

**Gongora tridentata** Whitten, sp. nov.

Species *Gongora amparoana* Schlechter similis, sed differt epichilim tridentatum, sine lobis laterali-bus.

**Pseudobulbs** to 4 cm tall, without ribs, 3 to 4 cm in diameter, bifoliate. **Leaves** lanceolate, 15-20 cm long, 4-5 cm wide. **Inflorescence** emerging from base of pseudobulb, pendent, bearing up to 10 flowers; rachis flexuous, 1 mm diam., thinner than pedicel and ovaries. Bracts subtending flowers to 6 mm long and 2 mm wide. Pedicel and ovary 5 cm long, 2 mm in diam. **Sepals and petals** pale yellow-orange, immaculate. Dorsal sepal cupped around column and petals, 20 mm long, 19 mm wide. Lateral sepals elliptic, 23 mm long, 15 mm wide, becoming longitudinally rolled so that lateral margins touch. Petals small, sigmoid, free, 9 mm long, 4 mm wide. **Lip** 13 mm long, 7 mm wide, free, attached by a flexible ligule 4 mm wide. Hypochile with broad, flaring basal lobes and short, obtuse, distally projecting

anterior lobes. Mesochile a callus-like ridge forming a 90-degree angle in lateral profile. Epichile strap-like, rigid, 4 mm wide, 6 mm long; apex three-lobed, consisting of an apiculate middle lobe and two rounded lateral lobes, all ca. 1 mm long. **Column** short, 12 mm long, 5 mm wide, broadest just proximal to stigmatic slit; column wings 1.5 mm wide. Pollinia two, 1.7 mm long and 0.5 mm wide; viscidium and stipe narrow, 2.0 mm long and 0.3 mm wide. **Fruit** not seen.

**ETYMOLOGY:** The specific epithet refers to the shape of the epichile, the most distinctive character of the species.

**TYPE:** GUATEMALA: Without locality, flowered in cultivation 2 August 1989, *hort. A. Embree* (#003) ex W. M. Whitten 1083 (Holotype: FLAS; isotypes: AMES, AMO, K, SEL).

Additional specimens examined: MEXICO: Chiapas: Finca Hamburgo, above Huixtla; in humid forests on trees; 1100 m: 15° 16'N, 92° 23'W; 11 August 1937; *O. Nagel* 4359 (AMES).

According to Mr. Embree, his plant came from Sr. Walter de Pinal of Guatemala City, who in turn had purchased it without locality data from a street vendor. Examination of all *Gongora* sect. *Acropera* specimens at NY, F, AMO, SEL, MO, and AMES revealed only one additional specimen of *G. tridentata*. The Nagel specimen indicates that it occurs on the Pacific slope of the Sierra Madre along the Mexican-Guatemalan border.

*Gongora tridentata* differs from *G. amparoana* and *G. cassidea* primarily in the shape of the mesochile and epichile (Fig. 1). In *G. amparoana*, the mesochile forms an obtuse angle in lateral profile, and the lateral lobes of the epichile are large and broadly rounded. In *G. tridentata*, the mesochile forms a 90-degree angle in profile, and the lateral lobes of the epichile are much shorter and more pointed, producing a tridentate appearance of the lip

<sup>1</sup>We thank Alvin Embree for providing material of *G. tridentata* and for his enthusiastic, continued help with field- and lab work; Rudolf Jenny, Michael Dix, Gerardo Salazar, and Walter de Pinal for providing information and plants; the Costa Rican Ministry of Agriculture and Dora Emilia de Retana for providing collecting permits; Wendy Zomlefer for preparing the illustrations; and the curators of AMES, AMO, CR, F, MO, NY, and SEL for loans of specimens.

