NEW COLOMBIAN SPECIES
OF *DRACULA* AND *MASDEVALLIA*:
PLEUROTALLIDINAE (ORCHIDACEAE)

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Abstract: *Dracula rojasii, D. senex-furens, D. callithrix, and Masdevallia virgo-rosea*, four proposed new Colombian species of Pleurothallidinae, are described. Affinities and taxonomic notes on these new species are presented. Additionally these four species, plus another recently described taxon, *Dracula dens-canis*, are categorized as endangered species using the UICN criteria.


INTRODUCTION:

The genera *Dracula* and *Masdevallia* have received the most taxonomic and horticultural attention among the Pleurothallidinae. At present nearly 120 species are recognized in the genus *Dracula* and approximately 500 within the genus *Masdevallia*. Several species from both genera have been recently described from Central and South America (Luer 1997, 1998, 1999, König 1999, Peláez 2007). Here we describe *Dracula rojasii, D senex-furens, D. callithrix* and *Masdevallia virgo-rosea*, four new species from Colombia. We propose to include all four plus the recently described *D. dens-canis* N. Pelaez in the red list of Colombian endangered species using the UICN criteria.
**Dracula rojasii** N. Peláez, E. Buitrago & G. Meyer, sp. nov.

Similis *Draculæ bellæ*, a qua distinguítur epichilo semicirculari non transverse dilatato, petalis margine apicaliter denticulato, margine exteriore rotundato nec bivalvi.

**Type:** COLOMBIA, Dept. of Antioquia, between Alejandría and Guatapé, ~1800 m a.s.l., Eastern slopes of the Central Cordillera, collected by Fabián Rojas & Juan Carlos Tobón in 2003. Flowered in cultivation by C. Carder at Llano Grande, 5 August 2008, (fl, fr), Peláez *NP0285* (holotypus JAUM 44185 (Figures 1A-1H), alcohol-glycerin stored material and JAUM 44185, dried material); isotype *Peláez NP0286* HUA 166136, dried and alcohol-glycerin stored material. Herbarium specimens prepared by E. Buitrago and N. Peláez, August 09/2008.

**Plant** epiphytic, medium to large in size, densely caespitose, roots coarse. Ramicauls short, erect, stout, 1.3-1.5 cm long, enclosed by two to three loose consecutive tubular sheaths. **Leaf** erect, carinate, thinly coriaceous, elliptical, subplicate, apex acute, with a gradually narrowed subpetiolate base, 16.7-19.6 cm long including petiole, 3-3.5 cm wide. **Inflorescence** successively 2-3 flowered, growing at the base of the ramicaul, breaking through the basal bract, usually descending; peduncles 14.3-15.5 cm long, brown to wine red, subverrucose, gradually enlarging from 1 mm to 2 mm, with several brown tubular bracts, each bract 1-1.2 cm long, pedicel 0.9-1.3 cm long, wine red, verrucose. **Sepals** cream to pale yellow, with small dark maroon lines and dots gradually decreasing in size and increasing in density towards the petals; **Dorsal sepal** subtriangular with a short obvate base, oblong, frequently reflexed after anthesis, apically acute, contracted into a dark red tail, 3.0-3.5 cm long without the tail, 9.2-11 cm long including tail, 2-2.3 cm wide. **Lateral sepals** obliquely ovate-triangular, obtuse, connate 1.8-2.3 cm to each other, connate 0.8-0.9 cm to the dorsal sepal forming a widely spread flower, sepals of the same colors and spotted patterns as the dorsal; sepals 2.1-2.4 cm wide x 3.5-4.1 cm long without tail, 10-11.9 cm including tail, margins retrose, contracted into a dark red tail. **Indumentum** of the sepals consisting of three types of structures and their transitions, type I (massive base with one to four apiculate endings) surrounding lip and petals, type II (oblong trichomes ending in one rounded red cell) in the mid region of the sepals, type III (multiseriate trichomes ending in one red pigmented acute apiculate cell) in the marginal and submarginal areas, tricomes relatively dense, indumentum larger in the marginal and submarginal regions of sepals. **Petals** cartilaginous, oblong, bivalvate, creamy with yellow and dark red-brown smooth papillae in the apex between the laminae conforming the valvae, longitudinally exhibiting centrally red-brown pigmentation, 6 mm long x 2 mm wide at the apex, inner lamina terminally acute and smooth, outer lamina recurved, undulate. **Lip** articulated with the column, spathulate, divided into an hypochile and epichile; **hypochile** 7 mm long x 6 mm wide, obovate, folded by 90° and cleft centrally forming a pseudonectary whose
margins are pale pink, pseudonectary internally white with a cavity prolonged through the hypochile, ending in an acute pale pink spotted callus continuous with the main central carina; epichile white, shallowly concave, margins lightly incurved, transversally semicircular, broad at the base, 11-14 mm wide x 8-10 mm long, with three main continuous branching and radiating white lamellae, margins slightly denticulate at the base, erect. Column yellow, ventrally white, semiterete, 6 mm long x 2 mm wide; column foot 4-5 mm long; anther cap white. Ovary 7-8 mm long x 4-5 mm wide, wine red, with 6 verruculose lines.

