Research article

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Scottmoria andinorientalis (Lecythidaceae): a new species from the southeastern Andean slopes of Ecuador

Scottmoria andinorientalis (Lecythidaceae): una nueva especie de las estribaciones al sureste de los Andes de Ecuador

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Abstract:

Background and Aims: *Scottmoria* is a monophyletic genus of Neotropical Lecythidaceae that encompasses 46 species, ranging from Honduras to Bolivia. During the revision of the genus, a new species from the Andean slopes of southeastern Ecuador has been found, that is formally described and presented here.

Methods: All specimens in the herbaria AAU, B, COL, GB, GUAY, K, LOJA, MO, NY, QCA, QCNE, and US were studied. Measurements were done from dried herbarium specimens, fresh and preserved material. The used terminology follows that presented in the Lecythidaceae Pages. The new species is mapped and the preliminary conservation status was determined using the coordinates of the studied specimens, as recommended by the IUCN.

Key results: A new species in the genus is formally presented, that is similar to *Scottmoria spiralocucullata* but differs by the smaller size of leaf blades at maturity (15-27 cm long), narrower petioles (3-4 mm diameter when fresh), and shorter calyx lobes (2.5-4 mm long). A key to the morphologically similar species is presented and the EN B1 B2abiii category is assigned to this new species.

Conclusions: *Scottmoria andinorientalis* is presented here as a new tree species endemic to southeastern Ecuador of medicinal use against stomach ache and to heal swellings.

Key words: Ericales, *Eschweilera*, Morona Santiago, Neotropics.

Resumen:

Antecedentes y Objetivos: *Scottmoria* es un género monofilético de Lecythidaceae neotropicales que comprende 46 especies, distribuidas desde Honduras hasta Bolivia. Durante la revisión del género, se ha descubierto una nueva especie proveniente de las laderas andinas del sureste de Ecuador, la cual se describe y presenta formalmente aquí.

Métodos: Se estudiaron todos los especímenes de los herbarios AAU, B, COL, GB, GUAY, K, LOJA, MO, NY, QCA, QCNE y US. Las mediciones se realizaron a partir de especímenes de herbario secos, así como de material fresco y conservado. La terminología empleada sigue la presentada en The Lecythidaceae Pages. La nueva especie se mapeó y el estado de conservación preliminar se determinó mediante las coordenadas de los especímenes estudiados, tal como recomienda la UICN.

Resultados clave: Se presenta formalmente una nueva especie del género, similar a *Scottmoria spiralocucullata* pero se distingue por el menor tamaño de las láminas foliares en la madurez (15-27 cm de longitud), los pecíolos más estrechos (3-4 mm de diámetro en fresco) y los lóbulos del cáliz más cortos (2.5-4 mm de longitud). Se provee una clave para las especies morfológicamente similares y se asigna la categoría EN B1 B2abiii para esta nueva especie.

Conclusiones: Se presenta aquí a *Scottmoria andinorientalis* como una nueva especie de árbol del sureste de Ecuador, de uso medicinal contra el dolor de estómago y para curar inflamaciones.

Palabras clave: Ericales, *Eschweilera*, Morona Santiago, Neotrópico.

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Introduction

Scottmoria Cornejo in Vargas et al. (2024) is a monophyletic genus of Lecythidaceae that has 46 species (including the new species presented here), most of which are hard wood trees that occur in well-drained soils in moist, wet forests to rainforests. The genus is centered from western Ecuador and Colombia to Panama and is distributed northwards to Honduras in Mesoamerica, with just six species in western Amazonia up to the eastern Andean slopes (Cornejo and Prance, 2025). During the revision of *Scottmoria* for the Supplement for Flora Neotropica (Cornejo in Prance et al., submitted) over a dozen of new species from northwestern South America, Panama and Costa Rica have been published (Cornejo, 2023a, b; Batista, 2024; Cornejo and Prance, 2024, 2025). Fieldwork by Gabriel Tello in the southeastern Andes of Ecuador uncovered an undescribed species distinct from all known congeners. Following extensive examination of herbarium collections (see Materials and Methods) and field studies, the descriptions and key to *Scottmoria* species were updated for the Lecythidaceae Supplement to Flora Neotropica (Cornejo in Prance et al., submitted). Fresh and preserved materials gathered by Tello were deposited at the herbarium GUAY for comparative analysis against these revised circumscriptions. The research yielded a new species, that is formally presented here.

