

Wiehler 1971a

**Gesneria mortonii, a new name for Heppiella cubensis
(Gesneriaceae).**

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Cuba, Gesneria, Heppiella, [Pheidonocarpa]

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Mailed at Ithaca, N. Y., July 15, 1971

Gesneria Mortonii, A New Name for Heppiella cubensis [Gesneriaceae]

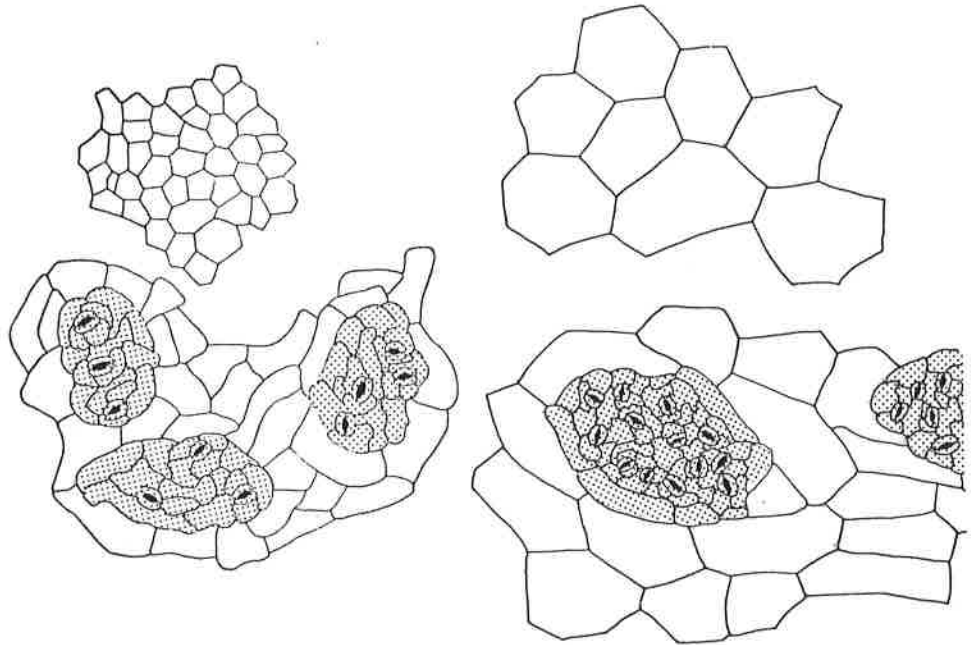
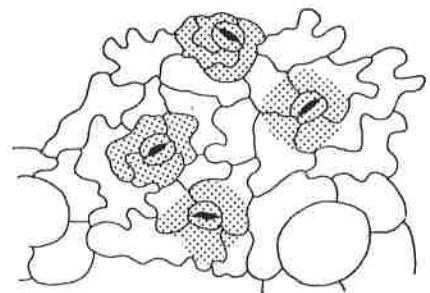
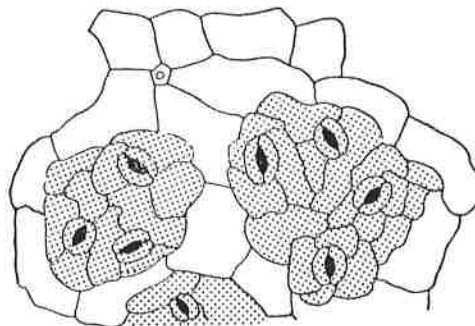
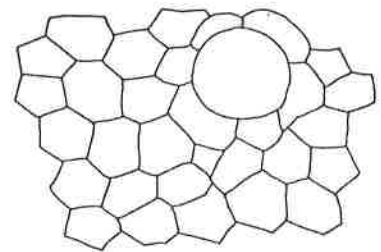
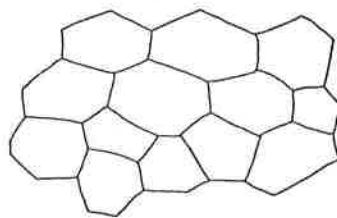
Hans Wiehler*

