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The Taxonomic Relationships of *Allocarya corallicarpa* (Boraginaceae)

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## NOTES

THE TAXONOMIC RELATIONSHIPS OF *ALLOCARYA CORALLICARPA* (BORAGINACEAE).— In western Oregon, two species of *Plagiobothrys* are distinctive in having relatively showy flowers, in which the corolla limb is 5–10 mm broad. One, *P. figuratus* (Piper) I. M. Johnston, is common and widespread (southern Vancouver Island to south-western Oregon), whereas the other, *P. hirtus* (E. Greene) I. M. Johnston, exists only in a small area of Douglas County, near the towns of Sutherlin and Yoncalla. *Plagiobothrys hirtus* is under consideration by the Oregon Department of Agriculture for possible listing and protection under the state's endangered species regulations. It is also included, under the name *P. hirtus* var. *hirtus*, on the federal list of candidate species (C2 designation) of the U.S. Fish and Wildlife Service, Endangered Species Office. Although *P. hirtus* is similar to *P. figuratus* in the morphology of the corolla and nutlets, the two species consistently differ in the pubescence of the upper stems and branches, which are strigose in *P. figuratus* and spreading hirsute in *P. hirtus* (see A. Cronquist in C. L. Hitchcock et al., *Vasc. Pl. Pac. N.W.* 4:239, 1959). In Douglas County, *P. figuratus* sometimes grows sympatrically with *P. hirtus* (e.g., *J. Kagan* 6038302, 6038303, Hwy. 99 just south of the I-5 exit to Sutherlin; ORE). No plants have been seen that combine the distinctive pubescence types of the two taxa. Cronquist (loc. cit.) at one time suggested that the two species might have to be united taxonomically, but their ability to remain biologically distinct when sympatric makes such a merger unnecessary.

This note is to comment on a third related taxon, designated on the federal C2 candidate species list as *P. hirtus* var. *corallicarpus* (Piper) I. M. Johnston. I have examined type specimens of the basionym *Allocarya corallicarpa* Piper (*C. V. Piper* 5021, Grants Pass, Josephine Co., US [holotype], GH, WS [isotypes]; *C. V. Piper* 5022, Medford, Jackson Co., GH, WS [paratypes]; *M. E. Peck* 2956, Grants Pass, WILLU, WS [paratypes]), and all available specimens of *P. hirtus* and *P. figuratus* at OSC and ORE. In Piper's original publication (*Proc. Biol. Soc. Wash.* 37:93–94, 1924), the stems of *A. corallicarpa* are described as "strigillose," and this can be verified on the type specimens, which show the same dense and rather fine, appressed trichomes as occur in *P. figuratus*. In other traits, such as leaf pubescence, corolla size, and bractless, geminate racemes, *A. corallicarpa* strongly resembles *P. figuratus* as well. The type specimens of *A. corallicarpa* possess nutlets that are more prominently ridged, and hence more deeply alveolate, than in *P. figuratus* and *P. hirtus*. Variation in the shape and size of the nutlets, as well as characteristics of the attachment-scar, are otherwise similar in all three taxa.

In the taxonomically important trait of stem pubescence, *A. corallicarpa* resembles *P. figuratus* rather than *P. hirtus*. Why, then, did I. M. Johnston make it a variety of the latter species rather than the former? At the time he published the combination *P. hirtus* var. *corallicarpus* (*J. Arnold Arb.* 16:193, 1935), Johnston considered the three taxa under discussion—*hirtus*, *figuratus*, and *corallicarpus*—to be conspecific. Because the epithet *hirtus*, based on *Allocarya hirta* Greene (*Pittonia* 1:161, 1888) had priority, Johnston adopted it in making his new combinations in *Plagiobothrys*, and reduced *figuratus* and *corallicarpus* to varietal rank. By taking up the name *P. hirtus*, Johnston was correcting his earlier view (*Contr. Arnold Arb.* 3:52–54, 1932) that *P. scouleri* (Hook. & Arn.) I. M. Johnston should be applied to the species containing *hirtus*, *figuratus*, and *corallicarpus*. By 1935, he had examined the original collections of *P. scouleri* at Kew and concluded that they represented a different species of the Pacific Northwest, having much smaller flowers than *P. hirtus*. Recent authors such as Cronquist (op. cit.) have followed this revised interpretation of *P. scouleri*.

