nelson and Kennedy, Muhl. viii. 138 (1908) framed the combination *Oligomeris ruderalis* (*Ellimia ruderalis* Nutt.) for a specimen from Nevada, the capsule of which "is distinctly bilobed as to each of the main lobes." I have not seen this material but specimens sent by Mrs. Spencer from the Colorado Desert, California, do not show this double lobing. Indeed I have not been able to distinguish any of the American specimens from authentic material from the Canary Islands.

Lotus Spencerae, spec. nov., perennis adpresse hirsutulus; caulibus suberectis flexuosis pumilis (circa 1 dm. longis) mediocriter divaricato-ramosissimis; foliis trifoliolatis; foliolis ovato-ellipticis minimis circa 3 mm. longis et 2.5 mm. latis; pedunculis axillaribus unifloris folio brevioribus; calycis circa 2 mm. longi dentibus linearibus tubo multo brevioribus; corolla flavo-aurantiaca circa 5 mm. longa; leguminibus junioribus arcuato-incurvis

paullo pubescentibus. — CALIFORNIA: stony slopes, Mountain Springs, Colorado Desert, March 18, 1917, *Mary F. Spencer*, no. 561 (TYPE, Gray Herb.).

This species is most nearly related to *L. Haydoni* (Orcutt) Greene which is essentially glabrous and has subequal corolla and calyx and smaller leaves. In Pitt. ii. 133–137 (1890) Greene showed the naturalness of the genus *Lotus* when considered as embracing the groups sometimes segregated as distinct genera, in *Hosackia*, *Syrmatium*, etc. When viewed in its entirety the group must be treated (if considered logically) in one of two ways. Either Greene's interpretation of the genus must be accepted or the numerous segregate genera must all be adopted, for to recognize one (as some have done in the case of *Hosackia*, for instance) will necessitate the acceptance of the others which have quite as good claim to generic recognition. It is not conceivable that any " conservative " botanist will endorse this segregation of a group which, when considered in the largest sense, forms a very natural entity.

ERODIUM CYGNORUM Nees. So far as I have been able to discover, Mrs. Spencer's specimens from San Diego (to be distributed under her number 227) furnish the first record of the introduction into the United States of this Australian species. According to Bailey this plant exhibits, in its native land, the same weedy propensity displayed by *E. cicutarium*. The question may be raised whether it will become as completely established in this country as the latter which has spread so rapidly in the last decade.

Fremontia mexicana (Davidson), comb. nov. *Fremontodendron mexicanum* Davidson, Bull. So. Calif. Acad. Sci. xvi. 50 (1917).

Despite the presence in botanical literature of the name *Fremontia* for more than one group of plants, its valid use, according to Art. 50 of the International Rules, is restricted to the sterculiaceous group of which the above species is a member; for where the name elsewhere occurs it is universally regarded as a synonym. Besides co-type material (Dr. Davidson's no. 3234) there is a specimen in the Gray Herbarium bearing no data except " San Diego, Cleveland " which is to be referred to this species. As indicated by Dr. Davidson, l. c., the species is an excellent one readily distinguished from *F. californica* by the glabrous pit at the base of the sepals. In the latter species the pit is densely hairy.

LOMATIUM Raf. According to Art. 57 of the International Rules of Botanical Nomenclature, Coulter and Rose, Contrib. U.S. Nat. Herb. xii. 448 (1909), erred in following Jones's rejection of this name because of the earlier *Lomatia* R.Br. This article reads, " When the difference between two names, especially between two generic names, lies in the termination, these names are to be regarded as distinct even though differing by one letter only." *Peponia* and *Peponium* are then cited as examples and these names are obviously analogous to those we are considering. It will become necessary, therefore, to transfer a number of species referred to *Cogswellia* Spreng. (revived by Jones to replace *Lomatium*) and in the course of determinative work the following have come to my notice.

