

The amazing Stanhopea orchids



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Given the level of interest in this genus demonstrated by bidding at the last general meeting, the following article from the Orchid Society Council of Victoria <http://www.oscov.asn.au/articles/stanhope.htm> is published in this newsletter. I have added photos of the species mentioned in the article, and from next month, will cover some additional members of this interesting genus.

"There are approximately sixty species in the genus *Stanhopea*, all native to Central America from Mexico south to Ecuador, Colombia and Venezuela. They are mainly found growing on steep mountain sides, trees and rocks but there are also a few terrestrial species. Although some of these species grow near sea level, others are found at altitudes up to 5000 m, so by no means are they all warm growers, and some thrive in Melbourne in conditions suited ideally for cymbidiums. My *Stanhopea* grow in baskets lined with paperbark and are suspended about 500 mm below the shade cloth roof (50% shade factor) of my Cymbidium house during both summer and winter.

Stanhopeas grown in shadehouses generally flower in summer or autumn. Usually the first flower 'spears' (flower spikes) emerge from beneath the basket in late spring and take about two months to develop fully. Flowering is spectacular - the flower 'spears' emerge from the base of the mature pseudobulbs, pierce the liner of the basket and eventually the buds burst open (sometimes with an audible pop) in early morning. A heavy, sweet fragrance is immediately released. The flowers last for only three days, which in nature gives the pollinator (a bee) little time to have his wicked way. The grower faces the same time constraint to show his plant at an orchid meeting! Transporting your plant to a meeting is not difficult, although it requires some ingenuity. Select a deep box or bucket which is a little wider than your basket and thrust two stakes horizontally through it just below the rim. These stakes will support the basket so that the inflorescence will dangle safely within the box or bucket. Some forethought is also necessary as to how your exhibit will be displayed - either on your own stand or by propping the basket on its side on the bench.

The genus *Stanhopea* was founded on *Stanhope insignis* when that flamboyant orchid flowered at Kew Gardens in 1828-1829, and there are about sixty other species. Natural hybrids are rare because, although different *Stanhopea* species may flower side by side, each has its own perfume which attracts a different species of bee, also the precise dimensions of the fertilisation path that the bee follows down the lip limits the size of the bee and the pollen mass that the bee can carry away.

Some *Stanhopea* species are quite variable in colour and markings. The species most benched in Melbourne are *Stanhopea nigroviolacea*, *Stanhopea tigrina* and *Stanhopea wardii*.

The flowers of *Stanhopea tigrina* are larger and the tiger stripes are made up of an aggregation of red spots.

Photo source:

<http://www.sborchid.com/plantdisplay.php?ocode=STAN1671>



The red spots on the flowers of *Stanhopea nigroviolacea* are randomly distributed on the tepals and the base of these cream-coloured segments is covered by an intense "bull's-blood" red.

Photo Source: http://stanhopea.autrevie.com/stanhopea_nigroviolacea.html



Stanhopea wardii has 5-10 medium-sized, golden flowers covered with fine red spots with a conspicuous eye spot at the base of the lip.

Photo source: http://www.autrevie.com/Stanhopea/stanhopea_wardii.html

More important than flower count, size or colour, the shape of the lip is the main basis on which taxonomists separate the *Stanhopea* species. The lip is considered in three obvious sections – the hypochile (the bulky perfumed part at the top where the lip meets the base of the column), the mesochile (the short middle section which carries the horns) and the epichile (the piece at the end, which is more or less heart-shaped). The hypochile is the source of the perfume which attracts the pollinator, a particular species of bee. Having invaded the hypochile, drunk the nectar and over-indulged, the bee slides down the chute formed by the horns of the mesochile to the epichile, in the process having the pollinia attached to its metathorax by a sticky glue.

This article draws on an excellent book, *Those Astonishing Stanhopeas*, published in 1998 by Barney Greer, who resides in Sydney and who is internationally recognised as an authority on the genus *Stanhopea*.

The genus *Stanhopea* was established by Sir William Hooker in 1829, on publication of *Stanhopea insignis* in the Botanical Magazine. The genus was named for the Rt Hon. Philip Henry Stanhope, Earl of Stanhope who was President of the Medico-Botanical Society of London 1829-1837. Stanhopeas are found throughout Central and South America and are pollinated by euglossine bees.

According to Rudolf Jenny, a well-recognized taxonomist for this genus and author of an authoritative monograph, the genus *Stanhopea* is allied to the following genera: *Acineta*; *Acropera* (*Gongora*); *Archivea*; *Braemia*; *Cirrhaea*; *Coryanthes*; *Embreea*; *Endresia* (*Trevoria*); *Gongora*; *Horichia*; *Houlletia*; *Kegeliella*; *Lacaena*; *Lueddemannia*; *Lycomormium*; *Paphinia*; *Peristeria*; *Polycynis*; *Schlimia*; *Sievekingia*; *Soterosanthus*; *Stanhopeastrum*; *Trevoria* and *Vasquezella*.

Stanhopea and related genera have large, pleated leaves and incredible flowers that have complex structures and mechanisms for pollination. These range from walkways for insects to containers of watery solution. Generally, inflorescences grow downward, and plants must be potted in hanging baskets or similar containers. The flowers generally have a spicy fragrance, and unfortunately are short-lived - some only for one day. However, well-grown plants will flower more frequently than once a year. The related genera of *Paphinia* and *Peristeria* require warmer temperatures and generally produce upright inflorescences.

This genus requires bright, direct, diffused sunlight. They are best grown suspended given their pendulous inflorescences, and this helps place them in brighter light. The preferred light level is 3,000 foot candles or 32,300 lux (similar to that for good *Cattleya* culture).

This genus prefers moderate summer and winter temperature in the range 10°-15°C night and 20°-24° daytime. However, as we have seen recently in Perth, these plants can withstand higher temperatures provided air movement, humidity and shading are increased. Light levels that are too high, or long periods of high temperature will inevitably lead to leaf burn and damage to your plants.

Abundant water to encourage growth during spring, summer and autumn, with protection during the cold, wet winter months will help develop strong pseudobulbs and minimise foliar spotting. This genus can be very susceptible to salt accumulation in the media, so should be kept moist at all times, even in winter, and watered heavily in the other seasons to flush out salts. *Stanhopea* are slow to make new root growth so careful management of water and fertiliser is critical.

Regular fertiliser application will promote growth and flowering. For plants grown in bark media, a rotation of high nitrogen NPK and balanced NPK in spring, and high potassium NPK in the summer flowering period, supplemented by organic fertiliser and plant tonic seems to encourage robust growth and free flowering.

Re-potting is most effective after summer flowering as in Perth, this genus grows all year. An open mix that retains some moisture (it can include perlite or chopped sphagnum moss to increase water-holding) and large baskets containing big plants will reward the grower with most flowers. Vigorous plants may require repotting every three years, or when the basket liner breaks down. Care should be taken when splitting up *Stanhopea* plants to ensure that the resultant individual plants are large enough to support multiple new growths.



The remainder of this article will cover some of the more and a few of the less common Stanhopeas in amateur and enthusiast collections. Much of the following information is from Nina Rach's *Stanhopea* pages. I had the pleasure of meeting Nina in Johannesburg at the World Orchid Conference in 2014 and commended her on her website which I used for much of the article that I wrote on the genus *Sobralia*.

Stanhopea anfracta is an intriguing species that some taxonomists believe is just a variety of *Stanhopea wardii*, published in Lindenia 1892 as *Stanhopea wardii* var. *venusta* Rolfe, fide Calaway H. Dodson (1975). Dodson asserts the taxonomically accepted name should be *Stanhopea wardii* G. Lodd. ex Lindl., published in Sertum Orchidaceum t. 20. 1838. -fide C. Schweinfurth (1960). However, to further explore the debate about this species, it is curious the International Plant Names Index did not contain any reference to *Stanhopea anfracta*, Photo source: http://www.autrevie.com/Stanhopea/stanhopea_anfracta.html

even as a synonym! The IPIN data is sourced from two databases, Index Kewensis (IK) and the Gray Card Index (GCI).

More recently however, several taxonomists have published *Stanhopea anfracta* as a valid species (Curry 1987; Curry et al. 1988; Greer 1998; Jenny 1993, 1999; Jørgensen 1999; Renner et al. 1990; Williams 1999). Dr. Rudolf Jenny refers to the type specimen at Kew.

Stanhopea anfracta can be distinguished from *Stanhopea wardii*, and from *Stanhopea peruviana*. *Stanhopea anfracta* has a forked column, but it does not have small hairs or horns at the end of the column (as does *Stanhopea peruviana*).

Stanhopea anfracta comes from south-eastern Ecuador, Peru, and Bolivia. In Ecuador, plants have been collected in Zamora-Chinchiipe near Cumbatarza along the Rio Zamora at 1,000 m, and between Loja and Zamora at 1200 m. The plants grow on trees in very wet mountain forests at 700-1400 m. The TROPICOS database lists 12 specimens, all collected in Ecuador, five from Morona-Santiago at 550m, 800m and 1,400m elevation respectively and six from Zamora-Chinchiipe at 700-1,200 m elevation.

Stanhopea annulata Mansfield 1938 is one of the hornless, or 'primitive Stanhopeas' and is like *Stanhopea avicula*, *Stanhopea cirrhata*, *Stanhopea pulla* and *Stanhopea ecornuta*.

This species is said to grow well in moist conditions and in plastic pots with a fine-medium bark mix with charcoal, perlite, and redwood fibre. Greer (1998) says that its natural habitat is tropical wet and wet montane forests on western slopes of the Andes, often found on branches over water in Ecuador and Colombia at 100-600m. In the publication 'Orquídeas de la costa del Ecuador', the authors say that *Stanhopea annulata* can be found in the Esmeraldas, Los Rios, Pichincha, and Cotopaxi provinces. It is also found in Bolivia.

Photo source: http://stanhopea.autrevie.com/stanhopea_annulata.html



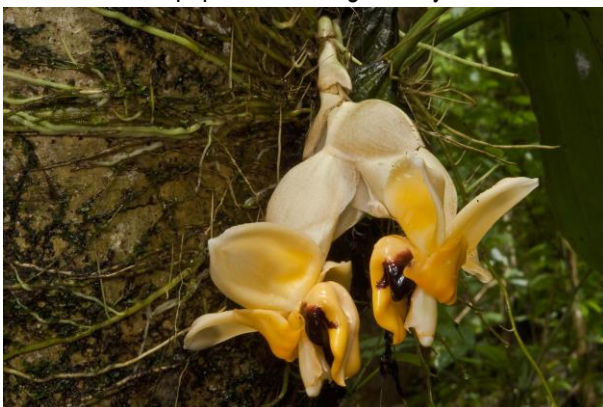
Stanhopea candida Barb.

Rodr. 1877 is widespread on

the eastern slopes of the Andes in Colombia, Ecuador, Peru, Bolivia, Brazil, the Guianas, and Venezuela. In Brazil, plants collected at Rio Capisan in the state of Para were growing in very moist, warm rainforests, usually in trees, but occasionally the surface of steep slopes and along the edge of roads in low vegetation. In Venezuela, plants are found along the banks of the Orinoco between San Antonio and Tamatama in hot forests at 400 m. In Ecuador, *Stanhopea candida* can be found in Napo Province growing in wet tropical forests on large tree branches overhanging rivers at 150-400 m. In Peru, plants have been found in the Department of Huanuco growing in wet forests near Leoncio Prado along the Rio Monzon at 810 m, while in Bolivia, plants have been collected in the extreme northeast corner of the Department of Cochabamba near Chimoré at 300m where they were growing on large limbs of canopy trees. The nearly white to brownish-white flowers have an intense sweet fragrance.

