

Folia taxonomica 15. Five new species of *Paradrymonia* subgenus *Paradrymonia* (Gesneriaceae: Episcieae) from the Venezuelan Guayana.

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FOLIA TAXONOMICA 15. FIVE NEW SPECIES OF *PARADRYMONIA*
SUBGENUS *PARADRYMONIA* (GESNERIACEAE: EPISCIEAE)
FROM THE VENEZUELAN GUAYANA

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ABSTRACT

Five species of *Paradrymonia* subg. *Paradrymonia* (Gesneriaceae: Episcieae) are described from the state of Amazonas, Venezuela: ***Paradrymonia glandulosa***, ***P. hamata***, ***P. lutea***, ***P. tepui***, and ***P. yatua***.

RÉSUMÉ

Cinq espèces de *Paradrymonia* subg. *Paradrymonia* (Gesneriaceae : Episcieae) sont décrites de l'état d'Amazonas, Venezuela: ***Paradrymonia glandulosa***, ***P. hamata***, ***P. lutea***, ***P. tepui*** et ***P. yatua***.

RESUMEN

Cinco especies de *Paradrymonia* subg. *Paradrymonia* (Gesneriaceae: Episcieae) son descritas del estado Amazonas, Venezuela: ***Paradrymonia glandulosa***, ***P. hamata***, ***P. lutea***, ***P. tepui*** y ***P. yatua***.

Continuing the publication of new species of *Paradrymonia* Hanst. from the Venezuelan Guayana (for an introduction cf. Feuillet 2009), I propose here five new species in subgenus *Paradrymonia*.

1. *Paradrymonia glandulosa* Feuillet, sp. nov. (**Fig. 1**). TYPE: VENEZUELA. AMAZONAS. Depto. Atabapo: Cerro Marahuaca, "Sima Camp", south-central portion of forested slopes along eastern branch of Caño Negro, 3°43'N, 65°31'W, 1140 m, 21–24 Feb 1985, fl., J.A. Steyermark & B. Holst 130443 (HOLOTYPE: US; ISOTYPES: MO, VEN).

Paradrymonia ciliosa affinis; lamina ovata vel late elliptica, sepalis apice linearibus, corolla 3.5 cm longa, corollae lobis brevis, non fimbriatis differt.

Terrestrial, saxicolous herb or basal trunk epiphyte. Stem sappy becoming subwoody at base, procumbent, hirsute, glabrescent towards base, about 0.5 cm thick. Leaves strongly unequal in a pair, the smaller one early deciduous; larger leaf: petiole 8–15 cm long, densely to slightly appressed-pilose; blade chartaceous when dry, 20–28 × 10–13 cm, broadly ovate to elliptic, base cuneate, apex acuminate to caudate, margin glandular serrate, above appressed-pilose to glabrous, beneath minutely pubescent to glabrous. Inflorescence axillary, fasciculate; pedicels 0.1–0.6 cm long, densely pilose, trichomes red. Flower: sepals pale green bordered with maroon, free, subulate, 8–20 × 1–1.5 mm, apex long linear-acuminate about half the total length, margin loosely glandular serrate, pilose; corolla creamy white with purple lines, oblique in the calyx, basal gibbosity prolonging the tube, curved, 3 × 2 mm, tube 2.5 cm long, narrow for 1.8 cm, then widely funnel-shaped, with red trichomes, lobes shallow. Fruits not seen.

Distribution.—*Paradrymonia glandulosa* was collected on forested slopes of Cerro Marhuaca and Cerro Yapacana, department of Atabapo, state of Amazonas (Venezuela), between 1140–1200 m. It was in bloom in January–February.

Paradrymonia glandulosa resembles *P. ciliosa* by its general appearance: thick stem with usually short internodes, creeping on rocks or climbing lower tree trunks, large leaves with long petioles, and very short inflorescences in the leaf axils. It differs from *P. ciliosa* and other species of subg. *Paradrymonia* from Venezuelan Guayana by the leaf blade ovate to widely elliptic with teeth wide-glandular at the tip, the sepals subulate and linear-acuminate, the corolla with a curved basal gibbosity, and short, non fimbriate lobes.



