

---

# A New Species of *Styrax* (Styracaceae) from Southern Mexico

Peter W. Fritsch

Department of Botany, California Academy of Sciences, 875 Howard Street, San Francisco, California 94103, U.S.A. pfritsch@calacademy.org

---

**ABSTRACT.** *Styrax uxpanapensis*, a new species of *Styrax* series *Valvatae* (Styracaceae) from the Uxpanapa-Chimalapa region in the states of Oaxaca and Veracruz, Mexico, is described and illustrated. The stamen morphology of this lowland humid tropical forest species appears to ally it with two Andean cloud forest species. A section of a key to Mexican and Mesoamerican species of *Styrax*, as modified to incorporate *S. uxpanapensis*, is included.

**Key words:** Mexico, Oaxaca, Styracaceae, *Styrax*, Veracruz.

Several specimens examined for the revision of *Styrax* L. (Styracaceae) for western Texas, Mexico, and Central America (Fritsch, 1997) were, for various reasons, of uncertain placement. Among these was a lowland collection in fruit from Municipio de Hidalgotitlán, Uxpanapa region of Veracruz, Mexico (2 Dec. 1981, *T. Wendt* 3576). I tentatively identified this specimen as *S. panamensis* Standley (Fritsch, 1997). Because *S. panamensis* is known only from a single collection in flower bud (Panama, 1911, *H. Pittier* 4242), however, the taxonomic status of the Veracruz collection remained unclear.

I have recently examined more material of *Styrax* from the Uxpanapa region of Veracruz and adjacent Chimalapa region in eastern Oaxaca and have identified two more collections with clear similarity to *Wendt* 3576. The combination of floral and fruit features present in these three collections clearly distinguishes them from *S. panamensis* and all other described *Styrax* species, such that the description of a new species is warranted. Here I describe this new species and incorporate it into a section of a previously published (Fritsch, 1997) key to Mexican and Mesoamerican species of *Styrax* to aid identification.

***Styrax uxpanapensis*** P. W. Fritsch, sp. nov.  
TYPE: Mexico, Veracruz: Uxpanapa, Esfuerzo Nuevo, al E, 17°10'15"N, 94°21'18"W, 225 m, 3 May 1996, *J. Rivera H. & S. Escobedo* 78 (holotype, MEXU; isotypes, CAS, TEX). Figure 1.

Haec species *S. argenteo* similis, sed calyce 2–2.5 mm longo, lobis corollae 7–9 × 1.2–2.0 mm, auriculis filamenti conspicuis, antheris 4–5 mm longis differt.

Evergreen tree to 23 m tall; young twigs grayish brown-stellate-tomentose. Petiole 9–17 mm long; lamina 13–21.5 × 5.4–8.2 cm, 2.1–2.9 times as long as wide, chartaceous, elliptic, secondary veins 7 to 9 on each side of midvein; apex acute to short-acuminate; base cuneate to rounded, adaxially glabrous except on midrib and secondary veins, these slightly impressed; abaxially greenish gray to the naked eye, with a dense, thin base tomentum of minute greenish white stellate trichomes, and larger scattered stiff tawny stellate trichomes (especially prevalent on the veins) with arms to 0.3 mm long, the base tomentum absent from the primary through tertiary veins, the tawny to light orange surface of the primary through tertiary veins easily visible through the pubescence, the tertiary veins slightly raised; margin entire. Inflorescences axillary, terminal, or produced above leaf scars proximally along the branch, racemose or paniculate, 1 to 3 per node, 3–4 cm long, 5- to 23-flowered, greenish gray-stellate-tomentose with scattered orange to ferruginous stellate trichomes, the lax to somewhat stiff trichomes to 0.3 mm long; lower pedicels 3–4 mm long. Flowers hermaphroditic, 10–12 mm long; calyx 2–2.5 × 3–4 mm, shallowly cupuliform, densely grayish green-stellate-tomentose, trichomes at mid-calyx with arms to 0.2 mm long, margin concave to truncate between the minute teeth; corolla 8–10 mm long, white; tube 0.8–1.2 mm long, extending up to the calyx margin; lobes 5, 7–9 × 1.2–2.0 mm, spreading, thick; stamens 10; free portion of stamen tube 0.5 mm long; distinct portion of filaments 0.8–1 mm long, ventrally with prominent auricles bearing a dense mass of tawny-yellow stellate trichomes with arms to 0.8 mm long, trichomes nearest the proximal end of the auricle with arms predominantly pointing upward, also often stellate-pubescent in sinuses of filaments, dorsally glabrous; anthers 4–5 mm long, the glabrous connectives slightly exceeding the linear, apically tapered, short stellate-pubescent thecae; ovary densely golden orange-stellate-tomentose; style filiform, glabrous; ovules many. Drupe 1.6–2.3 × 0.9–1.4 mm,