Materials and Methods

All specimens of *Scottmoria* in the herbaria AAU, B, COL, GB, GUAY, K, LOJA, MO, NY, QCA, QCNE, and US were studied (acronyms follow Thiers, 2025). Measurements were taken from dried herbarium specimens, fresh and material preserved in 70% ethanol. The used terminology follows that presented in the Lecythidaceae Pages (Mori et al., 2015). The map that illustrates the geographical distribution of the new species (Fig. 1) was generated using the Open-Source platform MapServer (McKenna et al., 2026). Subsequently, this map was edited using the photo-editing software Affinity Photo 2 v. 2.6.5 (Serif, 2026). The preliminary conservation status was determined using the coordinates of the studied specimens in GeoCAT (Bachman and Moat, 2012), and a buffer area of 2 × 2 km, as recommended by the IUCN (2022).

Results

Taxonomy

Scottmoria andinorientalis Cornejo & G.Tello, **sp. nov.** Figs. 1, 2, 3.

TYPE: ECUADOR. Morona Santiago, comunidad Uyuntza, 1093 m, 2°12'27.21''S, 78°0'58.79''W, 5.VII.2026, fl., fr., *G. Tello 25* (holotype: GUAY-14.075!; isotype: QCA!).

Scottmoria andinorientalis is similar to *S. spiralocucullata* S.A.Mori & Cornejo; however, *S. andinorientalis* differs by the smaller size of leaf blades at maturity (15-27 cm long *vs.* 35-55 cm long), narrower petioles (3-4 mm diameter when fresh *vs.* 6-12 mm diameter when fresh), flowers with calyx dark-purple to black (*vs.* calyx purple red), and shorter calyx lobes (2.5-4 mm long *vs.* 4-8 mm long).

Tree up to 8 m tall, ca. 20 cm diameter at breast height, bark and trunk not observed; stems longitudinally sulcate, glabrous, lenticellate, lenticels circular to elliptic; leaves petiolate, petioles channeled adaxially, rounded abaxially, hemispherical in cross section, 13-17 mm long × 3-4 mm diameter, glabrous; blades elliptic or oblong-elliptic to lanceolate-elliptic, 15-27 × 5.5-13 cm, chartaceous, adaxially with dark dots, abaxially with abundant dark-maroon to blackish-maroon punctations, base broadly cuneate to broadly obtuse or rounded, margins entire, revolute, marginal glands present in young leaves, turning to inconspicuous dark brown dots in mature leaves, apex narrowly acuminate to shortly caudate, 1-2.5 cm; venation apparently eucamptodromous towards base, brochidodromous towards apex, midrib prominent adaxially, salient abaxially, glabrous, secondary veins in 14-18 pairs, prominulous to impressed adaxially, salient abaxially, tertiary veins reticulate, prominulous on both sides; inflorescence a raceme, (sub)terminal, axillary and ramiflorous, rachis 4-8 cm long × 2-3 mm thick at lower half, straight, lenticellate, glabrous; pedicel/hypanthium 10-12 × ca. 2-3 mm, creamish-white verruculose-lenticellate, glabrous, dark-purple to black (fresh), black (dry); floral bracts absent; flower buds pink to rose (fresh); flowers 5-7 cm diameter (fresh), ca. 4-5 cm