Lomatium millefolium (Wats.), comb. nov. *Peucedanum millefolium* Wats. Bot. King Surv. 129 (1871). *P. Grayi* Coult. & Rose, Bot. Gaz. xiii. 209 (1888). *Cogswellia millefolia* (Wats.) Jones, Contrib. W. Bot. xii. 35 (1908).

Lomatium Chandleri (Jones), comb. nov. *Cogswellia Chandleri* Jones, Contrib. W. Bot. xiii. 11 (1910).

Lomatium Nelsonianum, spec. nov., mediocriter robustum circa 3.5 dm. altum; foliis subradicalibus late ovatis 2.5–3 dm. longis circa 1.5 dm. latis pinnatim vel subternatim decompositis, foliolis pinnatifidis, segmentis cuneatis versus apicem argute dentatis incisisque, supra fere glabris subtus minute hispidis imprimis in nervis; foliis caulinis inferioribus similibus sed brevioribus (circa 1 dm. longis); umbellis multiradiatis; involucelli bracteis linearisubulatis; pedicellis fructiferis minute pubescentibus; fructu fere apud *L. Donnellii* sed alis disco suboblongo paullo angustioribus; vittis in valleculis semper 3. — OREGON: dry rocky hillside near Mule Creek, Curry Co., June 21, 1917, *J. C. Nelson*, no. 1419 (TYPE, Gray Herb.).

No described species of *Lomatium* is more closely related to this one than is *L. Donnellii* Coult. & Rose which may be distinguished by its complete lack of pubescence, more narrowly winged fruits and more numerous (4–6) oil-tubes in the intervals. Moreover it seems to be confined to eastern Oregon and adjacent Idaho — a region noted for the very restricted ranges of the components of its flora. Furthermore the flora of southwestern Oregon — the region from which *L. Nelsonianum* comes — is likewise known for its endemism. Accordingly there is little doubt but that the differences that exist between these two plants are to be considered

as indicating specific values. *L. Plummerae* Coult. & Rose of northeastern California and adjacent Nevada resembles *L. Nelsonianum* in the number of oil-tubes (2–3) in the intervals but otherwise it is widely different, notably in characters of foliage. Mr. Nelson is an enthusiastic student of the flora of his state and finds time apart from his work as principal of the Salem High School to do much collecting. It is a pleasure, therefore, to have the opportunity to connect his name with this flora in which he takes so great an interest.

Arctostaphylos drupacea (Parry), comb. nov. *A. Pringlei* Parry, var. ? *drupacea* Parry, Bull. Calif. Acad. Sci. ii. 495 (1885). *Uva-ursi drupacea* (Parry) Abrams, Bull. N.Y. Bot. Gard. vi. 434 (1910).

Mrs. Spencer has secured, as her no. 500, some excellent specimens of this conspicuous shrub from the region of the type, — near Cuyamaca Lake. This Californian species is genuinely distinct from *A. Pringlei*, which is confined to Arizona, by the character of the completely consolidated stone. Indeed this is so hard that it is not breakable by any ordinary means. The fruit of *A. Pringlei* however (as shown nicely in recent specimens by Goodding) is easily separable into four nutlets by pressure between the fingers. Since recent collections substantiate the constancy of this striking character (pointed out by Parry, l. c.) and since the ranges of the shrubs with coalescent and readily separable nutlets do not meet, it seems proper to consider, as Abrams has done, N. A. Fl. xxix. 99 (1914), the two forms as distinct species. The attempt to use the words " Uva Ursi " as a generic name to replace *Arctostaphylos* is a procedure which Professor Fernald has shown clearly, Rhodora, xvi. 25–26 (1914), to be in accord with neither the International Rules nor the " American " Code.

Madhuca Hamilton ex J. F. Gmel. Syst. ii. 799 (1891). *Bassia* Koenig ex L. Mant. ii. App. 555 (1771) not *Bassia* All. Misc. Taur. iii. 177, t. 4 (1766). *Illipe* Koenig ex F. v. Muell. Select Extra-trop. Pl. Am. Ed. 181 (1884); Engler, Bot. Jahrb. xii. 509 (1890). *Vidoricum* Rumpf. ex Kuntze, Gen. Pl. ii. 407 (1891).

