

(Lindl.) Soto Arenas, *comb. et stat. nov.*

BASIONYM: *Vanilla grandiflora* Lindl., *Gen. Sp. Orchid. Pl.* 435. (1840).

TYPE: Guyana Francesa, *Martin s.n.* (holotype, K-L!).

Illustr. Dunsterville y Garay *Venez. Orchid. Ill.* 1: 435 (1050, as *V. pompona*). N.v.: Palanda vainilla, Ecuador: vainillón.

*Vanilla claviculata* Duss non Sw.; *V. lutescens* Moq. ex Dupuis

COMMON NAMES: “vainillón” (French and British Antilles),

DISTRIBUTION: Apparently naturalized in the West Indies.

There is no adequate material from NW South America, but the specimens from the Amazon basin, Guyanas, Coastal Venezuela, and S Brazil are considered here to belong to *V. grandiflora*. It is unknown if the plants from W Ecuador are *V. pompona* or *V. grandifolia*.

ECOLOGY: Lubinsky, Van Dam & Van Dam (2006) report the pollination of *V. (pompona subsp.) grandiflora* by male *Eulaema meriana*, one of the largest of the euglossine bees. They also photographed a male *Eulaema cingulata* gathering scents from the mature fruit of this species. There has been at least one other report of euglossine bees brushing on *Vanilla* fruits (Madison, 1981). It is quite possible that the Euglossini may play a role in the dispersal of *Vanilla* seeds, as well as the pollination of the flowers.

*Vanilla pompona* is very similar to *V. grandiflora* Lindl. (“French Guiana: without precise locality, *Martin s.n.*, K-L!), and the latter is has been recognized as a synonym by most orchid taxonomists. However, *V. grandiflora* is different because it has a rather oblong lip blade, not flabelate to obscurely trilobed as in *V. pompona*. In *V. grandiflora* the flowers are larger, with the lip > 80 mm long, the callus 9-10 mm long and originated at ca. 60 cm from the base and the column is 60-75 mm long; also the apical thickening is less conspicuous in *V. grandiflora* and the flowers have usually spreading segments, while *V. pompona* is usually closed, although occasionally, specimens with spreading segments on sunny days are found, as the illustrated in fig. 13.

*Vanilla lutescens* Moq.-Tand. described from material of Paraguay [*M. Coudert*, cultivated at the Faculté de Médecine de Paris, the type, not seen; probable duplicate at W(35455)!] is also similar to *V. grandiflora* and maybe conspecific with it.

REFERENCES: Chiron, G.R. & R. Bellone. 2005. *Les orchidées de Guyane Française*: 138, photo p. 93.

13c. *Vanilla pompona* Schiede subspecies *pittieri* (Schltr.) Dressler, *comb. et stat nov.*

BASIONYM: *Vanilla pittieri* Schltr., *Fedde Rep.* 3: 106. 1906.

TYPE: Costa Rica: In der Wäldern an Ufern des Río Ceibo bei Buenos Aires, c. 200 m. M-H. *Pittier no. 6600*, blühend im Januar 1890, B(destroyed); AMES(24329; drawing of the holotype)! BR!

DISTRIBUTION: Honduras, Nicaragua, W Costa Rica and the Pacific side of Panama.

The available Costa Rican material is not very well-preserved, but seems to be more similar to the Mexican populations of the Pacific slope; the name *V. pittieri* Schltr. is available to these Costa Rican populations. The type of *V. pittieri* was lost in Berlin bombing; a sketch of the type made under R. Schlechter’s supervision, and a rather crude illustration of the flower is kept at AMES; the lip is shown as entire, with a very elliptic blade, as it had been prepared from an immature bud. There are additional specimens from the area of Buenos Aires, Puntarenas, that match our concept of *V. pompona*.