**Etymology:** Named in honor of Fabian Rojas, a Pleurothallid enthusiast from La Ceja (Antioquia, Colombia), who first discovered and grew the species. Fabian has been observing natural populations of Dracula and cultivating Colombian species for more than 20 years.

**Distribution:** Like other species of the genus, D. rojasii is known only from a single gathering made years ago. It is probably endemic to a small area in the eastern slopes of the Central Cordillera of Colombia.

**Diagnostic Characters:** (Figures 1A-1H and 2) This species is distinguished from all others of the genus by the following character combination: 1) hypochile with rounded margins, 2) white semicircular, not transversally broadened epichile, 3) shallow cup-shaped epichile with three main radiating and branching lamellae, 4) obliquely ovate-triangular sepals, 5) dorsal sepal usually reflexed.

**Phylogenetic Relationships:** Although to some extent superficially similar to D. bella, this species does not have costae, only bearing minute verrucosities in the ovary (Figures 1F and 1G). Different results have been obtained for Section Costatae (sensu Luer, 1993), in one case being paraphyletic (Pelaez, 2003) in another one being monophyletic (Cameron & Meyer 2007). If the species belongs to this clade it might have lost the costae almost entirely. The taxon has not been so far included in any phylogenetic analysis, so it is premature to propose hypotheses about its ancestor-descendant relationships. Phylogenetic studies including this species are required to test this hypothesis.

**Taxonomic and Additional Notes:** Like Dracula xenos, D. berthae, D. anicula, D. aphrodes, D. incognita, D. brangeri and others, this species is known from only a single original collection. Four plants were collected by Fabian Rojas, some of which have been divided and distributed among members of Sociedad Colombiana de Orquideologia. There is no doubt that the plants used as source for the holotype were collected in the forest, so this taxon is not another “greenhouse spontaneous hybrid” as some previously described in the past by Luer & Escobar (see Luer, 1993).

The sepal shape and coloration of Dracula rojasii are most similar to those of D. bella, D. dens-canis, and D. nycterina. Also, a reflexed dorsal sepal (Figures 1A,
D, G, H) is present in many flowers of *D. bella*. Nevertheless, the epichile (Figure 1E), and to some extent the petals (Figure 1F), resemble those of *D. noseratu* and a spontaneous greenhouse hybrid drawn by Luer named *Dracula “X3”* (see Luer 1993, pag 239). Recently it has been shown that several species of *Dracula* including *D. kareniae*, *D. incognita*, *D. aphrodes* (Cameron & Meyer, 2007) and *D. xenos* (Peláez et al, 2009) had a hybrid origin. The ovary of *D. rojasii* has minute verrucosities, (Figures 1F and 1G) which are identical to the “vestigial costae” present in the hybrids *D. pileus* and *D. schudelii*; in both cases, *D. bella* served as the pod parent. Given the similarity of the ovary of *D. rojasii* to these *D. bella* hybrids, it remains possible that *D. rojasii* is itself a natural hybrid. However, no individuals of the section *Costatae* have been observed in the forest where this new taxon was discovered (Rojas, pers. com. 2008). Also, according to Luer (1993), *D. bella* only grows in the Western Cordillera of Colombia, whereas *D. rojasii* has only been found in the Central Cordillera. The other taxon with which this species has some superficial similarity is *D. nycterina*, the sister taxon of *D. bella* (Peláez, 2003). *D. nycterina* is a lowland species (~1200 m a.s.l.) distributed in the eastern slopes in a small area of the Central Cordillera of Colombia. Our current understanding of the geographic and altitudinal distributions of these two species suggests it is very unlikely that recent pollen flow might have caused their resemblance. The only other species known to date that grows in the same area as *D. rojasii* is *D. radiosa* (Rojas, pers. com. 2008). It is unlikely that the shape of *D. rojasii*’s flowers resulted from hybridization with *D. radiosa*. While awaiting DNA studies, and lacking evidence of the co-existence of plausible parents, the authors assume *D. rojasii* to be a distinct species.