Engler, l. c., showed the necessity of replacing the name *Bassia* Koenig because of the earlier valid *Bassia* Allioni. He erred, however, in taking up the name *Illipe*, first published by F. von Mueller, l. c. The situation is well explained by Cooke in his Flora

of Bombay ii. 92 (1904). " In his description of *Bassia longifolia*, Linnaeus (Mantiss. p. 563) mentions that Koenig (MS.) had given *Illipe* as a name of the plant. This name (*Illipe*) is the Tamil name of the tree and Koenig evidently intended to explain that it was the *Illipe* of the inhabitants of the Malabar coast (*Illipe malabarorum*). F. von Mueller (Select Extra-Trop. pl. ed. 5, p. 181) under the mistaken notion that Koenig, notwithstanding his having already established the genus *Bassia*, had changed the name of that genus to *Illipe*, called *Bassia latifolia* by the name *Illipe latifolia*. Engler (Engl. & Prantl, Pflanzenf. v. 4, part 1, p. 133) follows Mueller in his mistake and gives the name *Illipe*, Koenig, to the genus. Koenig has nowhere published the genus as *Illipe*, and the only name possible to recognize for it is *Bassia*." Trimen in his Flora of Ceylon iii. 79 (1895) also calls attention to Engler's mistake. " This [*Illipe malabarorum*] has been recently published by Engler as if a generic and specific appellation, to which it has no sort of claim." Kuntze, l. c., makes the same point as do also King and Gamble, Flora Malayan Pen. xvii. 176 (1905). But we do not need to depend upon recent authors to explain the significance of the phrase " *Illipe malabarorum* " for Gras in 1864, Bull. Soc. Bot. France, xi. 71–85 showed its meaning in his highly interesting paper " L'histoire du genre *Bassia*." Engler makes no reference to Mueller's publication, l. c., of *Illipe latifolia* which he probably overlooked since he makes the combination as his own, Bot. Jahrb. xii. 509 (1890). He is correct, however, in his statement that *Bassia* Koenig must be replaced because of the presence of the earlier and valid *Bassia* Allioni, l. c. This is in accord with the International Rules, Art. 51.2. And there is no question as to the validity of the publication (accord. to Int. Rules, Art. 37, 38) of Allioni's genus since there is not only an excellent description but also a good plate showing the plant and the floral parts. Since, as shown above, *Illipe* was not published until by F. von Mueller, l. c., the first available name for the group of plants known as *Bassia* Koenig is *Madhuca* Hamilton ex J. F. Gmel., l. c. About thirty species are known, the following being represented in the Gray Herbarium or in the herbarium of the Arnold Arboretum.

Madhuca longifolia (L.), comb. nov. *Bassia longifolia* L. Mant. 563 (1771). *M. indica* J. F. Gmel. Syst. 799 (1791). *Illipe Malabrorum* Koenig ex Engler, Bot. Jahrb. xii. 509 (1890).

Madhuca obovata (Forst. f.), comb. nov. *Bassia obovata* Forst. f. Prod. 35 (1786).

Madhuca latifolia (Roxb.), comb. nov. *Bassia latifolia* Roxb. Pl. Cor. 20, pl. 19 (1795). *Illipe latifolia* F. von Muell. Select Extra-trop. Pl. Am. Ed. 181 (1884).

Madhuca butyracea (Roxb.), comb. nov. *Bassia butyracea* Roxb. As. Res. viii. 477 (1805). *Illipe butyracea* Engler, l. c.

Madhuca cuneata (Blume), comb. nov. *Bassia cuneata* Blume, Bijdr. 675 (1825). *Illipe cuneata* Engler, l. c.

Madhuca fulva (Thwaites), comb. nov. *Dasyaulus fulvus* Thwaites, Enum. Pl. Zeyl. 176 (1860). *Bassia fulva* Thwaites ex Bedd. Forest. Man. Bot. 140 (1873). *Illipe fulva* Engler, l. c.

