NOTES ON *CATTLEYA* LINDL. (ORCHIDACEAE) FROM BRAZIL

C.N. Fraga[1], R.A.X. Borges[2] & A.P. Fontana[2]

[1]Instituto de Pesquisas Jardim Botânico do Rio de Janeiro. Rua Pacheco Leão, 915, Jardim Botânico, Rio de Janeiro, 22.460-030, Rio de Janeiro, Brasil. e-mail: cnfraga@jbrj.gov.br

[2]Projeto CORES – Conservação das Orquídeas em Risco de Extinção. Rua Pacheco Leão, 915, Jardim Botânico, Rio de Janeiro, 22.460-030, Rio de Janeiro, Brasil.

ABSTRACT

Nomenclatural and taxonomic changes are proposed in *Cattleya* (Orchidaceae): *Cattleya vandenbergii* Fraga & R.Borges is proposed to replace *C. duveenii* (Fowlie) Van den Berg (*non* Pabst & A.F.Mello); *Laelia wetmorei* Ruschi is transferred to *Cattleya*, and *Laelia* ×*espirito-santense* Pabst is lectotypified and included in its synonymy; a new status as nothospecies is proposed for *Cattleya* ×*fidelensis* (Pabst) Van den Berg.

Van den Berg et al. (2000) showed that *Laelia* Lindl. is polyphyletic based on molecular sequence data. This genus was then restricted to the species from Mexico and the remaining taxa placed in other genera. Since then, the Brazilian species previously attributed to this genus have been transferred to different genera: *Sophronitis* Lindl. (van den Berg & Chase 2000); *Hadrolaelia* (Schltr.) Chiron & V.P.Castro, *Hoffmannseggella* H.G.Jones, *Dungsia* Chiron & V.P.Castro, and *Microlaelia* Chiron & V.P.Castro, keeping *Sophronitis* with only those taxa prior to van den Berg & Chase (2000) (Chiron & Castro Neto 2002); *Brasilaelia* Campacci (Campacci & Gutfreund 2006) and *Chironiella* Braem (Braem 2006) for few species of *Hadrolaelia*; and *Cattleya* Lindl. for the whole group (van den Berg 2008).

The most recent phylogenetic analysis based on molecular data showed that the Brazilian species of this group form a clade nested within *Cattleya* (van den Berg et al., in press) and several combinations were proposed and names in *Cattleya* reinstated (van den Berg 2008). However, *Cattleya duveenii* (Fowlie) Van den Berg is an illegitimate name (later homonym) and *Laelia wetmorei* Ruschi has not been transferred to *Cattleya*. The purpose of this work is to formalize the changes for the two names and to indicate the nothospecies status of *Cattleya* ×*fidelensis* (Pabst) Van den Berg.

Cattleya vandenbergii Fraga & R.Borges, **nom. nov.**

Basionym: *Laelia duveenii* Fowlie, Orchid Dig. 52. 180. 1988.

Sophronitis duveenii (Fowlie) Van den Berg & M.W.Chase, Lindleyana 15: 116. 2000. *Hoffmannseggella duveenii* (Fowlie) V.P.Castro & Chiron, Richardiana 2: 22. 2002. *Cattleya duveenii* (Fowlie) Van den Berg, Neodiversity 3: 6. 2008, *nom. illeg.* (*non* Pabst & Ferreira).

The binomial *Cattleya* ×*duveenii* was previously used by Pabst & Mello (1977) to describe a natural hybrid between *Cattleya harrisoniana* Bateman ex Lindl. and *C. guttata* Lindl. Therefore, the combination proposed by van den Berg (2008) was a later homonym to be replaced. The new name honors Cássio van den Berg, professor at the Universidade

Estadual de Feira de Santana and the principal Brazilian researcher on Laeliinae phylogenetics.

Cattleya ×wetmorei (Ruschi) Fraga & A.P. Fontana, **comb. et stat. nov.**

Basionym: *Laelia wetmorei* Ruschi, Bol. Mus. Biol. Prof. Mello Leitão, Sér. Bot. 29. 1. 1970. Type: BRAZIL. Espírito Santo: Santa Teresa, Rio Claro, 20 Jan 1970, A.Ruschi s.n., n.r. 11.030 (Holotype MBML, spirit!).

Laelia ×espirito-santensis Pabst, Bradea 2(4): 14. 1975. *Sophronitis ×espirito-santensis* (Pabst) Van den Berg & M.W.Chase, Lindleyana 16: 110. 2001. *Hadrolaelia ×espirito-santensis* (Pabst) Chiron & V. P. Castro, Richardiana 2(1): 24. 2002. ×*Hadrobrasilaelia ×espirito-santensis* (Pabst) Gutfreund, Colet. Orquídeas Brasil (Pré-anexo) 4: 101. 2006. Lectotype: illustration B, Bradea 2(4): 15. 1975 (designated here).

