Zeitschrift: Boissiera : mémoires de botanique systématique

Herausgeber: Conservatoire et Jardin Botaniques de la Ville de Genève

Band: 74 (2024)

Artikel: Taxonomic revision of the genus Pentacalia (Compositae,

Senecioneae) in Ecuador

Autor: Calvo, Joel

Kapitel: Historical overview in Ecuador

DOI: https://doi.org/10.5169/seals-1052964

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. Mehr erfahren

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. En savoir plus

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. Find out more

Download PDF: 13.12.2025

ETH-Bibliothek Zürich, E-Periodica, https://www.e-periodica.ch

Introduction

The neotropical genus *Pentacalia* Cass. (*Compositae*, *Senecioneae*) comprises c. 162 species distributed from southern Mexico to northwestern Argentina, plus two disjunct species occurring in the Brazilian Atlantic Forest. The northern Andes are considered the center of diversity of the genus, Colombia having the foremost number of species, followed by Peru and Ecuador (Calvo & Buira, 2018).

Species belonging to genus *Pentacalia* are scandent woody plants with alternate (very rarely opposite), simple leaves, usually corymbiform, thyrsoid-paniculiform or racemiform synflorescences, involucres with supplementary bracts at the base (calycle), radiate, disciform, or discoid capitula with yellow or white corollas, stamens with balustriform filament collar and caudate anther bases, styles with truncate to obtuse branches that usually have a crown of sweeping trichomes (sometimes with a tuft of longer trichomes, but not strictly penicillate), and glabrous or pubescent achenes with a capillary pappus composed of barbellate bristles.

Pentacalia was established by Cassini (1827) to exclude the Colombian species Cacalia arborea Kunth from the genuine Cacalia L., based on its 5-ribbed achenes. However, Cassini's genus was not recognized by CANDOLLE (1838) or later botanists who worked on the neotropical Senecioneae (e.g. Bentham & Hooker, 1839; Hieronymus, 1900, 1901; Greenman, 1923, 1938). Pentacalia was finally retrieved by Robinson & Cuatrecasas (1978) when revising the species of *Senecio* sect. Streptothamni Greenm. from Central America. Its recognition as a genus distinct from Senecio L. was supported by the following morphological characters: fruticose to scandent habit with woody stems, distinctly petiolate usually non-stipitate leaves, minutely fistulose or non-fistulose receptacles, tails on the anthers, and the rather stout 5-ribbed achenes. Such circumscription was later broadened by Cuatrecasas (1981) to also embrace the rather erect species with shrubby habit originally treated in Microchaete Benth. These species were accordingly placed in Pentacalia subg. Microchaete (Benth.) Cuatrec., and the lianoid ones retained to the typical subgenus. Jeffrey (1992) did not adopt Cuatrecasas (1981)'s broad sense of Pentacalia and elevated to generic rank the subgenus Microchaete (under the replacement name Monticalia C. Jeffrey) and restricted Pentacalia to the lianoid species recovering the narrow concept of the genus established by Robinson & Cuatrecasas (1978). Afterward, this criterion has been adopted by most taxonomists working on these groups (Nordenstam, 1999; Pelser et al., 2007; Beck & Ibáñez, 2014; Pruski, 2018a, b; Calvo, 2021).

Historical overview in Ecuador

Georg H.E.W. Hieronymus (1846–1921) can be considered the first botanist to contribute to the taxonomy of the group in Ecuador, describing four species currently accepted under the genus *Senecio*. Hieronymus received at Berlin material sent by Jesuit Father Luis [Luigi] Sodiro (1836–1909), Italian botanist established in Quito who intensively collected in the province of Pichincha (Jørgensen, 1999). In 1938, the American synanterologist Jesse M. Greenman (1867-1951) described three new species as part of a broad study of the South American Senecio. However, it was in the mid-20th century when the number of species belonging to this group notably increased, due to the collections made by Wendell H. Camp (1905-1963), American botanist at the New York Botanical Garden. Camp collected in Ecuador between May 1944 and September 1945 for the United States Cinchona missions searching species of that genus with high quinine content (RICKETT, 1963; BALSLEV & JOYAL, 1980). Although the mission was focused on the species of Cinchona, Camp and his assistants made general collections of c. 5,800 numbers (c. 26,000 sheets including numerous duplicates). Most of these collections were made in southern Ecuador, in the provinces of Azuay, Morona-Santiago, and Loja. They are of a very high quality and from areas that were barely explored at that time, hence, many of them served as type material (Balslev & Joyal, 1980). The Compositae were later studied by Catalan Josep [José] Cuatrecasas (1903-1996) when he worked at the Field Museum before moving to Washington D.C. in 1955 (Robinson et al., 1996; López Sánchez, 2022). He described several new species, five of them treated herein (Cuatrecasas, 1954). Cuatrecasas devoted part of his career to the study of the tribe Senecioneae in the Northern Andes (Colombia, Ecuador) becoming the foremost specialist of this group in the region (Calvo & Beltrán, 2022). At the U.S. National Herbarium, Cuatrecasas collaborated with synanterologist Harold E. Robinson (1932-2020) and together they published 12 new species from Ecuador (one currently accepted as a member of Dendrophorbium (Cuatrec.) C. Jeffrey) and provided the first identification key for the Ecuadorian Pentacalia. After them, Swedish botanist Bertil Nordenstam prepared the genus Pentacalia for the Catalogue of the vascular plants of Ecuador [hereafter Catalogue] accepting 33 species, 24 of them endemic (Nordenstam, 1999); see Table 1. Since Nordenstam, two new species have been described (CALVO & BUIRA, 2018; Calvo & Pérez, 2023) and two names synonymized (Calvo et al., 2019). The work presented in the following contribution represents the first comprehensive treatment of this genus for Ecuador. Twenty-seven (27) species are recognized (Table 1), eight names are newly synonymized, two names are lectotypified, four new taxa are described, and 15 species are illustrated.

Discussion of characters

Habit – Pentacalia species are scandent, woody plants with long dangling branches. While most species are strictly lianoid, Pentacalia arborea (Kunth) Cass. and P. theifolia (Benth.) Cuatrec. sometimes display a suberect habit leaning over adjacent vegetation.