

A RE-ASSESSMENT OF THE SOUTH AMERICAN UMBELLIFER *HYDROCOTYLE FILIPES* MATHIAS

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SUMARIO

Se concluye que la especie *Hydrocotyle filipes* Mathias, como lo hemos tratado en floras recientes, consiste en realidad de tres especies distintas: *H. urbaniana* Wolff del Perú, *H. filipes* Mathias de Bolivia y del norte de la Argentina y *H. domingensis* Mathias y Constance, sp. nov., de Venezuela. *H. poeppigii* var. *filipes*, aunque fundado en otro tipo, es la misma planta como *H. filipes* Mathias.

The road to taxonomic salvation is marked by acquisition and incorporation of new material and repeated re-evaluation of previous decisions and dispositions. Examination of numerous South American Umbelliferae in various herbaria and particularly the attempt to provide a proper identification of a recent Venezuelan collection have led us to recognize that more than one taxon is involved in what we have heretofore called *Hydrocotyle filipes*. A minor additional problem is the relationships of *H. poeppigii* var. *filipes* Griseb. or *H. bonplandii* var. *filipes* (Griseb.) Pérez-Moreau, of northern Argentina, to *H. filipes* Mathias.

Mathias (1936) identified and described *H. filipes* from exclusively Bolivian material, utilizing a widely distributed collection (G. Mandon 572) as the type. In the FLORA OF PERU (Mathias et Constance, 1962) we attributed this species to the departamentos of Piura and Cusco; we also listed *H. urbaniana* Wolff (similar, but with more deeply lobed leaves) from Cajamarca, Cusco, and Huancavelica. In the FLORA DE VENEZUELA (Mathias et Constance, 1971), *H. filipes* was included on the basis of a single collection from the state of Mérida.

Our present evidence suggests that no fewer than three species are involved, the first in Bolivia and northern Argentina, a second in Peru, and a third and undescribed taxon in Venezuela. The three elements may be distinguished by the following key.

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1. Stem villous to pilose; peduncles retrorsely pilose above; Peru .. *H. urbaniana*
1. Stem glabrous; peduncles glabrous.
 2. Leaves orbicular to orbicular-reniform, glabrous to sparsely hirsute on both surfaces; umbels 7-15-flowered; Bolivia and Argentina *H. filipes*
 2. Leaves orbicular-septagonal, strigulose above, glabrous beneath; umbels 20-30-flowered; Venezuela *H. domingensis*

Hydrocotyle urbaniana Wolff, *Bot. Jahrb.* 40: 283. 1908.

Stems slender, creeping, villous to pilose; leaves orbicular to orbicular-reniform, not peltate, 2-5(-10) cm in diameter, strigulose to pilose with weak, pointed hairs (rarely glabrous) above, pilose to densely hirsute, especially on the veins, and often purplish beneath, shallowly 7- or 9-lobed to subentire, the lobes crenate-serate to doubly serrate, the sinus broad to narrow, the petioles rather stout, 2-25 cm long, densely white or yellowish crispate-hirsute at least above; peduncles slender, 3-12 cm long, shorter than to exceeding the petioles of the subtending leaves, softly retrorse-pilose above; umbels simple, 11-27-flowered, the petals greenish-white to purplish, the pedicels 3-5 mm long, spreading, glabrous (rarely puberulent); fruit orbicular-reniform, 1.25-2 mm long, 1.75-2.5 mm broad, glabrous, the ribs indistinct, filiforms, the stylopodium depressed.

Type: PERU. *Cajamarca:* "En la sombra de monte bajo compuesto de arbustos", encima de San Miguel, Prov. Hualgayoc, altitude 2300-3000 m, A. Weberbauer 3941, 8-V-1904 (USM, neotype; UC-photo, F. M. Neg. 3422).

Distribution: With grasses and other herbs in the moist shade of shrubs and trees at elevations of 1900-3100 m, in the departments of Amazonas, Cajamarca, Huancabamba, Huancavelica, and Cusco, Peru.

