Aliso: A Journal of Systematic and Evolutionary Botany

Volume 5 | Issue 3 Article 3

1963

The Generic Position of "Boisduvalia Tasmanica"

Peter H. Raven

ALISO

VOL. 5, NO. 3, pp. 247-249 APRIL 15, 1963

THE GENERIC POSITION OF "BOISDUVALIA TASMANICA"

PETER H. RAVEN[1]

In the year 1847, J. D. Hooker, in his "Florae Tasmaniae Spicilegium: *or, Contributions towards a Flora of* Van Diemen's Land" (Lond. J. Botan. 6: 475) described *Oenothera tasmanica,* basing it on a collection sent by Ronald Gunn from Marlborough, Tasmania. Hooker compared his new species closely with *O. dentata* Cav. of North and South America, despite the fact that it had "Flores purpurei," whereas *O. dentata* has bright yellow flowers. Later, in his *Flora Tasmaniae* (1: 119. 1860) Hooker for the most part repeated his 1847 description but questioned the color of the flowers. Bentham, on the other hand, in his treatment of the spcies in the *Flora Australiensis* (3: 303. 1866) stated that its flowers were yellow and that "Further specimens may possibly show the two [i. e., *Oenothera tasmanica* and *O. dentata*] to be forms only of one species."

Oenothera tasmanica retained its position as the only species of *Oenothera* native to Old World until 1942 when Dr. P. A. Munz transferred it, without much comment, to *Boisduvalia,* stating: "Evidently very near to *B. glabella,* but apparently separable by having the capsule enlarged somewhat in upper portion" (Darwiniana 5: 142. 1942).

Winifred M. Curtis, of the University of Tasmania, Hobart, first called my attention to the fact that *"Boiduvalia tasmanica"* was closely similar to some of the Tasmanian species of *Epilobium,* and further that it was not an annual, like all other species of *Boisduvalia,* but perennial, and occurred in closed grassland communities in the mountains of Tasmania. She further pointed out that it was not entirely restricted to Tasmania, but occurred in the mountains of Victoria on the Australian mainland. Later, she very kindly sent seeds of this species collected by Mr. W. D. Jackson in the Kosciusko Range of the mainland. I was able to grow the plant in Claremont from these seeds, and this provided ample material for a re-evaluation of its generic status.

"Boisduvalia tasmanica" is clearly not referable to *Oenothera,* as can be inferred from its erect sepals, purple flowers, and pollen in tetrads, among other characteristics. There seems to be no doubt that Munz was correct in placing it in the tribe Epilobieae. There is more reason however to question its generic position. As I understand it, tribe Epilobieae includes three genera, *Epilobium, Zauschneria,* and *Boisduvalia. Zauschneria,* consisting of several suffrutescent species with tubular red flowers, is endemic to the southwestern United States and adjacent Mexico, and need not concern us further here. Excluding *"Boisduvalia tasmanica"* for the moment, the distinctions between *Epilobium* and *Boisduvalia* are as follows: all species of *Boisduvalia* are annual and lack a coma on the seed; only two or possibly three species of *Epilobium* are annual. In only two cases (*E. glandulosum* Lehm. var. *ecomosum* Fassett; and a form of *E. glandulosum* found in the Hortus Bergianus, Stockholm—cf. Sv. Botan. Tidskr. 52: 191–192, 550–551. 1958) have species of *Epilobium* been found to lack a coma, the tuft of hairs at the chalazal end of the seed which aids in dispersing the seeds of these plants.

[1]Present address: Division of Systematic Biology, Stanford University, Stanford, Calif. I am most grateful to Miss Gretel W. Dalby for the illustration.

Notwithstanding this, there are a number of reasons why *"Boisduvalia tasmanica,"* despite its lack of a coma, is better considered a species of *Epilobium.* As mentioned above, all species of *Boisduvalia* are annual, and they are confined to arid western North and South America, often growing in places that are moist, at least in the spring. On the other hand,

