

Four New Species of *Meliosma* (Sabiaceae) from Peru

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ABSTRACT. Four new species of *Meliosma* are described from the Peruvian Andes as *M. pumila*, *M. simiarum*, *M. sirensis*, and *M. youngii*.

Meliosma is emblematic of Peruvian cloud forest plants in its tendency to local endemism and in the incompleteness of taxonomic knowledge about it. Not a single species of Sabiaceae was known from Peru when Macbride (1956) treated related families in the *Flora of Peru*, but at least 17 *Meliosma* species (and three of lowland *Ophiocaryon*) are now known from the country (Gentry, 1986, in press). Four of the most distinctive of these are described here, all from the Peruvian Andes. These four species are all shrubs or small trees or treelets and are the smallest in stature of any neotropical *Meliosma*. Three of them are also among the smallest-leaved species of the genus; the fourth is a large-leaved pachycaul treelet.

Meliosma pumila A. Gentry, sp. nov. TYPE: Peru. Amazonas: Bongara Prov., Shillac, N of Pedro Ruiz, 5°49'S, 78°01'W, 2,300 m, moist primary montane rainforest, 31 Aug.–2 Sep. 1983 (fr), *D. Smith & S. Vasquez 4894* (holotype, MO; isotype, USM).

Frutex 0.5–2 m altus. Folia oblanceolata, 4–17 cm longa, 1–5 cm lata, acute serrata, plus minusve glabra. Inflorescentia terminalis, sparsim puberula, pedicellis 0–0.5 mm longis, sepalis 0.3–0.4 mm longis, petalis 0.7–1 mm longis. Fructus globosus, 1–1.3 cm diametro.

Shrub or treelet 0.5–2 m tall; branchlets terete, glabrous or sparsely and glabrescently pubescent with appressed trichomes when young, usually with a few small, inconspicuous lenticels. Leaves alternate, oblanceolate, 4–17 cm long, 1–5 cm wide, acuminate, cuneate at base, chartaceous, sharply serrate, the midvein strongly impressed above, raised below, secondary veins plane and inconspicuous above, raised below, each terminating in a conspicuous tooth, the tertiary venation inconspicuous and plane above, plane to subprominulous below, glabrous above, below glabrous except for a few inconspicuous appressed trichomes along main veins and sometimes very sparsely on surface; petiole 0.5–2.5 cm long. Inflorescence terminal, subpaniculate with a well-developed slender central axis and 2–4

widely separated lateral branches, sparsely puberulous, the pedicels lacking to 0.5 mm long. Flowers (seen only in bud) greenish, the sepals 5, broadly ovate, rounded, 0.3–0.4 mm long, three slightly larger than the other two, the margin minutely fimbriate; outer petals broadly ovate, ca. 1 mm long, inner petals narrow, ca. 0.7 mm long and 0.2 mm wide; fertile stamens 2, the anthers thick and suborbicular, each ca. 3 mm long, only slightly separated by the thickened connective, including connective ca. 0.6 mm across, the slender filament ca. 0.5 mm long, completely fused to the narrow inner petal; ovary ovoid, ca. 0.5 mm long. Fruit cream-colored when fresh, asymmetrically globose, ca. 1–1.3 cm diam., slightly contracted into a broad and poorly demarcated basal stipe, the surface glabrous.

Distribution. Endemic to mid-elevation cloud forests of northern Peru, south of the Huancabamba Depression, 1,850–2,300 m elevation.

Additional specimens examined. PERU. AMAZONAS: Prov. Bongara, Dist. Sipabamba, Shilla, montane forest, 1,850–1,900 m, 6 May 1981 (fr), *Young & Eisenberg 378* (MO). CAJAMARCA: Prov. Cutervo, Distr. San Andrés de Cutervo, carretera entre San Andrés y Santo Tomás, km 12, 2,320 m, 7 Aug. 1987 (fl), *Diaz & Osorez 2536* (MO); lower edge of Cutervo National Park, 10–15 km N of San Andrés de Cutervo, montane cloud forest, 6°10'S, 78°40'W, 2,200–2,250 m, 11 Feb. 1988 (st), *Gentry et al. 61511* (MO, USM).

Meliosma pumila is the smallest species in the genus and can reportedly be reproductive as a 0.5-m-tall subshrub. It differs from *M. solomonii* A. Gentry, which has similarly small leaves, in the chartaceous leaf texture and consistently and sharply serrate leaf margin. It differs from *M. simiarum*, which also has small chartaceous leaves, in the cream-colored (rather than black) fruits at maturity, in the narrower leaves with conspicuously spinose serrate margins, and in the twigs and leaves either glabrous or with small appressed trichomes.