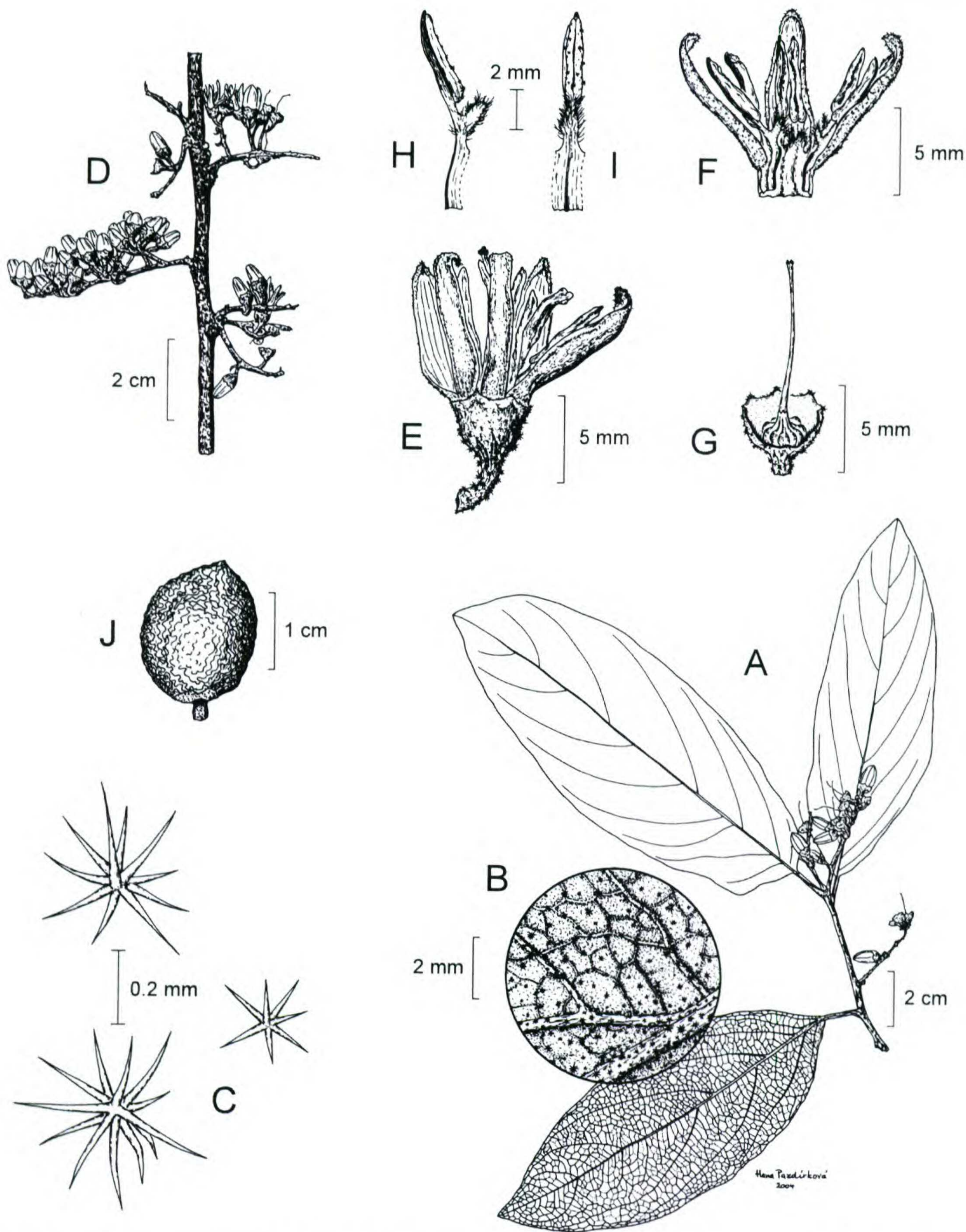


Figure 1. *Styrox uxpanapensis* P. W. Fritsch, new species. —A. Branch with distal inflorescences. —B. Leaf surface, abaxial view. —C. Stiff stellate trichomes from the abaxial side of the leaf. —D. Branch with proximal inflorescences. —E. Flower. —F. Flower, median long-section. —G. Calyx, long-section, and gynoecium. —H. Stamen, lateral view. —I. Stamen, ventral view. —J. Fruit. A–I based on *Rivera & Escobedo 78* (CAS isotype); J based on *Wendt et al. 3576* (MEXU).