**Floral Fragrance and Pollinator:** A weak scent has been detected in the flowers of this species when they have been cut and placed inside closed receptacles. The scent is mushroom-like, as in other species of the genus. No molecular analysis of its fragrance has been undertaken so far. The pollinator might possibly be a fly of the genus *Drosophila* (Drosophilidae), as has been observed by the authors for other species in the genus. No observations related to the pollination of this taxon have been made so far *in situ*.

**Red list status: CR**

A recent publication by Calderon et al (2007) categorized all the Colombian species of *Dracula* using the UICN standards. Since the taxon was not known at the time the manuscript was prepared, a categorization will be included here. This species is known from a single location outside of the system of protected areas that is estimated to include an area of less than 100 km²; therefore, it is categorized as *Critically Endangered* (CR) according to criteria B1ab(iii). The population is believed to be at risk of extinction due to loss of the quality of its
It is estimated that the population may have been reduced by 50% or more in recent years, therefore fulfilling criterion A2cd for a categorization of Endangered. The species is distributed in a very small area of about 20 km$^2$ and known from less than 5 localities, therefore fulfilling criterion D2 for a categorization of Vulnerable.

**Dracula senex-furens** N. Peláez, E. Buitrago & G. Meyer, sp. nov.

Similis *Draculae bellerophontis*, a qua differt labello prorsus articulato, sepals angustioribus, absentia duorum callorum bene signatorum in sepalis iuxta columnam, marginibus non retrorsis in sepalo dorsali.

**Type:** COLOMBIA, uncertain collection data. Apparently collected in Departamento de Antioquia, Urrao, near the head waters of Rio Pabón, unknown collector, possibly at 2000-2200 m a.s.l., flowered in cultivation at Orquifollajes in Guarne, 30 July 2008 (fl, fr), Peláez NP0287 (holotypus JAUM 44183 (Figures 3A-3C), alcohol-glycerin stored material; isotype Peláez NP0288 HUA 166137, alcohol-glycerin stored and dry material). Herbarium specimens prepared by E. Buitrago and N. Peláez, August 09/2008.

**Additional Material Examined:** Colombia, Valle del Cauca, Alto de El Militar, 1800-2000 m, colectada por J. Miranda. 1975, cultivada por A. Lehmann de Sarria en Popayán JAUM 003024, floreció en cultivo, 2 de febrero de 1979. Material prepared by R. Escobar. This specimen belongs to *D. senex-furens* but remained determined as “*D. bellerophon??*” for 3 decades (Figure 4).

**Plant** large, epiphytic, densely caespitose, roots coarse. Ramicauls long, erect, stout, 6.5-7.2 cm long, enclosed by two to three consecutive tubular sheaths. **Leaves** erect, carinate, thinly coriaceous, narrowed into a subpetiolate base, acute and narrowly elliptical to linear, 18.6-31.5 cm long including petiole, 1.7-2.3 cm wide. **Inflorescence** successively few-flowered raceme, growing at the base of the ramicaul, breaking through the basal bract, horizontal to descending; peduncles 15.2-21.1 cm long, brown, with several brown tubular bracts, 0.9-1 cm long; pedicel 1.5-2.5 cm long, brown, subverrucose. **Sepals** cream to pale yellow, with small dark brown to deep purple lines and dots gradually decreasing in size, present from the middle to the sepal base; **Dorsal sepal** broadly ovate, with margins yellow at the base, with one main thick deep purple and six thin red dotted short lines at the base above the petals, apically acute, gradually contracted into a long wine red tail, 2.1-2.3 cm wide, 2-2.3 cm long without tail, 14-14.9 cm long including tail. **Lateral sepals** ovate, oblique, connate 1.6-1.7 cm each other, connate 0.8-1.1 cm to the dorsal sepal forming a spread, shallowly cupped flower, sepals of the same colors and spotted patterns as the dorsal one, with a white area spotted with wine red behind the lip, basal lateral margins ye-
yellow; sepals 1.8-2 cm wide x 2.3-3.3 cm long without tail, 13-13.2 cm including tail, internal distal margin undulate, gradually contracted into a wine red tail; **Indumentum** of the sepals pale cream to pale yellow, consisting of three types of structures and their transitions, type I (massive base with one to four apiculate endings) surrounding lip and petals, type II (oblong trichomes, broadened at the base, ending in one apiculate cell) in the mid region of the sepals, type III (large multiseriate trichomes ending in one acute apiculate cell, in some cases fused forming bifid trichomes) in the marginal and submarinal areas, trichomes relatively dense, indumentum larger in marginal and submarginal regions of sepals. **Petals** cartilaginous, spatulate, oblong, bivalvate, creamy to yellow, with dark brown apiculate papillae in the apex between the laminae conforming the valvae, longitudinally exhibiting centrally red-brown pigmentation, 3-4 mm long x 2 mm wide at the apex, inner lamina terminally acute and denticulate, outer inferior lamina recurved, minutely denticulate. **Lip** articulated with the column, spatulate, divided into a hypochile and epichile; **hypochile** oblong, 4 mm long x 3 mm wide, folded by 90° and cleft centrally forming a pseudonectary whose margins are pink to orange, pseudonectary internally white with a cavity prolonged through the hypochile, ending in an acute orange spotted callus continuous with the central carina; **epichile** sacciform, rounded, basally orange, distally creamy to pale pink, 5 mm wide x 4-5 mm long, with three continuous branching and radiating creamy to pale orange lamellae, central main lamella bifurcating and apically intersecting with the two parallel second main ones, lamellae prolonging to the edge creating denticulate margins, margins erect. **Column** dorsally yellow, ventrally white, semiterete, 4 mm long x 2 mm wide; column foot 2-3 mm long; anther cap white, apically minutely denticulate. **Ovary** smooth, round in cross section, 6-7 mm long x 3-4 mm wide, light brown.

