Styrax paulhousei, a new species of Styrax L. series Valvatae Perkins from northwestern Honduras, is described and illustrated. It is similar to S. ramirezii Greenm. but differs in having fewer secondary leaf veins and larger corollas. The species is endemic to the Sierra del Merendón in the Department of Cortés and is categorized as vulnerable as based on IUCN Red List criteria. The discovery of this species brings the number of Styrax species native in Honduras to six.
**TAXONOMIC TREATMENT**

**Styrax paulhousei** P.W. Fritsch & D.L. Kelly, sp. nov. (Figs. 1–3). Type: HONDURAS. Cortés: Sierra del Merendón, W of San Pedro Sula, near Rio Cusco, by Trail BC4, ca. 2075 m by trail W from “Base Camp”/Campamento Parque Nacional Cusuco, UTM 16P 03684 17140 [corrected to 36855 17141]; 1650 m, 31 Mar 2016, D.L. Kelly, F. Fernandez, S. Hanley, P. O’Brien, G-C. Owens 16099 (holotype: TEFH; isotypes: BM!, BRIT!, MO!, TCDF!).

Haec species Styraci ramirezii Greenm. simillima, sed ab eo nervis laminae utroque costae latere 7 vel 8, corollis longioribus, lobis corollae longioribus differt.

Tree, apparently evergreen, to ca. 22 m tall. Bark smooth. Young branchlets and petioles densely covered with dull ferrugineous stellate trichomes with ± stiff straight arms. Leaves: petioles 9–12 mm; leaf blades ovate-elliptic, 8.4–12 × 3.6–5.3 cm, 2.2–2.5 times as long as wide, chartaceous, abaxially with evenly scattered white or pale orange stellate trichomes with 10 to 12 ± stiff straight arms to 1.3 mm (arms of trichomes near leaf surface much shorter), denser and larger on major veins and in leaf axils, adaxially glabrous except on major veins; midvein raised abaxially, impressed adaxially, secondary veins 7 or 8 on each side of midvein, tawny yellow, raised abaxially, slightly so adaxially, tertiary and quaternary veins raised abaxially (their surfaces easily visible through the pubescence) and adaxially; base subrounded to rounded, margin entire, planar, apex acute to slightly acuminate; leaf domatia present in axils of some secondary leaf veins, 1–1.3 mm, marupiform, mostly obscured by pubescence. Inflorescences axillary and pseudoterminal, raceme-like, 3.5–4.3 cm, each with 5 to 9 (to 10) flowers, rachis 9–10 × 1–1.3 mm, pedicels 8–10 mm, rachis and pedicels densely covered with large orange stellate trichomes overtopping a base tomentum of small white stellate trichomes. Flowers 1.8–2.2 cm, hermaphroditic. Calyx cupuliform, 4.5–5 × 5.5–6 mm, outer surface densely covered to about 1 mm from margin with greenish white and more scattered pale orange stiff and straight-armed trichomes, trichomes at mid-calyx with arms to 1 mm, within ca. 1 mm from margin these trichomes dissipating, thus revealing a base tomentum of minute white stellate trichomes that extends to the margin; calyx margin truncate between the 5 minute teeth, glandular toward inner (adaxial) side. Corolla white, 16–19 mm, petals connate ca. 3 mm beyond calyx margin; lobes 5, valvate in bud, spreading, linear-deltoid, 11–14 × 2.4–3 mm, abaxially covered with flattened stellate trichomes. Stamens 10; stamen tube diverging from corolla at ca. 2 mm, free portion ca. 3 mm, dorsally covered with white stellate trichomes, ventrally glabrous; distinct portion of filaments 0.9–1.2 mm, of equal width throughout, margins slightly incurved, ventrally without auricles, ventral surface bearing dense white stellate trichomes with arms to ca. 0.3 mm, the arms radiating from the central point in various directions, not primarily oriented parallel to the filament; anthers 4–4.5 × ca. 0.7 mm, connectives nearly as wide as theca in tangential view, glabrous; thecae linear, apically non-tapered, exceeding connective, sparsely stellate-pubescent at margins. Free portion of ovary conical, covered with greenish white stellate trichomes to ca. 1 mm; style filiform, lower third densely hirsute, becoming glabrous at apex; stigma truncate, ca. 0.5 mm wide. Fruit unknown.

**Distribution, Habitat, Ecology, and Common Names.**—Styrax paulhousei is endemic to the Sierra del Merendón in the Department of Cortés, northwestern Honduras. Four individual trees were recorded, each at a separate location between 1592 and 1850 m elevation, growing as understory trees in primary or disturbed montane rain forest. They were observed growing on slopes and valley bottoms in acid, humus-rich soil (samples of the top 5 cm from two locations recorded loss-on-ignition 56–75%, C/N ratio 17–19.5, and pH 3.1–3.5). The forest canopy varied from conifer-dominated (Podocarpus oleifolius D. Don. or Pinus maximinoi H.E. Moore) to broadleaved with, e.g., Quercus spp. and Hieronyma oblonga Mull. Arg. Styrax paulhousei flowers in March. The flowers have a strong, sweet perfume resembling lily-of-the-valley (Convallaria majalis L.) and are clearly adapted to insect pollination. All specimens showed evidence of invertebrate herbivory despite the indumentum of stellate trichomes, which has been shown in other plant groups to interfere with feeding and colonization, especially by small insects such as aphids (Price et al. 2011). The evidence of leaf damage in S. paulhousei suggests that the species or genus may play host to a number of more or less specialized invertebrate herbivores. Damage included removal of significant portions of the leaves (from leaf margins and/or the inner parts of the lamina), fenestration (removal of mesophyll tissues, leaving only veins and cuticle), and leaf mines (tunnels in mesophyll caused by insect larvae).
The tree was identified by different guides as “Aguacatillo peludo” or “Nance de montaña.” These names, however, are also applied locally to tree species in other families.