Other specimens examined: *Amazonas:* Prov. Chachapoyas, W side Cerros Calla Calla 45 km above Balsas midway to Leimebamba, P. C. Hutchison et J. K. Wright 5746, 19-VI-1964 (UC-pars, etc.). *Cajamarca:* Prov. Jaen, Colasay, F. Woytkowski 6983, 28-X-1961 (UC); Prov. Hualgayoc: Hacienda Taulis, Casa Hacienda - Palmito, P. C. Hutchison et K. von Bismarck 6392, 31-VIII-1964 (UC, etc.), Río Taulis, upstream from La Playa, P. C. Hutchison et K. von Bismarck 6472, 3-IX-1964 (UC, etc.); Prov. Cajamarca, NE of San Pablo, P. C. Hutchison et J. K. Wright 5029, 13-V-1964 (UC, etc.). *Huancabamba:* Prov. Huancabamba, road to Canchaque 18.5 km above and W of Huancabamba, P. C. Hutchison et J. K. Wright 6632A, 17-IX-1964 (UC); Catulún, C. Acleto 0524, 12-VI-1961 (UC). *Huancavelica:* Prov. Tayacaja, Quintabamba - Marcavalle SE, de Huachocolpa, O. Tovar 4732, 19-V-1964 (UC), Chuspi-Tocos, Colcamba - Paucarbamba, O. Tovar 2043 (F). *Cusco:* Prov. Calca, Hacienda Vilcabamba, C. Vargas 3900, I-1944 (UC);

Prov. Urubamba: Macchupichu, O. Velarde 6698, 19-V-1958 (UC), Huinaihuaina, C. Vargas 4147, 9-III-1944 (UC), Huayna Picchu, P. C. Hutchison 1757, 5-XI-1957 (UC), T. G. Tutin 1260, 5-VIII-1937 (BM); Prov. Cusco, Saxihuaman, F. L. Herrera 2345 (F).

The ample collections of Mr. Hutchison and his associates have provided a better basis for estimating the variability inherent in this taxon.

***Hydrocotyle filipes* Mathias, *Brittonia* 2: 230. 1936.**

H. poeppigii var. *filipes* Griseb. Pl. Lorentz. 105. 1874; *H. bonplandii* var. *filipes* Pérez-Moreau, Lilloa 2: 436. 1938. Based upon: P. G. Lorentz 492, "in einer Wald-quele an sumpf. Stee bei Siambón", Tucumán, Argentina, III-1872 (GOET, holotype; CORD; UC-photo).

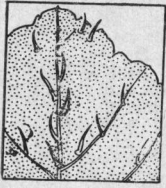
Stems filiform, creeping, essentially glabrous; leaves orbicular to orbicular-reniform, not peltate, 0.5-5 cm in diameter, glabrous to sparsely hirsute with weak, spreading hairs both above and beneath, shallowly 7- or 9-lobed to subentire, the lobes 1- or 2-crenate, the crenations subequal, the sinus narrow, the petioles slender, 0.5-10 cm long, glabrous or crispate-hirtellous above; peduncles filiform, 2.5-5 cm long, exceeding the petioles of the subtending leaves, essentially glabrous; umbels simple, 7-15-flowered, the petals not seen, the pedicels 3-6 mm long, ascending, glabrous; fruit (imature) orbicular, ca 1 mm broad, glabrous, the ribs distinct, the stylopodium depressed.

Type: BOLIVIA. *La Paz*: Viciniis Soratá, prope Mansani, in schistos, altitude 2650-3000 m, G. Mandon 572, II-III-1859 (K, holotype; BM, G, NY, P, S, W; UC-photo).

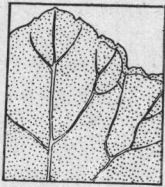
Distribution: Moist *quebradas* at altitudes of 650-3000 m, in the provinces of La Paz, Bolivia, and Salta and Tucumán, Argentina.

Other specimens examined: BOLIVIA. *La Paz*: Sirupaya bei Yanacachi, Sud-Yungas, O. Buchtien 239 (133) (NY, US), 247 (US); Un-duavi, O. Buchtien 4667, 4668 (US); Pongo, G. H. H. Tate 183 (NY). ARGENTINA. *Salta*: Metán, R. A. Pérez-Moreau, VII-1930 (BA). *Tucumán*: Dep. Tafí, El Rincón, M. Lillo 7544, 4-II-1908 (BA); Sierra de San Javier, S. Venturi 239 c, 5-III-1922 (BM); Tafí del Valle, Yerba Buena, S. Venturi 239, II-1919 (K). Dep. Famaillá, Quebrada de Pioles, S. Venturi 2396, 7-III-1921 (K). Dep. Chicligasta, Estancia Las Pavas, Pto. La Cascada, S. Venturi 3156, 14-V-1924 (UC, US), Estancia Santa Rosa, S. Venturi 4735 (BA). *La Ciénaga d. r. Tucumán*, P. G. Lorentz et G. Hieronymus 596, 10-14-I-1879 (GOET).

