SIX MORE NEW SPECIES OF *SOBRALIA* FROM PANAMA[1]

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ABSTRACT: Six new species of *Sobralia* from Panama are described. All six species belong to Section *Abbreviatae*, the largest section of the genus, and four of the six are found in the vicinity of El Valle de Antón.

SOBRALIA CONTINUES TO lag far behind most other orchid groups in classification. The flowers are very delicate, and unless dried quickly, field-collected specimens are usually quite useless. Ideally, one would have many different species growing together and could compare fresh flowers, but, even then, the flowers are mostly very short-lived, and closely related species usually flower on different days. Some features of the flower are lost in either pressed or liquid-preserved material, and even in alcohol the delicate flowers may disintegrate. Few of us can afford to keep a skilled botanical illustrator at hand to record the details of each species when it flowers. With *Sobralia*, if the illustrator comes just a few hours late, there may be nothing to draw. While carefully prepared and quickly dried specimens can be quite useful, pressed columns are crushed beyond recognition, so it is best to preserve the column in alcohol or to dry it without pressure.

Six new species from Panama are here described. There are undoubtedly others already in cultivation, but I have not seen their flowers. The reader will note that two thirds of the new species described here are from the area of El Valle de Antón, Coclé province, Panama. El Valle and the cloud forest north of town have been a Mecca for botanists and orchidophiles for many years, yet, with the help of local people interested in orchids, we continue to find new and surprising plants in the area. It is difficult to believe that there are so many species of *Sobralia* in this relatively small area, but at least until the rest of Panama is carefully sampled, the area of El Valle de Antón appears to have by far the greatest diversity of *Sobralia*. All of the species here described are members of the Section *Abbreviatae*, the largest section of the genus (Dressler, 2002).

Sobralia citrea* Dressler, *sp. nov.

HOLOTYPE: Panamá. Coclé: El Valle de Antón, 800–1000 m, flowered in cult. Aug. 2001, *R. L. Dressler 6338*, MO, Isotypes: FLAS, PMA, SEL.

Fig. 1. *Sobralia citrea*. A. Type plant, in cultivation. Photograph: K. Dressler. B. Another plant from El Valle de Antón, showing variation. Photograph: K. Dressler.

[1]I am greatly indebted to Franco Pupulin for help with the Latin diagnoses, to Andres Maduro and Erick Olmos for help in the field and in the garden in Panama, and, of course to Kruskaya de Melgarejo, for help with CITES permits.

Fig. 2. *Sobralia exigua*. Type plant, in cultivation. Photograph: K. Dressler.

Species Sobraliae chrysostomae Dressler similis, floribus aliquantum minoribus, labelo margine crispiore columnae brachiis porrectis vel subporrectis recedit.

Roots 3–5 mm in diameter; stems 60–75 × 0.5 cm basally; leaves 11–21 × 3.3–5.6 cm, narrowly ovate, acute-acuminate, short petiolate (1–1.5 cm); sheaths rugulose, scurfy-hispid; bract clusters about 5 × 1 cm, elliptic, scurfy-hispid; ovary and pedicel 2.8–3.5 cm; sepals and petals white, lip lemon yellow with white margins and white streaks on blade; dorsal sepal 6–7.5 × 1.9–2.2 cm, elliptic or ovate-elliptic, acute to apiculate; lateral sepals 6.5–7.7 × 2–2.9, oblong-obovate; petals 5.4–6.8 × 2.5–3.5 cm, oblong-obovate; lip 5.5–7.8 × 4–6 cm, obovate, blade markedly ruffled marginally, with several low keels; basal ridges ca. 8 mm long, verruculose between the ridges; column 4–4.2 cm., arms 3–4 × 2 mm, porrect or slightly upturned.

This is the common white *Sobralia* with yellow lip on the Pacific slope of Panama, ranging at least from western Panama to central Panama (Cerro Jefe). The flowers (Fig. 1, page 937) are somewhat smaller than those of *S. chrysostoma*, with a more strongly ruffled lip margin, and the column arms are either porrect or only slightly upturned. The color of the lip is lemon yellow, rather than the orange-yellow of *S. chrysostoma*. At the present, I see no evidence of intergradation between *S. citrea* and *S. chrysostoma*, which ranges from Nicaragua to Bocas del Toro, and perhaps farther east in Panama but only on the Atlantic (Caribbean) slope. A colleague has suggested that *S. chrysostoma* may be synonymous with *S. virginalis* of Antioquia, Colombia. Until (or unless) one can determine just what *S. virginalis* is, however, such speculation is futile.