FIG. 1. *Paradyrmonia glandulosa*, Steyermark & Holst 130443 (isotype: MO), shorter distance between the 2 petioles = 6 cm; leaf margin inset, *idem* (US), length of the inset = 12 cm; corolla inset, Maguire, Cowan & Wurdack 30657 (NY), total length of the object = 3.5 cm.

Although the flowers pressed in situ seem erect in the calyx, a separate corolla in the pocket of *Maguire et al.* 30657 clearly shows a lateral insertion at the base between the curved gibbosity and the tube suggesting that the corolla is strongly oblique in the calyx and that the calyx is itself oblique on the pedicel. A situation possibly imposed by the multi-flowered fasciculate inflorescence developing between the stem and the long petioles. This species was “sp. C” in Feuillet & Steyermark (1999).

Etymology.—The epithet *glandulosa* refers to the glandular teeth on the margin of the leaf blades, the bracts, and the calyx lobes.

PARATYPE: VENEZUELA. AMAZONAS. Depto. Atabapo: Cerro Yapacana, on slopes and cumbre, 1200 m, 3 Jan 1951, fl., B. Maguire, R.S. Cowan & J.J. Wurdack 30657 (NY).

2. *Paradrymonia hamata* Feuillet, sp. nov. (**Fig. 2**). TYPE: VENEZUELA. AMAZONAS. Depto. Río Negro: Cerro de la Neblina, Río Yatúa, 140–1700 m, 31 Dec 1957, fl., B. Maguire, J.J. Wurdack & C.K. Maguire 42563 (HOLOTYPE: NY).

Paradrymonia ciliosa affinis; lamina ovata vel orbiculata, pedicello usque ad 4.5 cm longo, sepalis in dimidio superiore linearibus, corolla 5–6 cm longa differt.

Terrestrial (?) herb; stem about 0.5 cm thick; trichomes red. Leaves so unequal in a pair that they look alternate, small one obsolete or early deciduous, lamina not developing; larger one: petiole 5–12 cm long, pubescent; blade broadly ovate to orbicular, base rounded or obtuse, then abruptly cuneate and narrowly somewhat decurrent, apex broadly and shortly acuminate, margin obscurely to clearly glandular-serrate, above minutely puberulent to glabrous, beneath appressed-pubescent on main veins, trichomes scattered between, margin densely appressed pubescent. Inflorescence axillary, fasciculate, pedicel 1–4.5 cm long, long-hirsute. Flowers: calyx with long, erect, trichomes, sepals narrowly triangular-elliptic and for half its length long linear-acuminate, 15–20 × 2–3 mm, with 1–3 teeth on the linear tip and near its base; corolla white or hyaline with scattered trichomes outside, basal gibbosity 0.4–0.5 × 0.4 mm, tube narrowly tubular at base, abruptly widening, then broadly tubular, 4–4.5 cm long, with white trichomes, lobes suborbicular, 0.9–1.2 cm, the ventral lobe shortly fimbriate, the others crenate to entire at margin; stamens borne near base of the tube, seen only recoiled to the base of the wide portion of the tube, anthers thecae widely divergent, about 1.5 mm long. Fruit not seen.

Distribution.—*Paradrymonia hamata* was collected partly buried in duff at 1200 m on Cerro de la Neblina (Department Río Negro) and Cerro Yapacana (Department Atabapo) in the state of Amazonas (Venezuela). It was in bloom in January and December.

Paradrymonia hamata resembles *P. ciliosa* by its general appearance: thick stem with usually short internodes, creeping on rocks or climbing lower tree trunks, large leaves with long petioles, and very short inflorescences in the leaf axils. It differs from *P. ciliosa* by the leaf blade ovate to orbicular, pedicels up to 4.5 cm long, versus up to 2.5 cm, the sepals linear-acuminate in the apical half, the corolla tube 4–4.5 cm long, versus 2–3 cm, and a much smaller basal gibbosity. *Paradrymonia hamata* can be separated from *P. lutea* by its white corolla versus yellow, from *P. tepui* and *P. yatua* by its calyx lobes partly linear acuminate versus elliptic, from *P. glandulosa* by its white corolla trichomes versus red, and from the other species of subg. *Paradrymonia* from Venezuelan Guayana by its leaves broadly ovate to orbicular versus oblanceolate to elliptic. This species was “sp. B” in Feuillet & Steyermark (1999).