Meliosma simiarum A. Gentry, sp. nov. TYPE: Peru. San Martín: Venceremos near Amazonas border, km 291 on Rioja–Pomacocha road, 5°45'S, 77°40'W, 1,850 m, wet lower montane forest, 9 Feb. 1984 (fl, fr), *Gentry & Smith*

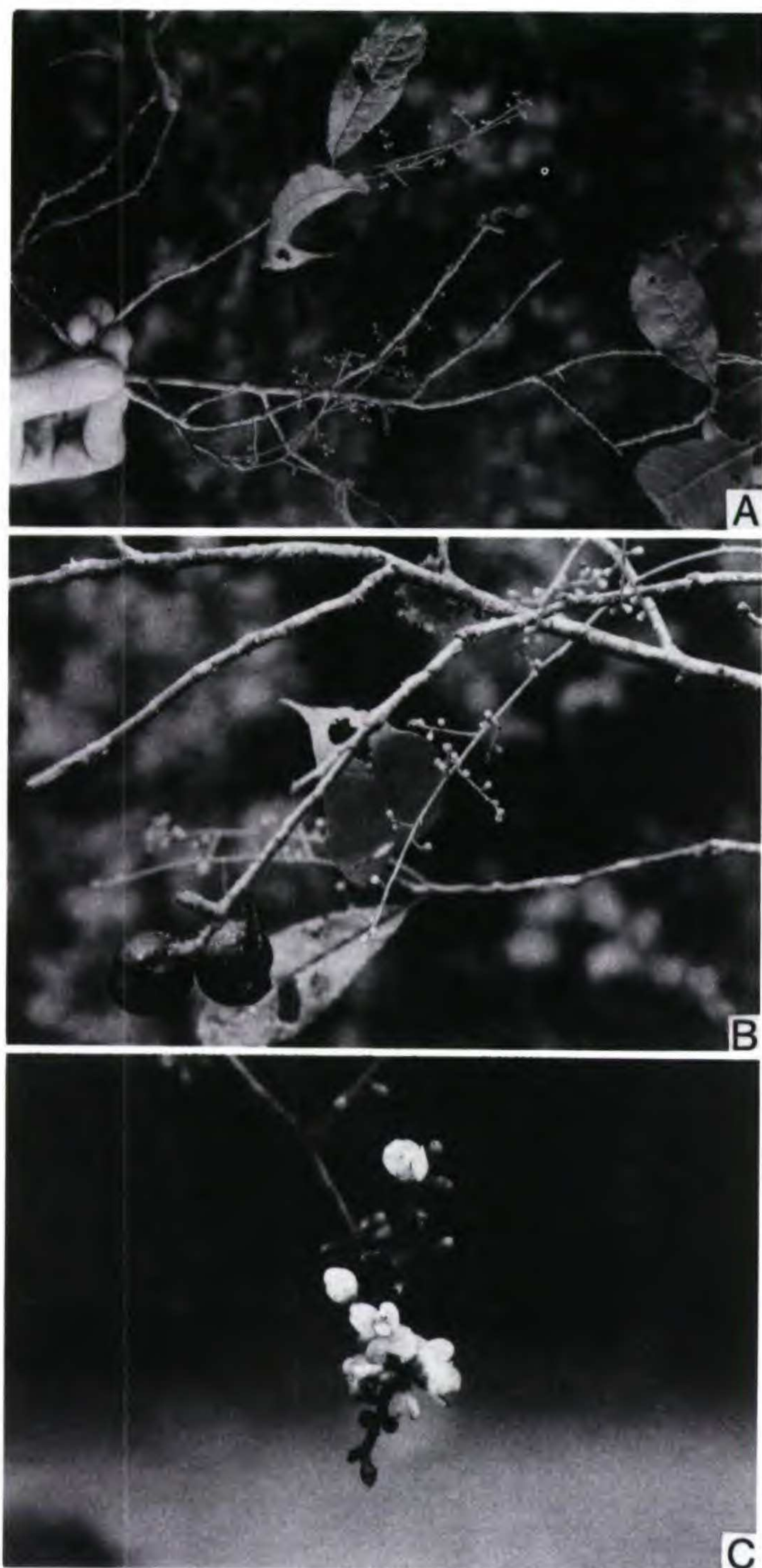


Figure 1. *Meliosma simiarum*. —A. Habit showing inflorescence, leaves, and fruit (Gentry & Smith 45225). —B. Close-up of inflorescence and fruit (Gentry & Smith 45225). —C. Close-up of flowering inflorescence (Gentry & Smith 45335).