Photo source: http://stanhopea.autrevie.com/stanhopea_candida.html

Stanhopea cirrhata Lindley 1850 is found in Nicaragua, Costa Rica, and Panama at altitudes less than 1000 m. Those from southwestern Panama are epiphytic in lowland rainforests, while in Costa Rica it is only found sporadically on the Pacific slopes. Larger populations occur near the Panama border, suggesting that this area is likely to be the distribution centre for the species. The Costa Rica populations are generally found in deciduous forests in seasonally dry lowlands at 400-800 m. With few



exceptions, this species is solitary and often found above standing or slow-moving water in very humid, shaded habitats. The flowers are waxy and fragrant, short lived and borne in pairs on short pendent racemes. One author says *Stanhopea cirrhata* is scented like Vicks. 1,8-cineole, one of the eleven major compounds found in orchids was covered in the AOS Bulletin, November 1986. The fragrance is produced in the hypochile (base part of the lip) and attracts male Euglossine bees. Photo source:

http://stanhopea.autrevie.com/stanhopea_cirrhata.html



This yellow to salmon-coloured species was named for the two hairs which curve upward from the apical wingtips of the distinctly green column. These can be seen clearly in the photo at left, provided by Dr. Guenter Gerlach, Munich Botanic Garden (Botanischer Garten Muenchen). *Stanhopea cirrhata* is one of the 'primitive' *Stanhopea* species, all of which are without horns arising from the mesochile (central section of the lip). The absence of horns leaves the flower accessible to a variety of pollinating euglossine bees, increasing probability of natural hybrids as these insects are the major pollinators for *Stanhopea* species.

Stanhopea cirrhata in situ in Costa Rica Photo Source:

<https://felipedelbosque.files.wordpress.com/2011/06/fdb0704.jpg>

Stanhopea confusa G. Gerlach & Beeche 2004. This recently discovered species was collected by C.K. Horich in September 2000 at 800-900 m elevation in Cartago, Turrialba, Costa Rica (east side of the Cordillera de Talamanca), and flowered in cultivation at Jardín Botánico de Múnich-Nymphenburg, Germany. The holotype is in the USJ herbarium.



Jorge Mora at <http://www.rednaturaleza.com.ar/planta/1276-stanhopea-confusa-orquidea> writes that *Stanhopea confusa* was believed for many years to be the same species as *Stanhopea gibbosa* of Ecuador. However, in 2004, Gunter Gerlach and Jorge Beeche determined that the Costa Rican species is different and named it *Stanhopea confusa* based on a specimen collected in Turrialba (Canton in the province of Cartago, Costa Rica) between Grano de Oro and Moravia Chirripo. It is likely that the species name refers to the misidentification of this plant for so many years.

Photo source: http://berggarten-orchids.com/pics/albums/userpics/10001/normal_P1010778.JPG

Stanhopea connata Klotzsch 1854 is found in Colombia, Ecuador, and Peru, on the eastern slopes of the Andes southward from the Caribbean coast at 1,100-1,700 m. This species is generally epiphytic, mostly on lower branches above standing or slowly moving water. In Ecuador, plants have been collected along the Rio Topo between Banos and Puyo at 1,300 m), in Zamora-Chinchi between Loja and Zamora at 1,400 m), and at the confluence of Rio Quijos and Rio Barja near Baeza at 1,700 m) in mountain cloud forests. *Stanhopea connata* grows on a variety of host trees at 4-6 m above the forest floor. In Peru, the species has been collected from the Rioja-Chachapoyas road near Venceremes at 1,500 m. In 1854, Klotzsch described the plant and wrote "*Stanhopea connata* differs from *Stanhopea graveolens* by the lower link of the crown of the lip or the hypochile grown together with the thickened base of the column." The large flowers, approximately 10cm across are reported to smell oppressively



of indole and/or scatole or other substances of the indole group. The flower colour varies from straw-yellow with a few fine purplish dots on the sepals to golden yellow or orange with heavier red markings on the recurved petals.

Betty Brinkman 2014 writes "While most *Stanhopeas* have fragrances delectable enough to eat, *Stanhopea connata* exudes cresole and indole. Cresole is the fragrance compound associated with coal tar (think freshly poured asphalt). And indole has a fragrance described in botanical literature as fecal. I was not, to be honest, in a hurry to have a closed-door photo session with *Stanhopea connata*. See <http://www.theorchidcolumn.com/2014/10/stanhopea-connata.html>

Photo source:

http://www.ecuagenera.com/WebRoot/Store/Shops/ecuagenera/5555/5AF6/C9E9/1C1B/7589/C0A8/DA44/1D5B/Stanhopea_0020_connata.jpg

Stanhopea costaricensis Rchb.f. 1860 is found in Nicaragua, El Salvador, Costa Rica, and Panama where the species grows in intermediate evergreen or cloud and rainforests, mostly on the Caribbean watershed. In Panama and Costa Rica, this orchid can be found at 500-1,500 m in moist, mist-forest habitats. It has large, fragrant flowers that González & Retana (1996) describe as very sweet, strong, confectionery body powder, cloves, floral, slightly spicy, bergamot. Flower colour can range from nearly off-



white or pale yellow to deeper yellow, with red speckles on sepals, petals, and epichile, and occasionally with dark eyespots on hypochile. A similar appearance species is found in Colombia where it is referred to as *Stanhopea* aff. *costaricensis*. Authors report that this species does not tolerate low humidity or high light as leaf burn will result. The pendant flower raceme 20 cm long, generally carrying 3-5 flowers. The large flowers resemble those of *Stanhopea oculata*, although the hypochile has a restricted centre portion that makes it form two broad segments that are almost unique in the genus (*Stanhopea gibbosa* has a similar shaped hypochile). Like most members of the genus, this species is fragrant; camphor scented when it first opens becoming a combination of camphor and cinnamon.

Photo source: http://stanhopea.autrevie.com/stanhopea_costaricensis.html

Stanhopea deltoidea Lemaire, 1862 is found in wet montane forests in Peru and Bolivia at 1,400 – 1,850 m as a large sized, warm growing epiphyte or occasional terrestrial or or-lithophyte on steep slopes and rocks. Flowers are carried on a short pendant, few flowered inflorescence from mature pseudobulbs in winter and spring. Dr. Rudolf Jenny notes that it is a seldom seen and cultivated taxon, locally endemic in the Chanchamayo Valley in Perú. Its flowers are usually red spotted on creamy or yellow ground with a dark red blotch on the hypochile base. A well-known grower, Bruce Blyth noted that it grows as a medium-sized plant in a temperature range 10°C-32°C. The flowers do not have a noticeable fragrance, and "the petals fold backwards under the lateral sepals instead of over the dorsal sepal." The nearest related species is *Stanhopea marizaiana*, a species described in mid-2003.

Photo source: http://www.eerikas-bilder.de/orchideen/Coryanthes_Stanhopea_Gongora_Embreea/stanhopea/stanhopeadeltoidea.jpg



Stanhopea dodsoniana Salazar & Soto Arenas 2001 is found on the Southwestern coast of Mexico in the states of Vera Cruz, Oaxaca and Chiapas in wet tropical rainforests and lower montane rainforests at 150-950m as a medium sized, hot to warm growing epiphyte. It flowers in summer from pendant 30cm, four flowered inflorescences enveloped completely by several, inflated, imbricate, acuminate bracts and floral bracts covering all the ovaries and carrying large, showy, fragrant flowers.

Found in the Mexican states of Veracruz, Chiapas, and Oaxaca, the initial collection on 27 March 1987 came from the municipality of San Andrés Tuxtla, atop Cerro del Vigía, Estación de Biología Tropical Los Tuxtlas at 500m. It flowered later in cultivation, and one holotype was deposited at the Herbario AMO in Mexico City. A second holotype was archived at the Herbario Instituto de Ecología, A.C., in Xalapa, Veracruz (XAL). The isotype is in the Herbarium of the Royal Botanic Gardens, Kew.

Photo source: <http://forums.gardenweb.com/discussions/2062749/stanhopea-dodsoniana>

However, this species was originally published as *Stanhopea oculata* var. *crocea* by Eduard Regel in 1856 and can be found in same area of Mexico as *Stanhopea oculata* and *Stanhopea whittenii*, but according to Jenny (2003), no natural hybrids have been found. It is distinguished from these two other species by lip morphology and the fragrance, which uniquely includes phenylethylacetate (aka phenethyl acetate), which has a rosy-honey odour, and phenylethylalcohol.

The species is named for taxonomist Calaway H. Dodson, who specialises in the orchids of Ecuador. It is often confused with *Stanhopea oculata*. In the flower of *Stanhopea dodsoniana*, the angle difference on the dorsal side of the hypochile and mesochile is 45°, while *Stanhopea oculata* is more obtuse.

Stanhopea embreii Dodson 1975 is found in Western Ecuador in wet mountain cloud forest in Chimborazo and Cañar Provinces. In Cañar, plants have been collected between Durán and Tambo at 1000 m, and in Chimborazo, along the railroad from Guayaquil to Quito at 600m. The flowers are average size for the genus with 3-7 blossoms are carried on each pendant inflorescence, and are pale yellow to nearly white with orange on the basal half of the hypochile and the base of the sepals and petals. The petals, lip and column are sparsely flecked and spotted with red. The large fragrant flowers occur in late spring and early summer.

Photo source: <https://www.pinterest.com/mariazavaczki52/stanhopea-corianthes-huntleya/>



Stanhopea ecornuta Lemaire 1846 is found in Belize, Guatemala, Honduras, Nicaragua, Costa Rica and Panama. Jenny writing in the 1993 Orchid Digest reported that this species' habitat is from Guatemala to Costa Rica and northern Panama. It has been collected from heavily shaded, very warm and constantly wet lowlands below 250 m. Other writers report that this species can be found throughout the Caribbean watershed in most of Central America, with distribution including Belize, Costa Rica, Guatemala, Honduras, Nicaragua, and Panama, but is uncommon. In Belize, *Stanhopea ecornuta* is found as an epiphyte on trees in the Toledo District in wet broad-leaved forests at about 100 m and in humid mountain forests, while in Guatemala, it is also found as an epiphyte, but at up to 1200 m. Horich (1974) reports that this orchid grows in dark niches or ravines along rivers or creeks in the steaming, hot, lowland, rainforest jungles on the Atlantic side at sea level to rarely more than 500 m, and Mora and Atwood (1993) report that Costa Rican plants grow in shady lowland tropical evergreen forests at 500-1200 m.

This species was originally described in 1846 by Charles Lemaire, in the first series of *Flore des Serres et des Jardins de l'Europe* ii, t. 181., published in Gand, Belgium by Louis Van Houtte

This is an interesting warm-growing species and is one of the "primitive" (hornless) Stanhopeas. Flowers are usually borne in twins on short inflorescences, facing each other. Unlike many other members of this genus, the inflorescence crawls across the top of the compost and the flowers open near the base of the plant. Other "primitive" Stanhopea include: *Stanhopea annulata*, *Stanhopea avicula*, *Stanhopea cirrhata*, and *Stanhopea pulla*.

Photo source: http://farm1.static.flickr.com/318/19590768236_123fe9f893.jpg



The ovoid, sulcate, slightly compressed pseudobulbs have basal bracts and carry a single apical, ribbed, plicate leaf that narrows into an elongate petiolate base, elliptic, abruptly acute leaf. Flowers are borne on a lateral and then pendant, 4 cm long, few flowered inflorescence arising on a mature pseudobulb, concealed by ovoid, inflated, imbricating, scarious, lepidote sheaths giving rise to 2 to rarely 3, large, fragrant, showy, membranous flowers in summer.

Asociación Costarricense de Orquideología (A.C.O.) has the following note about this species: "*Stanhopea ecornuta* produces two flowers in the base of the pseudobulb, white colour, speckled of brown near the base of labellum; this it seems an end of a slipper

without division in the centre. It does not have pieces. In the centre of labellum, it has a yellow colour with a solid concentration of spots brown to each side." [Translated from the original Spanish]. Other "primitive Stanhopeas found in Costa Rica include *Stan. cirrhata* and *Stan. pulla*. Natural hybrids include: *Stanhopea x fowlieana* (*Stan. ecomuta* x *Stan. costaricensis*) and *Stanhopea x horichiana* (*Stan. ecomuta* x *Stan. Wardii*).