**Etymology:** From the latin, *senex-furens*, “an old aged angry man”, referring to the appearance of the flowers that resemble the angry and irritated face of an old, white haired man.

**Distribution:** According to F. Villegas (pers. com. 2008) the plant used as the source for the holotype material was collected in Colombia, Urrao, Depto. de Antioquia, by an unknown collector, being brought together with plants of *D. villegasii*, *D. veleziana*, and *D. robledorum*. This would suggest that the species might be distributed in the Western Cordiller of Colombia. There is some uncertainty about the collection data. Additional material of this species was recently found at JAUM herbarium, having remained labeled for several decades as “*D. bellerophon??*”. (Figure 4) This other collection comes from Alto el Militar, near Calima, Dept. of Valle del Cauca. According to this the distribution of the taxon is in the western cordillera of Colombia.

**Diagnostic Characters:** (Figures 3A-3C and 5) This species is distinguished from all others of the genus by the following character combination: 1) fully articula-
Phylogenetic Relationships: Although to some extent superficially similar to *D. callithrix* and *D. bellerophon*, it is not clear whether that similarity resulted from kinship or convergent evolution. Following Luer’s (1993) systematics of *Dracula* this species would belong to Subgenus Dracula, section Dracula, subsection Dracula, series Grandiflorae-Parvilabiatae. Nevertheless, this and other series created by Luer (1993) have been shown to be polyphyletic (Peláez, 2003). *D. senex-furens* has not been included in any phylogenetic analysis so far. It is premature to propose hypothesis about its ancestor descendant-relationships. Phylogenetic studies including this species are required.

Taxonomic and Additional Notes: Material of this species was found at Orquifollajes, having been in culture for many years. There is no doubt that the plants came from the wild but the exact location of collection is to some extent uncertain. Sepal shape and coloration of *Dracula senex-furens* (Figures 3A-3B) are most similar to those of *D. callithrix* (Figures 7-8), described in this paper. It can be differentiated from it by the plant, inflorescence, and flower size, as well as by its narrower sepals and different coloration. *D. callithrix* produces white and deep purple spotted and dotted flowers, instead of flowers with cream to pale yellow background and dark wine red spots and dots. Also, one species exists in the western cordillera (Valle del Cauca), whereas the other was found in the south of Colombia (Nariño).

*D. senex-furens* is also very similar to *D. bellerophon* (Figures 6A-6B). A specimen of this species remained labeled for decades as “*D. bellerophon??*” at JAUM. Unlike *D. senex-furens* the lip of *D. bellerophon* is not fully articulated, the dorsal sepal has retrose margins, sepals are longer and broader, there are two thick well demarcated calluses resembling “cheekbones” near the petals and column, and the dorsal sepal is abruptly contracted into a tail. Also, *Dracula bellerophon* is an extremely rare taxon that has only been collected twice (only one collection known has correct collection data) and seems to exist southern in the Western Cordillera of Colombia, Dept. of Valle del Cauca, El Queremal. According to current distribution data the two species do not coexist in the same habitats of the Western Cordillera of Colombia.

Floral Fragrance and Pollinator: A weak scent has been detected in the flowers of this species when they have been cut and placed inside closed recepta-
The scent is mushroom-like, as in other species of the genus. No molecular analysis of its fragrance has been undertaken so far. The pollinator might possibly be a fly of the genus *Drosophila* (Drosophilidae) as has been observed by the authors for other species in the genus. Nevertheless, no observations related to the pollination of this taxon have been made so far in or ex situ.