Etymology.—The epithet *hamata* refers to the barb-like trichomes on the linear tip of the sepals.

PARATYPE: VENEZUELA. AMAZONAS. Depto. Atabapo: Cerro Yapacana, Río Orinoco, 1200 m, 2 Jan 1951, fl., B. Maguire, R.S. Cowan & J.J. Wurdack 30621 (NY).

3. *Paradrymonia lutea* Feuillet, sp. nov. (**Fig. 3**). TYPE: VENEZUELA. AMAZONAS. Depto. Río Negro: Neblina Massif, Canyon Grande, along Río Mawarinuma, ca. 7 km ENE of Puerto Chimo, 0°50–51'N, 66°02–06'W, 300 m, 9–14 Jul 1984, fl., G. Davidse & J.S. Miller 27212 (HOLOTYPE: US; ISOTYPES: MO, NY, VEN n.v.).

Paradrymonia ciliosa affinis; petiolo longiore, corolla lutea, corollae lobis suborbiculares non fimbriatis differt.

Herbaceous lithophyte, or low epiphyte. Stem densely pilose, trichomes reddish. Leaves opposite, very unequal in a pair, the small one scale-like, mostly early deciduous; the larger one: petiole purple, appressed

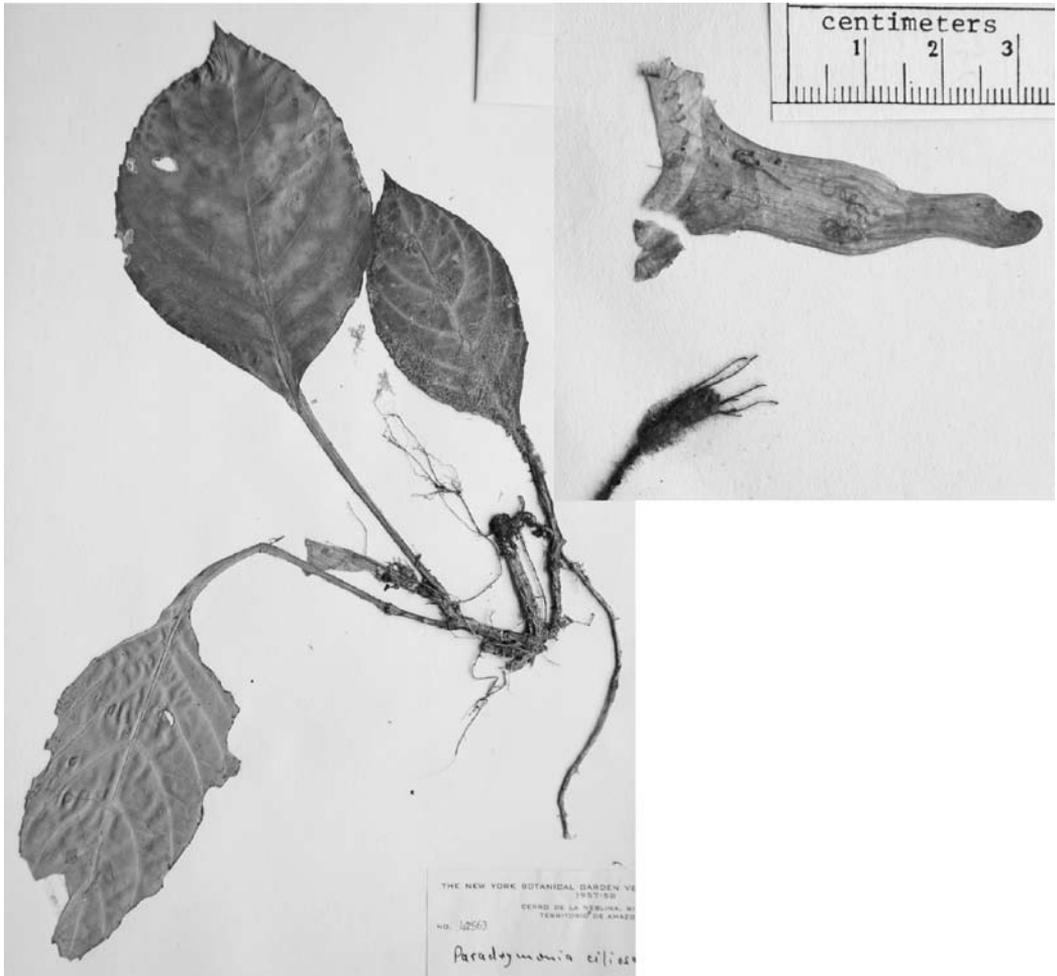


FIG. 2. *Paradymonia hamata*, Maguire, Wurdack & Maguire 42563 (holotype: NY), blade of the middle leaf 9.5 cm wide; corolla & bud inset, B. Maguire, R.S. Cowan & J.J. Wurdack 30621 (NY).