ETYMOLOGY: The epithet *citrea*, or lemon-colored, refers to the color of the lip. Please note that the name *Sobralia citrina* is an old name for a very different plant, better known as *Cattleya*, *Euchile* or *Prosthechea citrina*. The type material of *S. citrea* was prepared from a plant that has been grown in the Florida Museum of Natural History greenhouse for many years that we have nicknamed "la pollera," because of the ornately ruffled lip, reminiscent of the traditional *pollera*, or party dress, of Panama.

SPECIMENS: Other specimens seen from the same region: Aug.–Sept. 1996, *Dressler 6191* (FLAS); June–July 2003, *Dressler 6384* (MO).

Sobralia exigua* Dressler, *sp. nov.

HOLOTYPE: Panamá. Chiriquí: Cordillera, epiphytic, 800–1100 m., flowered in cult. 12 July 2003, *Dressler 6365B* (MO!), Clonotype: *Dressler 6365A* (PMA.)

Habitu Sobraliae callosae similis, ab illa flore alba cleistogama, labelli margine fimbriato calloque trichomatibus aurantiacis instructo distinguitur.

Caespitose, epiphytic, roots 4–6 mm in diameter; stems 14–21 × 0.1–0.15 cm; leaves 11.5–13 × 0.9–1 cm, narrowly elliptic-lanceolate, acuminate, sheaths striate, with dark scurfy spots; floral bracts few, 17–21 × 4–5 mm, narrowly lanceolate, striate, with dark scurfy spots; ovary and pedicel ca. 16 mm; flowers white with orange-yellow on disk, cleistogamous; sepals 26 × 2.6–3 mm, narrowly elliptic-lanceolate, apiculate; petals 24 × 4 mm, narrowly elliptic-lanceolate, apiculate; lip 22 × 10 mm, cuneate, oblong-obovate, shallowly 3-lobed, basal ridges ca. 4 mm, margins sparsely fimbriate laterally, distally fimbriate-crisped, disk with long orange hairs; column 13.5 × 3 mm, ventrally concave, arms ca. 3 mm, curved upward.

This species (Fig. 2) is vegetatively very much like *S. callosa* (first described as *Lindsayella amabilis*). We found several plants in the area of Cordillera, and the largest of them has grown and flowered. The plant bore a capsule when found and the dried column was quite unlike that of *S. callosa*. When the first two buds appeared, they were closely watched, and I kept thinking "not yet, maybe tomorrow." Finally, I realized that the flowers might be self-pollinating, or cleistogamous. At that point, one of the buds was yellowish and shriveling, but the other was near "flowering." In its second year, the plant produced only one bud, but this one actually opened a bit, and made a better specimen. In 2004 the plant produced three inflorescences, each with one bud. Though the buds did not open, they remained in good condition for three days before withering and setting fruit. I removed two of the capsules, and the plant has produced several more buds. Crossing *S. exigua* with other small-flowered Sobralias might produce a nice dwarf plant with flowers that open, but so far, my attempts to cross *S. exigua* with *S. mariannae* or *S. allenii* have been quite fruitless.