In 1788 Olof Swartz described as Gesneria corymbosa a rather rare low-growing and suffrutescent species found only on the limestone walls of the Cane River gorge in Jamaica. It differs from the other (about 67) species of Gesneria in possessing an opposite leaf arrangement. Gesneria and the closely allied genus Rytidophyllum (about 20 species) are, with one other exception,** the only genera of the American subfamily Gesnerioideae with alternate leaves. The geographical distribution of these two genera, which constitute the tribe Gesnerieae, is almost exclusively limited to the Caribbean islands.***

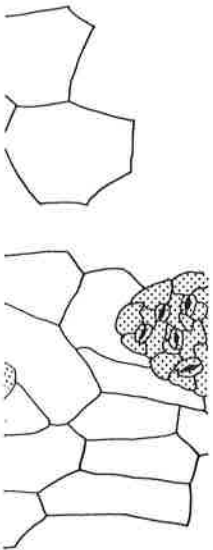
Ignaz Urban in 1901 transferred Gesneria corymbosa, because of its opposite leaves, to the South American genus Heppiella (about 15 species), whose center of distribution is Ecuador and Colombia. In 1957 Conrad V. Morton described as Heppiella cubensis a new and apparently rare species found on limestone cliffs along the lower Jauco River in southeastern Cuba. Its nearest relative is H. corymbosa from adjacent Jamaica. There are no other species of Heppiella known from the Caribbean islands.

Living material of Heppiella corymbosa was collected in 1964 by Robert E. Lee (Lee 6401) and has been cultivated since then in the conservatory of the L. H. Bailey Hortorium at Cornell University. The gametic chromosome number of this material was determined as $n=14$ (Lee, 1966). The number 14 does not occur among gametic chromosome numbers reported for the tribe Achimeneae ($n=10, 11, 12, 13$), of which Heppiella is a member. A recent collection of the type species of the genus, H. viscida (Lindley & Paxton) Fritsch, from western Venezuela, has been determined as a tetraploid, with a gametic number of $n=26$ (Wiehler, unpublished data). The gametic chromosome number reported for the tribe Gesnerieae, however, is 14.

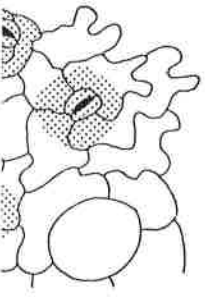
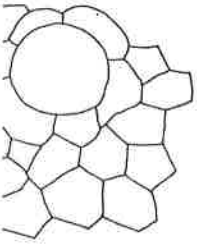
*The L. H. Bailey Hortorium, Cornell University, Ithaca, New York.
**The Amazonian genus Codonanthopsis (three species) of the large tribe Columneae also has alternate leaves.
***Two species are known from the nearby coastal ranges of Venezuela and Colombia.

1 *Gesneria corymbosa*2 *Gesneria Mortonii*3 *Gesneria pumila*4 *Heppiella viscida*

Since the general habit of *Heppiella corymbosa*, its place of origin, and especially its chromosome number indicate that this species may, after all, belong to the genus *Gesneria*, anatomical and morphological studies were undertaken to establish the affinity of this taxon. This project was part of a larger investigation of the American Gesneriaceae (Wiehler, 1970).



Mortonii



la viscida



5-7. The vasculature of the petiole in cross-section, taken at the geographical middle of the petiole, $\times 10$. 5, *Gesneria corymbosa*. 6, *Gesneria Mortonii*. 7, *Heppiella viscida*.