**Red list status: VU**

A recent publication by Calderon et al. (2007) categorized all the Colombian species of *Dracula* using the UICN standards. Since the taxon was not known at the time the manuscript was prepared a categorization will be included here.

Since collection data for the holotype are somewhat uncertain, we will only use the additional information to categorize the species using the UICN criteria. *D. senex-furens* is categorized as Vulnerable (VU). *Dracula senex-furens* is only known from plants in cultivation originating from a single location. It has not been found within the national system of protected areas. The current state of the population is unknown, but is likely to be at risk from severe habitat fragmentation; thus, criterion D2 applies as *D. senex-furens* is currently only known from one location. Criterion B is not applicable as nothing is currently known about the wild populations of the species.

**DRACULA CALLITHRIX**, N. Peláez, Buitrago & Mayer, sp. nov.

Similis *Draculae senis-furentis*, a qua differt inflorescentia, floribus et planta minoribus, lamella centrali labelli non intersecante lamellas praecipuas laterales, sepalis atque caudis brevioribus, tribus tantum lineis ad pollinia ducentibus bene signatis supra columnam, sepalis albis et purpureis nec luteis et rubro-vinaceis.

**Type:** COLOMBIA, Dept. of Nariño, in the neighborhood of Ricaurte, unknown collector and altitude. Flowered in cultivation at Orquifollajes Ltda., in Guane, Antioquia, 6 June 2008. Peláez NP0283 (holotypus JAUM 44187 (Figures 7A-7D) fl, fr, alcohol-glycerin stored material; isotype, Peláez NP0284, HUA 166135 alcohol-glycerin stored material and HUA 166135, dried material). Herbarium specimens prepared by E. Buitrago and N. Peláez, August 09/2008.

**Plant** medium-sized, epiphytic, densely caespitose, roots coarse. Ramicauls short, erect, stout, 3.5-5.5 cm long, enclosed by two to three loose, consecutive tubular sheaths. **Leaf** erect, carinate, thinly coriaceous, narrowly elliptical, subuplicate, apex acute, gradually narrowed into a subpetiolate base, 14.5-18.6 cm long including petiole, 1.6-1.9 cm wide. **Inflorescence** successively 3-5 flo-
wered, growing at the base of the ramicaul, breaking through the basal bract, lateral to descending; peduncles 10-11.6 cm long, dark green to brown, with several brown tubular bracts, each bract 0.9-1.2 cm long, pedicel 1.1-1.7 cm long, brown. **Sepals** white, with small wine red to deep purple lines and dots gradually decreasing in size and increasing in density towards the petals, lateral margins yellow; **Dorsal sepal** subtriangular, with a short ovate base, apically acute, with a short deep purple line above the column, abruptly contracted into a dark wine red erect tail, 2.1-2.3 cm long without the tail, 11.3-12.1 cm long including tail, 2.1-2.4 cm wide. **Lateral sepals** subtriangular, obtuse, with a short ovate base, connate to 2-2.2 cm each other, connate 0.8 cm to the dorsal sepal forming a shallowly cupped-shaped, relatively spread flower, sepals of the same colors and spotted patterns as the dorsal one; sepals 1.8-2 cm wide x 1.9-2.3 cm long without tail, 10.4-12.2 cm including tail, gradually contracted into a dark wine red to brown tail; **Indumentum** of the sepals consisting of three types of structures and their transitions, type I (massive base with one to four apiculate endings) surrounding petals and hypochile, type II (oblong trichomes ending in one rounded cell) in the mid region of the sepals, type III (long white multiseriate trichomes, basally enlarged, ending in one acute apiculated cell) in the marginal and submarginal areas, trichomes relatively dense, indumentum larger in marginal and submarginal regions of sepals. **Petals** cartilaginous, oblong, bivalvate, cream colored, with yellow and dark brown smooth papillae in the apex between the laminae conforming the valvae, longitudinally exhibiting centrally red-brown pigmentation, 3-4 mm long x 1-2 mm wide at the apex, inner lamina terminally acute, outer lamina rounded, denticulate. **Lip** articulated with the column, spathulate, divided into an hypochile and epichile; **hypochile** 4 mm long x 3-4 mm wide, oblong, slightly apically narrowed, folded by 90° and cleft centrally forming a pseudonectary with pale pink margins, pseudonectary internally white with a cavity prolonged through the hypochile, ending in a short acute pale pink spotted callus continuous with the central carina of the epichile; **epichile** white, saccate, 5-6 mm wide x 4-5 mm long, with three main branching white lamellae, carinae prolonged to the margin creating denticulate erect edges. **Column** yellow, ventrally white, semiterete, 3-4 mm long x 1 mm wide; column foot 2-3 mm long; anther cap white. **Ovary** 8-12 mm long x 3-4 mm wide, ovary dark brown, subverrucose.