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In a letter to Morton E. Peck, dated 3 October 1939 (WILLU archives) Johnston wrote that he was inclined to separate "the common forms of the old *Allocarya Scouleri* aucts. (sic!)" from *P. hirtus*, and "(I)f this is done your plant of the Willamette Valley will have to be called *Allocarya figuratus* (sic!) Piper." Shortly thereafter, Peck published the combination "*Plagiobothrys figuratus* (Piper) Johnst." (Man. Higher Pl. Oreg. 609, 1941), without specifically citing Piper's basionym. However, in synonymy under three other species of *Plagiobothrys*, Peck does mention species names in *Allocarya* published by Piper. For nomenclatural stability, it seems best to follow the precedent of Cronquist (op. cit.) and other authors in considering that Peck's publication contains an adequate, though indirect, reference to a previously and effectively published description (see Art. 32.4, Internl. Code Bot. Nomencl., 1988).

I have seen no recent collections from southwestern Oregon having the deeply and complexly ridged nutlets of *A. corallicarpa*, and the taxon has been listed as possibly extinct ("Rare, Threatened and Endangered Plants and Animals of Oregon," Oreg. Natural Heritage Data Base, Portland, 1988). To facilitate reference to this interesting plant and provide an appropriate name, should it eventually be rediscovered, the following taxonomic change is proposed:

***Plagiobothrys figuratus* (Piper) I. M. Johnston ex M. E. Peck subsp. *corallicarpus*** (Piper) Chambers, *comb. nov.*—*Allocarya corallicarpa* Piper, Proc. Biol. Soc. Wash. 37:93–94. 1924.—TYPE: Oregon, Josephine Co., Grants Pass, *C. V. Piper 5021*, 2 Jun 1921 (holotype US!; isotypes, GH!, WS!).

*Additional specimens examined.* OR, Josephine Co.: Grants Pass, 16 May 1910, *A. A. Heller 10026* (GH); T37S R6W sect. 10, 27 Apr 1941, *E. P. Cliff C308* (GH); T37S R6W sect. 11, 11 May 1946, *L. E. Detling 5629* (ORE). Jackson Co.: Sams Valley, 7 Jun 1930, *L. F. Henderson 12727* (ORE).—KENTON L. CHAMBERS, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331. (Received 17 Apr 1989; accepted 3 Jul 1989.)

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COMMENTS AND NOTES ON *PORTULACA* IN CALIFORNIA.—Two species of *Portulaca* occur in California: *P. oleracea* L., without conspicuously hairy axils, and a second species with conspicuously hairy axils. The remainder of this discussion concerns only the hair axiled (pilose) species. This species has previously been reported for California (Munz, A California Fl., 1959) as *P. mundula* I. M. Johnston. Munz (A California Fl., 1959) describes *P. mundula* as having pink to purplish petals, but later he (Munz, A Fl. of Southern California, 1974) describes the petals as pink to purplish at least in age.

This species has been collected in California only four times: twice by Roos and Roos (*Roos and Roos 4951, 5900*) and twice by Thorne et al. (*Thorne et al. 48603, 53590*). Three collections (*Roos and Roos 4951, 5900; Thorne et al. 53590*) are from the same general area (Little San Bernardino Mts./Hidden Valley/Joshua Tree Nat. Mon.), and a fourth (*Thorne 48603*) from the New York Mts. All the Roos and Roos specimens note the petals as yellow, drying reddish, and are labeled *P. parvula* A. Gray. The *Roos and Roos 5900* specimen at RSA/POM is annotated "*P. mundula* ? PAM-1970" by Munz. The Thorne et al. collections do not note petal color. Apparently the Thorne collections are labeled *P. mundula* because the only pilose (hairy axiled) *Portulaca* in Munz (A California Fl., 1959; A Fl. of Southern California, 1974) is *P. mundula*. Based on the Roos and Roos material the pilose *Portulaca* species in California has yellow petals, not red.

Matthews and Levins (Castanea 50:96–104, 1985; Sida 11:45–61, 1985; Syst. Bot. 11:302–308, 1986), working on *Portulaca* in the southeast U.S., summarize problems with *Portulaca* identification, classification, and evolution. They note the need for flower color information on herbarium material and the difficulties in using capsule