New Species of *Hedyosmum* (Chloranthaceae) from Northern South America

**Carol A. Todzia**

Plant Resources Center, Department of Botany, University of Texas, Austin, Texas 78713, U.S.A.

**ABSTRACT.** Four new species of *Hedyosmum*, all belonging to subgenus *Tafalla* sect. *Microcarpa*, are herein proposed. *Hedyosmum uniflorum* occurs in mid-elevation montane regions in central Ecuador and differs from its closest relative, *H. bonplandianum*, by its basally rounded, sometimes oblique leaves, flocculose midveins, slightly fimbriate stipular appendages, and long, linear, dissected stigmas. *Hedyosmum narinoense*, which inhabits the western slopes of the western cordillera in southern Colombia, also has single-flowered cymules but is unique among the solitary-flowered cymule species by having shorter pistillate inflorescences and scabrous, scurfy leaf sheaths. The remaining two new species, *H. tepuiense* and *H. intermedium*, are found in the Venezuelan Guayana. *Hedyosmum tepuiense* is recognized as distinct from the broadly ranging *H. racemosum* by virtue of its long stipular appendages, verrucose leaf sheaths, floccose midveins, and longer inflorescences. Morphologically intermediate between *H. gentryi* and *H. neblinae*, *Hedyosmum intermedium* is distinguished by its glabrous, elliptic leaves and 2–3-flowered purple-fruiting cymules.

Recent collections from South America have clarified the status of several populations of *Hedyosmum* that were previously incorporated into the variation of broadly ranging species (Todzia, 1988). All of these newly described species fall into subgenus *Tafalla* sect. *Microcarpa*, the largest section in *Hedyosmum*, now with 28 species. This section is recognized by racemose or paniculate pistillate inflorescences, cymules of 1–8 flowers, fleshy floral bracts that are fused in fruit, white, rarely purple, fruiting cymules.

*Hedyosmum uniflorum* Todzia, sp. nov. **TYPE:** Ecuador. Pichincha: old road Quito–Santo Domingo, 12–15 km NE of old road from junction with new road near Alluriquin, 1,430–1,540 m, ca. 0°20’S, 78°55’W, 3 Feb. 1982, *Luteyn, Pipoly, Lebrón-Luteyn & Kallunki 8754* (holotype, TEX; isotypes, NY, QCA not seen). Figure 1.
Figure 1. Distribution of the new species of Hedyosmum. Each symbol represents the presence of that respective species in a degree square.

only from central Ecuador (Prov. Pichincha) on the western slopes of the western cordillera, where it occurs between 1,300 and 2,200 m in disturbed cloud forest and montane wet forest. Flowering specimens have been collected in February, July, September, and December.

_Hedyosmum uniflorum_ appears to be most closely allied to _H. bonplandianum_ and _H. racemosum_. This new species is similar to _H. bonplandianum_ in having usually single-flowered cymes and leaves smooth upon drying. It differs from _H. bonplandianum_ in having long, linear stigmas (vs. stigmas shorter and more clavate), leaves rounded and sometimes oblique at base (vs. attenuate), flocculose hairs on midvein beneath (vs. entirely glabrous), and stipular appendages slightly fimbriate (vs. usually linear). If its fruiting cymes are green at maturity as indicated by label data, this would also be a character at variance with _H. bonplandianum_. Fruiting cymes of all previously known species of subgenus _Tafalla_ sect. _Microcarpa_ are either white or purple. The southernmost populations of _H. bonplandianum_ occur in southern Colombia (Depto. Cauca).

Although this population was originally placed into _H. racemosum_, it was noted that its solitary-flowered cymes and long (up to 3 mm), highly dissected stigmas were anomalous within the _H. racemosum_ species concept (Todzia, 1988: 75). Morphological characters shared with _H. racemosum_ include slightly fimbriate stipular appendages and leaves smooth upon drying. As noted above, _H. uniflorum_ differs from _H. racemosum_ in having usually single-flowered cymes, highly dissected stigmas, as well as rounded often oblique leaf bases (vs. attenuate and not oblique) and fruiting cymes green not white.