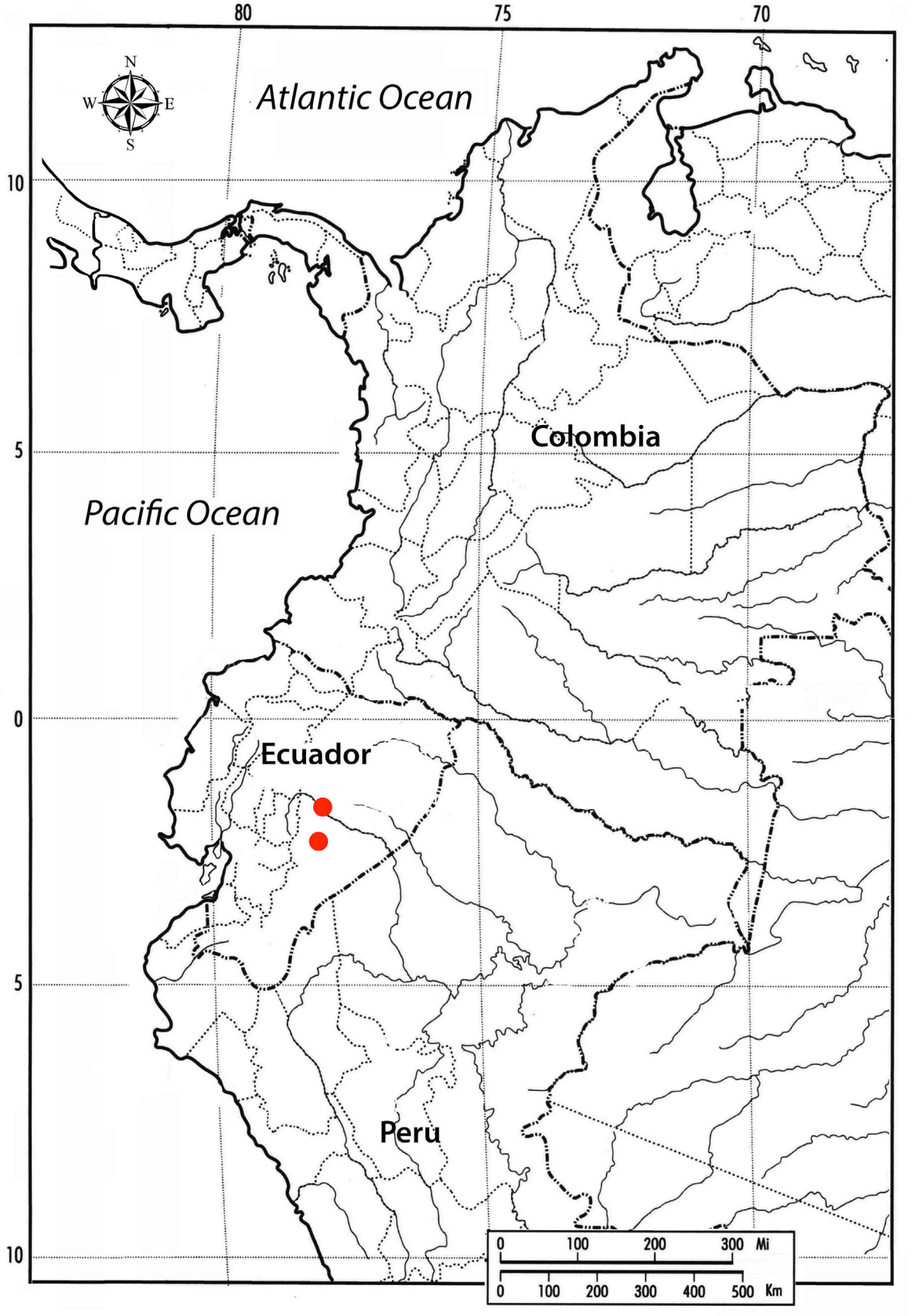


Figure 1: Distribution map of *Scottmoria andinorientalis* Cornejo & G.Tello.