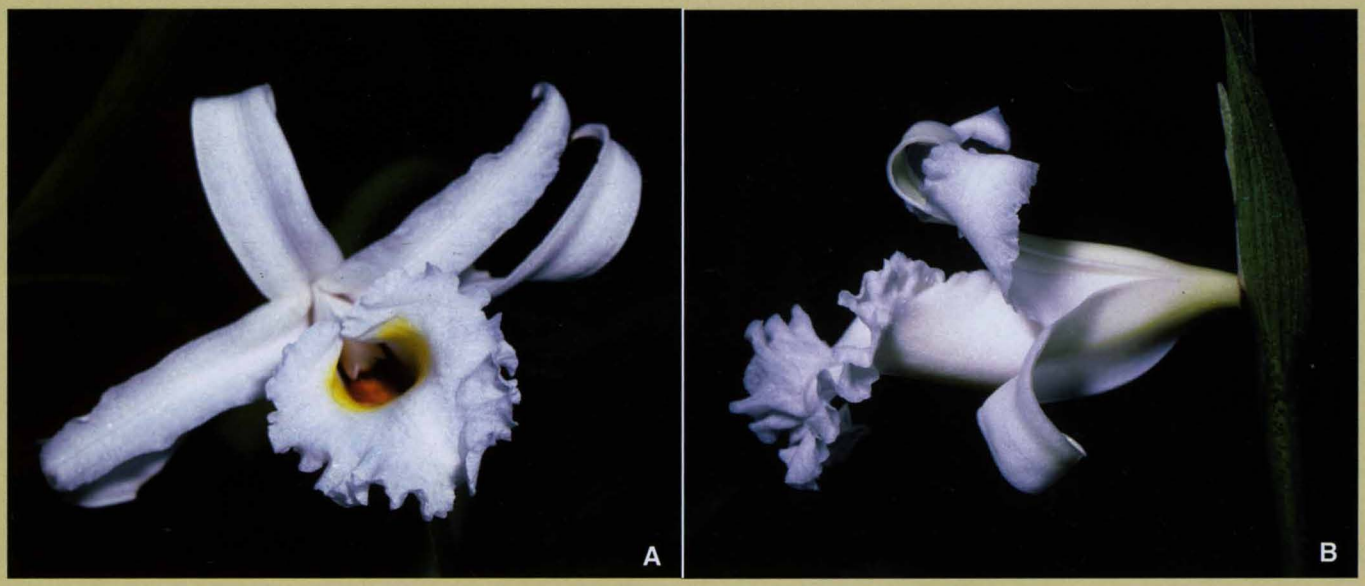

Fig. 3. *Sobralia kruskayae*. A. *Sobralia kruskayae*, in field, north of El Valle de Antón. Photograph: K. Dressler. B. Type plant, lateral view of flower, in cultivation, Chiriqui, Panama. Photograph: K. Dressler.

ETYMOLOGY: The epithet *exigua* means small or feeble. It is one of the smallest known Sobralias, and its flower production has, so far, been rather feeble. As with some other white-flowered species, including *S. leucoxantha*, the flowers quickly stain alcohol black. It is a measure of Ted Green's fanatic interest in *Sobralia* that he actually wanted a division of this plant.

Sobralia kruskayae* Dressler, *sp. nov.

HOLOTYPE: Panamá. Coclé: El Valle de Antón, flowered in cultivation July–Aug. 2003; flowers white, with yellow in throat, some brown or purple in base, *Dressler 6383*, MO, Isotype: PMA.

Species Sobraliae leucoxanthae Rchb.f. similis, labello ecarinato columna remuliformis recedit.

Roots 3–6 mm in diameter; stem 1–1.5 m tall; leaves 17–35 × 2.8–5.6 cm, elliptic, long-acuminate, subpetiolate (to about 6 mm), sheathes slightly striate, scurfy-punctate; bract cluster 3–4 × 0.6–0.8 cm, striate, scurfy-punctate, the outer bracts long-acuminate; ovary and pedicel 2.5–3 cm; flowers white, with yellow in throat, some brown or purple within near base; dorsal sepal 4.8–5 – 1.2 cm, lance-oblong, apiculate; lateral sepals 5–5.2 × 1–1.3 cm, lance-oblong, apiculate; petals 4.8–5.7 × 1.3–1.5 cm, oblong; lip 5.5–5.7 × 3.2–3.7 cm, oblong-obovate, basal ridges ca. 7 mm, papillose, without keels; column ca. 25 mm, very narrow for ca. 18 mm, then abruptly ca. 5 mm wide, arms ca. 3.5 mm, curved upward and reaching dorsal edge of column or apices in contact above column, column with low, thick ridge below.

This is another white-flowered species (Fig. 3) that is distinct from all of the other would-be "*S. leucoxantha*" so far known from Panama. It is distinct in the relatively narrow, long-acuminate leaves, in the rather porrect lip without keels, and in the slender, oar-shaped column. Also, the base of the lip is distinctly concave in front of (and somewhat beneath) the basal ridges. Part of the plant is cultivated in Florida and produced flowers in 2003. Though the plant was yet small and the leaves scarcely half their normal size, the flowers were almost exactly the same size as those collected in Finca Dracula the previous year.