Paratypes. ECUADOR. PICHINCHA: Carretera Quito-Aloa-Santo Domingo de los Colorados, km 94, a 10 km al S de la carretera, estribaciones occidentales del Volcán Corazón, 0°21'10"S, 78°51'15"W, 1,300–1,500 m, 24 Dec. 1986, Zak 1492 (MO, TEX); Reserva Florística-Ecológica “Rio Gualjalto,” km 59 de la carretera antigua Quito-Santo Domingo de los Colorados, estribaciones occidentales del Volcán Pichincha, 78°48'10"W, 0°13'53"S, 1,800–2,200 m, 9 July 1985, Jaramillo & Zak 7735 (MO, TEX); Reserva Florística-Ecológica “Rio Gualjalto,” km 59, carretera antigua Quito-Santo Domingo,
Hedyosmum narinoense Todzia, sp. nov. TYPE: Colombia. Nariño: 2–8 km E of Junín on Tumaco–Tiquerres road, 1°15′N, 78°09′W, ca. 1,100 m, 26 July 1986, Gentry et al. 55235 (holotype, MO; isotype, TEX—2 sheets). Figure 1.

Hedyosmos bonplandianum ac H. uniflorum cymulis flore singulo instructis similis sed ab utroque differt inflorescentiis pistillatis brevioribus et vaginis foliorum purpuraceis scarbris acetate prope vestis laciniasitum.

Dioecious (?) trees ca. 8 m tall; young stems quadrate, scurfy; older stems terete, becoming glabrous, with tubular leaf sheaths persisting and ultimately leaving circular scars; internodes 2.5–6 cm long. Leaves narrowly elliptic to elliptic, 8.5–12 cm long, 2.5–5 cm broad, with acuminate tips 0.5–1 cm long, rounded to attenuate at base, at margins sharply serrate with teeth 2.5–5 mm distant, drying coriaceous, smooth above, scabrous beneath; midveins impressed above, raised beneath, with sparse, floccose, multibranched trichomes; larger lateral veins 6–7, 11–20 mm distant, arcuate, raised and glabrous beneath; free portion of petioles 0.8–1 cm long, scabrous, rough; petiolar sheaths 1.6–2 cm long, 0.7–1.3 cm broad at apex, slightly inflated to somewhat closely appressed to stem, scurfy, becoming laciniate at upper margin with age, with slightly raised longitudinal lines extending down from distal margin, stipular appendages absent or early caducous. Stamine inflorescences not seen. Pistillate inflorescences axillary or terminal, racemes or sparsely branched panicles, 2.5–5.8 cm long with ca. 50 flowers, alternately arranged 1–8 mm distant on the rachis, subsessile or on short pedicles 1–3 mm long; lower inflorescence bracts similar to leaves but much smaller. Flowers usually solitary on rachis, rarely aggregated into clusters of 2, subtended by a fleshy cupular bract, on one side with an acuminate free tip ca. 1 mm long, enclosing lower half of flower. Pistillate flowers slightly trigonous, ca. 2 mm long, ca. 1 mm broad; perianth lobes united at base; stigmas clavate, dissected distally, ca. 2 mm long. Fruits white, ellipsoidal, 3–4 mm long, ca. 3 mm broad.

Distribution, habitat, and phenology. Known only from southern Colombia (Prov. Nariño) on the western slopes of the western cordillera where it occurs in pluvial forests and disturbed roadsides along cloud forest at elevations between 900 and 1,000 m. The three known collections were collected in flower and fruit in July.

Hedyosmum narinoense appears to share distinctive characters with several other species of Hedyosmum. It has the solitary flowers of H. bonplandianum, which ranges from Nicaragua to Colombia, and H. uniflorum of central Ecuador, yet differs from both by its shorter pistillate inflorescences, and scabrous and scurfy leaf sheaths that become laciniate with age. These laciniate leaf sheaths, along with its scabrous leaves, show a possible relationship to H. scaberrimum, which also occurs in southern Colombia. It differs from the latter species by its flowers, which are solitary on the inflorescence rachis (vs. in cymes of 2–4 flowers). Thus it is in the following suite of characters that the above collections are described as new: flowers borne singly on the inflorescence axis, not clustered into cymes; scabrous leaves with sparsely denticate teeth 2.5–5 mm distant; and scurfy, scabrous leaf sheaths becoming laciniate along the distal margin.