**Etymology:** From the mammalian genus *Callithrix*, referring to the similarity between the white hairy flowers of this species to the small white monkeys (“titis”) that inhabit the low elevation rain forests of South America.

**Distribution:** A single collection of this species comes from the southern region of Colombia, in Dept. of Nariño. Although this area had been explored previously by collectors apparently this taxon remained undiscovered. A number of *Dracula* species have been described from Nariño, but none are similar to this species. According to current data the species is distributed in a small area near
Ricaurte. No details are currently known about its local abundance or exact geographic distribution.

Diagnostic Characters: (Figures 7A-D and 8) This species is distinguished from all others of the genus by the following character combination: 1) a fully articulated lip, 2) white purple dotted and spotted sepals, 3) abundant and long indument in most part of the sepals, 4) lip with three main branching lamellae, 5) central main lamella of the lip bifurcating and not intersecting apically with the two parallel secondary lamellae, 6) lamellae prolonging to the edge creating denticulate margins, 7) a rounded, sacciform, relatively shallow epichile with erect margins bigger than the hypochile, 8) margins of the dorsal sepal non retrorse, 9) absence of two well demarcated calluses in the sepals on the sides of the column, 10) inflorescences lateral to descending, and 11) leaves acute and narrowly elliptical to linear.

Phylogenetic Relationships: Although to some extent superficially similar to D. senex-furens and D. bellerophon, it is not clear whether this similarity resulted from kinship or convergent evolution. Following Luer’s (1993) systematics of Dracula this species would belong to Subgenus Dracula, section Dracula, subsection Dracula, series Grandiflorae-Parvilabiatae. Nevertheless, this and other series created by Luer (1993) have been shown to be polyphyletic (Peláez, 2003). D. callithrix has not been included in any phylogenetic analysis so far. It is premature to propose hypotheses about its ancestor descendant-relationships. Phylogenetic studies including this species are required.

Taxonomic and additional Notes: Material of this species was found at Orquifollajes, having been in culture for many years. There is no doubt that the plants came from the wild. The sepal shape and coloration of D. callithrix (Figures 7A and 7C) are most similar to those of the D. senex-furens (Figures 3A-B) described in this paper. D. callithrix can be differentiated from D. senex-furens by the flower, inflorescence and plant size, D. callithrix being smaller, having narrower sepals and white flowers with deep purple spots and dots that are more widely distributed throughout the sepals, instead of cream to pale yellow with dark wine red spots and dots largely limited to the edges and central halves of the sepals. Also, the central main carina of the lip (Figures 7B and 8) does not intersect with the main parallel secondary carinae, the tails and sepals are shorter and it has only three well demarcated continuous pollination guides above the column. Finally, all the differences with D. bellerophon mentioned in the description of D. senex-furens (see above) are also valid for this taxon.

Floral Fragrance and Pollinator: A weak scent has been detected in the flowers of this species when they have been cut and placed inside closed receptacles. The scent is mushroom-like as in other species of the genus. No molecular analysis of its fragrance has been undertaken so far. The pollinator might possibly be a fly of the genus Drosophila (Drosophilidae) as has been observed by the authors.
for other species in the genus. Nevertheless, no observations related to the pollination of this taxon have been made so far in or ex situ.

**Red list status: CR**

A recent publication by Calderon et al (2007) categorized all the Colombian species of *Dracula* using the UICN standards. Since the taxon was not known by the time the manuscript was prepared a categorization will be included here.

This species is known from a single location outside of the system of protected areas that is estimated to include an area of less than 100 km²; therefore, it is categorized as *Critically Endangered* (CR) according to criteria B1ab(i)(iii). The population is believed to be at risk of extinction due to loss of the quality of its habitat. According to recent investigations of the only location from which it is known, it is estimated that the population may have been reduced by 50% or more in recent years, therefore fulfilling criterion A2cd for a categorization of Endangered. The species is distributed in a very small area of about 20 km² and known from less than 5 localities, therefore fulfilling criterion D2 for a categorization of Vulnerable.

**MASDEVALLIA VIRGO-ROSEA** E. Buitrago, N. Peláez & G. Meyer, sp nov.

Luer (2006) recently decided to subdivide *Masdevallia* into several new genera, according to some preliminary results obtained by Abelle et al (2005). Nevertheless, since it seems premature to subdivide the genus based on these results we will keep using the previous nomenclature and will describe this species as part of the genus *Masdevallia*.