ETYMOLOGY: The epithet of this species honors Licenciada Kruskaya de Melgarejo, who was for several years head of the Departamento de Manejo de Vida Silvestre of A.N.A.M. (Autoridad Nacional de Ambiente, Panama). Kruskaya is a pleasant person and very competent in her work. She recognizes the need to study the orchids (and other plants and animals) of Panama and does everything she can to facilitate permits for the collecting and exchange of materials for scientific study. I'm told that she has been promoted and is now in charge of the Departamento de Areas Protejidas y Vida Silvestre. The last few years has seen the description of many new species from Panama, with vouchers or type specimens deposited in the Herbarium of the University of Panama. This was made possible by Kruskaya's enthusiastic collaboration.

SPECIMENS: Other specimens seen from same area: 28 Apr. 1982, *Dressler 6040* (MO); pressed from cult., 11 Sept. 2002, *Maduro y Olmos 292* (FLAS, PMA).

Sobralia recta* Dressler, *sp. nov.

HOLOTYPE: Panamá. Bocas del Toro, 800 m., floreció en cultivo 12 Sept. 2002, *A. Maduro y E. Olmos 295* MO, Isotype: PMA.

A Sobraliae helleri A.D. Hawkes labello recto non reflexo recedit.

Caespitose, terrestrial, roots 4–6 mm in diameter; stems 1.5–2.5 m × 0.9–1 cm (basally); leaves 17–25 × 5.5–10.5 cm, ovate, acuminate, subpetiolate (6–7 mm), sheaths striate slightly scurfy; floral bract cluster 6 × 1.2–1.3 cm; ovary and pedicel ca. 16 mm; sepals pale green, petals white, lip flesh-pink with white blotch near apex; base of flower forming a definite floral tube about 1 cm long; dorsal sepal ca. 5.5 × 1.9 cm, elliptic-oblong, apiculate; lateral sepals ca. 5 × 2 cm, obovate-elliptic, apiculate; petals ca. 5 × 2 cm, obovate-elliptic, apiculate; lip ca. 5.7–5.8 × 3.2–4.6 mm, cuneate-obovate, weakly 3-lobed, basal ridges ca. 2 cm, without

Fig. 4. *Sobralia recta*. Type plant, in cultivation, Chiriqui, Panama. Photograph: E. Olmos.

keels, margins undulate distally fimbriate-crisped, midlobe not reflexed; column 4.5 cm, shallowly sigmoid, ca. 3 mm basally, with 2 lateral keels, distally 9 mm wide, 8 mm high, arms 6–7 × 2.5-3 mm, lanceolate, keeled, shallowly curved upward.

This huge plant (Fig. 4) with wide leaves is very like that of *S. helleri* Hawkes, to which it is probably closely related. It differs from that species in the straight (not reflexed) lip, in coloration and in the more strongly marked cross-veins of the leaves.

ETYMOLOGY: The epithet *recta*, or straight, refers to the nonreflexed lip.

Sobralia theobromina* Dressler, *sp. nov.

HOLOTYPE: Panamá, prov. Coclé: El Valle de Antón, 800–1000 m, Cult. en Finca Drácula, floreció 12 Sept. 2002 "la chocolatosa," *A. Maduro y E. Olmos 293*, MO, Isotype: PMA.

Sobraliae chrysostomae Dressler similis, sed labelli lamina breviore obtusiter contracta coloris badio-castaneis differt.

Caespitose, epiphytic or terrestrial, roots ca. 6 mm in diameter; stems 1–1.5 m, ca. 5–6 mm in diameter; leaves 13–19 × 4–7.3 cm, ovate, short-acuminate, blades furfuraceous beneath, with hispid veins, sheaths striate, rugulose; bract cluster 4–5 × 1–1.2 cm, striate, hispid-furfuraceous; ovary and pedicel 3.5–4 cm; flowers white, blade of lip pale reddish brown; dorsal sepal 6–7 × 1.8–2.5 cm, elliptic or narrowly obovate, acute-apiculate; lateral sepals 6–7 × 2–2.4 cm, elliptic or narrowly obovate, acute-apiculate; petals 24 × 4 mm, narrowly elliptic-lanceolate, apiculate; lip 6.2 × 3.3 cm, cuneate-obovate, obtuse; lip 6.3–7.2 × 4.7–4.9 cm, cuneate, obovate, blade distinctly narrowed, basal ridges 7–8 mm, well separated, verruculose between ridges, with 7–8 low keels, margin somewhat ruffled; column 4–4.2 cm, arms ca. 3.5 × 2 mm, upcurved, column trigonous, below with 2 raised keels and between them a raised plate with 3 furrows.