Stanhopea florida Rchb.f. 1879 is found in Colombia, Peru and Ecuador on the western and eastern slopes of the Andes at 1000-1800 m). In Ecuador, plants have been collected in Canar Province near Asumción, between Cuenca and Pasaje at 1000 m, in



Tungurahua Province at Rio San Francisco 5 km west of Rio Negro between Baños and Puyo at 1500 m, and in Zamora-Chinchiipe at km 49 between Loja and Zamora at 1300 m. This medium sized, warm growing caespitose epiphyte occurs in seasonally dry mountain cloud forest.

Stanhopea florida has a narrowly ellipsoid, sulcate, obtuse angled pseudobulb with a single, apical, elliptic-lanceolate, gradually narrowing into the elongate petiolate base, acute leaf with flowers on a pendant, 24 cm, racemose, few to several [5 to 9] flowered inflorescence arising on a mature pseudobulb, with large, concealing, distichous, imbricating, scarious, chartaceous bracts and subsimilar floral bracts in the late summer.

Stanhopea florida in situ Ecuador

Photo source: http://farm9.static.flickr.com/8064/8188681749_ff377d8e66.jpg

Stanhopea frymirei Dodson 1975 is endemic to Ecuador. Found in the provinces of Manabí and Guayas, Dodson and Dodson (1980) reported that the species grows in wet cloud forests on the summits of coastal mountains. Collections were found in Manabí Province in low mountains near the coast between Manta and Salinas at elevations of 200-600 m. It is also reported on hilltops, mostly epiphytic but sometimes as a terrestrial on steep road banks at 50-500 meters.

This species flowers in summer and autumn and requires high humidity throughout the year with bright light and is warm growing. The ribbed, ovate, dark green pseudobulbs carry a single, apical, plicate, broadly elliptic, acute leaf that gradually narrows below into the elongate petiolate base leaf. The pendant, racemose flower raceme up to 30 cm long carries few to several large, pleasantly cinnamon and bergamot (the flavouring in Earl Grey and Lady Grey black teas) scented flowers partially enveloped by large chartaceous bracts. It was initially published in *Selbyana* 1(2): 126-128, fig. 5A. 1975.



Calaway Dodson collected the original plant from which this species was described, in Ecuador in 1961, and seemingly took 14 years to describe it. *Stanhopea frymirei* is named for G.P. Frymire, with whom Dodson published papers. Carr writes: "Beginning in 1959, Calaway H. Dodson and G.P. Frymire took up where Allen had left off in studies of the orchids of tropical America and their pollinators. Dodson and Frymire began their work in Ecuador, whereas Allen had done most of his work in Panama and Costa Rica (Dodson & Frymire 1961, Dodson 1962b). They quickly noted the key role that fragrance played in attracting pollinators. Since *Cycnoches* is one of the most fragrant of the genera, along with the other members of the *Catasetinae*, they did a lot of work with *Cycnoches* species."

Photo source: <http://www.orchidspecies.com/orphotdir/staninsigna.jpg>

Stanhopea frymirei is pollinated by the euglossine bee *Eulaema bomboides*, as is *Stanhopea jenischiana* (Whitten & Williams, and is closely allied to both *Stanhopea embreei* and to *Stanhopea jenischiana* (known in cultivation as *Stanhopea bucephalus*) although there are no known natural hybrids with *Stanhopea jenischiana* as the habitats do not overlap.

However, there is disagreement between authors as Atwood (1993), Dressler (1993), and Hamer (1984) say that distribution is

only Honduras to Costa Rica and does not include Panama or Colombia. Such differences of opinion are quite common with the genus *Stanhopea* concerning distribution, correct name, flower form and colouration.

Stanhopea gibbosa Rchb. f. 1869 comes from Nicaragua, Costa Rica, and Panama at 500-1,500 m) in moist to very wet rainforests, often over standing or slow-moving water. Distribution is also reported in Colombia where plants are reportedly found in temperate rainforests in the districts of Antioquia, Chocó, and Caldas. Atwood (1993), Dressler (1993), and Hamer (1984), however, report that distribution extends only from Honduras to Costa Rica and does not include Panama or Colombia. In Nicaragua, plants were collected in Matagalpa Province near Sta. María de Ostumos, and near Cerro Buena Vista at 1,260 m. In Costa Rica, plants are native to intermediate rain or cloud forests, growing on the shady trunks and lower branches of trees in dense, very humid tropical lowland and lower-mountain rainforests at 500-1,500 m, particularly on the Atlantic/Caribbean slopes north of the Cordillera Central. Plants are most common in forest niches at 700-1,000 m) on the Sarapiquí and San Carlos Cordillera slopes. The highest elevation occurs at the La Plama mountain saddle at Rio Para.



Photo source:

<https://www.flickr.com/photos/afriorchids/11529558584>

This species, initially published in *Gardener's Chronicle* (1869) 1254 has pyriform to ovoid, strongly sulcate pseudobulbs with a single apical, coriaceous, obovate, plicate, ribbed, gradually narrows below into the elongate, petiolate base, elliptic-obovate leaf that blooms in the summer on a pendant, racemose, 6 to 10" [15 to 25 cm] long, few [3] flowered inflorescence arising on a mature pseudobulb with large, chartaceous bracts and vanilla scented flowers. The large, fragrant flowers on pendent inflorescences have cream to yellowish-white sepals and petals and the lip (hypochile, mesochile, and epichile) are pink, greenish-white, and cream. The pink coloration is a

distinguishing characteristic. The lip is approx. 5 cm, and the underside of the hypochile is shallowly bilobed. The flowers also have fine (or as the photo above shows, blotches) spots on sepals, petals, and lip, and always has dark "eyes" on the petals and hypochile.

Stanhopea gibbosa is often confused with *Stanhopea costaricensis*, *warczewicziana*, and *wardii*. However, note that *Stanhopea gibbosa* has eyes on the petals and on the hypochile, while *Stanhopea costaricensis* has no eyes, and *Stanhopea warszewicziana* and *Stanhopea wardii* each have eyes on the hypochile but NOT on the petals.

Stanhopea grandiflora (Lodd.) Lindley 1832 is found throughout Trinidad, British Guiana, northern Brazil, the Guyanas, Venezuela, and Colombia on spurs of the eastern slopes of the Andes at 100-1000 m. In Venezuela, plants are found in the state of Bolivar between El Dorado and Sta. Elena, and in Amazonas, plants have been found at Alto Orinoco and Tamá-Tamá at 120 m. Plants have also been collected in Guatopo and Canaima provinces. In Trinidad, plants have been found on Government House grounds, Tamana Mountain, and Brickfield. In Surinam, these orchids are found primarily in the northern coastal lowlands along rivers and creeks, while in British Guiana, plants were found along the upper Rupunumi River near Dadanawa at 245°N, and between the Rupununi and Kuyuwini Rivers at about 210° N growing epiphytically at the edge of the forest. *Stanhopea grandiflora* is usually found in warm, moist rainforests, often near moving or standing water on branches that hang down over the water. Some authors show Mexico as habitat for this species, but Williams (1951) has concerns with those reports and is unable to place this species to in Mexico. In this regard, he suggests that Schlechter's report might have been erroneous.

This species was first described in 1828 as *Ceratochilus grandiflorus* by Conrad Loddiges, plate 1414 of the *Botanical Cabinet; Consisting of Coloured Delineations of Plants from all Countries* [Bot. Cab., London]. Next, John Lindley published it in 1832 as *Stanhopea eburnea* in the *Botanical Register* [Bot. Reg.] 18, t. 1529. Recognizing that Loddiges had published first, Lindley revised it to *Stanhopea grandiflora* and published later in 1832 in *The Genera and Species of Orchidaceous Plants*, p. 158 [Gen. Sp. Orchid. Pl.]. Other synonyms include: *Stanhopea calceolata* Drap.; *Stanhopea calceolus* Hort. ex Reichb. f.; *Ceratochilus grandiflorus* Lodd.

The plants grow epiphytically, up to 60 cm tall, with clustered, ridged, ovoid pseudobulbs up to 7 cm tall, and leaves/petioles 25-55-cm long, 6-11-cm wide. One to three flowers are borne on each short, pendent raceme, subtended by papery bracts.



They are very fragrant and pearly to translucent white; the lip is finely spotted with purple, and the column is white to greenish white. The lip is long, straight (rather than bending at the mesochile), and relatively narrow. The hypochile has a small tooth on either side, near the base; the epichile is triangular, acute, and convex; the column is up to 7.5-cm long and has broad, translucent wings. There are two waxy pollinia.

Photo source:
<https://www.flickr.com/photos/diopsido/6134797108>

Stanhopea graveolens Lindley 1840. Found from Mexico south to Honduras and El Salvador. In Belize, plants grow near the Cayo (Mt. Pine Ridge Reserve) and Toledo Districts in riverine forests. While this species has been reported in Panama, Dressler in, "A Checklist of the Orchids of Panama as Known Today", which was appended to the 1980 publication of, "Orchids of Panama" by L. O. Williams and Paul H. Allen, reported that these plants were *Stanhopea costaricensis*. Plants in El Salvador collected at Boquerón, in the crater of the San Salvador volcano at 1800 m and in Cerro Grande de Apaneca at 1500 m that were originally identified as *Stanhopea wardii* by Hamer (1964) were later reported by Hamer (1970) to be *Stanhopea graveolens*. The plants described as *Stanhopea wardii* by Ames and Correll (1952-1965), which were said to grow as epiphytes on trees and on rocks in humid forests at elevations up to 2700 m should probably be referred to as *Stanhopea graveolens*. Brazil has been included in some reports as within the range of distribution, but it is generally accepted that this is a different species.

This species was initially published by John Lindley in 1840, "based on a plant purchased from the London nurseryman James Charles Tate, who had imported it from Peru." This is now accepted to be erroneous since the showy, rather grotesque, species *Stanhopea graveolens* occurs from Mexico south through Guatemala to Honduras and Belize, growing in mountain forests up to 2,700 m altitude." (Cribb 1992). Vegetatively, this species has ovoid-conical to rhomboidal, sulcate, slightly compressed pseudobulbs carrying a single, apical, elliptic-lanceolate to broadly obovate-elliptic, abruptly acute, petiolate, sulcate leaves. It demands wire or similar basket culture as the few large, showy, incredibly complex, fragrant, waxy flowers descend from the base of the plant on a short, pendulous, 1 to 6 flowered inflorescence with papery, spathe like bracts in the spring and early summer.

Stanhopea greerii Jenny 2000 is a recently named species from Moyombamba in the San Marcos region of Peru. It is named after Barney Greer, an enthusiastic Australian collector and hybridiser of *Stanhopea* orchids, and published author of material about this genus. This species has been the subject of considerable controversy (for a more fulsome explanation, see Nina Rach's republication of an article by Rudolph Jenny published in Orchids Australia in 2000 at http://stanhopea.autrevie.com/stanhopea_greerii.html).



In summary, it appears that published reports had for many years suggested that *Stanhopea wardii* also occurred in Peru despite the fact that it had never been collected in either Southern Colombia or Ecuador. Rudolph Jenny received material and slides of an unknown plant collected in Peru from Roger Kramer in Australia. While the flower was very similar to *Stanhopea wardii*, careful examination revealed major differences from the known clonal variations of that species. While reluctant to describe a new species based on a single specimen, Jenny felt that given prior published material about a seeming different form of *Stanhopea wardii* from Moyombamba, that the differences were significant enough to publish it as a new species.

Photo source: https://commons.wikimedia.org/wiki/File:Dick_Hartley_DSCN1964_-_Stanhopea_greerii.jpg

Whether it is a new species or is an old segregate from *Stanhopea wardii* that has disappeared in Ecuador and Southern Colombia is unknown. Jenny acknowledges that the new species, *Stanhopea greerii* is very closely allied to *Stanhopea wardii* and *Stanhopea inodora*.