grayish green, ellipsoid, apex rounded; wall irregularly and very coarsely rugose on herbarium specimens; fruiting calyx shallowly cleft-cupuliform to discoid,  $5-7 \times 1-2$  mm, 0.06–0.12 times the length of the drupe proper.

**Etymology.** The specific epithet refers to the Uxpanapa region in southeastern Veracruz and eastern Oaxaca, from which the type collection of the species was made.

**Habitat, distribution, and phenology.** *Styrax uxpanapensis* is endemic to the Uxpanapa-Chimalapa region in extreme southeastern Veracruz and eastern Oaxaca, Mexico, where it has been found in secondary vegetation along arroyos and in chaparrera, a type of secondary rain forest (T. Wendt, pers. comm.; information from specimen labels) at 225–250 m. It was collected in flower in May, and in fruit in September.

The Uxpanapa-Chimalapa region comprises part of an area of the Mexican Atlantic slope rain forest that is rich in endemic species (Wendt, 1987, 1993). The geographic distribution of the available collections of *Styrax uxpanapensis* suggests that it is endemic to this region. Species of *Styrax* (e.g., *S. glabrescens* Benth., *S. warszewiczii* Perkins) have been collected from surrounding areas in Mexico and Central America, but *S. uxpanapensis* has not been among these.

*Styrax uxpanapensis* belongs to *Styrax* sect. *Valvatae* Gürke series *Valvatae* Perkins, a clade of about 78 species of *Styrax* endemic to the Neotropics (Fritsch, 1999). Species of this series are easily distinguished from other members of *Styrax* by the combination of persistent leaves and a fleshy to juicy mesocarp (Fritsch, 1999). Within this group, the species is part of a clade that possesses robust trichomes on the stamen filaments (generally 0.8–2 mm vs. up to 0.7 mm long) and anther connectives that are prolonged beyond the anther sacs (vs. not or only slightly exceeding the anther sacs; see key below and Fritsch, 1999).

Other than *Styrax peruvianus* Zahlbruckner, *S. uxpanapensis* is the only species of *Styrax* in Mexico and Mesoamerica that possesses prominent stamen filament auricles. Other species of *Styrax* with this feature are endemic to South America, mostly in Andean cloud forests. *Styrax peruvianus* is not likely to be the closest relative of *S. uxpanapensis* because it has an indument of peltate scales instead of stellate trichomes and linear-triangular (vs. linear) anther sacs. Thus, unless prominent auricles have arisen independently in *S. uxpanapensis*, the phylogenetic affinity of this species appears to be with the Andean cloud forest species *S. subargen-*

*teus* Sleumer or *S. tomentosus* Bonpland, or both. *Styrax uxpanapensis* is similar to these species in its stellate trichomes and linear anther sacs, but is distinguishable from them by its larger leaves (13–21.5 cm vs. 5.5–12 cm long) and smaller flowers (10–12 mm vs. 13–20 mm long; Perkins, 1907; Sleumer, 1936; P. Fritsch, pers. obs.). Furthermore, *S. uxpanapensis* is a lowland species, whereas *S. subargenteus* and *S. tomentosus* are montane. Floristic affinities between the Uxpanapa region and areas of South America have been noted by Wendt (1993).

**Paratypes.** MEXICO. **Oaxaca:** Juchitán, Santa María Chimalapa, 3 km W of San Antonio Nuevo Paraíso, Plan de la Ceiba, 21 Sep. 1997, E. Torres B., J. Rivera H., T. Alvarez R. & D. Acuña V. 1347 (CAS, MEXU). **Veracruz:** Hidalgotitlán, hills SE of Poblado 6, 2 Dec. 1981, T. Wendt, A. Villalobos C. & I. Navarrete 3576 (CHAPA, MEXU[2]).