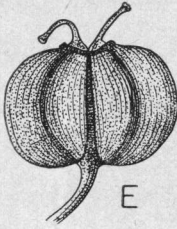
Hydrocotyle poeppigii var. *filipes* Griseb. was transferred to *H. bonplandii* by Pérez-Moreau, who annotated the holotype and remarked, "El material depositado en Göttingen, y que sirvió Grisebach para crear su



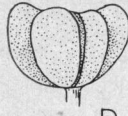
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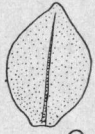
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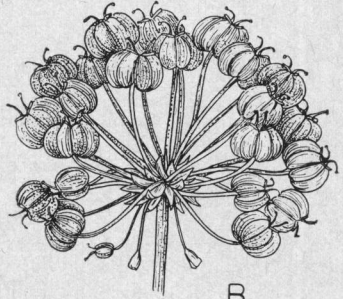
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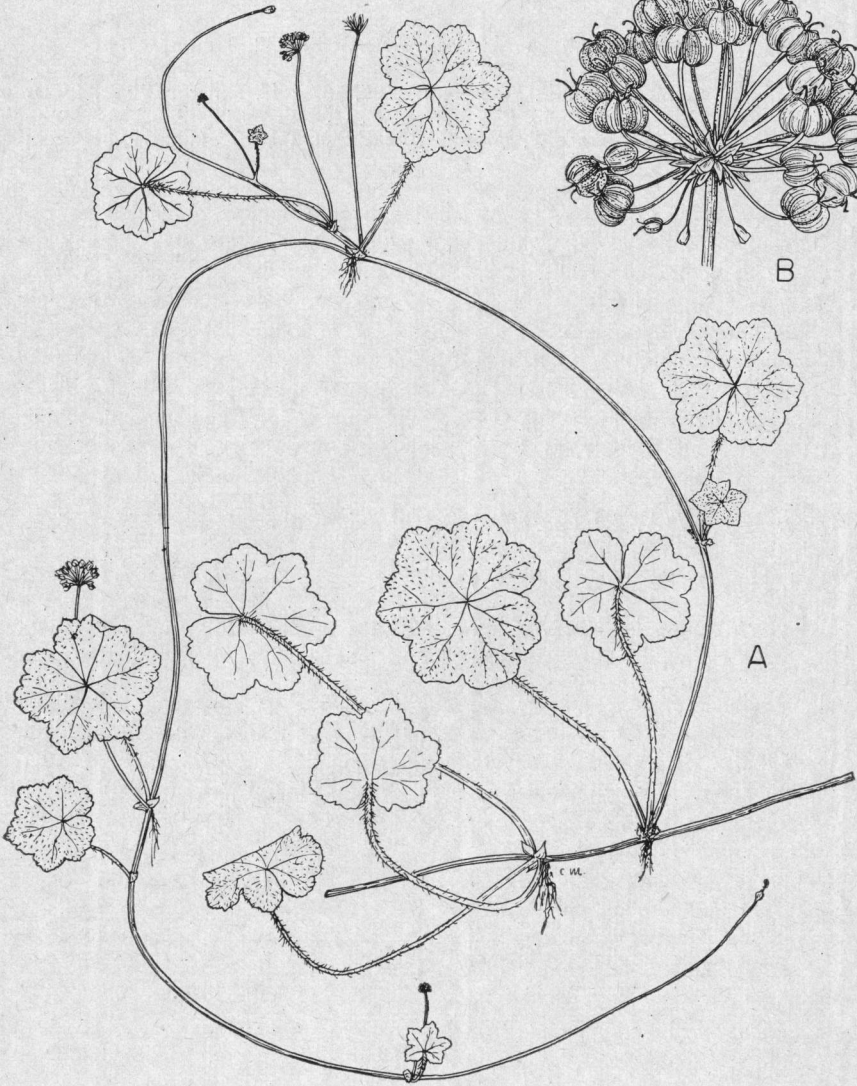
D



C



B



A

variedad, da la impresión de ser una forma empobrecida de *H. Bonpladii* Rich.; la falta de frutos maduros impide toda comparación. Tal vez el día que se disponga de abundante material será posible sinonimizarla con la especie más arriba citada". Inasmuch as *H. bonpladii* is characteristically a species of the northern Andes (Venezuela to Peru), this eventuality seems unlikely.