pubescent to glabrous, 15–38 cm long; blade broadly ovate to ovate elliptic, 13–32 × 6–21 cm, cuneate and shortly decurrent at base, abruptly acuminate at apex, margins obscurely and loosely glandular serrate, glabrous, sometimes the veins sparsely appressed-pubescent abaxially, margin sparsely ciliate, with 9–13 main veins on each side of the midrib, impressed adaxially, conspicuous abaxially, tertiary venation not evident. Inflorescences axillary, fasciculate or short pedunculate, 12–25-flowered, peduncle 3–5 mm long, appressed-pubescent, bracts oblanceolate or lance-elliptic, acute at apex, 10–12 × 1.5–3 mm, minutely appressed-pubescent, pedicels densely appressed-pubescent, 2–3 cm long. Flower: calyx lobes free, 15–25 × 3–6 mm, narrowly to broadly lanceolate or lance-elliptic, narrowed to an acuminate attenuate apex, endured at the tip, sparsely ciliate in the upper half, entire in the basal half, with a few endured blunt teeth toward the apex; corolla bright yellow, tubular, 4.3–4.5 cm long, glabrous inside except for the verrucose throat, pilosulous outside except toward the base, basal gibbosity 3.5 × 5 mm, ovate-oblong, glabrous, base narrowed, broader above to 7–8 mm diam., lobes suborbicular, 6 × 7 mm, glabrous inside, ventral lobe appressed-pilose outside, the others appressed-pilose toward base, otherwise glabrous outside; stamens