Paratypes. Colombia: Nariño: Junín–Barbacoas road, 2–10 km N of Junín, 1°30′N, 78°10′W, 900–1,000 m, 26 July 1986, Gentry et al. 55329 (MO, TEX).

Hedyosmum tepuience Todzia, sp. nov. TYPE: Venezuela. Amazonas: Dept. Río Negro, Cerro de la Neblina, Expedition Camp VII, 0°50′N, 65°58′W, 1,850 m, 29 Nov. 1984, Anderson 13389 (holotype, TEX; isotype, MICH not seen, NY not seen, VEN not seen). Figure 1.

Hedyosmos racemoso inflorescentibus racemosis paniculatisque cymulis floribus aliquot instructis similis sed differt appendicibus stipularum maxime longis et vaginis foliorum verrucosis.

Dioecious, aromatic trees or shrubs 4–10 m tall; young stems quadrature; older stems terete with tubular leaf bases persisting, ultimately disintegrating and leaving circular scars; internodes 3–6 cm long. Leaves elliptic, 7.5–19 cm long, 2.3–10 cm broad, with long-acuminate tips 0.5–1.5 cm long, attenuate at base, at margins coarsely serrate with teeth 3–6 mm distant, drying subcoriaceous, scabrous; midveins impressed above, raised beneath, with floccose or strigose hairs; free portion of petioles 0.7–2 cm long, glabrous; petiolar sheaths 1.5–2.5 cm long, 1–1.4 cm broad at the apex, inflated, slightly flared at apex, smooth to verrucose especially along distal margin, extending above free portion of petioles ca. 0.5 mm, persistent but disintegrating with age, each distal margin with two linear to slightly fimbriate stipular appendages ca. 3 mm long. Staminate inflorescences composed of a straight rachis 2.5–6.5 cm long, with 2–3 nodes; nodes usually alternate, sometimes opposite, with 1 spike per node; spikes
sessile or on short peduncles 1–4 mm long; mature spikes 0.6–1.5 cm long, ca. 4 mm broad; stamens 50–100; anthers 1–1.5 mm long, connectives extended into a pad ca. 0.5 mm long with an apicule at summit. Pistillate inflorescences axillary or terminal, racemes or sparsely branched panicles, 3–10 cm long with ca. 20 cymules; cymes sessile or on short peduncles 1–5 mm long, oppositely or alternately arranged on rachis, 0.2–1.4 cm distant, very irregularly globose, 4–6 mm diam., subtending floral bracts connate in lower one- to two-thirds, enclosing one- to three-fourths of flower, the margin usually entire, occasionally with a few sparse strigose hairs. Pistillate flowers slightly trigonous, 2–3 mm long, 1–2 mm broad, with a small pore on each face of the ovary; perianth lobes small, ca. 0.3 mm long, rounded at apex; stigmas irregularly clavate, 1–2 mm long, 3-angled, papillos. Fruiting cymes white, irregularly globose, 4–9 mm diam. Seeds ca. 3 mm long, ellipsoidal, brown, smooth.

**Distribution, habitat, and phenology.** Occurs throughout a large region of the Venezuelan Guayana at elevations of 1,200–2,660 m in wet forest and riparian habitats. Flowering specimens have been collected in February, April, and November and fruiting specimens in March, October, November, and December.

The sandstone plateaus or tepuis of the Venezuelan Guayana are not a region of great *Hedyosmum* diversity as they are for some other groups of plants (Steyermark, 1979). Three species were previously reported from that area: *H. racemosum* (Ruiz & Pavón) G. Don, *H. gentryi* D’Arcy & Liesner, and *H. neblinae* Todzia (Todzia, 1988). This new species, *H. tepuiense*, was previously treated as *H. racemosum* in Todzia (1988). Another new species described below, *H. intermedium*, was previously treated as the southernmost populations of *H. gentryi*. Considering these taxonomic reevaluations, the three species found in the Venezuelan Guayana are now called *H. tepuiense*, *H. intermedium*, and *H. neblinae*.