ETYMOLOGY: This is the species known as "la chocolatosa" in El Valle de Antón, though the color seems to me closer to *café con leche* than to chocolate (Fig. 5). Since the people of El Valle have chosen chocolate, I use the epithet *theobromina*, referring, of course, to *Theobroma cacao*, the source of chocolate. This is certainly the same species that I illustrated in 2001 as being a variant of *S. chrysostoma*, and in its details, *S. theobromina* resembles *S. chrysostoma* much more than it does *S. citrea*. *Sobralia theobromina* differs from both *S. chrysostoma* and *S. citrea* in lip color, in the smaller, abruptly tapering blade of the lip, and in the leaves that are more furfuraceous beneath and with veins that are distinctly hispid. If one spreads the lips, all three species are about 5 cm wide at the widest point, but in *S. theobromina* the blade (the colored

Fig. 5. *Sobralia theobromina*. Type plant, in cultivation, Chiriqui, Panama. Photograph: K. Dressler.

Fig. 6. *Sobralia tricolor*. Type plant, in cultivation, Chiriqui, Panama. Photograph: K. Dressler.

portion) is about 2.5 cm wide at the midpoint, while the lips of other yellow-lipped species are about 4 cm wide at the midpoint.

As implied by the name, the lip of this species is more brown than yellow. I would describe the lip as pale reddish brown or "old gold." The various meanings of "brown" are difficult enough in English. In Spanish, "castaño," "moreno," "pardo," "café" and "chocolate," are all used but not necessarily for different colors. Rather these are the preferred terms in different areas or cultures.

SPECIMENS: Other specimens seen from the same area: 6 Nov. 2001, *Maduro y Olmos 232* (FLAS, PMA); 20 Nov. 2003, *Maduro y Olmos 317* (PMA, SEL); Aug.–Sep. 2003, *Dressler 6401*, (MO, PMA).

Sobralia tricolor* Dressler, *sp. nov.

HOLOTYPE: Panamá. Coclé: El Valle de Antón, 800–1000 m, floreció en Finca Drácula, 12 Sep. 2002, *Maduro y Olmos 297* MO, Isotype: PMA.

Inter species generis Sobraliae floribus magnitudine mediana, tricoloribus (albis, luteis, pupureisque), sepalis lateralibus insigniter falcatis dignoscenda.

Roots 3–5 mm in diameter; stems 0.75–1 m × 0.6 cm basally; leaves 15–21 × 3.1–4.2 cm, elliptic, long-acuminate; sheaths striate; bract clusters 3 × 0.7 cm, elliptic, striate, slightly scurfy; ovary and pedicel 2–2.8 cm; flowers white, with yellow ventrally in throat and purplish-brown spots laterally near base; dorsal sepal 4.3–5.2 × 0.9–1 cm, oblong-oblanceolate, apiculate; lateral sepals 4.3–4.8 × 1.1–1.3, oblong, apiculate; petals 4.5–4.7 × 1–1.1 cm, oblanceolate-oblong, falcate, apiculate; lip 4–5.5 × 2.7–3 cm, ovate, weakly 3–lobed, midlobe 1.3 × 2 cm, erose, pilose, basal keels ca. 8 mm long, with several low keels from base; column ca. 2.2 cm., 2 mm wide basally, 5 mm wide apically, slightly "winged" throughout, arms 2.2 × 1 mm, lightly curved, anther keeled.

This species (Fig. 6) has rather small flowers with narrow segments and falcate ("bow-legged") lateral sepals. It is easily recognized by the three different colors, white, yellow and red-purple.

A Note on Sobralia ×gloriae — I now feel sure that my first impression of *S.* ×*gloriae* was correct, in that it is probably a natural hybrid between *S. atropubescens* and some white-flowered species. Considering the number of white-flowered species known from El Valle, the white-flowered parent species may still be undescribed and the exact parentage of *S.* × *gloriae* remains a mystery for now.

Literature Cited

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___. 2002. The major sections or groups within *Sobralia*, with four new species from Panama and Costa Rica, S. *crispissima, S. gloriana, S. mariannae* and *S. nutans*. *Lankesteriana* 5: 9–15.