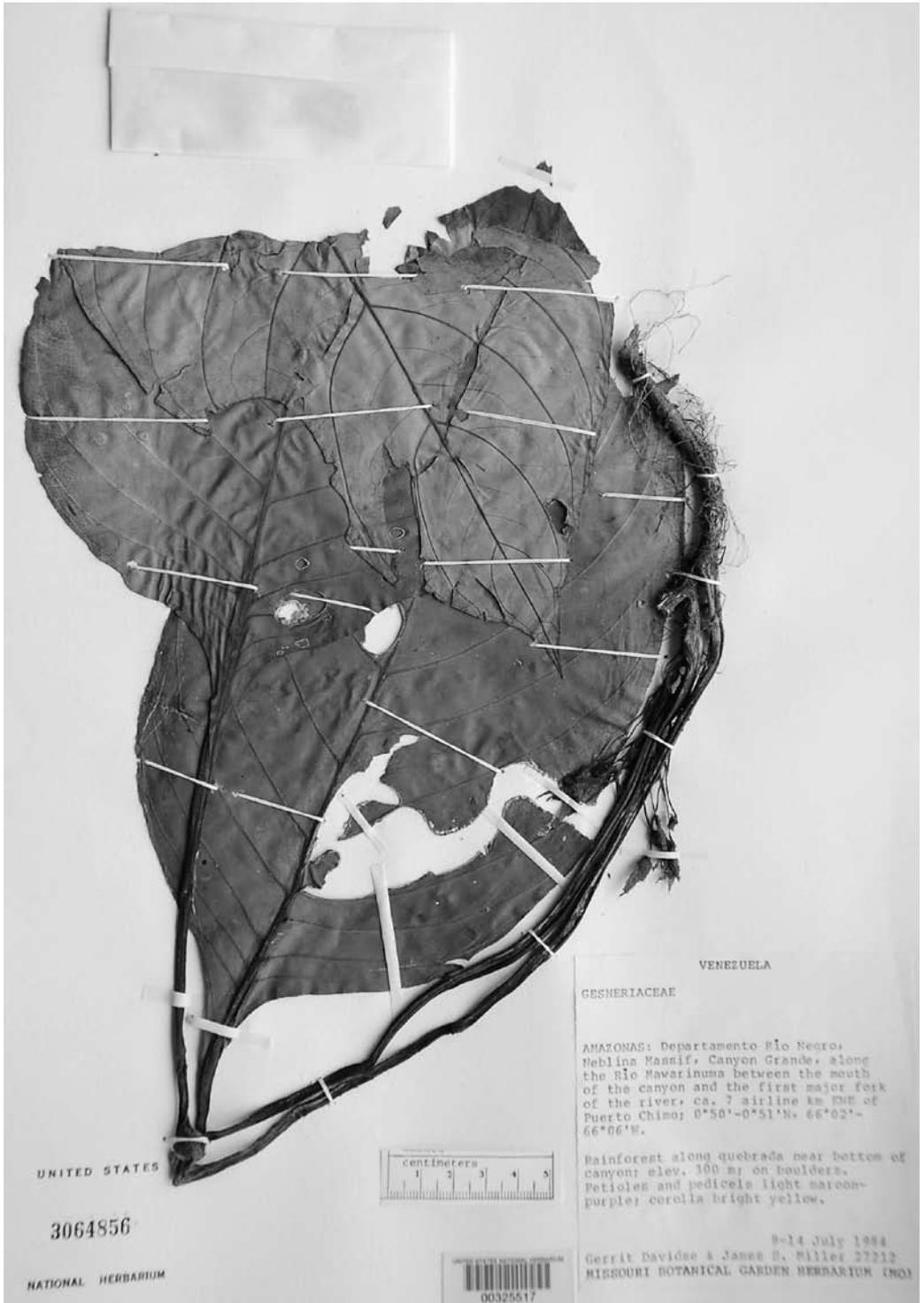


Fig. 3. *Paradrymonia lutea*, Davidse & Miller 27212 (holotype: US).

4, inserted on the corolla, anthers 2×2 mm, cells pilose at base; disc reduced to a dorsal gland, glabrous; ovary densely sericeous, style 25 mm long, glabrous at base, sparsely pilose toward apex, stigma verrucose. Fruits not seen.

Distribution.—*Paradrymonia lutea* grows on boulders in forest or as a low epiphyte at 150–1250 m on the Neblina Massif, Amazonas (Venezuela).

I have not seen a single corolla and rely on careful notes taken by Julian Steyermark in the description of the corolla and androecium. *Paradrymonia lutea* resembles *P. ciliosa* from which it differs mainly by the bright yellow (vs. white corollas), the bracts and sepals oblanceolate or lance-elliptic (vs. narrow triangular), and the leaf blades that are broadly ovate to ovate elliptic (vs. oblanceolate) and cuneate (vs. long attenuate) at base. The bright yellow corollas separate *P. lutea* from the other species of subg. *Paradrymonia* from Venezuelan Guayana. This species was “sp. A” in Feuillet & Steyermark (1999).

Etymology.—The epithet *lutea* refers to the bright yellow corolla.

PARATYPES: VENEZUELA. AMAZONAS: Depto. Río Negro: Cerro de la Neblina, foothill of South slope of North arm, above Puerto Chimo camp, $0^{\circ}50'N$, $66^{\circ}07'W$, 150–500 m, 14 Feb 1984, fl., R.L. Liesner 15896 (MO, US, VEN); Cerro de la Neblina, north base of Pico Cardona, $0^{\circ}49'N$, $66^{\circ}0'W$, 1250 m, 21–24 Mar 1984, fl., R.L. Liesner & B. Stannard 16895 (MO, US, VEN).

4. *Paradrymonia tepui* Feuillet, sp. nov. (Fig. 4). TYPE: VENEZUELA. AMAZONAS. Depto. Río Negro: Cerro Aracamuni, summit, Proa Camp, in ravines and near edge of tepui, $01^{\circ}32'N$, $65^{\circ}49'W$, 1400 m, 31 Oct 1987, fl. & fr., R.L. Liesner & G. Carnevali 22679 (HOLOTYPE: US; ISOTYPE: MO).

Paradrymonia ciliosae affinis; lamina ovata vel late elliptica, basi breviter decurrente, sepalis apice linearibus differt.