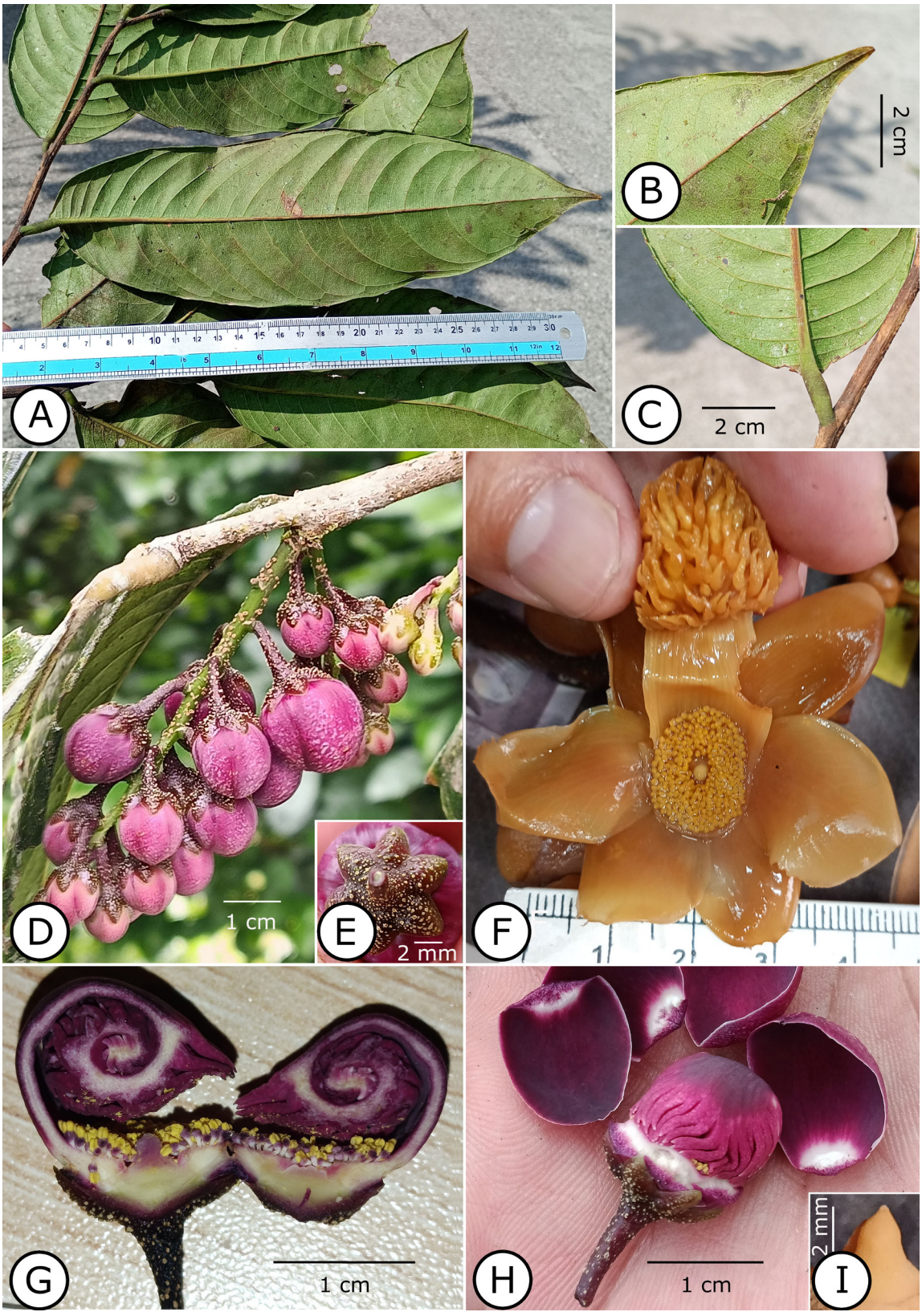


Figure 2: *Scottmoria andinorientalis* Cornejo & G.Tello. A. leaves, abaxial view; B. acuminate leaf apex, abaxial view; C. leaf base, abaxial view; D. ramiflorous racemose inflorescence; E. valvate calyx, abaxial view; F. corolla and open androecium exhibiting the ligule; G. sectioned androecium displaying a triple coil; H. calyx attached to androecium and four detached petals; I. style, lateral view. A-I are based on *Tello 25* (GUAY, holotype). Photographs A-C, F, I by Xavier Cornejo; D, E, G, H by Gabriel Tello-Hidalgo.

