MOHAVEA SUBSUMED WITHIN ANTIRRHINUM
(PLANTAGINACEAE)

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ABSTRACT

Because the small genus Mohavea A. Gray is nested within the New World lineage of Antirrhinum L., based on molecular evidence, the two species of Mohavea are merged into Antirrhinum. The binomial Antirrhinum mohavea D.J. Keil, nom. nov., is proposed because the earlier Antirrhinum breviflorum Gilib. precludes the use of the specific epithet of Mohavea breviflora Coville in Antirrhinum. With the addition of the two species from Mohavea and the exclusion of Antirrhinum cyathiferum Benth. as Pseudorontium cyathiferum (Benth.) Rothm., the New World snapdragons (Antirrhinum sect. Saerorhinum A. Gray) form a monophyletic unit.

Gray (1856) described the genus Mohavea and the species M. viscida A. Gray to accommodate a peculiar herbaceous annual discovered during the railroad surveys of the 1850s. Coville (1893) described a second species, M. breviflora. Heller (1912) noted that M. viscida had previously been described as Antirrhinum confertiflorum and published the combination Mohavea confertiflora. The genus Mohavea has been consistently recognized as a distinctive and readily recognizable genus of two species in western American floras, e.g., The Jepson Manual (Wetherwax & Thompson 2012).

Antirrhinum (sensu lato) is a genus with a disjunct distribution, comprising species of both the Old World (primarily Mediterranean region) and New World (western North America). Thompson's monograph (1988) of the New World species (sect. Saerorhinum A. Gray) included 15 species of annual and perennial herbs and subshrubs. Independently Sutton (1988) in a revision of the tribe Antirrhineae split Antirrhinum (sensu lato) into a number of segregate genera, with the New World species being assigned to four genera: Howelliella Rothm., Neogaerrhinum Rothm., Pseudorontium (A. Gray) Rothm., and Sairocarpus D.A. Sutton.

Oyama and Baum (2004) investigated the phylogenetic relationships of the New World snapdragons using phylogenetic analyses of sequences of the internal transcribed spacer region (ITS) of nuclear ribosomal DNA from all of the New World species recognized by Thompson (1988), four Old World species, and 13 related genera of the tribe Antirrhineae. They found that the two species of Mohavea are nested within the clade that includes most of the New World Antirrhinum species. The New World species A. cyathiferum Benth. is not at all closely related to the rest of Antirrhinum. This species was treated by Sutton (1988) as Pseudorontium cyathiferum (Benth.) Rothm., and it is clear from the analyses that its exclusion from Antirrhinum and its placement in the monotypic genus Pseudorontium are warranted. The phylogenetic analyses of Oyama and Baum (2004) do not support the remaining three genera recognized by Sutton, although relationships among the taxa of Howelliella, Neogaerrhinum, and Sairocarpus were only weakly resolved. With the exclusion of A. cyathiferum and the inclusion of Mohavea, the remainder of Antirrhinum forms a well-supported monophyletic lineage including both the Old and New World species. The remaining American species plus Mohavea comprise a monophyletic Antirrhinum sect. Saerorhinum, albeit only weakly supported.
Ogutcen and Vamosi (2016) also investigated the systematics of the Antirrhineae, using data from multiple DNA regions. Their analysis, like that of Oyama and Baum (2004), recovered a well-supported Antirrhinum clade that contains a more weakly supported New World Antirrhinum clade in which Mohavea is nested. Their sampling included 12 of the New World species but did not include Pseudorontium cyathiferum (Benth.) Rothm.

Inclusion of Mohavea and the removal of Antirrhinum cyathiferum result in a monophyletic lineage of New World Antirrhinum. A binomial in Antirrhinum already exists for Mohavea confertiflora; the species was originally described as Antirrhinum confertiflorum (de Candolle 1846). Mohavea breviflora, however, has not previously been classified in Antirrhinum, and the combination Antirrhinum breviflorum Gilib. already exists. I therefore am proposing a replacement name in Antirrhinum for this species. Nomenclature for the two species follows.


**Etymology.** The epithet "mohavea" is the former generic name serving as a noun in apposition to the generic name Antirrhinum and retains its own gender and termination irrespective of the gender of the generic name (ICN Article 23.5—McNeill et al. 2012).

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**LITERATURE CITED**