*Hedyosmum tepuiense* is obviously closely allied to *Hedyosmum racemosum*, with both having racemose and paniculate inflorescences with several-flowered cymes. This new species differs from *H. racemosum* by its extremely long stipular appendages (4 mm long vs. 1–2 mm long for *H. racemosum*) and verrucose leaf sheaths (vs. glabrous in *H. racemosum*). *Hedyosmum tepuiense* has consistently larger leaves than populations of *H. racemosum* in the Andes, as well as floccose trichomes on the lower side of the midvein and longer inflorescences.

**Paratypes.** GUAYANA. Upper Potaro River region, upper slopes of Mt. Wokoming, 65°05′N, 59°50′W, ca. 1,500 m, 4 July 1989, Boom & Samuels 9063 (NY, TEX), 1,530 m, 13 July 1989, Boom & Samuels 9200 (NY, TEX). VENEZUELA. AMAZONAS: Depto. Río Negro, Cerro de la Neblina, Expedition Camp VII, 00°50′N, 65°58′W, 1,850 m, 29 Nov. 1984, Anderson 13440 (TEX), 1 Dec. 1984, Anderson 13440(TEX); Cerro Neblina, camp #7, S slopes of Cañon Grande, 1,800 m, along river below camp, 05°55′N, 66°00′W, 29 Nov. 1984, Croat 59449 (MO, TEX), Croat 59463 (MO, TEX); trail S from Cerro Neblina Camp #5, 1,200–1,300 m, 04°49′N, 66°00′W, 12 Apr. 1984, Gentry & Stein 46570 (TEX); Depto. Río Negro, E of and below Neblina Camp 7, 05°55′N, 66°00′W, S slopes Canyon Grande, ca. 1,700 m, 29 Nov. 1984, Kral 71905 (TEX); Dept. Atabapo, Cerro Marahuaca, summit SW side of center, sides and bottom of 120 m deep sinkhole, 33°9′N, 65°26′W, 2,600 m, 22 Oct. 1988, Liesner et al. 25717 (TEX); Depto. Río Negro, Cerro de La Neblina, ridge at divide between Brazil and Venezuela, 26 km ENE of Neblina Base Camp, approx. 05°33′N, 65°56′W, 2,000 m, 15 Apr. 1984, Ploskon & Thomas 13629 (NY, TEX); Depto. Río Negro, Camp 7, 00°52′N, 65°58′W, 1,730–1,850 m, 1 Feb. 1985, Renner 2058 (US); BOLIVIA: Cerro Apacara, Río Caroní, 1,850 m, 11 Nov. 1946, Cardona 1956 (NY, US); Cerro Roraima, ca. 51°12′N, 60°40′W, 2,280–2,600 m, Luteyn & Ayward 9769 (TEX); Illí-tepui, Gran Sabana, 7–8,000 ft., 17 Mar. 1952, Maguire 33470 (TEX); Mount Roraima, SW slopes, 2,400 m, 10 Jan. 1939, Pinkus 130 (BR, F, GH, MO, NY, US); Cerro Uananapán, S of Uei-tepui, between Luepa and Cerro Venamo, 1,450 m, 25 Apr. 1960, Steyermark & Nykiss 746 (NY, VEN); Chimantá Massif, SW edge of Apara-tepui, 1,800–2,000 m, 14 Apr. 1953, Steyermark 74972 (F, NY); Auyán-tepui, entre la escarpa superior, este del paso de acceso a la cumbre del sur y "El Pehón," 1,800 m, 17 May 1964, Steyermark 94083 (NY, VEN); Massif Chimantá, along Río Asaporko, 1,300 m, 7 Jan. 1953, Wurdack 34033 (NY, US).