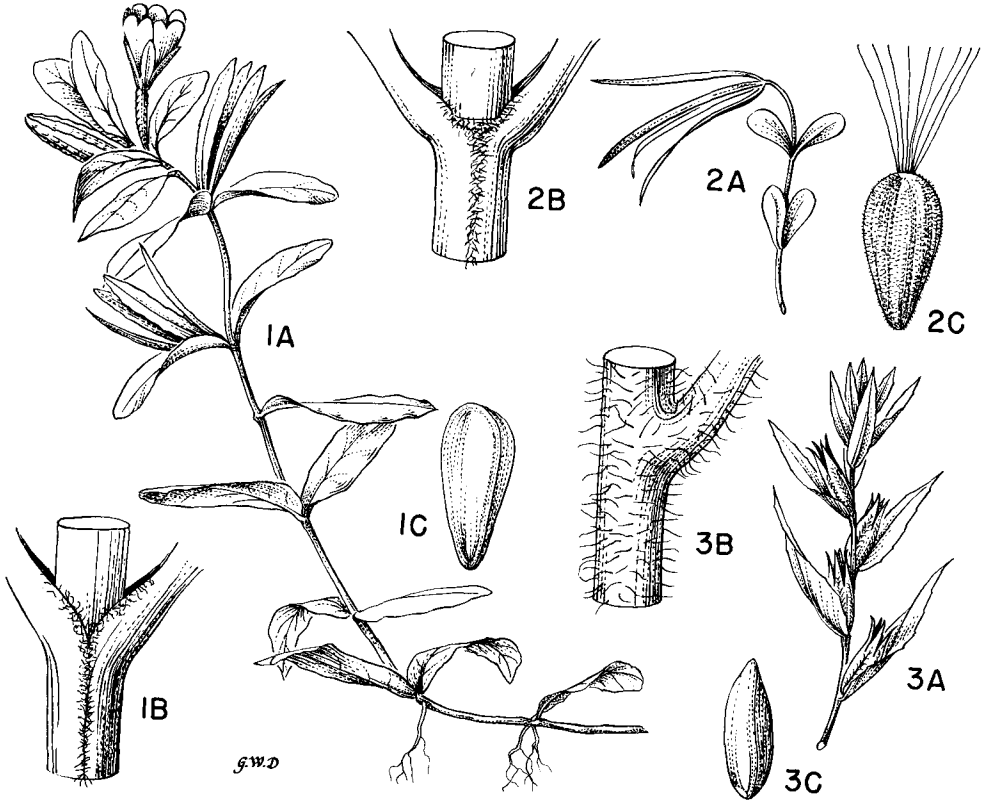

Fig. 1–3. Fig. 1. *Epilobium curtisiae (Boisduvalia tasmanica),* from an isotype (*R. Gunn 1065;* BM); 1A. Habit, × 2; 1B. Leaf axil, showing pubescence, × 10; 1C. Seed, × 20.—Fig. 2. *E. confertifolium,* from Mt. Bonpland, South Island, N. Z. (*Gibbs 1184;* BM); 2A. Habit, × 2; 2B. Leaf axil, showing pubescence, × 10; 2C. Seed, × 20.—Fig. 3. *Boisduvalia glabella,* from Bozeman, Mont. (*Blankinship 188;* BM); 3A. Habit, × 2; 3B. Leaf axil, showing pubescence, × 10; 3C. Seed, × 20.

"B. tasmanica", as Winifred Curtis suggested, is a perennial (Fig. 1A). Furthermore, its leaves are opposite nearly to the summits of the stems, just as in *Epilobium confertifolium* Hook. f. (Fig. 2) and related species of Haussknecht's (Monogr. Epil., p. 295. 1884) Australasian group Microphyllae; in species of *Boisduvalia,* all of the leaves beyond the seedling stage are alternate. Unlike any species of *Boisduvalia* (Fig. 3B, *B. glabella* (Nutt.) Walp.), *"B. tasmanica"* has hairs on the stems extending down in lines from the bases of the petioles (Fig. 1B), as do many species of *Epilobium* (Fig. 2B). Munz (Darwiniana 5: 126. 1941) states that the anthers of *Boisduvalia* are basifixed, wheres in *Epilobium* they

are versatile, but a re-examination has shown that in all members of the tribe Epilobieae, including *"B. tasmanica"*, the anthers are versatile, although in self-pollinating species they may be reduced in size. Despite their lack of a coma, the narrowly winged seeds of *"B. tasmanica"* (Fig. 1C) are more similar to those of *Epilobium confertifolium* (Fig. 2C) in shape than they are to those of *Boisduvalia glabella* (Fig. 3C). Moreover, the papery capsules of *"B. tasmanica,"* which readily split nearly to the base (Fig. 1A) are much more similar to those of *E. confertifolium* (Fig. 2A) than they are to the tough, tardily dehiscent capsules of *Boisduvalia glabella.* Finally, the strain of *"B. tasmanica"* mentioned above (seeds from the Kosciusko Range, S.E. Australia, March 1961, W. D. Jackson; progeny, *Raven 18049,* DS[2], RSA) at meiotic metaphase I formed 18 pairs of chromosomes, like every other Old World species of *Epilobium,* including several of the Microphyllae, that has been examined; whereas the only chromosome numbers known in *Boisduvalia* are n=9, 10, 15, and 19 (Lewis et al., Aliso 4:73–86. 1958; Raven and Moore, unpubl.).

Therefore, the evidence that *"Boisduvalia tasmanica"* should be referred to *Epilobium,* series Microphyllae, despite its lack of a coma, appears conclusive. *Boisduvalia* should therefore be removed from the list of genera purporting to show a floristic connection between southern South America and Australasia, and *"B. tasmanica"* should be regarded as a species of *Epilobium* aberrant in a single striking characteristic, its lack of a coma. The fact that the epithet *"tasmanicum"* has already been employed in the genus *Epilobium* makes it incumbent on me to select a new specific name for the present species in that genus, and thus I have the pleasure of naming it in honor of Winifred Curtis, who has helped me so much with this species, and whose studies of Tasmanian plants have done so much to increase our knowledge of them. The following synonymy is indicated:

Epilobium curtisiae, nom. nov.

Oenothera tasmanica Hook. f., Lond. J. Botan. 6: 475. 1847. Type from Marlborough, Tasmania, 5 January 1841, *R. Gunn 1065* (holotype, K; photograph, POM; isotypes, BM, CAMB). *Boisduvalia tasmanica* (Hook. f.) Munz, Darwiniana 5: 142. 1941. Non *Epilobium tasmanicum* Hausskn., Mongr. Epil., p. 296. 1884.

---

[2]Standard herbarium abbreviations of Lanjouw and Stafleu, Reg. Veg. 15: 1–249. 1959.