

be considered a contribution to the methods by which similar problems may be handled by the Nation in the future. In the administration of the National Forests there is being developed gradually what I believe to be a truly scientific system for attaining a concrete economic end, a system of controlling certain correlated industries with a single purpose in view—the maximum of the welfare of the Nation as a whole. In spite of many mistakes which we have undoubtedly made and which we have attempted to correct as we went along, in spite of the lack of practice and experience in solving the problems at hand, this new policy, it seems to me, has already proved to be entirely safe and workable.

BOTANY.—*A new genus of Chenopodiaceae*,¹ from Arizona.

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While examining some sheets of Chenopodiaceae from the herbarium of the Missouri Botanical Garden not long ago the writer came upon one consisting of specimens of a low shrub, from northern Arizona, which in general appearance were exactly like *Grayia brandegei*; and being only in flower they were so labeled, although that species was not otherwise known from Arizona. The specimens were associated with this rare species quite naturally, for the writer knew there was no other described member of the Chenopodiaceae in the Southwest that was similar in general aspect.

More recently Mrs. Walter Hough has generously presented to the U. S. National Museum an interesting collection of plants, gathered chiefly in northern Arizona in 1896 and 1897. While inspecting the sheets of this accession the writer's attention was drawn to one which at once recalled the specimen just mentioned. This second one, however, was in mature fruit and showed clearly that the plant was no *Grayia*. Careful examination definitely placed it as a member of the Atripliceae, but as scarcely referable to any known genus. While, unfortunately, this curious shrub is known only from pistillate branches, the staminate flowers

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in this group of the Chenopodiaceae are of so little taxonomic importance—being singularly uniform through all the genera of the tribe—that the writer has no hesitation in making it the basis of a new genus, named in honor of the discoverer. Its characters are discussed below.

ZUCKIA Standley, gen. nov.

Low erect shrubs, with a copious covering of whitish inflated trichomes. Leaves numerous, alternate, petiolate, the blades flat, entire. Flowers dioecious, the pistillate ones sessile, solitary or in small glomerules forming short interrupted naked paniculate spikes, each flower bibracteolate, the bractlets accrescent in age, united except for a small aperture at the depressed apex, slightly inflated, thin, depressed vertically, 6-carinate vertically, 2 of the keels broader than the others and winglike; perianth none. Ovary depressed-globose; stigmas 2, filiform, exserted, connate at the base. Utricle included in the bracts, the pericarp membranaceous. Seed horizontal, the testa membranaceous; embryo annular, surrounding the copious endosperm; radicle centrifugal.

Type species, *Zuckia arizonica* Standley.

Zuckia arizonica Standley, sp. nov.

Plants 1.5–4 dm. high, fruticose nearly throughout, copiously branched, the branches slender, erect, striate, the older ones gray or brown, the younger ones stramineous and densely furfuraceous; leaf blades oblong-oblancheolate or spatulate-oblancheolate, or the uppermost linear-oblancheolate, 10–20 mm. long, 1.5–7 mm. wide, obtuse to acutish at the apex, attenuate at the base to a short stout petiole, thick and somewhat coriaceous, grayish-furfuraceous; pistillate spikes much interrupted, divaricate, forming nearly naked panicles 5–12 cm. long and 2–6 cm. wide; fruiting bractlets 4–5 mm. broad, densely furfuraceous, the 6 keels acute, two of them usually 1–1.5 mm. wide and winglike; utricle furfuraceous; seed orbicular, compressed, 2 mm. in diameter, yellowish brown, dull.

Type in the U. S. National Herbarium, no. 694799, collected at Chalcedony Park (the Petrified Forest), eighteen miles southeast of Holbrook, Arizona, October 15, 1897, by Miss Myrtle Zuck (Mrs. Walter Hough). Also collected at Adamana, Arizona, in early August, 1903, by Dr. David Griffiths, no. 5085 (Mo. Bot. Gard. no. 46127). The type is in mature fruit and the second specimen in flower.

The genus *Zuckia* is a member of the tribe Atripliceae, subtribe Atriplicinae, as defined by Volkens.² It is difficult to tell to which of the included genera it is most closely related. In the key given by Volkens it would run to either *Spinacia* or *Suckleya*. Certainly

² In Engl. and Prantl, Nat. Pflanzenfam. 3^{1a}: 62. 1893.

Zuckia is not very closely related to the species of Spinacia, which are glabrous annuals with indurated bracts, 4 or 5 stigmas, and vertical seeds. Suckleya, too, is an herbaceous plant with strongly obcompressed bracts and vertical seeds. Only two other genera are included in the subtribe Atriplicinae: Endolepis and Atriplex. Endolepis has been included in Atriplex by most authors, but it seems to the writer sufficiently distinct in having a perianth in the pistillate flowers, a character which, along with its vertical seeds, also separates it from Zuckia.

Apparently this new genus is most closely related to Atriplex, but in the latter the bracts are never wholly united; at least the tips are always free, and commonly the bracts are distinct at least to the middle, often nearly or quite to the base. In Zuckia they are wholly united, and at the depressed apex there is only a very small aperture through which the styles are exerted. In only a small group of Atriplex species—the subgenus Dichospermum Dum., which contains the type of the genus, *A. hortensis*—are horizontal seeds found. In these species there are two kinds of pistillate flowers on each plant: some with vertical seeds inclosed by two distinct bracts, and others with horizontal seeds inclosed in a regular herbaceous calyx. In Zuckia all the pistillate flowers are alike, having the horizontal seed included in the somewhat inflated bracts, with no calyx present. As already noted, Zuckia bears a superficial resemblance to *Grayia brandegei*, the two being almost exactly alike in habit and leaf form; but the species of *Grayia* have a copious pubescence of small branched hairs, and, of course, the structure of the pistillate flowers and the fruit is very different.

Zuckia is evidently a very distinct genus and one of the most remarkable members of the whole tribe. That it was not found by some of the earlier collectors who visited this region is rather strange, but doubtless attributable to the circumstance that the two localities whence it now comes are in a part of Arizona in which comparatively little collecting has been carried on. This and the fact that so much critical attention has been given recently to the Chenopodiaceae, without the discovery of this new generic type, lead to the belief that Zuckia is generally wanting in herbaria. Its rediscovery and collection in adequate amount for distribution will be a matter of much interest; for, while many new genera have been proposed in recent years for United States plants removed from well known genera, the opportunity rarely arises of establishing a genus of phanerogams upon a plant previously quite unknown.