KEY TO MEXICAN AND MESOAMERICAN SPECIES OF *STYRAX* WITH ANTHER CONNECTIVES PROLONGED BEYOND THE ANTHER SACS

- 1a. Calyx vestiture of stellate hairs.
  - 2a. Calyx vestiture uniformly golden brown; lamina 1.5 times as long as wide . . . *S. panamensis*
  - 2b. Calyx vestiture predominantly or completely grayish green, occasionally with additional scattered yellow or orange-brown trichomes; lamina 2.1–3.8(–5.2) times as long as wide.
    - 3a. Calyx 2–2.5 mm long; corolla lobes  $7-9 \times 1.2-2.0$  mm; filament auricles conspicuous; anthers 4–5 mm long . . .  
. . . . . *S. uxpanapensis*
    - 3b. Calyx 2.5–5 mm long; corolla lobes  $8-14 \times 1.7-4$  mm; filament auricles inconspicuous; anthers 5–8 mm long.
      - 4a. Upward-pointing trichomes on the filament auricles with at least some arms 1–2 mm long; abaxial laminar surface and outer calyx grayish green-stellate-pubescent, without scattered orange-brown stellate trichomes; larger drupes 13–18 mm long (excluding beak, if present), ellipsoid or ovoid-ellipsoid; corolla lobes 1.7–2.3 mm wide, widely spreading or recurved . . . . .  
. . . . . *S. argenteus* C. Presl
      - 4b. Upward-pointing trichomes on the filament auricles with arms to 1 mm long; abaxial laminar surface and outer calyx with scattered, orange-brown, stellate trichomes in addition to grayish green pubescence; larger drupes (15–)17–28 mm long, ovoid or obovoid; corolla lobes 2.5–4 mm wide, recurved or reflexed . . . . .  
. . . . . *S. nicaraguensis* P. W. Fritsch
- 1b. Calyx vestiture of radiate, peltate, or lacerate-margined scales.
  - 5a. Calyx with vestiture of peltate or lacerate-

- margined scales; scales at mid-calyx 0.27–0.44 mm diam . . . . . *S. peruvianus*
- 5b. Calyx with vestiture of radiate scales; scales at mid-calyx 0.05–0.33 mm diam.
- 6a. Abaxial laminar surface glabrous or nearly so; calyx 4–7 mm long, in fruit funnelform, 4–8 mm long; anthers 5–8 mm long; corolla lobes linear-deltoid . . . . . *S. glabratus* Schott
- 6b. Abaxial laminar surface densely pubescent; calyx 2.5–3 mm long, in fruit shallowly cupuliform, to 1.5 mm long; anthers to 4.5 mm long; corolla lobes linear . . . . . *S. steyermarkii* P. W. Fritsch

*Acknowledgments.* I thank Tom Wendt for bringing his collection of this species to my attention and for insight into the habitat of the species; Mario Sousa and the curators of MEXU for facilitating examination of MEXU *Styrax* material; Hana Pazdirkova for the illustration; and Arne Ander-

berg, Jon Ricketson, and one anonymous reviewer for helpful comments on the manuscript.

#### Literature Cited

- Fritsch, P. W. 1997. A revision of *Styrax* (Styracaceae) for western Texas, Mexico, and Mesoamerica. *Ann. Missouri Bot. Gard.* 84: 705–761.
- . 1999. Phylogeny of *Styrax* based on morphological characters, with implications for biogeography and infrageneric classification. *Syst. Bot.* 24: 356–378.
- Perkins, J. 1907. Styracaceae. *In* A. Engler (editor), *Das Pflanzenreich* 241 (IV.30Bd): 1–111.
- Sleumer, H. 1936. Vermischte Diagnosen IV. *Repert. Spec. Nov. Regni Veg.* 39: 117–128.
- Wendt, T. 1987. Las Selvas de Uxpanapa, Veracruz-Oaxaca, México: Evidencia de refugios florísticos cenozoicos. *Anales Inst. Biol. UNAM* 58 (1987), Ser. Bot. (Número único): 29–54.
- . 1993. Composition, floristic affinities, and origins of the canopy tree flora of the Mexican Atlantic Slope rain forests. Pp. 595–680 *in* T. P. Ramamoorthy, R. Bye, A. Lot & J. Fa (editors), *Biological Diversity of Mexico: Origins and Distribution*. Oxford Univ. Press, New York.