

A NEW SPECIES OF *SARCOGLOTTIS* (ORCHIDACEAE)  
FROM PARAGUAY

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*Sarcoglottis tirolensis* Burns-Balogh and M. S. Foster, sp. nov., Sect. *Aphylla*.

Type: PARAGUAY: ITAPUA: El Tirol, 19.5 km NNE of Encarnación, *Foster 82-1*, (Holotype: US).

Plantae herbaceae perennes terrestres. Folia basalia acutata, sub anthesi absentia. Inflorescentia racemosa spiralis pubescens, pilis septatis, bracteis scapi vaginantibus. Bracteae florales foliiformes pubescentes brunneo-virides. Flores pedicellati pubescentes brunneo-virides. Columna more generis.

Plants herbaceous, perennial; roots fleshy, fascicled. Leaves many, basal, absent at anthesis or soon after, the apex acute, the base angustate, 9.5-18 cm long, 3.5-4.5 cm wide. Raceme densely septate-pubescent, ensheathed by bracts. Scape bracts overlapping, gradually narrowing at the apex to a sharp point, broadest at the base, septate-pubescent on the outside surface, glabrous inside, lower 1/5 green, upper 4/5 beige-tan, 3-4 cm long, 5-7 mm wide at the base. Flowers pedicellate, densely septate-pubescent, adnate to petals, lower 1/5 green, upper 4/5 beige-tan, gradually tapering to a rounded point, 3-nerved, 17-18 mm long, 3-4 mm at the widest point. Lateral sepals septate-pubescent, the upper 1/2 recurved with the apex touching the margins of the flower, the lower 1/2 green, the upper 1/2 beige-tan, strongly falcate, widest at the upper 2/3, the base extending to the pedicel and one side connate to the other sepal, the other side adnate to the ovary along the column-foot, 3-4 cm long. Petals septate-pubescent, adnate to the dorsal sepal with which they form a hoodlike structure over the column apex, the lower 1/3 green, upper 2/3 beige-tan, weakly falcate, with dark beige nerves, 15-18 mm long, 2-3 mm at the widest part. Labellum glabrous except for nectary hairs, the lower 1/2 green, upper 1/2 white with beige-tan nerves, the apex recurved, the nectary guides prominent, ca. 2.5 cm long, 8-9 mm wide; nectar glands long, narrow, thick. Column below the stigma densely pubescent; column-foot glabrous at the base of the abaxial side of the ovary, the column 3-3.3 cm long; stigmatic surface of 2 separate lobes; stylar canal entrance at the base of the lobes; rostellum long-triangular with a blunt apex; anther with a short filament, drying at anthesis; pollinarium wishbone-shaped, 5 mm long; viscidium rounded at the base, the apex acute; staminodes short, pointed. Ovary densely septate-pubescent, green, ca. 2 cm long.

*Sarcoglottis* is a genus of about 40 species distributed in the American tropics in savannas, dry limestone areas, and wet deciduous woods (Balogh, 1982). Species bloom sporadically throughout the year, mostly from October to May. The most distinguishing characteristics of this genus are the long adnate nectar spur, long adnate column-foot that extends along the abaxial surface of the ovary, large erect flowers, large recurved lateral sepals, and a wishbone-shaped pollinarium. *Sarcoglottis* is closely allied to *Pelexia*, both in subtribe *Spiranthisae*, but *Pelexia* differs in having a prominent free nectar spur, free column-foot, horizontal flowers, and an oblong pollinarium.

*Sarcoglottis tirolensis* is similar to other species in the genus in flower coloring, but differs in the type of pubescence, shape of the perianth parts

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(both mentioned above), and in having separate stigma lobes with a basal stylar canal entrance. It is also unusual in that the leaves provide substrates for lichens. Distinguishing characters are illustrated in Figures 1-6.

This species was found in an area of forest adjacent to Hotel El Tirol de Paraguay (ca. 27°11' S, 55°47' W), 19.5 km by road NNE of Encarnación, Departamento de Itapúa, Paraguay. This temperate moist forest experiences seasonal fluctuations in both temperature and rainfall. The average annual precipitation (n = 10 years) is 173.4 cm. The total rainfall per month is greatest from October through December (mean cm/month = 17.1, 16.5, and 16.3, respectively, n = 11) and least in July (10.9 cm, n = 12). November through February are the warmest months with mean monthly temperature maxima exceeding 35° C. Temperatures are lowest from May through September, where mean monthly minima fall below 4° C and frosts occasionally occur.

The forest, which covers moderately steep hillsides and level areas (elevational range ca. 170-260 m), has a canopy height of ca. 15 m. The forest has not been heavily logged, but selective cutting in recent years has resulted in increasing disturbance, with some areas cleared for agriculture or expansion of the hotel. The forest understory is relatively open.

*Sarcoglottis tirolensis* was located during visits to El Tirol from 21 September to 11 October, 1981, and from 19 September to 3 October, 1982. In both instances, plants were growing on the forest floor with their roots firmly embedded in the soil to a depth of about 10 cm. In 1981, 8 to 10 plants were located in an area of about 100 m<sup>2</sup>, growing in association with other Spiranthinae (*Cyclopogon*). Many mature seed pods were found, but no pollinators were observed. When this area was visited in 1982, no plants were found, presumably because of the ability, characteristic of some orchids, to remain dormant for a year or more. In an adjacent area of the forest specimens of this species were collected and were found growing within 40 cm of each other. Several exhibited moderate herbivore damage, and two had developing racemes more than 10 cm high. These plants were taken back to the United States and flowered in the greenhouse.

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#### LITERATURE CITED

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