This species is epiphytic in primary forest at 1,100m. The creeping rhizome and clustered growths have oval pseudobulbs that are strongly ribbed when aged and furrowed. The pseudobulbs are 4-6cm high and 3-4cm wide and unifoliate. The leaves are coarse and leathery, petiolate, lanceolate, plicate and acute, 30-40cm long and 12-15 cm wide, petiole round and one-sided notched, 10-12cm long. Consistent with other species in this genus, the inflorescence develops downwards from the base of the bulb, up to 15cm long and with 2-5 loosely arranged, pleasantly scented flowers. The inflorescence covered by large, spread out broadly triangular and acute bracts. Flowers are 6-7cm in size with sepals and petals yellow to golden yellow with fine red dots. The hypochile is orange yellow without markings, with sharply delimited, almost black eyespots, mesochile and epichile white without spots. The column is white, dorsal sepal is oval, concave, acute, 4-4.5cm long and 2-3cm wide in the middle, lateral sepals lightly asymmetric, broadly lanceolate, acute, 4-5cm long and 2.5-3cm wide at the broadest part in the basic third, folded backwards, and petals are oblanceolate (inversely lanceolate with the point of attachment at the tapering end), acute, undulate, 4-4.5cm long and 2cm wide in the middle, folded backwards between dorsal and lateral sepals. The labellum is 5cm long in all and 2 cm wide, hypochile distinctly narrower than epichile (upper part of the jointed lip), saccate, flat at bottom, only slightly dented, protruding toward mesochile, on top with distinct knee of 90°, opening ovate, bridge at base narrow wide and towards front lightly triangularly widened, with sharp edge.

Stanhopea haselowiana Rchb.f. 1855 -- Perú was originally published as *Stanhopea haselhoffiana* Allg. Gartenz. 23:322 1855 based on material collected by J. Warszewicz. This species is found in the Cusco and San Martin Departments in Peru at 1,000-2,000m as an epiphyte in wet, tropical forests on the eastern slopes of the Andes. Joseph Warszewicz, a Lithuanian of Polish descent made several collecting trips to Central and South America between 1840 and 1850, and many species bear his name.



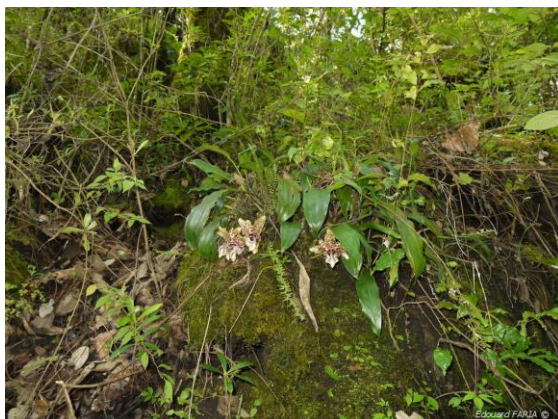
This species is a spectacular, but sadly now rare species seldom seen in collections. Three – five very large, heavy textured flowers with reflexed sepals and petals that are white, pale grey (yellowish within) to pale pink with pale and deep red-violet rings or spots. The dorsal sepal is nearly 8cm. long and 3cm. wide, and the lateral sepals are slightly longer and considerably wider than the dorsal sepal. Consistent with other members of this genus, this species quite strongly scented. Initially, it is a sweet, herbal mixture that becomes a strong, pleasant and penetrating smell of myrrh. *Stanhopea moliana* is said to be intermediate in form between *Stanhopea haselowiana* and *Stanhopea wardii*. *Stanhopea* Louis Bernier (*haselowiana* x *wardii*), was registered in 1970 by Marcel Lecoufle.

Photo source:

<http://essenceofstanhopea.blogspot.com.au/2011/01/stanhopea-haselowiana.html>

Stanhopea hernandezii (Kunth) Schltr. 1918 is the type species for the genus and was first collected by Fernando Hernandez in Mexico (then "New Spain" - Nueva Espana) in the 1570's. A line drawing of the species was pictured in Hernandez's *De Rerum Medicarum Nova Hispaniae Thesaurus*, published in 1628, with the flower identified as "*Coatzonte Coxochitl*". Kunth changed it to *Anguloa hernandezii* in 1815, and Schlechter moved it to *Stanhopea hernandezii* in 1918.

Stanhopea hernandezii is found in Mexico and Guatemala, on the southwestern side of the Trans-Mexican Volcanic Belt in the states of Guerrero, Mexico, Michoacan and Morelos at 1,700-2,200m in moist forests with a seasonal dry period. It occurs as a semi-terrestrial or lithophyte in shallow soils and humus over rock and in decaying leaf litter.



Typical of the genus, the flowers are relatively large (9cm across) with heavy reddish spotting over



a buff to cream background on the petals and sepals. This species is in the *Saccata* section of *Stanhopea* where the members have inflated hypochile that are sack-like. Generally, the inflorescence has 2-3 flowers carried on a short pendulous raceme. The fragrance difficult to describe but is a mixture of vanilla, herbs, peppermint, and cinnamon, varies throughout the day sometimes appearing to be like bubble-gum. In this regard, it is quite different to *Stanhopea tigrina* with which it is sometimes confused.

Photo source: <http://stanhopea-passion.over-blog.com/>

Stanhopea impressa Rolfe 1898 is found in Colombia and Ecuador. *Stanhopea impressa* was first published by Robert Allan Rolfe in Bulletin of Miscellaneous Information Kew 196 in 1898. His description came for a specimen supposedly from Ecuador, and was published without illustration. Jenny (1993) advises that the type specimen in the Kew herbarium consists of a single leaf and an inflorescence of three flowers. The first published drawing of the lip was done by Dodson (1975) and the first colour picture was published in 1986.



It is a small to medium sized, hot to cool growing epiphyte or occasional terrestrial on steep embankments roadsides, and among low bush vegetation from southern Colombia and western Ecuador. It occurs in wet montane forests on the western slopes of the Andes at 500-2,000.

Photo source: <https://s-media-cache-ak0.pinimg.com/236x/a9/b0/05/a9b0057c0bc80d47ed0512c4e21d3e3e.jpg>

The 10cm wide flowers are cream coloured to white and have a few sparse reddish spots along the petals and more on the sepals, hypochile and column. The centre portion of the flower is infused with an intense yellow-gold colour. The fragrance of the flowers is similar to basil and is slightly herb-like, with an undertone of moth balls.

Photo source: <http://stanhopeaculture.blogspot.com.au/2015/09/stanhopea-impressa.html>

Stanhopea inodora Loddiges ex Lindley 1870 is found in Mexico, Belize, Guatemala, and Nicaragua.

Found in Mexico, Belize and Nicaragua in wet montane forests on trees at 800-1,500m as a medium sized, hot to cool growing epiphyte or occasional terrestrial along roads on steep banks. This widely grown species has ribbed, sulcate pseudobulbs enveloped basally by several dry sheaths and carrying a single, apical, plicate, elliptic-lanceolate, gradually narrows below into the elongate, petiolate base leaf. The pendulous inflorescence has several to ten flowers in spring and summer with showy, fragrant flowers. Its common name, the odourless *Stanhopea* ("inodora" means non-fragrant) is somewhat of a misnomer as it does have a slight fragrant perfume. However, many of the alba and white coloured forms have very faint perfume when compared with other members of the genus, and perhaps this nomenclature is understandable when compared with them. The species from Belize seem to be more strongly perfumed.





The flowers are large, sculptured pale lime to white with red specks on the petals displaying full, showy blooms with red "eyes" and golden colour labellum. The scent is herbal/spicy/medicinal with many undertones and is stable and long-lasting.

Photo source:

https://c2.staticflickr.com/6/5594/15319969171_a622bff2f2_b.jpg

Stanhopea insignis Frost ex W. Hook. 1829 is the type species for the genus and is found in Brazil and Ecuador. In Brazil, plants are found in a relatively narrow strip of coastal mountains from the state of Rio de Janeiro southward through São Paulo, Paraná, Santa Catarina, and Rio Grande do Sul where plants grow in dry forests in semi-shaded conditions from sea level to 500 m. While generally found as epiphytes on trees, they can be found as terrestrials on steep slopes. Plants are also reported in Espírito Santo on the eastern sides of the mountain range on moss-covered trees in wetlands at 1,100 m.



Stanhopea insignis was originally discovered in Ecuador in the early nineteenth century, but the location and details of habitat were not reported, and no further collections are reported. Plants described as *Stanhopea macrochila* Lemaire, now recognized as a synonym of *Stanhopea insignis*, supposedly originated in Mexico, but Williams 1951 said that he had seen no specimens from that region and doubted the veracity of that report. Original publication by Frost in: Botanical Magazine tt. 2948, 2949 (1829); reclassified from Benth. & Hook. f. iii. 549 CERATOCHILUS, Lindl. in Lodd. Bot. Cab. t. 1414(1828).

Photo source: https://farm9.staticflickr.com/8093/8509565233_c363427786_b.jpg

It was an excellent choice as the type species because it is both visually impressive and highly fragrant. *Stanhopea insignis* was sent to U.K. by D. Lochart at Trinidad Botanic Garden in 1818, and was described in 1829 by English botanist Sir Wm. Jackson

Stanhopea jenishiana Kramer ex Rchb.f. 1851. Found in Colombia, Ecuador, Peru, and Venezuela, and possibly Costa Rica and Panama, this species occurs on the western slopes of the Andes in montane areas with a distinct dry season at 800-1,500m as a medium sized, hot to cool growing epiphyte or occasional terrestrial. In Colombia, plants grow near Popayan along the western slopes of the Andes at 800-1,500 m), as epiphytes in seasonally dry, mountain cloud forests on steep slopes and road cuts, but can also be found the ground in low scrubby vegetation. In Ecuador, plants grow in seasonally dry, mountain cloud forest in El Oro Province near Zarum at 1,300m and near Pacha at 1,400m. It was initially reported as an epiphyte on tree trunks near Cuença, Ecuador, and has since been found on the slopes from coastal Guayaquil to Cuença at 1,830 m). In Perú, plants have been cultivated at Iquitos, but in the past were collected in tropical wet forest in the Department of Amazonas. In Venezuela, plants have been collected at La Aguadita, near Las Delicias (Edo. Táchira) at about 1,650 m on steep, shaded road banks. This species was named for Jenisch, senator in Hamburg, and German orchid enthusiast in the 2nd half of the 19th century.



The ribbed, globose pseudobulbs carry a single, apical, plicate leaf that gradually narrows below into the elongate, channelled petiolate base. Flowers are borne on a basal, pendant to lateral, racemose, 30cm, few to several flowered inflorescence

with large, chartaceous bracts. Flowering is from mature pseudobulbs. *Stanhopea jenishiana* fragrance is mostly methyl cinnamate. It is a warm fruity-floral scent lacking the tangy liquorice component belonging to *Stanhopea embreei*.

Photo source: <https://au.pinterest.com/pin/333970128593439938/>

This species is closely related to *Stanhopea frymirei* and *Stanhopea embreei*. All three species can be found in Ecuador but not together and their habitats do not overlap, so there are no natural hybrids. The two species, *Stanhopea frymirei* and *Stanhopea embreei* have very similar floral morphologies, nearly identical fragrances and share some of the same pollinators. *Stanhopea frymirei* and *Stanhopea embreei* both grow on the western side of the Andes, but at different elevations. *Stanhopea frymirei* is found in the warm lowlands at 50 - 500 m, and *Stanhopea embreei* higher at 500 to 1,200m.

