BOISDUVALIA, A COMA-LESS EPILOBIUM (ONAGRACEAE)

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ABSTRACT

Evidence from independent analyses of morphological and molecular variation in tribe Epilobieae shows no support for the continued recognition of Boisduvalia Spach. Absence of seed comas, the only consistent diagnostic feature of the genus relative to Epilobium, now appears to be a secondary loss; other characters reveal a close relationship of Boisduvalia to taxa within Epilobium. Therefore, all species of Boisduvalia are transferred to Epilobium, in order better to reflect phylogeny.

KEY WORDS: Onagraceae, Epilobium, Boisduvalia, New World

Tribe Epilobieae (Munz 1965; Raven 1976) is marked within Onagraceae as monophyletic by probable base chromosome number of \( z = 9 \) (Raven 1976, 1979), commissural stigmas (Eyde 1982), and dry type stigma surface (Heslop-Harrison 1990); most species (excluding mainly Epilobium sect. Chamaenerion) also have pollen released in tetrads (Skvarla et al. 1978). The tribe traditionally has comprised Epilobium (including sections Chamaenerion and more recently Zauschneria), characterized by the synapomorphy of seed comas (tufts of hair on the chalazal end of the seed), and Boisduvalia (Raven & Moore 1965), an entirely annual genus that lacks comas. Recent phylogenetic analyses of the tribe using either morphological data (Hoch & Crisci, in prep.) or variation in chloroplast DNA (Baum et al., in prep.) have revealed relationships among the taxa that are not reflected in the current taxonomy. Even though the exact relationships proposed among the taxa differ between these two studies, both demonstrate convincingly that recognition of Boisduvalia as a genus is not supported and that continuing to recognize it renders Epilobium paraphyletic.

These studies strongly suggest that Boisduvalia evolved from taxa with a coma. By analogy in support of that suggestion, two species of Epilobium and populations of a third have secondarily lost their comas (Munz 1965; Raven
& Raven 1976; Seavey et al. 1976). Other characters that mark species or
groups of species in Boisduvalia include capsule specializations and seed shape,
but these may be associated with the loss of the coma and may be viewed
more accurately as apomorphies within the group, rather than plesiomorphies
within the tribe. Consequently, we here propose that Boisduvalia be placed in
 synonymy with Epilobium, and make the necessary nomenclatural changes, in
order to make the names available for floristic treatments in progress.

The following nomenclatural changes include only names relevant to the
 transfers. For more complete synonymy of Epilobium and the sections, see
Raven (1976); for complete synonymies of all species being transferred from
Boisduvalia, see Raven & Moore (1965).


Epilobium sect. Boisduvalia (Spach) Hoch & Raven, comb. nov. BA-
Onothera group Boisduvalia (Spach) H. Lév., Monogr. Onothera 296.
1908. TYPE: Epilobium concinnum (D. Don) Hoch & Raven.

1. Epilobium concinnum (D. Don) Hoch & Raven, comb. nov. BA-
SIONYM: Oenothera concinna D. Don in Sweet, Brit. Fl. Gard. II,
4:384. 1835. Oenothera subulata (Ruiz & Pavón) H. Lév. race concinna
Fl. Gard. II, pl. 183. 1833; plant raised from seeds sent from Chile by
H. Cuming (LECTOTYPE, designated by Raven & Moore [1965]).

Boisduvalia subulata (Ruiz & Pavón) Raim. in Engl. & Prantl, Nat.
Pflanzenfam. III. 7:212. 1893. Oenothera subulata Ruiz & Pavón,
Fl. Peruv. Prodr. 3:82, pl. 316. 1802; non Epilobium subulatum
(Hausskn.) Rydb., 1913.

2. Epilobium densiflorum (Lindl.) Hoch & Raven, comb. nov. BA-
TYPE: Lindl., Bot. Reg. 19: pl. 1593. 1833; plant raised from seeds
sent from “Northern California” by Douglas in 1831 (LECTOTYPE,
designated by Raven & Moore [1965]).


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LITERATURE CITED


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