

GENERA ET SPECIES ORCHIDALIUM. 12. ONCIDIEAE

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Abstract. Three new genera of the tribe Oncidiinae (Vandoideae, Orchidaceae) are described: *Aurinocidium* Romowicz & Szlach., *gen. nov.*, *Concocidium* Romowicz & Szlach., *gen. nov.* and *Vitekorchis* Romowicz & Szlach., *gen. nov.* Taxonomic affinities of new taxa are briefly discussed and new combinations at the species level are proposed.

Key words: Orchidaceae, Vandoideae, Oncidiinae, *Aurinocidium*, *Concocidium*, *Vitekorchis*, neotropics

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All species of the subtribe Oncidiinae Benth. (Orchidaceae, Oncidiinae) were most often included into two genera *Oncidium* Sw. and *Odontoglossum* Kunth in Humb., Bonpl. & Kunth. in the past. Traditionally, these genera were separated by the angle between the lip and the column, though this feature varies greatly and does not separate two distinct groups. Chase (1986) divided Oncidiinae into two main complexes. The first embraced primitive plants, with conduplicate, dorsiventral leaves in both seedlings and adults, and with chromosome numbers mostly of 56 or 60. The advanced group embraced many short-lived twig epiphytes, with laterally flattened leaves in the seedlings, lower chromosome numbers, and often with sepaline nectaries. From a molecular point of view Chase and Palmer (1992) recognized 16 distinct clades within Oncidiinae, ten of them embraced members of *Oncidium* and *Odontoglossum* in the traditional sense. Authors suggested that Oncidiinae early divided into several distinct clades. Additionally, Chase and Palmer (1992) support a chromosome number of $n = 28$ or 30 as the ancestral state for this group. According to Dressler (1981, 1993) there is no doubt that the generic classification of this subtribe is artificial, but no clear resolution is available to date. He included 77 genera and 1232 species into Oncidiinae.

Till now this subtribe lacks a modern taxonomic revision, especially the heterogeneous genera such

as *Oncidium*, *Odontoglossum* or *Miltonia*. In 2002 Chase published *The pictorial encyclopedia of Oncidium*. The author tries to divide *Oncidium* s.l. using modern molecular techniques.

Revising herbarium materials of the tribe Oncidiinae for *Gynostemium Orchidali* 4 (Szlachetko et al., in prep.) we came to the conclusion that new taxa in the subtribe Oncidiinae should be proposed.

Subtribe *ONCIDIINAE* Benth.

J. Linn. Soc., Bot. 18: 288. 1881.

1. *Aurinocidium* Romowicz & Szlach., *gen. nov.*

Oncidium Sw. sect. *Pulvinata* Lindl.

Genus hoc generibus *Oncidium* Sw. et *Walpuea* Regel *affine sed folio coriaceo ad pseudobulbum minuto unico, sepalis lateralibus liberis, callo labelli stricto, pilis granduliferis tectis et gynostemio glabro oncidioideo differt.*

GENERIC TYPE: *Aurinocidium pulvinatum* (Lindl.) Romowicz & Szlach. (= *Oncidium pulvinatum* Lindl.).

ETYMOLOGY. The name refers to the form of the leaves, which resemble donkey's ears.

Pseudobulbs small. Leaf single, stiff, coriaceous. Lateral sepals free. Lip callus simple, usually covered by glandular hairs. Gynostemium erect, stout. Column part slightly longer than anther, winged

near the stigma, wings obliquely ovate to elliptic, entire and papillate on margins. Column foot absent. Anther subapical, incumbent, operculate, ellipsoid, obscurely 2-chambered, papillate. Connective narrow, slightly thickened on the dorsal surface and apically elongate to form a roof-like projection. Pollinia 2, oblong obovoid, dorsiventrally flattened, hard, unequally and deeply cleft, empty inside. Caudiculae sticky, amorphous. Apical clinandrium obscure. Stigma large, elliptic, deeply concave. Rostellum short, conical-digitate in the middle, obtuse. Viscidium single, very small, elliptic, thick, fleshy. Tegula single, oblong, apically expanded and here selliform, thin, lamellate. Rostellum remnant bilobulate at the middle, with oblique shallowly concave plate between acute lobules.