Stanhopea lietzei (Regel) Schlechter 1926 is found in coastal Brazil (Rio de Janeiro, Sao Paulo, Alagoas, Pernambuco, Parana, Santa Catarina, Rio do Sul) and is also reported from northern Argentina. This species is a medium sized, hot to warm growing



lithophyte or epiphyte that occurs in the southeast Atlantic forests of Brazil at 100-800m in very humid and shady locations with a distinct dry season in the winter. The semi-deciduous, lowland mesophytic forests in south and south-eastern Brazil in the Santa Catarina, Espirito Santo and Minas Gerais are its home where it grows on rocks, often in large clumps that have expanded over time growing in leaf litter and humus. This species was initially published in 1891 by Regel under the name *Stanhopea graveolens* var. *lietzei*, however in 1926; Schlechter distinguished it as a valid species.

The flowers are golden yellow with red markings. Naumann notes that it is found in northern Argentina, mainly in Salta and Jujuy provinces.

Photo source: <http://www.orchidspecies.com/orphotdir/stanhopleitz.jpg>

Stanhopea x lewisae (Ames & Correll) Horich ex Jenny 1988 (1942) is a natural hybrid from Guatemala. It was originally identified as a species by Ames & Correll (1953) who named it after Margaret Ward Lewis who first collected it in Guatemala (Dept. Izabal, Los Andes District, near Entre Rios) on June 12, 1935. It was later recognized as a natural hybrid of *Stanhopea ecomuta* and *Stanhopea inodora*. This orchid grows between 0-100m in very humid, lowland forests.

The plant is described as a small monophyllous pseudobulb with a pendent several-flowered inflorescence carrying 3-5 flowers,



drooping from the base of the pseudobulb and covered with dry hard imbricating bracts. The flowers are large, showy, creamy white with purple or reddish flecks, with slightly triangular papillose pedicellate ovaries. The dorsal sepal is oblong-elliptic, and the lateral sepals are oblique, ovate-elliptic and deeply concave. The petals are slightly oblique, ovate-lanceolate, acute to shortly acuminate. The labellum is fleshy and rigid with a glossy wax-like appearance, 4-4.5 cm. long, complex in structure with the basal half deep yellow with striations of purple flecks. The upper front section is very fleshy. The column is flat, somewhat arcuate, lightly winged above. This natural hybrid is distinguished from other species by the extremely short lateral horns on the lip, about 6mm, and the rigid apical portion of the lip.

Photo source: [http://www.eerikas-](http://www.eerikas-bilder.de/orchideen/Coryanthes_Stanhopea_Gongora_Embreea/stanhopea/stan)

[bilder.de/orchideen/Coryanthes_Stanhopea_Gongora_Embreea/stanhopea/stan](http://www.eerikas-bilder.de/orchideen/Coryanthes_Stanhopea_Gongora_Embreea/stanhopea/stan)

hopeaxlewisae.jpg

However, as is often the case, its recognition as a natural hybrid is the subject of considerable debate with some regarding it as a paler form of *Stanhopea insignis*.

Stanhopea maculosa Knowles et Westcott 1839 known locally as "Torito" (bull) is endemic to Mexico and can be found near the southwest Pacific coast and slopes of the Sierra Madre del Sur, Sierra Madre Occidental and the Volcanic Belt, in Sonora, Sinaloa, Durango, Nayarit, Jalisco, Colima, Michoacan, and Guerrero at 1,000-1,800m as a medium sized, warm growing epiphyte. The pseudobulbs are ovoid, green, 60-70 mm long, 35-44 mm diameter. Leaves 44-53 cm long, the blades 27-53 cm long, 6-8.4 cm wide, elliptic-obovate with 5 major veins, the petioles 4.5-14.5 cm long. The intensely apricot-scented flowers are large, very fragrant, cream to yellow and reddish-brown to orange blotches and borne on a pendant short inflorescence. Typical of the genus, flowers are short-lived, and the species requires a distinct winter/spring dry season to bloom.



This species is closely related to *Stanhopea hernandezii* and *Stanhopea martiana*.

Photo source:

https://www.desertmuseum.org/programs/alamos_orchids_stamac.php

The Arizona Desert Museum has an interesting discussion about this species. Apparently, it is "known in Sonora from one very large colony with hundreds of pseudobulbs on the lip of a huge boulder of a cliff face in the bottom of a moist canyon in the Sierra Saharibo west of Rancho Santa Bárbara, among oak forest at 1,160 m. The tropical evergreen canyon bottom vegetation includes *Magnolia pacifica*, *Platanus wrightii*, *Oreopanax peltatum*, *Cornus disciflora*, *Urera carascana*, and *Clethra lanata*, and

closely associated with *Cuphea hookeriana*, *Senecio tepopana*, and *Tillandsia cretacea*. Also occurs in Colima and Michoacán and is expected in Sinaloa.

Despite their short bloom duration, the numerous species of *Stanhopea* are widely cultivated because of their spectacular flowers. Unlike all other known species that grow in wet tropical forests, *Stanhopea maculosa* will not flower unless it experiences a spring dry period. Our species lives in an area with a nine-month dry season, yet it is obviously a mesic orchid. This fact probably explains why it is restricted to the very moist microhabitat of Arroyo Verde. The species has been in cultivation for many years, where it is the only species of about 30 in the genus that seems to require a spring dry rest to bloom".

Stanhopea maduroi Dodson & Dressler 1998 is a recently named species. It was previously identified as *Stanhopea platyceras* fma. *gunnii* by Jenny. Jenny wrote "If you put a platyceras in alcohol, it looks very much the same but the hypochile is a bit shorter and broader." The flower is concolor yellow and the lip is very similar to that of *Stanhopea platyceras*. Apparently, the type plants were "collected" (purchased in the weekly plant market) in El Valle de Anton, Panama, and it is named after Andres Maduro, a Panamanian orchidist and owner of Finca Dracula. With only three clones known, it is arguably one of the rarest *Stanhopea* species.

An article in the Australian Orchid Review by Rudolph Jenny and David Banks referred to a slide provided by Ron Parsons of a pure yellow *Stanhopea* collected by the late Henry Butcher, allegedly in northern Colombia close to the border of Panama. It was named *Stanhopea platyceras alba*. Jenny says that he couldn't identify the species, so just filed it away. Some years later, Ron Parsons sent some more slides of an unspotted yellow *Stanhopea* for identification that had been flowered by Howard Gunn in Sacramento, California USA. Jenny later received pickled flowers and when compared with *Stanhopea platyceras*, realised that it

could be an anthocyanin-free form of this species. As it was unclear whether the two plants in the photos were exceptions of part of a population, it was described in 1997 as *Stanhopea platyceras* fma. *gunnii*.



Then, in 1998, a third plant was described as *Stanhopea maduroi* by Dodson and Dressler in Orquideologia. This plant was collected in 1985 by Andres Maduro, a Panamanian orchidist, in El Valle in Panama and described by the authors as a species in his honour. The comparison shows very clearly that *Stanhopea maduroi* is identical with the concept of *Stanhopea platyceras* fma. *gunnii*. The flower is pure yellow; the form of the lip is very close to *Stanhopea platyceras*, deeply saccate with broad horns. If you put a flower of *Stanhopea platyceras* in alcohol, it looks very much the same as *Stanhopea maduroi* but the hypochile is a bit shorter and broader.

Photo source: http://stanhopea.autrevie.com/stanhopea_maduroi.html

After careful comparison of the available material Jenny concurred that Dodson and Dressler are correct in treating this plant at specific level and not as an aberrant colour

form of *Stanhopea platyceras*. It is found at 500-1,500m in Panama and Colombia. This species has been collected once in El Valle de Anton in Panama and twice in northern Colombia, close to the border of Panama.

Stanhopea manriquei Jenny & Nauray 2004 This new species was described in 2004 by Rudolf Jenny and William Nauray and published in the journal *Lankesteriana*. Is found in Peru, and was named for Alfredo Manrique, past president of Club Peruano de Orquideas (2001-05) and owner of Centro de Jardineria Manrique, Lima. Manrique is an agronomist from Universidad Agraria la Molina, Lima, but is better-known for his association with *Phragmipedium kovachii*. The flowers are a deep golden yellow, evenly spotted dark red, with red flush on hypochile. I could not find any photos that I was confident were of this species.

Stanhopea marizaiana Jenny 2003 was published by Dr. Rudolf Jenny in August 2003. It is found in the Cusco region of Peru and is related to *Stanhopea deltoidea* that is endemic to the Chanchamayo Valley in Peru. The two species have identical mesochiles and epichiles, while the main variance is the shape and size of the hypochile. According to Jenny, the hypochile of *Stanhopea*



marizaiana is "large and massive...as broad as the mesochile [horns]." By comparison, the hypochile of *Stanhopea deltoidea* is small and narrow, approximately 1/3 the width of the mesochile. Physically, the species is small and compact in growth, with rounded leaves and with a growth habit like *Stanhopea posadae*.

The original plant was noticed by Isaias Rolando, an orchidist from Lima, Peru who is responsible for the Peruvian Orchid Club website, www.peruorchids.com. Collected in November 2001 by Moises Quispe at an altitude of 1,800-2,200 m, it flowered in autumn 2002 with flowers that were 11-12 cm across. The colour is described as beige with sepals and petals uniformly covered with small, red to red-brown spots. The inside of the hypochile is red, and the horns and epichile are covered with speckles, rather than spots. The species was named for the collector's late wife Mariza Rolando.

Photo source: http://stanhopea.autrevie.com/stanhopea_marizaiana.html

Stanhopea martiana Bateman ex Lindley 1840. This species from the Nayarit, Jalisco, Guerrero and Oaxaca states of Mexico is



found as a medium sized, cool to hot growing lithophyte on rocks in open oak forests in the lower coastal mountains from Tepic to Oaxaca 1,200 to 2,100m. It is like *Stanhopea hernandezii* and Williams and Whitten (1999), University of Florida, Gainesville, noted that *Stanhopea martiana* is "morphologically similar to *Stanhopea tigrina* Bateman ex Lindley, but differing in floral fragrances" and "forms an independent clade." Index Kewensis also lists *Stanhopea martiana* var. *bicolor* Lindl., published in *Edward's Botanical Register* 29: tab. 44. 1843.

Photo source: <http://www.orchidspecies.com/stanmartiana.htm>

Stanhopea martiana is very showy species but is not common in culture but grows in intermediate to cool conditions. In vegetative form, it has few, clustered, ovoid, deeply rugose pseudobulbs enveloped partially below by scarious bracts that become fibrous with age and carrying a

single, apical, elliptic, plicate, acuminate, erect, gradually narrowing below into the stout petiole. It blooms in its natural habitat in late spring and summer on a pendant, often 2 flowered, to 20 cm long inflorescence with ovate clasping bracts and narrower floral bracts and has waxy, large, fragrant flowers.

Stanhopea napoensis Dodson 1975. Found on the hot, humid, Amazonian lowlands and eastern slopes of the Andes in Ecuador near Napo at elevations around 400 m in very wet montane forests, this species is a medium sized, hot to cool growing epiphyte with a short rhizome, pyriform, sulcate, dark green pseudobulbs carrying a single, apical, large elliptic, plicate leaf that gradually narrows below into the elongate, channelled petiolate towards the base. It flowers in spring on a basal, 12.5 cm long, few flowered inflorescence arising from a mature pseudobulb and enveloped completely by large, inflated chartaceous bracts. This species was originally published by Calaway H. Dodson (1975) in: *Selbyana*, 1(2): 114--129.

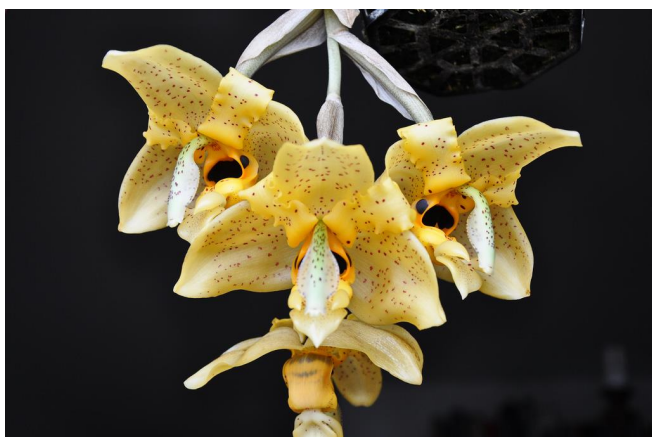


This rarely seen species has very large flowers up to 23cm with distinctive markings and deep purple spotting coloration in the bowing hypochile.