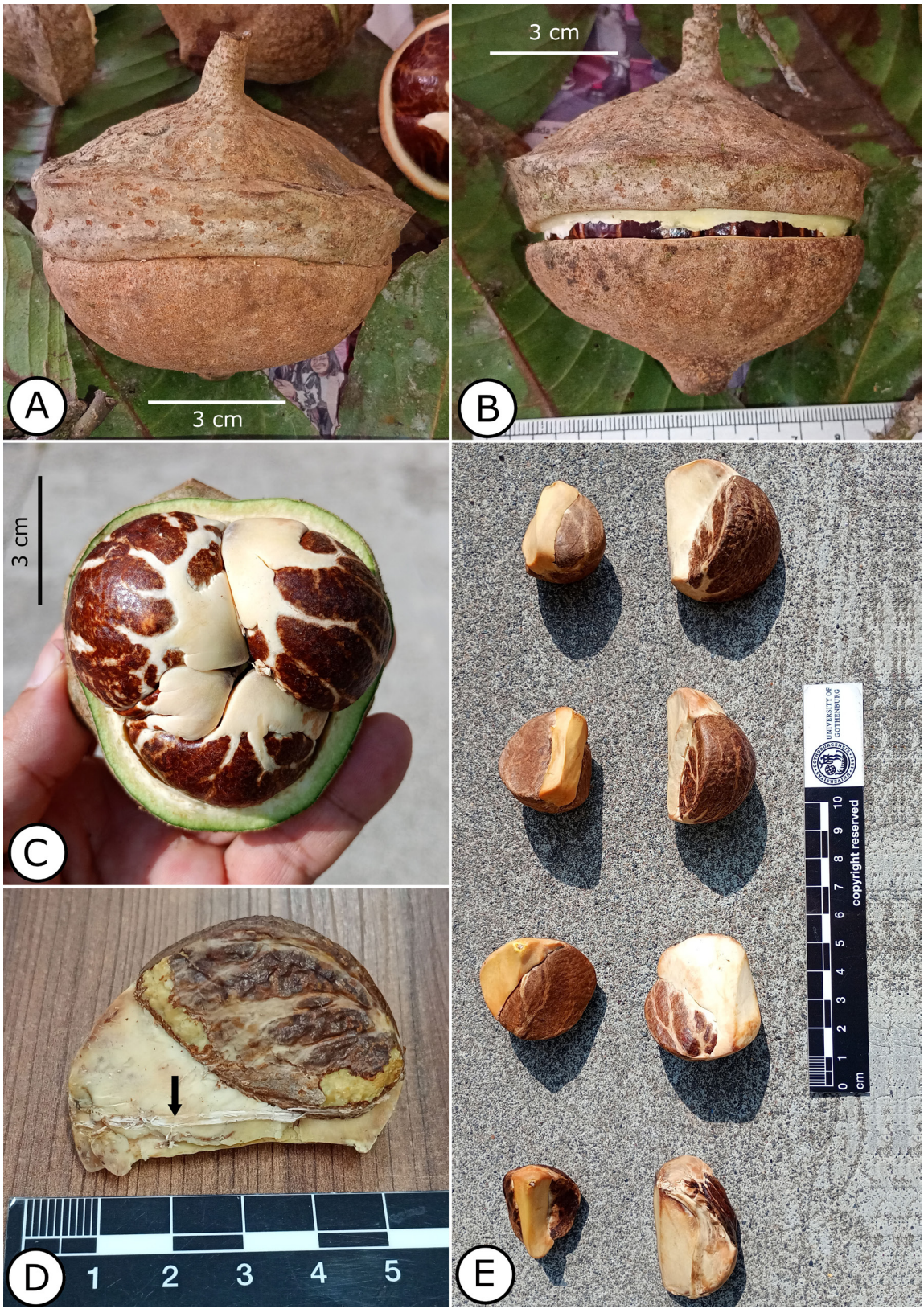


Figure 3: *Scottmoria andinorientalis* Cornejo & G.Tello. A. mature fruit before dehiscence, lateral view; B. mature fruit after dehiscence, lateral view; C. mature fruit exhibiting the seed´s arrangement and funicular arils, operculum removed, apical view; D. seed with asymmetric basally overdeveloped funicular aril, the arrow pointing the straight funicle, note the divergent position of seed; E. mature seeds in two rows, each row from a different collection. A-D, E (right) are based on *Tello 25* (GUAY, the type); E (left) is based on *Tello 24* (GUAY). Photographs: A-E by Xavier Cornejo.