Species ad subgenus *Amanda* Luer pertinens. Planta mediocris, similis *Masdevalliae vittatulae*, a qua differt inflorectia laxa, successive biflora, sepalis et petalis marginibus integris, sepalis lateralibus oblique ovatis ornatis punctis clare violaceis, petalis oblongis, subfalcatis, labello oblongo, pandurato, hypochilo oblongo, truncato, anguste fisco in articulatione cum pede columnari, epichilo apice rotundato, convexo et revoluto, pede columnari apicaliter laminari et ovario verruculoso.

**Type:** COLOMBIA, Dept. of Nariño, Monopamba, (2000-2200 m.a.s.l.), known from the Andes of southern Colombia, (Nudo de los Pastos, eastern slope). Collected by Jose-Luis Aguirre (F.Villegas, pers. com, 2008). Flowered in cultivation at Orquifollajes (Guarne), Medellín Ant. August 2008 NP0289 (Holotype JAUM
An additional collection (alcohol-glycerin material, NP0290) of the same plant was deposited at HUA. Herbarium specimens prepared by E. Buitrago and N. Peláez, August 09/2008.

**Plant** epiphytic, medium-sized, caespitose, roots slender. Ramicauls short, erect, slender, 3.5–4 cm long, enclosed by one to two tubular sheaths. **Leaf** erect, coriaceous, petiolate, elliptical, subacute, subplicate, 7–9.5 cm long including petiole, 1.6–1.8 cm wide, narrowly cuneate below into the petiolate base. **Inflorescence** green to brown, successively two flowered, borne by a slender, erect, glabrous peduncle, 8.8-9.2 cm long, with one to two bracts above the middle; floral bracts dark green to brown, thin, inflated, ovate, enclosing ovary and pedicel, 5–7 mm long; pedicel 5–7 mm long. **Sepals** with three prominent veins, pale cream with diffused light purple spots and dots, ventrally yellow, glabrous. **Dorsal sepal** pale cream, with pale yellow spots at base and three prominent purple veins ending in dots, ovate, concave, 3.8–4 cm long, 8–1.1 cm wide, connate to the lateral sepals for 8–9 mm to form a sepaline cup, apically rounded and abruptly contracted into a slender brown and yellow 2.8–2.9 cm long tail. **Lateral sepals** pale cream with minute pale yellow spots at the base, diffusely spotted with light purple to pale cream, with three ill-demarcated purple veins; obliquely ovate, 4–4.8 cm long, 0.6 cm wide, 1–1.1 cm connate, apices oblique subacute and narrowly contracted into light brown to yellow tails, 2.2–2.3 cm long. **Petals** cartilaginous, translucent, white, oblong, subfalcate, 5–6 mm long, 3 mm wide, dilated on the labelar margin between the middle and lower thirds, apex with an acute apiculum, a longitudinal callus above the base. **Lip** articulated with the column, oblong, pandurate, 6 mm long, 3 mm wide, with marginal folds above the middle, tricallous; **hypochile** light brown with minute purple spots, oblong, basally truncated, shallowly cleft, hinged bellow; **epichile** brown, minutely purple spotted, ovobate, obtuse, margins decurved, apex rounded, convex and revolute. **Column** pale cream, ventrally marked with two purple lines, semiterete, 5 mm long, 1 mm wide, column foot 3 mm long, anther cap white. **Ovary** brown, verruculose, 3–4 mm long, 2 mm wide.

**Etymology:** From the latin words *virgo-rosea*, “a purple maiden”, referring to the delicate purple gorgeous flowers of this species.

**Distribution:** A single gathering of this species comes from the southern area of Colombia, in the Dept. of Nariño. Although this area had been previously explored by collectors apparently this taxon remained undiscovered. According to current data, the species is distributed in a small area near Monopamba. No details are known about its local abundance.

**Diagnostic Characters:** (Figures 9A-9D and 10) This species is distinguished from all others of the genus by the following character combination: 1) a lax, two-flowered, successive inflorescence, 2) verruculose ovary, 3) glabrous sepals with
smooth margins, 4) a concave dorsal sepal with three prominent purple veins, 5) obliquely ovate lateral sepals, 6) sepals with diffuse purple dots towards the mid region, 7) connate sepals forming a deep sepaline cup, 8) oblong sub-falcated petals with a longitudinal callus towards the mid region, 9) an oblong pandurate lip with its margins folded from the base to the middle, 10) an oblong truncated hypochile, cleft basally at the articulation with the column, 11) an ovate obtuse epichile with a rounded, convex, and revolute apex, 12) a column foot ending in a thin tissue layer, 13) a short semiterete column, marked with two purple lines in the ventral region.