Photo source: http://stanhopea.autrevie.com/stanhopea_napoensis.html

Stanhopea nigripes Rolfe 1894 is found in Peru in wet montane rain forest in the Departments of Amazonas, Huánuco, and Pasco at 800 to 1,900m. It is a medium sized, warm to cool growing epiphyte. This species first flowered in Kew in the 1890's, although it appears that its origin was unknown at the time, and that single plant was the only example that could be studied. It was originally published in the *Bulletin of Miscellaneous Information, Royal Gardens, Kew* [Bull. Misc. Inform. Kew]: p.364.

Stanhopea nigripes has an ovoid-pyriform, sulcate pseudobulb subtended by 4 to 6 basal, scarious bracts and a single, apical, lanceolate, attenuate to the stout, terete petiole, coriaceous, acuminate, glossy dark green leaf. It blooms on pendant 10 cm one to seven flowered inflorescences arising from mature pseudobulbs. The flowers are dark cream in colour with darker overlapping



petals and very large, distinct black "eyes". The perfume is quite unusual as it is reminiscent of strong and penetrating smoke.

Unusually, this species is not included in Charles Schweinfurth's 1960 publication, *Orchids of Peru*, published in *Fieldiana: Botany* that list only eight *Stanhopea* species, one of which (*Stan. randii*) is no longer considered valid (now *Stan. candida*). The orchids of Peru are currently being reconsidered by Calaway H. Dodson and David E. Bennett Jr. in the *Orchids of Peru: Icones Plantarum Tropicarum, Series II* [1991], published by the Missouri Botanical Garden. David E. Bennett also collaborated with Eric A. Christenson in producing the *Icones Orchidacearum Peruvianum*, in which *Stanhopea nigripes* is presented as plate 577.

Photo source: https://c2.staticflickr.com/4/3931/15456170036_591934e3ca_b.jpg

Stanhopea naurayi Jenny 2005 is found in Peru, although the actual location and habitat details have not been published, perhaps to protect this population from collection. It is one of the most recent species of *Stanhopea* to be published, and information is scarce. However, it was originally collected by Alfredo Manrique in 2002, in Dept. Puno, Peru; and flowered in cultivation. IPNI lists D. E. Bennett as collector, specimen B-7989. Herbarium sheets: Holotype MOL, isotype Heb. Jenny.

It is named for William Nauray Huari, the artist of Fig. 1 in the original publication in *Lankesteriana*. He is a Peruvian national and Ph.D. candidate at Universitat de Girona (Spain) working under Prof. Norma Salinas Revilla. His research project was "Systematic and biogeography of the genus *Telipogon* Kunth". Nauray earned a BSc in biology and an MSc in botany at the National University of Cusco, and as a student, studied the orchids of Wiñay Wayna, an orchid-rich, cloud-forest portion of the historical sanctuary of Machu Picchu, and contributed to the Cesar Vargas Herbarium (CUZ) at the University of Cuzco. He is a co-author of the book "Orchids of Machu Picchu."



Photo source: <https://www.orchidsforum.com/threads/stanhopea-naurayi.12696/>

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Photo source:



https://c2.staticflickr.com/4/3931/15456170036_591934e3ca_b.jpg

Stanhopea nigroviolacea Morren ex Beer 1854 is found in Mexico in heavy rainfall forests on the eastern slopes of the Mexican Plateau up to 2,000 m. It was first reported as collected near Xalapa, Veracruz at 1,000-1,300 m. There is some question as to whether *Stanhopea nigroviolacea* is valid as a separate species. Dr. Rudolf Jenny considers it to be a dark-coloured variant of *Stanhopea tigrina* Bateman ex Lindley. "For now, *Stan. nigroviolacea* should be maintained as a variety of *Stan. tigrina*, this based on the illustration by Morren and the indications by Kennedy in 1977" (Jenny 1999). As is often the case, debate continues between taxonomists on this matter. Collections of both *Stanhopea tigrina* and *Stanhopea tigrina* var. *nigroviolacea* have been made near Veracruz and near Orizaba. Some of the confusion arose because early authors reported the species in Colombia, Ecuador, Venezuela, and Brazil. Cogniaux (1893-1906) reported that plants were found near Caracas, Venezuela, and in Colombia near Bogota, but more contemporary authors have not supported the occurrence of *Stanhopea tigrina* outside of Mexico.

Kennedy (1997) does not support the classification of *Stanhopea nigroviolacea* as a variety of *Stanhopea tigrina*. In his view, the differences between *Stanhopea tigrina* and *Stanhopea nigroviolacea* are significant. In particular, he writes of *Stanhopea nigroviolacea* "...petals largely of a solid maroon colour; the hypochile is very much thicker [rounded and bulbous] than *Stanhopea tigrina*, the horns surrounding the epichile are substantially thicker, the column is much less arched, and it accepts a somewhat smaller pollinator than Bateman's *Stanhopea tigrina*." Yet Kennedy's work was used by Jenny 1999 to argue for its classification as a variety of *Stanhopea tigrina* which seems curious.

Kennedy explained the taxonomic history thus: "This plant [with dominant maroon petals and deep hypochile] was originally described as *Stanhopea tigrina* var. *nigroviolacea* [by] Morren...1845... It was later elevated to specific rank, *Stanhopea nigroviolacea* (Morr.) Beer ...[in] 1854." Auguste Morren was known for his work on algae (1804-1870; source: IPNI). Johann Georg Beer was an Austrian taxonomist (1803-1873; source: IPNI).



This large, showy and fragrant species blooms in the summer, and given the outstanding colour, is one of the most recognisable members of the genus.

Photo source: <http://www.orchidspecies.com/stannigroviolacea.htm>

Stanhopea novogaliciana S. Rosillo de Velasco 1984 is found in the states of Nayarit and Jalisco in Mexico. The type specimen was collected near Ameca in Jalisco at about 1,550 m) and was growing in deep shade in a deep, narrow gorge which narrowed to only about 5m wide. It was in this very narrow crevice that *Stanhopea novogaliciana* was found. This orchid, which may be epiphytic or lithophytic, grows in the same area as *Stanhopea intermedia*. These plants have also been found near Tepic in Nayarit. Other than this limited information, little has been published.



Photo source: www.eerikas-bilder.de/orchideen/Coryanthes_Stanhopea_Gongora_Embreea/stanhopea/stanhopea_novogaliciana.htm

Stanhopea oculata (Lodd.) Lindley 1832. This well-known and relatively common species comes from Mexico, Belize, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, northern South America and Brazil. The Mexican habitat is the eastern slopes of the Mexican Plateau from the States of Puebla and Veracruz into the intermountain regions of Chiapas. In Belize, plants are found on trees, stumps, rotten logs, or rocks in wet broad-leaved forests in the Cayo and Toledo Districts at 400-750m. In Guatemala, the species is found in humid forests as an epiphyte on trees or on rocky ground at 1,500 m) near Cobán in Alta Verapaz, and may be found in coastal regions along the Pacific slope in Guatemala. In El Salvador, plants grow in the Department of Santa Ana on Cerro Montecristo at 1,600-2,000 m, while in Nicaragua, it can be found in Nueva Segovia Province where



epiphytic plants were collected from trees on Cerro El Sangarro and between Ocotol and Jalapa at 960 m. In Panama, *Stanhopea oculata* is found in Coclé Province 1,000m in wet highland forests high in the canopy of tall trees. In Venezuela, plants were found at Caripe at about 910m, and between Guácharo Cave and San Francisco in the same habitat as *Stanhopea wardii*. In Brazil, these plants are found only at lower elevations in the State of Amazonas.

Photo source: http://stanhopea-passion.over-blog.com/pages/STANHOPEA_OCULATA_Lodd_Lindl_1832-2759792.html

Most habitat listings include Mexico, including the states of Chiapas, Michoacan, Vera Cruz, and Puebla, but McVaugh (1986) indicates that reports of this species from western Mexico is probably based on the misidentification of *Stanhopea maculosa*. He states, "According to Dodson (1963), true *Stanhopea oculata* is

found from Puebla and Veracruz to Central America." However, Kennedy (1975) illustrated a *Stanhopea oculata* found at 1,830m, 16 km southwest of Taxco in Guerrero, Mexico.

It is another variable species, with substantial variation in colour (from bright yellow to buff), size and colour of spotting on petals and sepals with most having torus shaped (like the letter O) red to purple coloured spots. Some forms have a many intense red to purple spots on the upper hypochile and the epichile. This is one of the easiest *Stanhopea* species to grow in a shadehouse provided high humidity can be provided during summer.

The best known characteristics used in identifying this species are the narrow hypochile that is bent at a 90 degree angle, and several dark red eye spots along the hypochile and base of the petals. The eye spots are what provide us with the epithet "*oculata*" meaning eyes in Latin. This species is well known for its fragrance that has been described as vanilla with mint and a hint of cocoa. As with many of the genus, the fragrance is strong and can be overpowering in a confined space.

Stanhopea ospinae Dodson 1967 is found in Colombia, endemic to the area of Fusagasuga in the Department of Cundinamarca in Colombia as an epiphyte at approx. 1,800 m in moist cloud forest. This species was originally published in Orquideologia; Revista de la Sociedad Colombiana de Orquieologia, Medellin; no. 4:19 (1967).



Jenny (1993) says the plant was "discovered by Dodson in 1965 in the collection of Dona Ospina in Fusagasuga" and named for her (note the feminine -ae ending). He considers that the species is "closely related to *Stanhopea gibbosa* from Costa Rica but differs from this by the form of the hypochile." The flowers are yellow-orange to pale orange, hypochile darker, with distinct dark eye spot. Sepals and petals have small, randomly scattered, burgundy spots. Horns are short and plump.

Photo source:

https://commons.wikimedia.org/wiki/File:Dick_Hartley_DSCN1703_-_Stanhopea_ospinae.jpg

Stanhopea panamensis N.H. Williams & W.M. Whitten 1988 is found in Panama. Plants were originally as epiphytes on moist rainforest trees around Cero Campana, approximately 80 km south of Panama City 900m. The species is a medium sized, warm growing epiphyte with oval, strongly ribbed and furrowed with age pseudobulbs carrying a single, apical, coarse, leathery, plicate, lanceolate, acute, gradually narrowing below into the channelled, petiolate base leaf that blooms in the mid-summer through early winter on a pendent, basal, to 8" [to 20 cm] long, loosely 3 to 7 flowered inflorescence enveloped by large, spread, broadly triangular, acute floral bracts and carrying fragrant flowers.



This species is often cited as a synonym of *Stanhopea occulata* but differs in having a less sharply angled hypochile, has a different scent and there is no eye spot although there may be patterning. This species has a strong mint scent and showy, cream-colored flowers with reddish spots. While *Stanhopea panamensis* was originally described as endemic to Panama, plants have since been reported in Colombia. It appears that the species was known and discussed prior to 1983, but not formally described until 1988.

Photo source:

<https://www.flickr.com/photos/81918877@N00/15145752949>

Stanhopea peruviana Rolfe 1912. Found in the Huanuco department of Peru at 950-1,000m, this species was originally published in Botanical Magazine 1912, and is often confused with *Stanhopea pozoi*.



It is a very attractive species with closely spaced (but not crowded) flowers on relatively short to medium length inflorescences. Sepals and petals are yellow gold, with or without spots. The lip is predominantly white to cream, and has two large, dark eye spots on the hypochile. The horns arising from the mesochile are short, sturdy, and curved. The epichile is wide, heart-shaped, and longer than the column. The column has wide, rounded wings and can be speckled. It has a wonderful rich, spicy chocolate scent. When well grown, this species forms large, specimen plants.