45225 (holotype, MO 3517422; isotypes, MO 3517423, USM). Figure 1.

Arbor parva 6–10 m alta. Folia anguste ovata vel elliptica vel oblanceolata, 5–14 cm longa, 1.5–4.5 cm lata, puberula pro parte maxima infra in costa. Inflorescentia pauci-ramosa; plerumque axillaris, puberula, pedicellis ca. 1 mm longis, sepalis ca. 1 mm longis, petalis ca. 1 mm longis. Fructus obpyriformis, 1.4–1.7 cm longus, 1–1.5 cm diametro.

Small tree 6–10 m tall; branchlets terete, with laxly spreading reddish trichomes, lenticels large but very few and scattered. Leaves alternate, narrowly

ovate to narrowly elliptic or oblanceolate, 5–14 cm long, 1.5–4.5 cm wide (–22 × 6 cm in juveniles), acuminate, cuneate to obtuse at base, chartaceous, entire or with 2–3 shallow teeth near apex at maturity, rather remotely and coarsely serrate in juveniles, the midvein impressed above, secondary veins plane above, raised below, tertiary veins plane above, finely prominulous below, puberulous with suberect trichomes along main vein below, also sparsely on secondary veins below and even more sparsely with widely scattered trichomes on surface above and below; petiole 0.3–0.7(–1) cm long, pubescent with suberect flexuous trichomes. Inflorescence a few-branched panicle, mostly axillary or borne below the leaves, with a straight rachis and 5–10 widely separated short lateral branches, pubescent with 2 kinds of trichomes, some longer and suberect, others short and gland-tipped (or the gland sessile with the stalk obsolete), the pedicels ca. 1 mm long. Flowers white, the sepals 5, broadly ovate, ca. 1 mm long, the margin erose-fimbriate, otherwise glabrous; outer petals broadly ovate, ca. 1 mm long, inner petals thinner, obtriangular, 0.5 mm long, 0.5 mm broad at apex, the filament ca. 0.8 mm long, the lower half fused to inner petal, the anthers subglobose, 0.3 mm long, widely separated by the thickened connective, sometimes only 1 developed; pistil 0.5 mm long. Fruit obpyriform 1.4–1.7 cm long, 1–1.5 cm diam., turning black at maturity, the poorly demarcated thick basal stipe having an asymmetrically squarish corner at base, glabrous, drying black.

Distribution. Endemic to lower elevation cloud forests of San Martín Department, 1,850–2,040 m elevation.

Additional specimens examined. PERU. SAN MARTÍN: type locality, 10 Feb. 1984 (st), Gentry et al. 45318 (MO, USM), 10 Feb. 1984 (fl), Gentry et al. 45335 (MO, USM), 12 Feb. 1984 (fl, fr), Gentry et al. 45497 (MO, USM); Rioja Prov., Pedro Ruiz–Moyobamba road, km 390 Venceremos, 2–3 Aug. 1983 (fr), D. Smith & S. Vasquez 4573 (MO, USM); Province of Rioja, sin. loc., M. Leo 110 (MO).

This species is most similar to *M. pumila*, the only other species of Peruvian *Meliosma* with small noncoriaceous leaves, but differs in the more conspicuous vegetative pubescence of suberect flexuous trichomes, the entire or subentire mature leaves, the black (rather than cream-colored) fresh fruits, and the apically much broader inner petal and broader connective. Although the two species grow in the same general area, *M. pumila* occurs in the cloud forests of the Marañón Valley, while *M. simiarum* occurs on the Amazon-facing slopes.

Meliosma simiarum is named for its association with the nearly extinct yellow-tailed woolly monkey, *Lagothrix flavicaudus*, which shares the same cloud forest habitat. It is known only from the Venceremos forest, one of the last habitats of that threatened primate, where it is one of the most common understory species, averaging 40 plants >2.5 cm DBH/ha.

Meliosma sirensis A. Gentry, sp. nov. TYPE: Peru. Huánuco: Prov. Pachitea, Serranía de Siri, 26–28 km ESE of Puerto Inca, 1,750 m, elfin forest, 9°25'S, 74°43'W, 23 July 1988 (fl), B. Wallnoffer 11-23788 (holotype, MO; isotypes, USM, W).