Terrestrial herb, lithophyte, or low epiphyte. Stem densely pilose, trichomes reddish. Leaves opposite, very unequal in a pair, the small one scale-like, mostly persistent; the larger one: petiole 14–23 cm long, glabrescent; blade obovate to broadly elliptic, 14–30 \times 6.5–13, cuneate and briefly decurrent at base, obtuse to acuminate at apex, margin minutely and loosely serrate, glabrous except abaxially on veins, margin ciliate, 7–10 main veins on each side of the midrib, midrib raised on both surfaces, veins raised or impressed on both surfaces. Inflorescences axillary, densely fasciculate on short peduncle; peduncles 1–1.5 cm long; bracts similar to the sepals; pedicels sparsely appressed pilose. Flowers: sepals greenish tan tinged with red, oblanceolate to lance-elliptic, narrow-triangular acuminate at apex, 1.7 \times 0.4 cm, sparsely pilose, few glandular teeth limited to the acumen; corolla (seen only in bud) white, hyaline-pilose, basal gibbosity 5 \times 3 mm, tube 2 cm long, edge of barely opening lobe undulate. Fruit subglobose, greenish tan, tinged with red.

Distribution.—*Paradrymonia tepui* has been collected on slopes and summit of a tepui, Cerro Aracamuni, in the Dept. Río Negro (Amazonas, Venezuela) between 600 and 1400 m. It was in flower and fruit in October.

Paradrymonia tepui resembles *P. ciliosa* by its general appearance: thick stem with usually short internodes, creeping on the substrate, strongly unequal leaves in a pair, the larger ones with long petioles, short inflorescence peduncles in the leaf axils, and creamy white corollas. *Paradrymonia tepui* differs from *P. ciliosa* by the leaf blade ovate to broad-elliptic, briefly decurrent at base, the inflorescence densely multiflowered, and the sepals linear-acuminate. The shape of the leaves and the sepals oblanceolate to lance-elliptic and narrow-triangular acuminate separate *P. tepui* from other species of subg. *Paradrymonia* from Venezuelan Guayana. This species was “sp. D” in Feuillet & Steyermark (1999).

Etymology.—This species is named tepui, a noun in apposition, after the location of the three known collections at the summit or on the slopes of a tepui.

Iconography.—See Fig. 493 in Feuillet and Steyermark (1999).

PARATYPES: VENEZUELA. AMAZONAS: Depto. Río Negro: Cerro Aracamuni summit, Proa Camp, near edge of tepui, $1^{\circ}32'N$, $65^{\circ}49'W$, 1400 m, 27 Oct 1987, calices, R.L. Liesner & G. Carnevali 22530 (MO, US); Dept. Río Negro, slopes of Cerro Aracamuni, Quebrada Camp, Laja area, $1^{\circ}24'N$, $65^{\circ}38'W$, 600 m, 22 Oct 1987, fr., R.L. Liesner & G. Carnevali 22324 (MO, US).

5. *Paradrymonia yatua* Feuillet, sp. nov. (Fig. 5). TYPE: VENEZUELA. AMAZONAS. Depto. Río Negro: Río Yatúa, at base of Piedra Araucaua, 100–140 m, 3 Feb 1954, fl., B. Maguire, J.J. Wurdack & G.S. Bunting 37466 (HOLOTYPE: US; ISOTYPE: NY).



FIG. 4. *Paradrymonia tepui*, Liesner & Carnevali 22679 (isotype: MO).



Fig. 5. *Paradymonia yatuana*, Maguire, Wurdack & Bunting 37466 (holotype: US); flower inset, Steyermark & G.S. Bunting 102546 (US).

Paradrymonia ciliosae affinis; lamina foliorum lanceolata, inflorescentia pluriflora, sepalis oblanceolatis vel lanceo-ellipticis apice linearibus, corollae lobis suborbiculares non fimbriatis differt.