Photo source:

https://commons.wikimedia.org/wiki/File:Dick_Hartley_PIC00015_-_Stanhopea_peruviana.jpg

Stanhopea platyceras Rchb.f. 1868 is found in Narino and Antioquia areas of Colombia at 1,000 to 1,500m. It was previously identified as *Stanhopea madouxiana* Cogn. and is a large, warm to cool growing, epiphytic species that requires good air circulation, wet humid conditions and deep shade. Jenny (1993-Orchid Digest) asserts that all discoveries came from the Departments of Antioquia and Narino at 1,000-1,500m), however Hernandez (1958) reports that this species is found on the humid slopes in the Departments of Tolima and Huila and the Commisaryship of Caquetá at about 2,000m.



The plant is a large robust species with ovoid-pyriform pseudobulbs carrying a single, apical, elliptic, acute, longly petiolate, plicate leaves blooming in the fall on a pendulous, 2 -7 flowered, 15 cm inflorescence subtended by large, chartaceous, oblong ovate bracts and giving rise to large, fragrant, waxy flowers. This species is seldom seen in collections. Photo source:

<http://www.orchidspecies.com/stanplatyceras.htm>

Stanhopea posadae Jenny et Braem 2000. This is a relatively recently discovered species from Colombia. It was described by Rodrigo Escobar in the publication "Native Orchids of Colombia" in 1992 and is named for the Colombian orchid grower, Juan Felipe Posada of Medellín. While a very desirable species, it is seldom seen in collections.



A medium sized, cool growing epiphyte, this species has ovate, longitudinally grooved with age pseudobulbs that carry a single, apical, plicate, lanceolate, acuminate, gradually narrowing below into the terete, channelled, petiolate base leaf. They bloom in summer on a basal, pendant, to 30 cm long, 4 to 12 flowered inflorescence with large, spread, broadly triangular, acute floral bracts carrying up to 12, fragrant flowers. The striking yellow flowers with dark burgundy spotting have a herbal or spicy perfume with sharp undertones that is very long lasting. The original specimen upon which the recently published description was based, was collected by Rudolf Jenny on 22 July 1993. The holotype was filed in Geneva at the herbarium of the Conservatoire et Jardin botaniques de la Ville de Genève.

Photo source: http://orchidroots.org/natural/196147/species_detail/

Stanhopea pozoi Dodson & D.E. Bennett 1989 is an Ecuadorian and Peruvian medium sized, hot growing epiphytic species found at 800-1,000m in wet montane forests on the western slopes of the Andes. It has ovoid, sulcate pseudobulbs carrying a single,



apical, plicate, obtuse, gradually narrowing below into the elongate, channelled, petiolate base leaf. Flowering in late summer or early autumn, it has a pendant, basal, 3 to 5 flowered inflorescence subtended by large, chartaceous bracts. The large, yellow-orange waxy flowers with red-brown blotches or "eyes" on the labellum are pleasantly fragrant.

In Peru, plants were collected in the Department of Huanuco growing in wet mountain forest at 950 m and have also been found on the eastern slopes of the Andes in southern Ecuador on the Peru border.

This species was originally published in *Icones Plantarum Tropicarum* fasc. 2, t. 177. 1989.

Photo source: http://stanhopea.autrevie.com/stanhopea_pozoi.html

Stanhopea pseudoradiosa Jenny & R. González 1997. Found in Guerrero, Colima and Oaxaca States of Mexico on the western slopes as an epiphyte in oak, oak-pine and tropical sub deciduous forests at 750-1,300m, it is a medium sized, cool to warm growing species with oval, strongly ribbed, furrowed with age pseudobulbs carrying a single, coarse, leathery, lanceolate, plicate, acute, gradually narrowing below into the channelled, petiolate base leaf. Flowering in summer, the pendent, basal, 20 cm loosely 2 to 5 flowered inflorescence is enveloped by spread, large, broadly triangular, acute floral bracts. The flowers are fragrant.



This species differs from *Stanhopea radiosa* as the hypochile is less deeply saccate and has a very narrow opening; the horns are elongate, triangular and not oblanceolate; and it has a free tooth-like callus on the base of the epichile.

Photo source:

<http://www.orchidspecies.com/orphotdir/stanpseudoradiosa.jpg>

Stanhopea pulla Rchb.f. 1877. Found in Costa Rica, Panama and Colombia. In Colombia, the species occurs in very hot, moist habitats at 100-800m, especially in the Department of Choco. The species is rare in Costa Rica, but was reported by Holrich (1974) from a single specimen on the base of a tree in roots and rocks on a semi-vertical, heavily jungle covered rock wall along a tributary of the Reventazon River close to Cervantes at 1000 m. Later, a few widely dispersed plants were later found on the Caribbean watershed, east and southeast of Turrialba at El Alto de las Varas and Grano de Oro at 500-700m.

The species is much more common in Panama where it can be found at sea level in the Canal Zone in the vicinity of Gatún. Plants also grow in Coclé Province in El Valle de Antón at 800m, and in Veraguas Province in the region west of Santa Fé at 760-910 m. In this region, the plants grow on both the Atlantic slopes and in adjacent high-rainfall areas of the Pacific watershed

It is a medium sized, hot to warm growing epiphyte with ovoid to pyriform, sulcate pseudobulbs with fibery, basal bracts with a single, apical, elliptic, plicate, ribbed, gradually narrows below into the elongate, petiolate base leaf. Flowers are borne on a short, lateral inflorescence that grows across the surface of the media before becoming pendent. One or-two small fragrant flowers which lack the elegant horns which are so prominent in most of the other *Stanhopea* species arise from the mature pseudobulb in autumn as a new growth appears. This species requires less light than most of the genus.



Photo source: <https://garden.org/plants/photo/421578/>

Stanhopea radiosa Lemaire 1859-1860 is found along the north Pacific coast of Nayarit, Jalisco and Oaxaca states of Mexico, on rocks or trees in oak and pine-oak forests and deciduous tropical forests at 200-1,500m. Plants have been found near Tepic, between Tepic and Jalcocotán, near the towns of Mascota, Talpa, and Los Pericos near Caule, on the south side of Sierra de Manantlán, on the seaward-facing slopes southwest of Autlán, on a coffee plantation northeast of Pihuamo, and between Pihuamo and Colima at 760m.

Stanhopea radiosa is a medium sized, warm to cool growing epiphyte with ovoid, crowded, apically truncated, rugose pseudobulbs partially enveloped below by scarious sheaths becoming fibrous with age and carrying a single, apical, plicate, erect, elliptic, acute,

gradually narrowing below into the sulcate, slender petiolate leaf. Flowering in late spring and summer, 1-3 fleshy, waxy, cinnamon fragrant flowers are borne on a pendent, basal, to 25cm inflorescence enveloped by scarious sheathing bracts with ovate, inflated sheathing floral bracts. The sepals and petals are pale green with purple-red spots; petals are more spotted, and sometimes orange yellow at the base. The dorsal sepal is boat shaped. The lip is fleshy and yellow to white, with an orange-yellow sac-like hypochile. The horns are somewhat flat and approx. 2.5 cm long. The apex of the lip is subtruncate, rounded with a short acumen, or 3-pointed. The column is slender, with hyaline wings.

This species is often cited as a synonym of *Stanhopea saccata* but differs in having a less saccate hypochile with a wider opening allowing a larger pollinator. Its hypochile is squarer than *Stanhopea saccata* and there is a broad tooth on the upper side of the epichile.



Photo source: <http://www.orchidspecies.com/stanhradiosa.htm>

This species first appeared in the Belgian publication L'illustration Horticole, journal special des Serres et des Jardins Vol. 6: misc. 72, with two accompanying figures.

The Index Kewensis contains the notation that this species is the same as *Stanhopea saccata*. McVaugh (1985) says that while *Stanhopea radiosa* may be the "*Stanhopea saccata*" of some authors, it is "probably not of Bateman, 1838."

Dodson (1975) wrote that the range of *Stanhopea radiosa* is from Sonora to Oaxaca, whereas *Stanhopea saccata* is found only in Chiapas and Central America. Kennedy (1975) wrote that there were probably intermediates (natural hybrids) between *Stanhopea radiosa* and *Stanhopea saccata*, and that

these two species were probably not really separated by the Isthmus of Tehuantepec.

Stanhopea reichenbachiana Roezl ex Rchb.f. 1879 is found in Colombia and Ecuador. In Colombia, the species has been collected from Western Cordillera in the Rio Cauca basin. In this habitat, *Stanhopea reichenbachiana* is epiphytic, lithophytic, or semi-terrestrial in warm, wet rainforests, often in inaccessible locations and on deforested cliffs and banks at 500-1,000m. This warm-growing species with ivory/white waxy flowers is often mistaken for *Stanhopea candida*, *Stanhopea grandiflora*, or *Stanhopea inodora*. The large porcelain ivory/white flowers have a spicy sweet smell.

The species was originally described by the younger Reichenbach and renamed by Benedikt Roezl. Synonyms include: *Stanhopea amesiana* Hort, *Stanhopea lowii* Rolfe, and possibly *Stanhopea suavis* Ospina. *Stanhopea reichenbachiana* is not considered to be one of the 'primitive Stanhopea', but it has very abbreviated horns. Based on the open lip morphology that does not restrict the size or shape of pollinators, it is likely that there are natural hybrids.



Photo source: http://bluenanta.com/natural/196155/species_detail/

Stanhopea ruckeri Lindley 1843 is reported from Mexico and Nicaragua, where it can be found as an epiphyte in wet mountain forests at 450-1,400m. Other authors report that it can be found in Belize, El Salvador, Guatemala and Honduras, although here are no reported collections from these countries. Kennedy (1975) reported that in Mexico plants apparently grow in Veracruz near

Fortin de Las Flores, but the published literature including Kennedy (1975) and Williams (1951) has no instances where the author has sighted material collected in Mexico.

This is another *Stanhopea* species shrouded in mystery and in 1963, Calaway Dodson suggested in the article "The Mexican Stanhopeas" that *Stanhopea ruckeri* is in fact a natural hybrid of *Stanhopea oculata* and *Stanhopea wardii*. He writes that the specimen at the British Museum, labelled *Stanhopea ruckeri* by Lindley contains two inflorescences, one of *Stanhopea oculata* and one of an intermediate between *Stanhopea wardii* and *Stanhopea oculata*. This appears to leave a group of variable hybrids between *Stanhopea oculata* and *Stanhopea wardii*. As there is no name to apply to them, it might be a reasonable approach to apply the name "*Stanhopea x ruckeri*" to the whole group. Roger Kramer writing in *Orchids Australia*, Volume 12, No. 4, August 2000 says "This species is only relatively new in cultivation even though it was described in 1843. However, there seems to be some confusion as to what is and what is not *Stanhopea ruckeri*."



Photo source: <https://au.pinterest.com/mariazavaczki52/stanhopea-corianthes-huntleya/>

Stanhopea ruckeri, like many of the members of the genus, is quite variable. Some forms are more or less spotted, while there are also alba forms that have no red colouration in the flower, while others are more ivory – yellow. Its fragrance is a light cinnamon scent, consistent with the fragrance study done that includes the pheromones trans-cinnamaldehyde, cinnamyl-alcohol, and cinnamyl-acetate. These provide a fragrance that is similar to a candy known in the USA as "Hot Tamales", and the flowers have a similar fragrance to the candy.