**Phylogenetic Relationships:** Of the *Masdevallia* species included by Pridegeon (2001) and Abele (2005) in their phylogenetic analyses, *Masdevallia caloptera* is the most similar to *M. virgo-rosea*. *M. caloptera* was found to be closely related to *M. ophioglossa* and *M. nidifica* in the first study, and *M. nidifica* and *M. meleagris* in the second. Nevertheless, the statistical support for these relationships is small, which precludes substantiation of the exact phylogenetic relationships of these species at this time.

Following Luer’s (1986) systematics of *Masdevallia*, prior to his recent set of hypotheses where the genus was subdivided into several new genera (Luer, 2006), this species would belong to Subgenus Amanda. Nevertheless, this and other taxa created by Luer (1986) have been shown to be polyphyletic (Pridegeon et al. 2001; Abelle, 2005). In Luer’s new system this species would belong to the genus Spilotantha. Nevertheless, Abelle’s et al. (2005) study had been only briefly summarized in a short communication, and it is not yet possible yet to replicate these results due to lack of public access to the DNA sequences used. The methods and parameters used in the phylogenetic analysis to process the matrix are also unknown, since they were not described in detail. Also, this study lacks extensive sampling in the genus and the results are far from conclusive (some of the clades have a relatively poor support and are poorly resolved at intrageneric and intergeneric levels). Thus, we do not accept the new Luer’s classification as it is based on this set of results.

*M. virgo-rosea* has not been included in any phylogenetic analysis so far. It is premature to propose hypothesis about its ancestor descendant-relationships. Phylogenetic studies including this species are required.

**Taxonomic and additional Notes:** *M. virgo-rosea* is to some extent superficially similar to *M. vittatula* and *M. caloptera*. It is not clear whether that similarity might have resulted from kinship, convergent evolution, natural hybridization, or a particular combination of some of these processes. Material of this species was found at Orquifollajes, having been in culture for several years. The plant produces a few-flowered successive inflorescence. This contrasts *M. vittatula*, where multiple flowers develop and open at the same time. Interestingly, sepal
shape and coloration of *M. virgo-rosea* (Figures 9A-9B) are to some extent similar to those of *M. vittatula*. One possibility is that this resemblance resulted from a hybrid origin of *M. virgo-rosea* or that introgression with *M. vittatula* had occur at some point in the past. Only a single plant of this species was collected in the wild together with *M. vittatula*, supporting the hypothesis of a possible hybrid origin for *M. virgo-rosea*. Nevertheless, this hypothesis is the result of the authors' intuitions. At this point, not enough is known about the size and distribution of the *M. virgo-rosea* population, nor the extent of its overlap with the similarly poorly studied *M. vittatula*. Besides gross morphological and some coloration pattern similarities, no current data support this hypothesis. Detailed anatomical, morphological and DNA studies are needed to test if hybridization played any roll in its origination.

**Floral Fragrance and Pollinator:** A weak scent has been detected in the flowers of this species when they have been cut and placed inside closed receptacles. No molecular analysis of its fragrance has been undertaken so far. Pollinator and pollination mechanisms are unknown.

**Red list status: VU**

A recent publication by Calderon *et al* (2007) categorized all the Colombian species of *Masdevallia* using the UICN standards. Since the taxon was not known at the time the manuscript was prepared a categorization will be included here.

*M. virgo-rosea* is categorized as *Vulnerable* (VU). *M. virgo-rosea* is only known from cultivated plants obtained from a single location and is not found within the national system of protected areas. The current state of the wild population is unknown, and it is possible that its habitat has suffered from forest fragmentation. Thus, given that it is known from a single location, criterion D2 is applicable. Criterion B is not applicable because of lack of information about the current status of the species in the wild.

**Dracula dens-canis** N. Peláez (The Orchid Review 2007, 144(1272): 334-349)

**Red list status: CR**

A recent publication by Calderon *et al* (2007) categorized all the Colombian species of *Dracula* using the UICN standards. Since the taxon was not known at the time the manuscript was prepared, a categorization will be included here.
This species is known from a single location outside of the system of protected areas that is estimated to include an area of less than 100 km²; therefore, it is categorized as Critically Endangered according to criteria B1a. The species is distributed in a very small area of about 20 km² and known from less than 5 localities, therefore fulfilling criterion D2 for a categorization of Vulnerable.

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**Photographs:**


Pictures 1A, 1D, 1E, 1F, 1H, 1B, 1C, 1D, 6A, 6B, 7C, 7D, 9A-9E taken by N. Peláez (2008).

Picture 4 taken by JAUM herbarium (2008).