Mathias, in describing *H. filipes*, was unaware of the Grisebach variety. The type locality of the variety lies outside the area with which she was concerned at the time, and the name was not included in INDEX KEWENSIS. Her species was based on an entirely different (Bolivian) type. Thus, the Grisebach-Pérez-Moreau and Mathias uses of the epithet *filipes* are entirely independent, although the three authors were all referring to the same taxon.

***Hydrocotyle domingensis* Mathias et Constance, sp. nov.**

Planta omnino glabra caulibus gracilibus; foliis palaceis, orbiculari-septangularibus, diametro 2-5 cm, modice 7-lobatis, lobis crenatis, crenis subaequalibus, supra strigulosis, subtus glabris, petiolis insuper retrorsovillois; pedunculis quam foliis longioribus, glabris; umbellis simplicibus, 20-30-floris, pedicellis 3-4 mm longis, glabris; fructibus glabris, costis distinctis, acutis.

Stems slender, creeping, essentially glabrous; leaves orbicular-septangular, not peltate, 2.5-5 cm in diameter, strigulose with weak, pointed hairs above, glabrous below, shallowly 7-lobed with crenate lobes to subentire, the crenations subequal, the sinus nearly closed (so that the leaves appear peltate) or broader, the petioles moderately slender, 3-10 cm long, softly retrorse-villous above; peduncles 5-8 cm long, surpassing the petioles of the subtending leaves, glabrous, umbels simple, 20-30-flowered, the petals oval, ca 1 mm long, the pedicels 3-4 mm long, spreading, glabrous; fruit transversely elliptical, 1.5-2 mm long, 2-2.5 mm broad, glabrous, the ribs distinct, acute, the stylopodium depressed.

Type: VENEZUELA. *Barinas:* "Herb, creeping on wet rock; stipe, petiole, and leaf abaxially purplish-brown, road from Santo Domingo to Barinitas ($\pm 70^{\circ} 30' W$, $8^{\circ} 50' N$); in very wet quebrada with remains of cloud forest. Altitude about 1500 m", leg. J. G. Wessels Boer 1977, 15-VIII-1967 (UC, holotype).

Fig. 1. — *Hydrocotyle domingensis* Mathias and Constance. A, habit, $\times 1/2$; B, fruiting umbel, $\times 5$; C, petal, $\times 18$; D, flower, $\times 18$; E, fruit, $\times 8$; F, leaf tip, lower surface, $\times 2$; G, leaf tip, upper surface, $\times 2$. (A from Wessels Boer 1977, UC; B-G from Vareschi 5123, Ven.).

Other specimen examined: VENEZUELA. Mérida: Monte cerca Las Piedras, Valle Santo Domingo, 2000 m, V. Vareschi 5123, 5-VIII-1956 (VEN).

Assignment of the last specimen to the new species removes *Hydrocotyle filipes* Mathias from the roster of Venezuelan plants.

The writers wish to express their appreciation to the curators of the numerous herbaria (indicated above by their standardized symbols) in which pertinent material has been studied or from which it has been borrowed for examination. They wish also to record their indebtedness to the National Science Foundation for long-term support of their research on American Umbelliferae under a series of different grant numbers.

LITERATURE CITED

- GRISEBACH, A. H. R., 1874. *Pantae Lorentzianae. Abb. Königl. Ges. Wiss. Göttingen* 19: 231 pp.
- MATHIAS, M. E., 1936. The genus *Hydrocotyle* in northern South America. *Brittonia* 2: 201-237.
- PÉREZ-MOREAU, R. A., 1938. Revisión de las "Hydrocotyle" Argentinas. *Lilloa* 2: 413-463.
- MATHIAS, M. E., et L. CONSTANCE, 1962. Umbelliferae; in *Flora of Peru. Field Mus. Nat. Hist., Bot. Ser.* 13 (5A, n° 1): 1-97.
- 1971. Umbelliferae; in *Flora de Venezuela*, 3: 1-76.