Madhuca Motleyana (de Vriese), comb. nov. *Isonandra Motleyana* de Vriese, Natumk. Tijdschr. Neerl. Ind. xxi. 308. 1860, & Miq. Journ. Bot. Neerl. i. 257 (1861). *Bassia Mottleyana* Clarke, Hook. f. Fl. Br. Ind. iii. 546 (1882). *Illipe Mottleyana* Engler, l. c.

Madhuca amicorum (Gray), comb. nov. *Bassia amicorum* Gray, Proc. Am. Acad. v. 327 (1862).

Madhuca betis (Blanco), comb. nov. *Azaola betis* Blanco, Fl. Filip. ed. 1. 402 (1837). *Illipe betis* Merrill, Forest. Bureau Philipp. Bull. i. 46 (1903).

Madhuca multiflora (Merrill), comb. nov. *Illipe multiflora* Merrill, Philipp. Gov. Lab. Bur. Bull. xvii. 41 (1904).

MERTENSIA OBLONGIFOLIA (Nutt.) G. Don, var. **nimbata**, var. nov., foliis utrinque pubescentibus. — MONTANA: Bozeman, May 18, 1893, *Camilla Gottschalck* (TYPE, Gray Herb.).

The discovery of a plant of this species which has the leaves pubescent on both sides instead of only on the upper surface makes eleven species, or approximately one-third of the known species of North America, which exhibit this sort of variation. The character, though trifling, is always obvious and may be noted in classification as a variety.

PHACELIA CALIFORNICA Cham., f. **immunda**, f. nov., f. *egenae* peraffinis sed plus minusve glandulosa. — OREGON: dry rocky ridge, Agness, Curry Co., June 23, 1917, *J. C. Nelson*, no. 1470 (TYPE, Gray Herb.).

Except for the glandulosity this plant might be referred to forma *egena* which has been secured by Heller (no. 7993) in adjacent California.

Lycium Spencerae, spec. nov., frutex mediocriter ramosus fere inermis; ramis gracilibus in spinos terminantibus; foliis linearioblanceolatis circa 15 mm. longis 2.5 mm. latis minute pubescenti-

bus; floribus sessilibus; calyce glabro campanulato circa 4 mm. longo lobis brevibus ovatis acutis; corolla late campanulata circa 5 mm. longa lobis latis erectis; staminibus styloque inclusis, filamentis glabris; bacca ignota. — CALIFORNIA: summit El Cajon Pass, San Bernardino Co., May 12, 1917, *Mrs. Mary F. Spencer*, no. 366 (TYPE, Gray Herb.).

The short campanulate calyx and corolla are characters which definitely ally this species to *L. californicum*. The latter plant, however, has small thick glabrous leaves and is of totally different habit, being a very spinescent much branched shrub. *L. Spencerae*, on the other hand, produces simple elongate flowering branches spinescent only at the tip and thickly clothed with long narrow leaves.

Terracciano's revision of *Lycium* in Malpighia iv. 472–540 (1891) is scarcely to be taken seriously. His conception of " species " and " variety " is so extreme that his work is of little value except as indicating the grouping of the described forms. The species in the genus are numerous and certainly closely related but apparently they do not often intergrade and may be distinguished rather easily by Dr. Gray's treatment in the Flora of California and in the Proc. Am. Acad. vi. 45. Therefore, in following Dr. Gray's interpretation of specific limitations here I have been compelled to consider the above plant as a species amply distinct from its nearest relative, *L. californicum*, and in assigning to it the name *L. Spencerae* I have accorded well-merited recognition to an enthusiastic and discriminating collector.