Herb saxicolous. Stem short pilose, trichomes hyaline. Leaves very unequal in a pair, the small one scale-like, often early deciduous; the larger one: petiole 13–30 cm long, 1 cm wide (life-measurement), glabrous; blade broadly obovate to elliptic or lanceolate, cuneate and then long decurrent into the petiole, acuminate at apex, margin entire or serrulate toward apex, glabrous both sides, 40–55 × 13–18 cm, midrib strikingly raised below, 12–13 main veins on each side of the midrib. Inflorescence axillary, densely fasciculate; bracts similar to the sepals; pedicels 1.5–3 cm, sparsely pilose. Flowers: sepals green, oblanceolate to lance-elliptic, long linear at apex, 2.5–2.8 × 0.9–1.1 cm, margin entire loosely ciliate, sparsely pilose; corolla creamy white, 6–6.5 mm long, basal gibbosity 8 × 3 mm, curved, tube 2–2.8 cm long, pilose outside with hyaline trichomes, lobes suborbicular, entire, 10 × 10 mm, undulate at margin, pilose at base outside with hyaline trichomes, otherwise glabrous, dorsal gland, entire, rounded, 2 mm long, 1 mm wide; anthers reniform-suborbicular; ovary slender ovoid, densely short strigose, trichomes purple, style 2.5 cm long, conspicuously short hirsute, trichomes dark. Fruit not seen.

Distribution.—*Paradrymonia yatua* has been collected at the base of Cerro Araucaua, near Río Yatúa (Amazonas, Venezuela), between 100 and 150 m elevation.

Paradrymonia yatua resembles *P. ciliosa* by its general appearance: thick stem with usually short internodes, creeping on the substrate, strongly unequal leaves in a pair, the larger ones with long petioles, short inflorescence peduncles in the leaf axils, and creamy white corollas. *Paradrymonia yatua* differs from *P. ciliosa* by the leaf blade broadly obovate to elliptic or lanceolate (rather than oblanceolate), the sepals oblanceolate to lance-elliptic, long linear at apex (rather than linear-acuminate), the corolla lobes undulate at margin (rather than the ventral lobe and two dorsal lobes fimbriate). *Paradrymonia yatua* differs from *P. lutea* by its white corolla versus yellow, from *P. tepui* by its leaves ovate to broad elliptic versus oblanceolate and its green calyx versus tinged with red, and from the other species of subg. *Paradrymonia* from Venezuelan Guayana by its calyx lobes lacking a linear apex.

Etymology.—This species is named yatúa, noun in apposition, after the Río Yatúa near which the known specimens have been collected.

PARATYPES: **VENEZUELA. AMAZONAS: Depto. Río Negro:** Cerro Araucaua, al pie y en las faldas inferiores, Río Yatúa, 1°35'N, 66°10'W, 125–150 m, 11 Apr 1970, fl., J.A. Steyermark & G.S. Bunting 102546 (MO, NY, NY, US, VEN).

KEY TO THE SPECIES OF *PARADRYMONIA* SUBG. *PARADRYMONIA* IN THE GUIANA SHIELD AREA
(EXCEPT *P. CILIOSA*, ALL RESTRICTED TO VENEZUELA, AMAZONAS)

1. Corolla bright yellow (Neblina Massif) _____ ***Paradrymonia lutea***
1. Corolla white.
 2. Calyx lobes elliptic.
 3. Leaf blades ovate or broad-elliptic; calyx tinged with red (Cerro Aracamuni) _____ ***Paradrymonia tepui***
 3. Leaf blades oblanceolate; calyx green (Río Yatúa) _____ ***Paradrymonia yatua***
 2. Calyx lobes partly linear-acuminate.
 4. Corolla white with red trichomes (Cerro Marhuaca & Cerro Yapacana) _____ ***Paradrymonia glandulosa***
 4. Corolla white with hyaline trichomes.
 5. Leaf blades broadly ovate to orbicular, suddenly decurrent to the petiole; calyx lobes acuminate long filiform; corolla ventral lobe fimbriate, others crenate to entire at margin (Río Yatúa & Cerro Yapacana) _____ ***Paradrymonia hamata***
 5. Leaf blades oblanceolate to elliptic, progressively long decurrent to the petiole; corolla 3 lobes fimbriate.
 6. Calyx lobes margin loosely glandular toothed, acuminate short or long linear; corolla with the ventral and dorsal lobes fimbriate (large distribution in Central & northern South America) _____ ***Paradrymonia ciliosa***
 6. Calyx lobes margin (including the long linear acuminate) loosely fimbriate; corolla with only the ventral lobe fimbriate (Cerro Cuao) _____ ***Paradrymonia* sp. 1**

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