OTHER RECORDS: NICARAGUA: CHONTALES: ca. 2.8 km above (N of) Cuapa; ca. 12°17’N, 85°23’W, elev. 400-500 m; roadside, pastures, disturbed evergreen forest on hillside, and bank of small stream. One seen, climbing up trunk of large tree in disturbed forest near road, section of lower stem collected, *W.D. Stevens, B.A. Krukoff 3690* \*SEL(049330; sterile)! SEGOVIA: *Oersted* W(19359)! Plant - Large thick (up to 2 cm) climbing leafy stems. Flowers- Large light yellow sepals and petals, yellow-orange lip. Light yellow column, orange on anterior face [mounted with description, notes an analytical drawing] *A.H. Heller s.n.* \*SEL(003850)! NUEVA SEGOVIA: Quilali, ca. 13°34’N, 86°01’W, elev. 430 m, cultivated, said to have been collected wild in the vicinity about 10 years earlier; flowers yellow-green, fragrant, heavily visited by euglossine bees, fruits fleshy, dark brown, aromatic, 16 March 1980, *W.D. Stevens, B.A. Krukoff 16829*

\*SEL(049331)! **ZELAYA**: Cerro Livico, 7 km northeast of Siuna, forest slope; elev. 500 m. Climbing trunk of tree 28 April 1978, D. Neill 3670 \*SEL(047695; sterile)! **COSTA RICA**: **GUANACASTE**: Flores amarillas. Enredadera subiendo tronco de árbol, en chaparral o bosque poco denso dentro de sabana cerrada. A 5 millas al sur de La Cruz, Liberia. Alt. 200 m, febrero 11, 1963, *A. Jiménez M. 313* \*F(1606969)! 550 m, *Calvo 1136* F(1456238)! Parque Nacional Guanacaste, Estación Maritza, sendero a la cima del Volcán Orosí. Bosque primario y secundario, 10°57.6'N, 85°29.6'W, 600 m. Planta epífita, creciendo sobre un árbol a 5 m de altura y a la orilla de una quebrada. Frutos verdes. 2 julio 1989, *INBio 132* INB! \*CR(fruit)! **PUNTARENAS**: Cantón de Buenos Aires. Along the Río Ceibo, Ujarrás. 09°14'00" N, 83°18'00" W, 500 m. Thick stemmed vine; climbing high on trunk of tree in riparian forest. Lvs. succulent, deflexed. Just one young bud and one old, dry flower seen. 9 March 1993. *M. Grayum 10237* INB! Esparza Macacona, margen derecha, quebrada La Turbina. Bejuco trepador, botones florales verde tenue, flor de corola amarilla, aromática, 15 enero 1987, *G. Herrera & E. Herrera 466* MO(3594340)! **WITHOUT PRECISE LOCALITY**: "*Vanilla reichenbachii*", *Endres 270* W(16231, 16175, 16176)! Sepals and petals greenish yellow. Lip orange yellow. Pie del Turrubares, 150 m, March 6, 1926 *A. Alfaro 269* \*AMES(31487, \*31487)! In forest between Colonia & Las Huacas, May 25 1903, *O.F. Cook & C.B. Doyle 742* \*US(474659)! "Costa Rica", dried leaf from *M. Godefroy-L.*, Paris, 1895 K! **PANAMA**: **PANAMA**: Low places contiguous to City, Alt Sea level. Grows in damp places. Climbs trees up to 40-60. Flowers yellow, with orange throat. Flowers Feb-March. 1919, *C.W. Powell 137* AMES(\*23763; AMES 28290 is *V. phaeantha*)! Moist woods; large herbaceous vine, Río Paraíso, above East Paraíso, January 7, 1924, *P.C. Standley 29919* \*AMES(31437, sterile)! \*US(1225393)! Vine on west shore, Barro Colorado Island, March 11, 1931, *C.L. Wilson 119* \*F(636191)! Barro Colorado Island, shores of Gatun Lake, South of Lab., Aug 28th 1929, *W.N. Bangham 458* \*AMES(71357, fruit)! Near Canal Zone, *C.V. Piper s.n.* \*AMES(36948)! Low thick scrub along R. Tecumen, north of Chepo road, up to 30 m. March 10, 1935, *A.A. Hunter and P.H. Allen 852* \*AMES(42162)! \*F(1329667)! \*US(1976167)! Coastal thicket; large herbaceous vine; common, Punta Paitilla, January 12, 1924, *P.C. Standley 30788* \*US(1229496)! Parque Nacional Altos de Campana. Epífita con botones florales verdes. Fuera del parque, a 1 km de la oficina del parque. Sendero de interpretación, 1 km al este del campamento de los guardabosques de INRENARE. Bosque húmedo tropical premontano. Elevación entre 800 y 900 m. 8°40'N; 79°55'W. 23 de abril de 1993, *M.D. Correa, E. Montenegro & E. Hidalgo 9460* PMA! Cerca de Cerro Azul, 14.8 km al N de la carretera Cd. de Panamá-Tocumen, camino Cerro Azul-Cerro Jefe, vegetación secundaria con *Terminalia* y *Byrsonima*, ca. 600 m s.n.m., trepadora, estéril,