**Hedyosmum intermedium** Todzia, sp. nov.

**TYPE:** Venezuela: Amazonas: Depto. Atures, Sierra Maigualida, NW sector, small valley along an upper tributary of Caño Iguana, 5°30′N, 65°15′W, 2,000 m, 28 Feb–3 Mar. 1991, Berry, Huber & Rosales 4913 (holotype, TEX; isotypes, MO, MYF not seen, VEN not seen).

**Figure 1.**

**Inter Hedyosmum neblinae ac H. gentryi intermedium; H. neblinae similis dispositionibus florum ac cymularum sed folis ellipticis et vaginis foliorum glabris differt; H. gentryi similis foliis ellipticis ac vaginis foliorum glabris sed cymulis floribus 2–3 instructis differt.**

Dioecious, aromatic trees or shrubs 1.5–8 m tall; young stems quadrate, sometimes dull red; older stems terete with tubular leaf bases persisting, ultimately disintegrating and leaving circular scars; internodes 1–7 cm long. Leaves elliptic, 6–14 cm long, 2.3–0.4 cm wide with abruptly acuminate apices 0.5–1.2 cm long, attenuate at base, at margins coarsely serrate with teeth 5–8 mm distant,
Hedyosmum

85
glabrous, drying subcoriaceous and smooth; midvein
glabrous beneath; larger lateral veins 10–14, 7–10
mm distant, obscure, leaving midvein at ca. 90°
angle, arcuate toward margin, free portion of peti-
oles 0.4–1.8 cm long, glabrous; petiolar sheaths
0.8–1.1 cm long, 0.6–0.9 cm broad at apex, slightly
flared at apex, glabrous, smooth; stipular append-
ages linear, ca. 2 mm long, caducous. Staminate
inflorcescences 5.5–11 cm long, composed of rac-
iches with 1–4 nodes with 1–3 spikes per node;
mature spikes 1–2 cm long, subtended by 2–4 ovate
bracts; stamens ca. 130–200, congested on axis,
ca. 1.5 mm long, ca. 1 mm broad at apex, connect-
ive ca. 0.3 mm long, flattened distally. Pistillate
inflorcescences axillary or terminal, simple or basally
branched racemes 3–4 cm long; cymes with 2–3
flowers, opposite on inflorescence axis, 4–10 mm
distant, sessile; subtending floral bracts 2.5–4 mm
long, free almost to base or connate in lower one-
fourth, acute at apex, margin ciliate. Pistillate flow-
ners strongly trigonous, 3–4 mm long, 1–2 mm broad
on each face, with a large pore on each face of the
ovary; perianth lobes minute, deltoid, rounded at
apex. Fruiting cymes red to purple; seeds ca. 4
mm long, strongly trigonous, minutely papillose.

Distribution, habitat, and phenology. Widespread
in the Venezuelan Guayana, occurring in semi-open
and medium-height forest, savannas, and stream
and river edges between 1,200 and 2,000
m. Flowering specimens have been collected in Feb-
uary, March, and October, while fruiting is reported
in March and October.

Numerous recent expeditions in the Venezuelan
Guayana have provided sufficient material to assess
these populations that were originally placed in Hedyosmum gentryi (Todzia, 1988). Along with
H. gentryi, H. neblinae, and H. pseudoandromeda,
H. intermedium is one of the few purple-fruited
species in subgenus Tafalla sect. Microcarpa. Hedyosmum
intermedium is morphologically inter-
mediate between Hedyosmum gentryi, which ranges
from eastern Panama (Darién) and northern
Colombia (Antioquia) to northern Venezuela (Ara-
gua, Falcón, Mérida, Miranda, Monagas, Portu-
guesa, and Yaracuy), and H. neblinae (known only
from Cerro Neblina, which is further south than the
localities presently known for H. intermedium).
Hedyosmum intermedium has a flower and cyme
arrangement similar to H. neblinae, but differs from
it by glabrous (vs. verrucose) leaf sheaths and elliptic
(vs. ovate) leaves. It shares with H. gentryi elliptic
leaves and glabrous leaf sheaths, but differs in having
2–3 flowers per cyme (vs. 1 flower per cyme).