Stanhopea schilleriana Rchb.f. 1870 from Antioquia Colombia at 2,200 meters is generally found growing on wet rocks. The actual location has not been published which is somewhat surprising given this species was first identified nearly 150 years ago. It is a medium sized, cold growing lithophyte, and vegetatively, has ovate, strongly ribbed and furrowed pseudobulbs carrying a single, apical, erect, plicate, coarse, leathery, lanceolate, acute, gradually narrowing below into the channelled, petiolate base leaf. As do the majority of this genus, blooming occurs on a basal, pendent, to 25 cm loosely bunched 6 - 10 flowered inflorescence with large, spread, broadly triangular, acute floral bracts. Flowers are pleasantly fragrant. Readily available information about this species is at best sparse.



Photo source:
http://stanhopea.autrevie.com/Stan_schillerianaKB8.jpg

Stanhopea x thienii Dodson 1980 is thought to be a natural hybrid of *Stanhopea impressa* and *Stanhopea annulata*. The natural hybrid was discovered by Calway Dodson and Dr. Leonard B. Thien in wet cloud forest in western Colombia in 1962. While the natural hybrid has only been reported from Ecuador, both parents also grow in Colombia (*Stanhopea x thienii* is the only known natural hybrid involving *Stanhopea impressa*). Calaway Dodson (1975) wrote that both *Stanhopea impressa* and *Stanhopea annulata* are pollinated by the same bee, *Euglossa grantii*.

Stanhopea tigrina Bateman ex Lindley 1838, a cool to warm growing Mexican species is the subject of continuing and often robust debate between taxonomists. The best known variety is *Stanhopea tigrina* var. *nigroviolacea*, although commonly it is now treated as a species in its own right (see earlier discussion in this series). The RHS accepts only *Stanhopea tigrina* and *Stanhopea tigrina* var. *nigroviolacea*. The latter is one of the most common Stanhopeas in cultivation while *Stanhopea tigrina* is now rarely seen. Accordingly, I have attempted to find reliable photos of the lesser-known forms rather than the well-known oxblood *Stanhopea tigrina* var. *nigroviolacea*. The original illustration by Bateman was of a 'tiger-stripe' flower distinctly different to the much later described *Stanhopea tigrina* var. *nigroviolacea* (1854). The following photo shows other forms where the yellow petals and sepals with some red blotching are dominant, the second photo an albinistic form, and the third image shows the 'tiger stripes' referred to by early taxonomists.



Photo source:
http://bluenanta.com/static/utis/images/species/spc_000022225_000003645.jpg

Photo source: <https://www.orchidsforum.com/threads/stanhopea-tigrina.6390/>



Photo source:
http://digilander.iol.it/uparis/mostre/roma2003/stanhopea_tigrina_3.jpg

Stanhopea tigrina is a medium sized, epiphytic species on oak trees in the well-watered, thick forests of the eastern slope of the Mexican Plateau at 600 to 1,700m. It has ovoid, slightly compressed, dark green pseudobulbs carrying a single, apical, plicate, elliptic, petiolate, dark green leaf, and blooms on a pendulous, 2 to 8 flowered, 15 cm inflorescences that are subtended by large, chartaceous bracts. The flowers are large, pleasantly fragrant and are borne in summer and autumn.

Stanhopea tigrina var. *nigroviolacea* is the most often seen in photos with many variants and cultivars, some with exceptionally

dark colouring and unusual petal and sepal shapes. Many of these have been awarded.

Stanhopea tricornis Lindley 1849 is found in Colombia, Ecuador and Peru in tropical wet and wet montane lowland cloud forests on the western slopes of the Andes at sea level to 1,200m. It is a small to medium sized, hot to warm growing epiphyte or terrestrial generally growing on steep embankments and has ovate, ribbed, dark green pseudobulbs carrying a single, apical, plicate, broadly ovate, acute, gradually narrowing below, petiolate base leaf. Blooming in winter through to summer, flowers are carried on a short 15 cm racemose, 2-3 flowered inflorescences arising from mature pseudobulbs and enveloped by large chartaceous bracts. It is a very distinctive Stanhopea, and therefore easily identified. The white to cream fragrant flowers have pale to bright yellow markings on the end of the lip, sepals, and petals. The petals clasp the column and lip, and the lip has three horns (giving rise to the name).

Experienced growers warn that this species requires heavy shade, good air circulation and a hot, moist tropical environment to survive. The flowers have heavy, waxy substance, and sepals will snap off if you attempt to fully open the flower.



Photo source (both): http://stanhopea.autrevie.com/stanhopea_tricornis.html

Stanhopea tricornis subsp. *stenochila* is a recognised subspecies that has small magenta spots or speckles on the base (bottom) of the lip (hypochile), and sometimes at the base of petals and sepals.



There is a school of thought that *Stanhopea tricornis* may be a hybrid between a species of *Sievekingia* and *Stanhopea* (Curry et al. 1991) but this view is not widely accepted.

Stanhopea wardii Lodd. ex Lindley 1838 variously reported to be from Mexico, Belize, Nicaragua, Honduras, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Bolivia, Peru is one of the most common members of the genus in collections. However, there is substantial disagreement between authors about the northern extent of habitat range. Current opinion is that this species is only found south of Honduras, i.e., excluding Mexico.

First collected near Caracas, Venezuela and then elsewhere including the National Park in the District of Aragua at 800-1,800m. In Colombia, the species is found in the north at 1,800-2,500m, while in Costa Rica, it occurs on the Costa Rican Meseta Central, east and southeast of Cartago and the adjacent Reventazon area at 1,350 m) where it grows on old trees covered with Spanish moss and masses of *Bromeliad*, particularly *Tillandsia*. In Panama, this species is common in the intermediate highlands on the Pacific slope of Coclé and Chiriquí Provinces at 550-1,220 m). Plants collected in El Salvador near Boquerón and in the Cerro Grande de Apaneca at 1,500 m) were originally identified as *Stanhopea wardii* by Hamer (1964), but later in 1970, he advised that they were actually *Stanhopea graveolens*. In Guatemala, Ames and Correll reported that plants were collected in Zacapa, on Sierra de las Minas, between Río Hondo and the summit of the mountain at Finca Alejandría, where the orchids grew on trees and rocks in humid forests at elevations up to 2,700 m).

Originally reported to be widespread in Mexico, Guatemala, Costa Rica, and Panama, later taxonomical investigation reveals that the habitat for *Stanhopea wardii* does extend that far north, and plants from these areas previously identified as *Stanhopea wardii* are most likely to be *Stanhopea graveolens*.



Stanhopea wardii in situ Costa Rica

Photo source:

<https://www.flickr.com/photos/58718092@N07/10171418365>

Stanhopea wardii is a medium sized, hot to warm growing epiphyte found growing on trees and on rocks in humid cloud forests from 800 – 2,700m. A distinctive feature of this species is a powerful, yet pleasant fragrance. It has pyriform to ovoid, sulcate pseudobulbs with a single, apical, coriaceous, plicate, ribbed, elliptic-obovate, gradually narrows below into the elongate, petiolate base leaf. The species blooms in summer

through autumn on a pendant, 3 to 10 flowered, 15 to 18cm, crowded inflorescence arising from a mature pseudobulb. Flowers have a spicy scent and dramatically coloured flowers. Sepals and petals are yellow to yellow orange, occasionally greenish yellow. The hypochile is yellow to yellow orange, while the mesochile and epichile are cream to yellow. There are fine spots on the sepals,

petals, epichile and column; only rarely is the hypochile stippled. There are no "eyes" on the petals or sepals, only on the hypochile. The column is usually greenish white. Flowers last from 2-4 days, and this species is pollinated by the *Eulaema polychroma* bee.

Stanhopea warscewicziana Klotzsch 1852 occurs in the Atlantic (Caribbean) lowlands of Costa Rica, from sea level 1000 m. Dressler describes it "Hypochile globose in profile; greenish cream colour, horns and epichile white, base of lip may have dark purple eyes, column and epichile may be speckled with red." Barney Greer wrote that this species "grows huge and lush in the wet tropical jungles of Costa Rica." "In Australia, it grows best in a warm glasshouse down to 14° C with up to eight flowers per inflorescence." This species is shown on the cover of his book, *"The Astonishing Stanhopeas."* Andres Maduro believes that this species may be found in Panama.



It is a medium sized, hot to warm growing epiphyte found in Costa Rica and western Panama in very wet tropical rain forests at elevations from sea level to 1,400m. Flowering in summer, the up to eight-flowered inflorescence is short-lived. There is also a concolor-yellow form described.

Photo source: <http://www.orchidspecies.com/stanhwarscewiczii.htm>

Stanhopea whittenii Soto Arenas, Salazar & G. Gerlach 2002 is found in the Chiapas state of Mexico, Guatemala, Belize as a medium sized, hot to warm growing epiphyte in Chiapas state of Mexico, Guatemala and Belize in lowland and lower montane rainforests at 300-1,500m. The 2-4 flowered inflorescence has simultaneously opening, pleasantly fragrant flowers.

This species was named for Dr. Wm. Mark Whitten, Univ. of Florida, Gainesville, a specialist in the biology and classification of the subtribe *Stanhopinae*. He collected the original specimen in 1987, and it was flowered by Gerardo Salazar, and Miguel Soto in 2005: The flowers are pale cream, lightly spotted with red-purple; proximal half of hypochile bright orange, with a pair of dark purple eyespots.



Photo source: http://www.eerikas-bilder.de/orchideen/Coryanthes_Stanhopea_Gongora_Embreea/stanhopea/stanhopea_whittenii.htm

According to Soto Arenas (2002), this species grows as an epiphyte in lowland and lower montane rainforest and flowers from July to September. It is the commonest *Stanhopea* species in the Selva Lacandona. It is sometimes found with *Stanhopea graveolens*, *S. inodora*, *S. oculata*, and *S. dodsoniana*.

Stanhopea whittenii is distinguished from *Stanhopea oculata* by its fewer flowers (2-3 in wild), and massive hypochile with a broader, shorter, bright orange base. It is often found at lower elevation than *Stanhopea oculata*. Fragrance is like, but stronger than both *Stanhopea oculata* and *Stanhopea*

dodsoniana, and it has a touch of cinnamon-scent as well (trans-methyl cinnamate).

In 2003, Soto Arenas noted that it is also found in Alta Verapaz and is confused with *Stanhopea ruckeri* from Nicaragua. He examined specimens from the collections of D.E. Breedlove (13043; 68659).

Stanhopea xytriophora Rchb.f. 1868 comes from Bolivia and Perú. After earlier incorrect identification as *Stanhopea deltoidea*, Reichenbach published named this species from Peru as *Stanhopea xytriophora* in 1868. Subsequently, in 1984, Dodson published it as *Stanhopea vasquezii* from a plant that flowered in cultivation after being collected at Cochabamba, Bolivia by Kuhn in July 1981 (the holotype for *Stanhopea vasquezii* Dodson is in the Selby Herbarium). This was found to be invalid, and the accepted name is *Stanhopea xytriophora*.



Rare in collections, this species is found in Bolivia on steep slopes at 1,800-2,000m. as a small sized, cool to cold growing epiphyte or terrestrial. It has white to cream/white flowers with red eyes and many red spots on the petals. It also has a strong, spice fragrance. A yellow form, *Stanhopea xytriophora* var. *aureum* is also known. While the plant itself is medium sized, it seems to be very slow growing in cultivation.

Photo source: <https://orchid.unibas.ch/phpMyHerbarium/documents/38/2065038m.jpg>

This concludes what has been a long, but hopefully interesting article about this enchanting species. It is relatively easy to grow in Perth providing you can keep them drier during the colder winter months. You may remember that back in March 2016 when I started publishing this treatment of the Genus *Stanhopea*, I included part of an article from the Orchid Society Council of Victoria. In summary, that article spoke about the rewards from growing this genus and that many are relatively easy to grow for inexperienced orchid hobbyists.

This article has covered both common and rare *Stanhopea* species including those that we most often see and some about which little is known. We will have *Stanhopea* species in our raffles from time, and there will be plants for sale at WAOS. Many of our members grow *Stanhopea* and if this article has stimulated your interest, ask them next time they have a plant on our display tables.