Etymology.—The new species is named in honor of the late Dr. Paul House (1961–2016), an authority on the plant life of Honduras. Born in Essex, in England, Paul spent most of his working life in Honduras. He carried out groundbreaking research in ethnobotany, principally in his work with the Tawakha people in the
Fig. 2. Flowering branchlet of *Styrax paulhousei*. Photo by Sr. F. Fernandez.
Fig. 3. Image of unmounted holotype specimen of *Styrax paulhousei* (TEFH). Scan by Ms. J. Stone.
inaccessible Mosquitia region of eastern Honduras (Walker & Barrance 2016). As professor in the School of Biology of the Universidad Nacional Autónoma de Honduras in Tegucigalpa, he made major contributions in teaching, research, and outreach. He was a tireless worker; one tangible part of his legacy is the University botanical garden, of which he was the founder. Paul was warmly supportive of the studies in Cusuco National Park that led to the discovery of this and other species.

Conservation Assessment.—Styrax paulhousei is known from only four collections in northwestern Honduras, each of which can be considered to represent a distinct population. These four populations are located within the boundaries of a protected area (Cusuco National Park) and declines in these populations are not evident. As calculated with the aid of GeoCAT (Bachman et al. 2011), the extent of occurrence is 1.85 km² and the area of occupancy is 16 km². In accordance with the International Union for Conservation of Nature Red List criteria (IUCN Standards and Petitions Subcommittee 2017), we categorize this species as Vulnerable (VU): D2.

Discussion.—Styrax paulhousei possesses a combination of characters that solidly places it within the exclusively Neotropical clade S. series Valvatae Perkins, i.e., an apparently evergreen habit, bases of young shoots without distinctly stalked trichomes, and a subcoriaceous corolla with valvate floral aestivation and straight sides (Wallnöfer 1997; Fritsch 1999, 2001). This series, with about 90 species, is endemic to the Neotropics and contains nearly all of the Neotropical species of Styrax. Although the fruit of S. paulhousei is unknown, by its placement in S. series Valvatae it can be expected to have a fleshy drupe and a smooth ellipsoid seed (Fritsch 1999).

In the key to the species of Styrax for western Texas, Mexico, and Mesoamerica in the treatment of Fritsch (1997), S. paulhousei would key to the Mexican endemic species S. ramirezii Greenm., specifically the form with stellate trichomes at mid-calyx (versus scales; p. 714, lead 19b). It can be distinguished from S. ramirezii by having only 7 or 8 secondary veins on each side of the leaf midvein (versus 10 to 15), and longer corollas (16–19 mm versus 8–14 mm) and corolla lobes (11–14 mm versus 6–10 mm). It is also distinct from S. ramirezii geographically: the populations of S. ramirezii nearest to the new species occur ca. 600 km to the west in far western Chiapas, Mexico, and those with the calyx of stellate trichomes are even farther away in Guerrero.

The discovery of Styrax paulhousei brings the number of Styrax species known in Honduras to six, along with S. argenteus C. Presl., S. conterminus Donn. Sm., S. glabrescens Benth., S. incarnatus PW. Fritsch, and S. warscewiczii Perkins. The species is distinguished from all these species by the combination of its valvate corolla lobes in bud (imbricate in S. glabrescens), calyx with stellate-hirsute pubescence (versus scales in S. conterminus and S. warscewiczii), arms of the trichomes on the ventral side of the stamen filaments to 0.3 mm (versus up to 1–2 mm in S. argenteus), stamen connectives exceeding the thecae (versus the thecae exceeding the connective in S. argenteus), and the abaxial surface of the secondary and tertiary veins easily visible (versus obscured by the tomentum in S. incarnatus). Styrax glabrescens (D.L. Kelly 23/155 and CA5/SS5/21) and S. cf. argenteus (D.L. Kelly BC1/SS7/847, without flowers or fruit) have also been documented as occurring in the Sierra del Merendón.

Paratypes. HONDURAS. CORTE S: Cordillera del Merendón, Parque Nacional El Cusuco, W of San Pedro Sula, Plot 2, close to right bank of Río Cusuco, ca. 300 m NNE of “Base Camp”/Campamento Parque Nacional Cusuco 15°49’88.4”N, 88°21’26.4”W, 1592 m, 5 Jul 2004, D.L. Kelly et al. 2/34 (BRIT!); Cordillera del Merendón, Parque Nacional El Cusuco, W of San Pedro Sula, Plot 25, ca. 19 m N of trail to Río Cantiles from big landslide area, 15°50’07.8”N, 88°23’32.8”W, 1850 m, 29 Jul 2004, D.L. Kelly et al. 23/361 (TCD, TEFH!); Sierra del Merendón, Parque Nacional El Cusuco, W of San Pedro Sula, Plot CA5/SS5, 1500 m along the old hunter’s trail to Agua Mansa, NW of Cantiles camp, 15°32’24.3”N, 88°24’17.2”W, 1811 m, 19 Jun 2013, D.L. Kelly & A.C. Dietzsch CA5/SS6/485 (EAP!, TCD).

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REFERENCES