Arbor parva 7 m alta. Folia anguste elliptica, 5–9.5 cm longa, 1.1–2.5 cm lata, plus minusve glabra. Inflorescentia axillaris vel subterminalis, glabra, pedicellis 2–3 mm longis, sepalis ca. 1 mm longis, petalis exterioribus 2 mm longis. Fructus ignotus.

Small tree 7 m tall and 4 cm DBH; branchlets terete, glabrous or with very few scattered trichomes, the few lenticels large and tannish. Leaves alternate, narrowly elliptic, 5–9.5 cm long, 1.1–2.5 cm wide, gradually sharply acuminate, narrowly cuneate at base, coriaceous, entire, the midvein impressed above, strongly raised below, the secondary veins 6–8 on a side, brochidodromous, making nearly a 90° angle with midvein, plane and inconspicuous above, prominulous below, the tertiary venation finely and intricately prominulous-reticulate above and below, glabrous except for very few small appressed trichomes widely scattered along midvein below, both surfaces minutely lepidote-glandular, drying dark brown above, gray-brown below with contrasting brown midrib and whitish finer venation; petiole 0.6–1.4 cm long, glabrous. Inflorescence axillary or leaf-opposed to subterminal, paniculate with a well-developed central rachis, glabrous, the pedicels 2–3 mm long. Flowers white, the sepals broadly and obtusely ovate, ca. 1 mm long, with a few short, gland-tipped trichomes along margin, otherwise glabrous; outer petals broadly ovate, 2 mm long, inner petals rectangular, 1 mm long, 0.5 mm wide, not bifid, fused only at base with the filament of fertile stamen; fertile stamens 2, the slender filament 1.5 mm long, apically thickened into connective, the anthers small, oblong, each ca. 0.3 mm long, held horizontally at ends of the 0.5-mm-thick connective; ovary ovoid, 1 mm long and wide, glabrous, tapering to a short narrow style. Fruit unknown.

Distribution. Known only from the type locality in elfin forest along the crest of the isolated Serranía de Siri.

This species is closest to *M. solomonii*, the only other Andean *Meliosma* with small, narrow, coriaceous leaves. *Meliosma solomonii* has mostly larger leaves with more numerous, more strongly ascending secondary veins, a larger inflorescence with sessile or subsessile flowers and scattered appressed trichomes, and larger sepals (ca. 2 mm long). That species is known only from higher altitudes (2,450–2,850 m) in the main Andean Cordillera.

Meliosma youngii A. Gentry, sp. nov. TYPE: Peru. San Martín: Prov. Mariscal Caceres, Río Abiseo National Park, 7°S, 77°W, Las Palmas, 2,350 m, 17 Aug. 1986 (fr), Young 4070 (holotype, MO; isotype, USM not seen).

Arbor parva 3 m alta. Folia anguste obovata, ca. 21–50 cm longa, ca. 8–16 cm lata, adpresso-puberula plerumque in costis, petiolis ca. 7 cm longis. Inflorescentia folio opposita, pyramido-paniculata, puberula. Fructus globosus, 1.4–1.7 cm diametro.

Small pachycaul tree 3 m tall, branches thick and somewhat angled, glabrous or glabrate, the bark rather wrinkled, grayish, with contrasting reddish brown raised lenticels. Leaves (only 2 seen, both broken) clustered near apex (fide K. Young), alternate, narrowly obovate, ca. 21–50 cm long, ca. 8–16 cm wide, apex not seen, base obtusely asymmetrically cuneate, membranaceous to chartaceous, apparently entire (badly eaten), the midvein impressed above, secondary veins plane above, prominent below, tertiary venation plane and not apparent above, prominulous below, appressed-puberulous along main veins above and below and sparsely over surface below; petiole ca. 7 cm long, tannish from the dense parallel-appressed short trichomes. Inflorescence (seen only in fruit) leaf-opposed, pyramidal-paniculate with a well-developed central rachis, ca. 14–24 cm long, puberulous. Flowers not seen. Fruits brownish when fresh, drying black, globose, essentially estipitate, 1.4–1.7 cm diam.

Distribution. Known only from the type specimen from montane rainforest in Río Abiseo National Park at 2,350 m.

Although the type collection has only two leaves, which are not in very good condition, there is no doubt that this represents an undescribed species. The species is characterized by the pachycaul treelet growth form and by the large thin-textured leaves (larger than any other high-altitude *Meliosma*) with conspicuously tannish, almost sericeous, petioles and midveins, and by the very smooth upper leaf surface.

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