Cirsium praeteriens, spec. nov., ut videtur validum et 1 m. altum; caulibus superne foliosissimis parce arachnoideis; foliis valde spinescentibus caulinis oblongo-lanceolatis 1.5–2 dm. longis supra viridibus et fere glabris subtus lanuginoso-tomentosis subpinnatifidis, laciniis brevibus saepius trilobis lobis triangulari-lanceolatis spina circa 5 mm. longa terminatis; foliis superioribus similibus sed brevioribus; capitulis sessilibus folioso-bracteatis 3–5 aggregatis vel rare solitariis circa 5 cm. altis; involucro campanulato circa 3 cm. alto; squamis subimbricatis exterioribus arachnoideis erectis spinescentibus margine minute et parce ciliatis, interioribus similibus sed vix rigidis et margine dense papilloso-ciliatis; corolla albida fere 3.5 cm. longa lobis circa 7 mm. longis quam limbus paullum brevioribus; pappo paullo sordido. — CALIFORNIA: Palo Alto, July 19, 1897, *Congdon*, no. 6 (TYPE, Gray Herb.); also July 7, 1901.

It seems remarkable that this splendid thistle should have escaped notice so long since it grows at the very door, so to speak, of one of the principal herbaria of the Pacific coast. An explanation may be had, however, from the fact that the identity of two species in the *C. edule* group (to which *C. praeteriens* belongs) has been obscure. *C. Andrewsii* (Gray) Jepson was described from a meager specimen showing only an upper branch. When Professor Jepson included it in his Flora of W. Middle Cal. ed. 1, 506, (1901) he referred to it a specimen collected by Miss Eastwood from Tennessee Bay with the note "(apparently also at Lake Merced) and distributed by her as *Carduus amplifolius* Greene." In the second edition, p. 423 (1911), Tennessee Bay is still given as the only known locality and no mention is made of Greene's *amplifolius*. I have compared Miss Eastwood's specimens with the type of *C. Andrewsii* and there is no doubt that they are referable to that species; and since they agree precisely with the description of *Carduus amplifolius* Greene, Bot. San F. Bay Reg. 217 (1894) I have no hesitancy in regarding this name as a synonym. It may be noted that Miss Eastwood's material is fine, consisting of several sheets which show the entire plant. A distinctive character of *C. Andrewsii* is the great reduction of the upper leaves. These are broadly ovate in outline and, as described by Dr. Gray, laciniate-pinnatifid. The lower cauline leaves are well-described by Greene, l. c. *C. praeteriens* is nearest this species but is at once distinguished by reason of its comparatively narrow inordinately spinose leaves which are scarcely reduced upward and retain to the heads their oblong outline. The narrow rigid lobes of the leaves are very different from the broad soft overlapping lobes that characterize *C. Andrewsii*. The flowers of the latter are not " whitish " but roseate (as is still evident even in the type) and the heads are smaller (3–4 cm.) than those of *C. praeteriens*. Only two other species of this group, characterized by leafy-bracted heads, are known from the vicinity of San Francisco, viz. *C. edule* and *C. crassicaule* and these are obviously very different from our plant. *C. crassicaule* was first collected by Dr. Kellogg in April, 1868 or 1869 and was cited by Dr. Gray, Proc. Am. Acad. x. 41 (1875) as representing his new species *Cnicus quercetorum*. He based this species, however, upon an Oakland specimen collected by Bolander and this is to be taken as the type since his description was evidently drawn from that material rather

than Kellogg's. He also cites the Bolander specimen first. Moreover, in the Fl. of Cal. i. 418 (1876), having noticed the leafy-bracted heads of Kellogg's plant he appended a note to that effect and suggested ecological conditions as a probable cause. Of course it is now well-known that the character of leafy bracts beneath the heads is constant and of specific value. Professor Jepson, Fl. W. Middle Cal. ed. 2, 423 (1911) has indicated the glabrous (in age) involucre as a means of distinguishing this species (*C. crassicaule*) from *C. Andrewsii* but the elongate upper leaves also furnish a means of separation. The former character distinguishes it also from *C. praeteriens*, which it resembles in its elongate upper leaves but these have the broad ample lobes of the leaves of *C. Andrewsii*. The broadly ovate proper bracts resemble most those of *C. quercetorum*, so it is not very surprising that Dr. Gray referred (although doubtfully) Kellogg's rather meager specimen to that species.

