

STUDIES IN THE EUPATORIEAE (ASTERACEAE). LIV.

THE GENUS, SYMPHYOPAPPUS.

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Described over a hundred and twenty years ago, the genus Symphyopappus was recognized at least in part for over a hundred years. B.L. Robinson maintained the genus and assigned new species to it. The genus is in B.L. Robinson's key to genera (1913), distinguished by the pappus setae coalesced into a thickened annulus at the base and the leaves being coriaceous. The genus was formally reduced into the synonymy of Eupatorium by Steyermark in 1953, and has been treated in this manner by Cabrera (1963). In retrospect it is obvious that B.L. Robinson was correct in maintaining the genus. Still, the characters given were not particularly distinctive and there was no way to adequately separate the genus from Eupatorium as then conceived. In spite of sometimes great differences in the habits of the plants, the closest relationships of Symphyopappus are clearly to Dimorpholepis and Disynaphia. Many of the species of Symphyopappus have long narrow outer phyllaries such as are characteristic of Dimorpholepis, and the anatomy of the flower is like that of Disynaphia in all respects except the larger carpodium. The pappus formerly used as key character, is like that of Disynaphia. Symphyopappus is most readily distinguished from its relatives by the glabrous ascending strongly and decurrently ridged pedicels of the inflorescence.

Symphyopappus Turczaninow, Bull. Soc. Nat. Mosc. 21: 583. 1848.

Erect few branched herbs or shrubs. Leaves opposite becoming alternate above in some species, sessile, subsessile to petioled, ovate-lanceolate, serrate. Inflorescence a corymbose panicle, pedicels glabrous, with prominent decurrent ridges. Involucre of ca. 15 substramineous, unequal phyllaries in 3-4 (5) series, often one or more long narrow thickened phyllaries in outer series, receptacle flat or slightly convex, glabrous or with numerous stiff hairs, 4-5 flowers per head. Corollas tubular, 5 lobed, lobes with a few glands near the tips, usually twice as long as wide, outer surface of corolla glabrous below, lobes papillose at tips, stomates absent. Inner surface of corolla glabrous, anther collar short, composed of mostly rectangular or quadrate cells, cell walls with annulate thickenings, base of anthers hastate. Anther appendage large,

composed of large cells, style base not enlarged, glabrous. Styler appendage not or scarcely enlarged, with crowded short erect papillae. Achenes prismatic, 4-5 ribbed, glabrous or with a few short stalked glands, minute punctations often in transverse rows; carpodium stout with enlarged thin-walled cells continuing on lower ribs; pappus of ca. 40 scabrous setae united to form a cone or cylinder at base; apical cells acute to obtuse. Chromosome number determined as $X = 10$ from two species (S. compressus as S. polystachus, and S. cuneatus; Coleman, 1968). Type species: Symphyopappus decussatus Turcz.

Our studies of the genus indicate that it contains the following 13 species.

Symphyopappus angustifolium Cabr., Nat. Mus. La Plata Bot. 19: 191. 1959. Brazil.

Symphyopappus casarettoi B.L.Robinson, Candollea 5: 170. 1934. Brazil.

Symphyopappus compressus (Gardn.) B.L.Robinson, Contr. Gray Herb. n.s. 80: 12. 1928. Brazil.

Symphyopappus cuneatus Sch.-Bip. ex Baker, Mart. Fl. Bras. 6(2): 367. 1876. Brazil.

Symphyopappus decussatus Turcz., Bull. Soc. Nat. Mosc. 21: 584. 1848. Brazil.

Symphyopappus itatiayensis (Hieron.) R.M.King & H.Robinson, comb. nov. Eupatorium itatiayense Hieron., Engl. Jahrb. 22: 764. 1897. Brazil.

Symphyopappus leptophlebius B.L.Robinson, Contr. Gray Herb. n.s. 96: 18. 1931. Brazil.

Symphyopappus lymansmithii B.L.Robinson, Contr. Gray Herb. n.s. 96: 19. 1931. Brazil.

Symphyopappus myricifolius B.L.Robinson, Contr. Gray Herb. n.s. 68: 6. 1923. Brazil.

Symphyopappus pennivenius B.L.Robinson, Contr. Gray Herb. n.s. 68: 7. 1923. Brazil.

Symphyopappus reitzii (Cabr.) R.M.King & H.Robinson, comb. nov. Eupatorium reitzii Cabr., Sellowia 15: 191. 1963. Brazil.

Symphyopappus reticulatus Baker, Mart. Fl. Bras. 6(2): 367.

1876. Brazil.

Symphyopappus tetrastichus B.L.Robinson, Contr. Gray Herb. n.s.
104: 8. 1934. Brazil.

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Eupatorieae. Sellowia 15: 149-258.
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Compositae. Rhodora 70: 228-240.
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Contr. Gray Herb. n.s. 42: 429-437.
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King, Robert Merrill and Robinson, Harold E . 1971. "Studies in the Eupatorieae (Asteraceae). LIV. The genus, *Symphyopappus*." *Phytologia* 22(2), 115–117.

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