diameter (dry); calyx with 6 lobes, lobes triangular to ovate, 2.5-4 × 3-4 mm, broadly divergent to patent at anthesis, verruculose-lenticellate abaxially, margins entire, bases valvate; petals ovate to obovate or oblongoid, 1.5-2.5 × 1.3-2 cm, ecostate, red-wine to dark purple (burgundy), white at base; androecial hood with three coils perpendicular to pedicel, 1.7-2 cm across, dark purple (fresh), inner cleft present; vestigial stamens on outside of coils; staminal ring with ca. 250 stamens, filaments 0.5-1.5 mm long (fresh), clavate, dark-purple the apical swollen part, anthers 0.5-0.7 mm long (fresh); hypanthium glabrous, verruculose-lenticellate, truncate at summit, shortly tapering to pedicel at base, ca. 4 mm long; ovary summit protruding convex over hypanthium, 1-2 mm high, surrounded by a shallow circular depression between intrastaminal ring scar and summit of ovary; style 1.5-3 mm long, distinguished from summit ovary, stylar collar absent, stigma pore ellipsoid; fruits depressed oblate, 5-9 × 6.5-11 cm, the infracalycine zone one fifth to one third of length of fruit, poorly developed, convex from calycine ring to pedicel, calycine ring sharp, ± conspicuous, calyx lobes minute, upwards to patent, inconspicuous or deciduous in subwoody fruits at maturity, supracalycine zone ca. 1-2 cm wide, straight to ascendant upwards, operculum occupying half to two thirds of fruit length, broadly convex, with a nipple-like umbo, apical pore present, pericarp light brown when dry, 4-8 mm thick; seeds 3-9 per fruit, dark brown and glossy at maturity, more or less wedge-shaped in cross section, outer surface hemispherical, two sides flat, 2.5-5 × 2.5-4 cm, veins sulcate to impressed on surface of fresh seeds, testa smooth, lateral aril of I-beam type, sometimes asymmetric and more developed basally to 2/3 the size of attached seed with inner funicle vertically straight, seed mostly divergent from it, thick, yellowish or creamish-white, thin sarcotesta white, absorbed at maturity.

Etymology: the epithet “andinorientalis” refers to the pattern of distribution of the new species, that is restricted to the eastern slopes of the Andes in Ecuador.

Common name and uses: olla de mono (Spanish, meaning monkey´s pot, Lila Shacay, pers. comm. to Gabriel Tello). The infusion of leaves is drunk against stomach ache, the bark is prepared to heal swellings suggesting anti-inflammatory properties, chemical studies are recommended.

Habitat and distribution: *Scottmoria andinorientalis* occurs as an understory woody element in conserved and secondary evergreen wet and rainforests, on Andean slopes between 600 and 1090 m, in southeastern Ecuador (Fig. 1).

Phenology: flowers have been recorded from May to July, and fruits from July to August.

Preliminar conservation status: *Scottmoria andinorientalis* inhabits forests within an area of less than 5000 km^2 in southeastern Ecuador that is under pressure from logging. Therefore, the EN B1 B2abiii category is assigned to this new species (IUCN, 2022).

Additional specimens examined: ECUADOR. Morona Santiago, comunidad Pikiur, 2°12'15.31''S 78°0'50.89''W, 1086 m, 30.VI.2026, fr, *G. Tello 24* (GUAY). Pastaza, Parroquia Veracruz, comunidad San Pablo de Talín, Finca Los Seikes, ca. 1˚31'44.81''S, 77˚51'59.0''W, 780 m, 15.V.2024, fl, *D. Criollo s.n.* (GUAY).

Discussion

The small trees of up to 8 m tall, ramiflorous racemose inflorescences (Fig. 2D), flowers with a developed pedicel and valvate calyx, purple corolla, androecium of a triple coil and fruit with a poorly developed infracalycine zone of *Scottmoria andinorientalis* may resemble those of *S. spiralocucullata*, a species restricted to western Amazonia on the lower Andean slopes from Ecuador to western Brazil. However, the new species differs from the latter by the characters discussed in the diagnosis. Furthermore, the dark-purple to black pedicel and calyx are unusual colors in the genus. Nevertheless, at present it is unknown if that color may have some degree of variability, as sometimes happens in *S. integrifolia* (Ruiz & Pav. ex Miers) Cornejo from coastal Ecuador to southwestern Colombia, whose

color of calyces vary from light green to purple. The asymmetric and basally overdeveloped funicular aril that are often present in some seeds is an unusual variable feature (Fig. 3E).

Below we present a key to identify *Scottmoria andinorientalis* and morphologically similar *Scottmoria* species in South America.