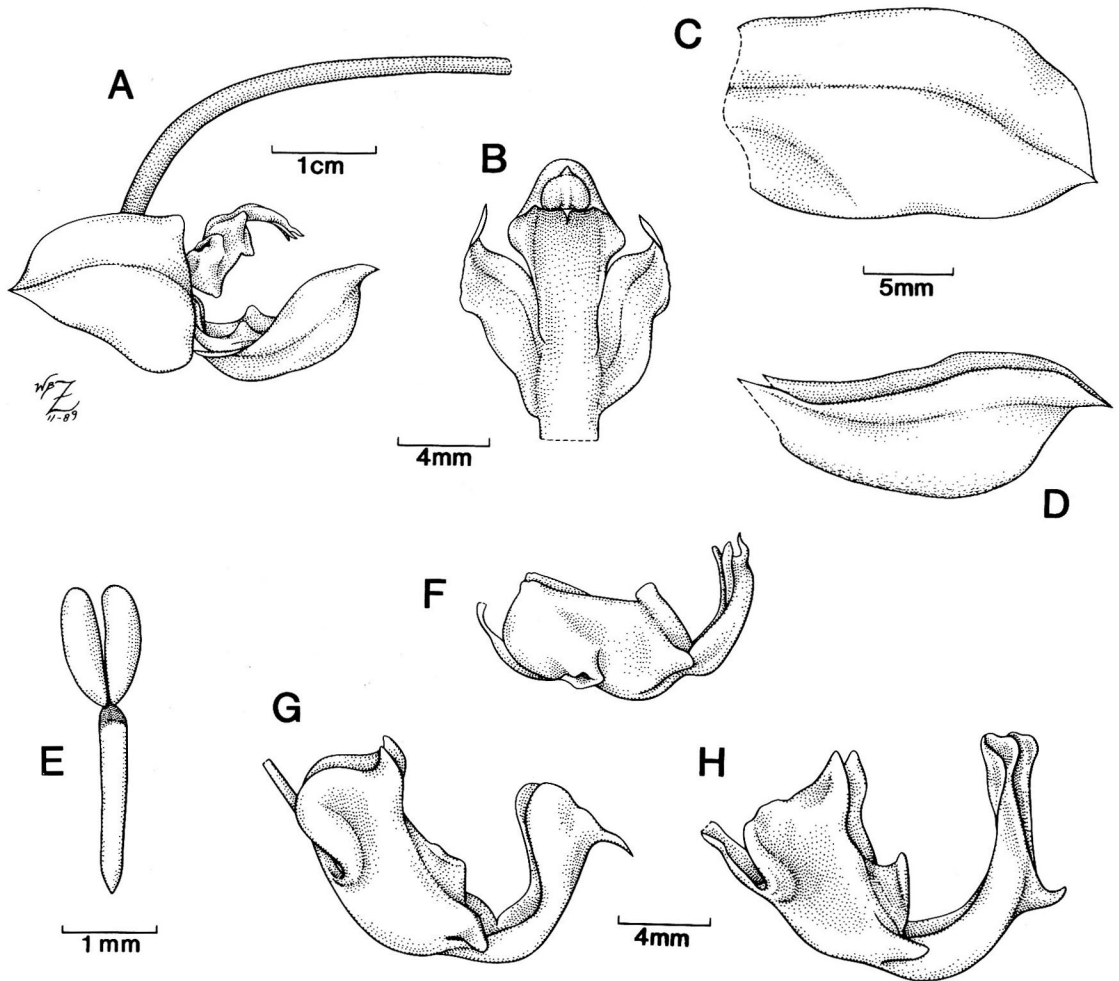


Fig. 1. *Gongora tridentata* Whitten. A. Whole flower; B. Abaxial view of column and petals; C. Lateral sepal; D. Dorsal sepal; E. Pollinarium; F. Labellum, lateral view. G. Labellum of *Gongora amparoana*; H. Labellum of *Gongora cassidea*.

apex. In *G. cassidea*, the lateral lobes of the epichile are greatly enlarged so that the epichile appears forked.

Floral fragrance composition is often of taxonomic value in the Stanhopeinae because the chemical composition of the fragrances determines which species of euglossine bee are attracted as pollinators. All three of these *Gongora* species share a number of compounds, including beta-ocimene, p-dimethoxybenzene, and linalool. However, *Gongora amparoana* fragrance is dominated by germacrene D-4-ol, whereas *G. cassidea* and *G. tridentata* produce mainly alpha-farnesene. Fragrance composition of all species of *Gongora* sect. *Acropera* will be presented in detail elsewhere (Whitten and Williams, in prep.). Based on the similarity in fragrance composition, we predict that *G. tridentata* and *G.*

*cassidea* share a pollinator, and that hybridization is prevented by allopatry or by flowering at different seasons.