Paratypes. VENEZUELA: AMAZONAS: Serrania Parí, Caño
Asis, Rio Venturi, 2,000 m, 7 Feb. 1951, Cowan &
Wardack 31336 (NY); Depto. Atalaia, slope of Cerro
Marahuaca, Rio Yameduaka arriba, 3°38'N, 65°28'W,
1,225 m, 19 Feb. 1985, Liesner 17663 (MO, TEX,
VEN); Depto. Atalaia, below Salto Los Monos on tribu-
tary of headwaters of Rio Igupo, 3°35'N, 65°23'W,
1,500–1,650 m, 12 Mar. 1985, Liesner 18582 (MO,
TEX, VEN); Depto. Rio Negro, Cerro Aracacumuni, sum-
mit, Proa camp, 1°32'N 65°49'W, 1,400 m, 27 Oct.
1987, Liesner & Carnevali 22517 (MO, TEX, VEN),
Liesner & Carnevali 22535 (MO, TEX, VEN); Depto.
Atalaia, Cerro Marahuaca, slopes, "Sima" area, 03°43'N
65°30'W, 1,200 m, 16 Oct. 1988, Liesner 24961 (MO,
TEX, VEN), 18 Oct. 1988, Liesner 25068 (MO, TEX,
VEN); Depto. Rio Negro, Cerro Aracacumuni, summit,
Proa camp, 1°32'N 65°49'W, 1,400 m, 25 Oct. 1987,
Liesner & Carnevali 22438 (MO, TEX, VEN), 26 Oct.
1987, Liesner & Carnevali 22472 (MO, TEX, VEN), BOLD
AIR: Meseta del Jaua, Cerro Jaua, 1,820–1,880 m, 28 Feb.
5 Mar. 1974, Steyermark et al. 109677 (A, K, NY); Distr.
Cedeño, Meseta de Jaua, sector centro meridional,
cabeceras del Rio Marajano, affluente del Rio Cácaro,
04°48'N, 64°32'W, 1,750–1,800 m, 20 Nov. 1989,
Huber 13048 (TEX).

Acknowledgments. I thank the curators at MO,
NY, US, and VEN for sending Hedyosmum material
for identification. I also thank Guy Nesom for the
Latin diagnoses and Paul Berry for review of the
manuscript.

Literature Cited

Steyermark, J. A. 1979. Plant refuge and dispersal
centres in Venezuela: Their relict and endemic ele-
ment. Pp. 185–221 in K. Larsen & L. B. Holm-
Nielsen (editors), Tropical Botany. Academic Press, London.

Todzia, C. A. 1988. Chloranthaceae: Hedyosmum. Fl.
Neotropica Monogr. 48: 1–139.
Todzia, Carol A. 1993. "New species of Hedyosmum (Chloranthaceae) from northern South America." *Novon a journal of botanical nomenclature from the Missouri Botanical Garden* 3, 81–85. [https://doi.org/10.2307/3391430](https://doi.org/10.2307/3391430).

**View This Item Online:** [https://www.biodiversitylibrary.org/item/14663](https://www.biodiversitylibrary.org/item/14663)

**DOI:** [https://doi.org/10.2307/3391430](https://doi.org/10.2307/3391430)

**Permalink:** [https://www.biodiversitylibrary.org/partpdf/23615](https://www.biodiversitylibrary.org/partpdf/23615)

**Holding Institution**
Missouri Botanical Garden, Peter H. Raven Library

**Sponsored by**
Missouri Botanical Garden

**Copyright & Reuse**
Copyright Status: In copyright. Digitized with the permission of the rights holder.
License: [http://creativecommons.org/licenses/by-nc-sa/3.0/](http://creativecommons.org/licenses/by-nc-sa/3.0/)
Rights: [https://biodiversitylibrary.org/permissions](https://biodiversitylibrary.org/permissions)

This document was created from content at the **Biodiversity Heritage Library**, the world’s largest open access digital library for biodiversity literature and archives. Visit BHL at [https://www.biodiversitylibrary.org](https://www.biodiversitylibrary.org).