toda la población con hojas elípticas, grandes y tallos gruesos, 4 junio 2001, *M. Soto 9921, G. Salazar, J. Linares y R. Gregg* PMA! in cult., at Smithsonian Tropical Research Institute in Balboa. Voucher: fragrance collection. 18 Mar 1979, *J.D. Ackerman 1354* SEL(039338)! In Powell's garden; large vine, Balboa, Non., 1923-Jan., 1924, *P.C. Standley 28570* \*US(1225365; sterile)! **COCLE**: ca. 5 km al N de El Copé, entrada del Parque Nacional Omar Torrijos, vegetación secundaria abierta, derivada de bosque húmedo tropical premontano con *Vochysia*, ca. 700 m s.n.m. 2 junio 2001, *G. Salazar J. Linares, M. Soto y R. Gregg* PMA!

REFERENCES: Hamer, Orch. Nicaragua, Ic. Pl. Trop. pl. 1195. 1984.

14. *Vanilla sarapiquensis* Soto Arenas, *sp. nov.*

TYPE: **COSTA RICA**: HEREDIA: Sarapiquí. Llanura de San Carlos. Sardinal. Bosques residuales y tacotales camino a Finca Dos Loas. 10°31'45"N, 84°05'32", 70 m. Bejuco herbáceo. Sépalos verde crema, labelo blanco, columna con la punta negra, 10 May 1995, holo. *J.F. Morales 4082, E. Lépez, V.H. Ramírez & A. Rojas* INB! iso. apparently at MO.

Vanillae costaricensis aemulens differt inflorescentiis bracteisque minoribus, floribus longioribus, labello suborbiculari, 3-lobato, callo duobus carinis incrassatis prominentibus in apicem confluentibus.

Hemiepiphytic vine, leafy. **Stems** 4 mm thick; internodes 6.5-7.8 cm long. Aerial **roots** flattened, ca. 2 mm wide. **Leaves** obscurely petiolate, the petiole canaliculate, ca. 7 mm long, 3.5 mm wide; blade elliptic, long acuminate, somewhat cuneate at base, membranaceous-chartaceous in dried condition, 15.9-19.5 x 4.8-7 cm. **Inflorescence** very different from the vegetative shoots, a 4-flowered raceme 5.5 cm long, internodes up to 1.5 cm long; peduncle ca. 26 mm, rachis ca. 2 mm thick. **Bracts** scale-like, ovate to lanceolate, acuminate, concave, 9 x 4 mm. **Flowers** successive, with rather spreading segments, showy, ca. 7 cm in diameter; tepals green-cream colored, lip white; of heavy substance. **Ovary** rather sigmoid, terete, somewhat thickened at base, smooth, inconspicuously sulcate, 42-53 mm long, 3-4 mm thick. **Dorsal sepal** rather spreading, convex, the margins reflexed, the apex slightly incurved, slightly undulate; elliptic, apex acute-subacute, extreme apex