In recognizing the genus *Cirsium* as distinct from *Carduus* I am following Bentham, Gray, Hoffmann, Petrak and many others. It is rather singular that the recognition of this genus has not come more readily in this country. It was accepted in Gray's New Manual, however, and I feel it will be taken up generally as soon as it is realized that the weight of authority in the botanical world is for its recognition. I am taking this opportunity to transfer two beautiful species with which I am very familiar in the field. The first forms an important component of the midsummer flora of the Laramie Plains and the second is characteristic of wet saline flats at low altitudes in central and western southern Idaho. It is truly a magnificent plant growing often as high as five feet and coloring gorgeously, both as to stem and bracts, toward maturity. The cobwebby pubescence of the bracts glistening in the sun accentuates their beauty. In emphasizing the attractiveness of this species I have had in mind *Cirsium foliosum* (Hook.) DC. which it resembles too closely in the herbarium and from which it is mainly distinct by characters of habit and habitat. *C. foliosum*, however, is a comparatively low plant, smaller in all its parts and an inhabitant of non-saline grasslands. It is not uncommon, either, in Idaho but the collector would never confuse it with *C. magnificum*.

Cirsium Nelsoni (Pammel), comb. nov. *Cnicus Nelsoni* Pammel, Proc. Iowa Acad. Sci. viii. 235 (1901). *Carduus Nelsonii*

Pammel acc. to A. Nels. in Coulter & Nelson, Man. Bot. Rocky Mts. 586 (1909).

Cirsium magnificum (A. Nels.), comb. nov. *Carduus magnificus* A. Nels. Bot. Gaz. liii. 228 (1912).

Cirsium Drummondii T. & G., var. **acaulescens** (Gray), comb. nov. *Cnicus Drummondii* T. & G., var. *acaulescens* Gray, Proc. Am. Acad. x. 40 (1874). *Carduus Drummondii acaulescens* (Gray) Cov. Contrib. U. S. Nat. Herb. iv. 142 (1893).

This curious form of the species, well represented by Mrs. Spencer's no. 474 from San Diego County, not infrequently grows with the typical state in Idaho, and, according to Hall, Univ. Cal. Publ. Bot. iii. 238 (1907) also in California.

Cirsium occidentale (Nutt.) Jepson, var. **candidissimum** (Greene), comb. nov. *Carduus candidissimus* Greene, Proc. Phil. Acad. 1892. 359 (1893). *C. occidentalis* Nutt., var. *candidissimus* (Greene) Hall, Univ. Cal. Publ. Bot. iii. 240 (1907).

This handsome variant of the typical form of the species has been secured in Curry County, Oregon, by Professor J. C. Nelson (his number 1518). Dr. Hall, l. c., has shown that the plant is to be considered only as a variety of true *C. occidentale* since intermediate forms are frequently met with.

Stephanomeria exigua Nutt., var. **Deanei,** var. nov., ramis intricato-ramosissimis plus minusve glandulosis. — California: Sweetwater Valley, San Diego Co., July 23, 1888, *Geo. C. Deane* (type, Gray Herb.); sandy valley-bottoms, San Diego, Oct. 20, 1916, *Mary F. Spencer*, no. 293.

This is the plant to which Hall refers, Univ. Cal. Publ. Bot. iii. 260 (1907), as follows: " The common form [of *S. exigua*] in southwestern San Diego Co. is intricately branched, the twigs very slender, the herbage conspicuously glandular, and the pappus that of the *S. coronaria* form. It apparently grades into *S. exigua* as regards all of these characters." Nevertheless it would seem to merit recognition as a variety since its glandulosity is so striking a character and since it so largely if not quite replaces in San Diego County the typical form. It is a pleasure to connect the name *Deane* with the flora of the region, the collector of this plant having secured many specimens for his brother, the enthusiastic New England botanist, Walter Deane, whose long interest in taxonomy has been so appropriately remembered by Coulter and Rose in the genus *Deanea*.