Key to *Scottmoria andinorientalis* and morphologically similar species in South America

1a. Leaf blades 50-80 × 18-30 cm, sessile or petioles up to ca. 1 cm long × 6-8 mm thick with many unicellular, papillose, light brown trichomes; style apparently absent, not distinguished from ovary summit ..... *S. brevipetiolata* (S.A.Mori & Cornejo) Cornejo

1b. Leaf blades 10-55(-60) × 4-20(-27) cm, petioles up to 2.5 cm long × 1.5-6 mm thick (if thicker, then longer than 1 cm long, see *S. spiralocucullata*), glabrous; style 1-4(-5) mm long, distinguished from ovary summit 2

2a. Inflorescence/infructescence strictly cauline, rarely cauline, ramiflorous and (sub)terminal 3

2b. Inflorescence/infructescence ramiflorous to/or subterminal, never cauline 4

3a. Calyx lobes triangular or ovate-triangular, lanceolate or oblong, 4-8 mm long; fruits with infracalycine zone truncate to depressed from calycine ring to pedicel/hypanthium; eastern Andes to western Amazonia, Ecuador to (Acre) western Brazil ..... *S. spiralocucullata* S.A.Mori & Cornejo

3b. Calyx lobes broadly ovate to hemiorbicular, 2-4 mm long; fruits with infracalycine zone hemisphaerical or rounded to obtuse from to pedicel/hypanthium; coastal to western Andes of Ecuador ..... *S. rimbachii* (Standl.) Cornejo

4a. Androecial hood with second and third coils parallel to pedicel ..... *S. caudiculata* (R.Knuth) Cornejo

4b. Androecial hood with second and third coils perpendicular to pedicel 5

5a. Calyx lobes 4-8 mm long 6

5b. Calyx lobes 2-4 mm long 7

6a. Pedicels 3-7(-10) mm long; leaf blades 4-10 cm wide, apex narrowly acuminate to often caudate, 2-7 cm long; fruit with infracalycine zone convex to broadly convex from calycine ring to pedicel/hypanthium, persistent calyx lobes minute, upwards, rather inconspicuous ..... *S. bogotensis* (R.Knuth) Cornejo & Prance

6b. Pedicels 8-13 mm long; leaf blades 8-18 cm wide, apex shortly acuminate, up to 2 cm long; fruit with infracalycine zone truncate to depressed from calycine ring to pedicel/hypanthium, persistent calyx lobes as knobs ..... *S. spiralocucullata* S.A.Mori & Cornejo

7a. Leaf blades 8-27 cm long, with 7-12(-18 in *S. andinorientalis*) pairs of lateral veins; fruit with infracalycine zone poorly developed, truncate to broadly obconical (unknown in *S. petalocostata*) 8

7b. Leaf blades 30-60 cm long (smaller in *S. caudiculata s.l.*), with 12-30 pairs of lateral veins; fruit with infracalycine zone developed, broadly convex 9

8a. Inflorescence a panicle; flowers with outer petals costate; northwestern Ecuador ..... *S. petalocostata* Cornejo

8b. Inflorescence a raceme; flowers with outer petals ecostate; southeastern Ecuador ..... *S. andinorientalis* Cornejo

9a. Flowers with androecial hood of 4 coils, style absent or nearly so, stylar collar absent ..... *S. rimbachii* (Standl.) Cornejo *s.l.*

9b. Flowers with androecial hood of 3 coils, style 1-5 mm long, stylar collar present 10

10a. Mature leaf blades 33-60 × 9-18 cm, apex usually linear-caudate, 2-7 cm long; rachis of inflorescence/infructescence 0.7-8 cm long, floral bracts present at anthesis ..... *S. apilingua* Cornejo

10b. Mature leaf blades (10-)12-27(-36) × 5-13 cm, apex short acuminate to caudate, up to 3.5 cm; rachis of inflorescence/infructescence up to 30 cm long, floral bracts absent or deciduous before anthesis ..... *S. caudiculata* (R.Knuth) Cornejo *s.l.*

Author contributions

Conceptualization: XC; Data curation: XC; Investigation: XC; Visualization: XC; Resources: GT; Writing – original draft: XC; Writing – review & editing: XC.

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Declaration of use of Artificial Intelligence

No artificial intelligence was used in the conception, analysis, and writing of this research.

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