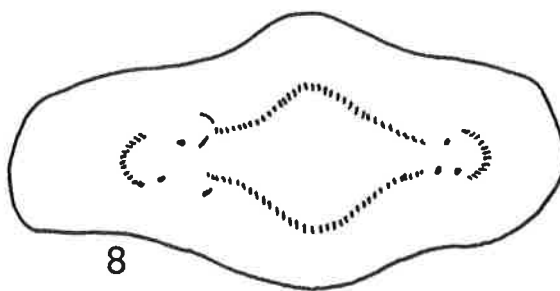
Only herbarium material was available of *H. cubensis* (Leon & Victorin 17748 [US], paratype). The following factors seem to suggest that these two Caribbean species assigned to *Heppiella* do actually belong to *Gesneria*:

1) In both *H. corymbosa* (Fig. 1) and *H. cubensis* (Fig. 2) the stomata on the abaxial epidermis of the leaf are grouped into large islands, a feature typical for many species of the tribe Gesnerieae (e.g., *Gesneria pumila*, Fig. 3), but not found in the tribe Achimeneae. The stomata in *Heppiella viscida*, for instance, are scattered randomly over the abaxial surface of the leaf (Fig. 4).

2) In both *H. corymbosa* (Fig. 5) and *H. cubensis* (Fig. 6), the vasculature of the petiole in cross-section shows an invaginated crescent, typical for the tribe Gesnerieae, but not found in other species of *Heppiella* or in any other species of the tribe Achimeneae. Figure 7 shows the vascular crescent in cross-section of the petiole of the type species, *Heppiella viscida*.

(Opposite page)

1-4. Epidermal patterns and stomatal arrangements in species of *Gesneria* and *Heppiella*. The adaxial epidermis is represented by the upper camera lucida drawing in each figure, and the abaxial epidermis with stomata in the lower drawing of each figure. The shaded areas indicate stomatal complexes raised above the general level of the epidermis. All $\times 112.5$. 1, *Gesneria corymbosa*, with stomatal islands. 2, *Gesneria Mortonii*, with stomatal islands. 3, *Gesneria pumila*, with stomatal islands. 4, *Heppiella viscida*, with individual stomata scattered randomly over the epidermal surface.



8. Gesneria fruticosa: cross-section of a node in the stem, showing the opposite leaf traces departing from the stele, $\times 10.5$.

3) Heppiella corymbosa (and presumably also H. cubensis, judging from its woody habit) does not possess scaly rhizomes, which are present in the continental species of Heppiella.

4) In all gross morphological characters except leaf arrangement, both Caribbean species of Heppiella fit very well into the genus Gesneria. A recent finding makes it clear, however, that alternate leaves cannot be regarded any longer as a feature exclusively of the tribe Gesnerieae. In the Cornell conservatory collection there is a plant of Gesneria fruticosa (Linnaeus) Kuntze from Hispaniola with an opposite, decussate leaf arrangement. Cross-sections of the node have verified the truly opposite character of the leaf position (Fig. 8). Thus the two Caribbean species of Heppiella with their opposite leaf arrangement would not seem total strangers in Gesneria.

5) As indicated above, the distribution area for the genus Heppiella is Ecuador, Colombia, and adjacent western Venezuela; except for H. corymbosa and H. cubensis, no other species of Heppiella are found in the Caribbean islands. The Caribbean is, however, the distribution center for the tribe Gesnerieae.

The fivefold evidence listed above, plus the chromosomal evidence established by Lee (1966), support the proposal to return Heppiella corymbosa to Gesneria and to transfer Heppiella cubensis with a new name:

Gesneria corymbosa Swartz, Nova genera et species plantarum 89. 1788.

Heppiella corymbosa (Swartz) Urban, Symbolae Antillanae 2: 368. 1901.

Pentarhaphia? corymbosa (Swartz) Hanstein, Linnaea 34:307. 1865.

Gesneria Mortonii Wiehler, nom. nov.

Heppiella cubensis Morton, Brittonia 9 (1): 21. 1957; not Gesneria cubensis (Decaisne) Kuntze, Revisio Generum Plantarum 2: 473. 1891.

Baileya

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