When describing *Laelia wetmorei*, Ruschi (1970) did not consider the hybrid nature of this taxon. However, in the commentary, he stated characteristics that might suggest a hybrid origin of the plant. The species was included in the synonymy of *L. xanthina* Lindl. by Pabst & Dungs (1975), a treatment accepted by van den Berg & Chase (2001), Chiron & Castro Neto (2002), and Braem (2006). According to F. Barros (pers. comm.), Pabst had recognized his mistake by examining the photo of *Laelia wetmorei* (Ruschi 1979, p. 39). Its leaves are purple-brownish and the flowers light yellow-rose with labellum purple at apex, whereas *Cattleya xanthina* (Lindl.) Van den Berg presents green leaves with wine dots and bright yellow flowers with purple veins on the labellum; measures of floral parts are also different between the two species. Therefore, following the combinations proposed by van den Berg (2008), we are proposing the transference of this nothospecies to *Cattleya*. Pabst (1975) described *Laelia ×espirito-santensis* as a natural hybrid between the current *Cattleya pumila* Hook. and *Cattleya xanthina* (Lindl.) Van den Berg. The holotype of this name was lost and its original illustration, which is sufficiently elucidative to identify this taxon, is designated here as lectotype. Based on the descriptions of *Laelia wetmorei* and its lectotype, we concluded that *L. ×espirito-santensis* is a synonym of that nothospecies.

Cattleya ×fidelensis (Pabst) Van den Berg, **stat. nov.**

Basionym: *Laelia fidelensis* Pabst, Orquídea (Rio de Janeiro) 29: 11. 1967.

Sophronitis fidelensis (Pabst) Van den Berg & M.W.Chase, Lindleyana 15: 117. 2000. *Hadrolaelia fidelensis* (Pabst) V.P.Castro & Chiron, Richardiana 2: 17. 2002. *Brasilaelia fidelensis* (Pabst) Gutfreund, colet. Orquídeas Brasil 4 (pré-anexo): 99. 2006. *Chironiella fidelensis* (Pabst) Braem, Richardiana 6: 109. 2006. *Cattleya fidelensis* (Pabst) Van den Berg, Neodiversity 3: 7. 2008. Type: BRAZIL. Rio de Janeiro: Serra de São Fidelis, PR. Campos, 25 Jan 1967, *col. Ign. Ex Coll. Lúcilio Leite*, Niterói (Holotype: HB 41267).

Pabst (1967) described *Laelia fidelensis* based on a plant collected by Júlio Sodré in 1940 and cultivated by Lucílio Leite. This plant was placed in the Herbarium Bradeanum (HB 41267). According to Tinoco (2005), Hoehne, Brade, and Pabst himself considered the possibility that it was a natural hybrid. Fowlie (1977) suggested that it could be a hybrid between species of sections *Cattleyodes* and *Hadrolaelia* (sensu Pabst & Dungs 1975) and Tinoco (2005) argued that it could be *Laelia ×juvenilis* Bleu, an artificial hybrid between *L. pumila* (Hook.) Rchb.f. and *L. perrinii* (Lindl.) Bateman (Linden 1893). The same assumption was considered by Leite (1979), whose plant was used for the original *L. fidelensis* description. Despite of

these, Mello-Filho et al. (1992) classified this species as "insufficient known" category in the red list of Brazilian endangered species. After three years developing research activities, examining herbarium and living collections, consulting proper references, interviewing local and regional orchid growers, and having carried out field expeditions to possible type localities (São Fidélis, Santa Maria Madalena and Campos dos Goytacazes cities, state of Rio de Janeiro), without any novelty, we concluded that *Cattleya fidelensis* (Pabst) Van den Berg is not threatened or extinct, but probably a natural hybrid. Initially, interviews pointed out that every cultivated plant has the same matrix (collection made by Júlio Sodré) or was generated through artificial reproduction. Second, analyzing species of *Cattleya* distributed in the same region (Tab. 1), we found that *C. perrinii* Lindl. and *C. bicalhoi* Van den Berg presented morphological characteristics very similar to *C. fidelensis*, suggesting to be putative parents, pending experimental crosses and/or genetic evidences for confirmation. In this manner, *C. fidelensis* must be recognized as a nothospecies, similar to the adopted by Cruz et al. (2003) for *Cattleya silvana* Pabst (=×*Sophrocattleya* ×*albanensis* (Rolfe) Van den Berb & M.W.Chase), and excluded from the list of Brazilian endangered species in MMA (2008).

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Table 1. Morphological comparison between *Cattleya* ×*fidelensis* and putative parental species.

Character	*Cattleya perrinii*	*Cattleya bicalhoi*	*Cattleya* ×*fidelensis*
Pseudobulb size (cm)	long (10-15)	short (5-7)	intermediate (4-5)
Leaf blade size (cm)	long (17-25)	short (7-10)	intermediate (10-12)
Spathe size (cm)	7-10	absent	2-3
Inflorescence size (cm)	shorter than leaves (7-15)	shorter than leaves (2-3.5)	longer than leaves (12-15)
# flowers/inflorescence	2-8	1 (rarely 2)	1-2
Dorsal sepal size (cm)	5.5-7 × 1.3-1.5	3.7-4 × 1-1.2	5.5 × 1-1.3
Lateral sepals size (cm)	5.5-7 × 1-1.3	3.7-4 × 1-1.2	5 × 1-1.2
Petals size (cm)	5.5-7 × 1.6-2.5	3.6-4 × 1.6-1.9	5.5 × 2-2.5
Labelum size (cm)	4-5.2	3.8-4.2	3.5-4
Labelum lobes margin	smooth-ondulate	smooth-ondulate	smooth-ondulate
Column	2.7-3.5	1.5-1.7	1-1.3

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