NOTE. This genus is characterized by stiff, coriaceous leaves set on relatively small pseudobulbs. The flowers are similar to *Oncidium* and *Waluewa* at the first glance, but the lateral sepals are free, the lip callus is simple, usually covered by glandular hairs. The gynostemium is glabrous, similar to *Oncidium*. Chase (2002) based on DNA analysis suggested overall relationship of *Oncidium* Sw. sect. *Pulvinata* Lindl. to *Trichocentrum* Poepp. & Endl. and *Saundersia* Rchb.f. It shares similar habit with the former, but the gynostemium structure and general flower architecture excluded their close affinity. *Saundersia* has been classified by Szlachetko (1995) in subtribe Leochilinae Szlach., a group of *Oncidieae* with completely different gynostemium organization. It has pendent inflorescence with small, campanulate flowers, densely pubescent ovary and lip distinctly longer than other tepals. It is difficult to explain the similarity in rbcL and ITS genes sequences in *Saundersia* and *Oncidium* sect. *Pulvinata*. This problem is treated widely in Górniak *et al.* (in prep.).

The following species from Brazil belong to the new genus. The new combinations are herein made:

Aurinocidium divaricatum (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium divaricatum* Lindl., Bot. Reg. **13**: t. 1050. 1828.

Aurinocidium edwallii (Cogn.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium edwallii* Cogn. in Martius, Fl. Bras., Orchid. **3**(6): 383. 1905.

Aurinocidium harrisonianum (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium harrisonianum* Lindl., Bot. Reg. **19**: t. 1569. 1833.

Aurinocidium hians (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium hians* Lindl., Bot. Reg. **24**: Misc. 65. 1838.

Aurinocidium pulvinatum (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium pulvinatum* Lindl., Bot. Reg. **24**: Misc. 61. 1838.

Aurinocidium robustissimum (Rchb.f.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium robustissimum* Rchb.f., Gard. Chron. **2**: 352. 1888.

Aurinocidium sphegiferum (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium sphegiferum* Lindl., Bot. Reg. **29**: Misc. 17. 1843.

2. ***Concocidium*** Romowicz & Szlach., *gen. nov.*

Oncidium Sw. sect. *Concoloria* Krzl., *p.p.*

Genus hoc generi *Oncidio* Sw. *affine sed recedit gynostemio oncidioideo cum tegula plana, sepalis petalisque aequimagnis, integris, sepalis lateralibus fere liberis, callo labelli stricto glabroque et labello lobis lateralibus nullis.*

GENERIC TYPE: *Concocidium concolor* (Hook.) Romowicz & Szlach. (= *Oncidium concolor* Hook.).

ETYMOLOGY. Combination of two words, *Oncidium* and the sectional name *Concoloria* Kraenzl.

Sepals and petals subsimilar. Lip with no basal lobules, callus simple, glabrous. Gynostemium

erect, rather short and stout. Column part slightly longer than anther, broadly winged near the stigma, wings obliquely rhomboid, entire and papillate on margins. Column foot absent. Anther subventral, incumbent, operculate, ovoid, obscurely 2-chambered, papillate. Connective narrow, slightly thickened on the dorsal surface and elongate apically. Pollinia 2, obovoid, slightly dorsiventrally flattened, hard, unequally and deeply cleft, empty inside. Caudiculae sticky, amorphous. Apical clinandrium obscure. Stigma large, obovate, deeply concave. Rostellum short but relatively massive, conical-digitate in the middle, obtuse. Viscidium single, quite large, ellipsoid, very thick, fleshy. Tegula single, oblong, thin, lamellate, delicate, flat. Rostellum remnant bi-lobulate at the middle, canaliculate on the dorsal surface.

NOTE. The genus is characteristic by having sepals and petals of similar size and shape, both with entire margins, almost free lateral sepals, simple and glabrous lip callus, lip lacking any basal lobules and gynostemium similar to *Oncidium*.

The genus embraces eight species so far, herein transferred to the new genus:

Concocidium brachyandrum (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium brachyandrum* Lindl., Sert. Orchid.: t. 25. 1838.

Concocidium concolor (Hook.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium concolor* Hook., Bot. Reg. **67**: t. 3752. 1841.

Concocidium dasytyle (Rchb.f.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium dasytyle* Rchb.f., Gard. Chron. 253. 342. 1873.

Concocidium disciferum (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium disciferum* Lindl., Fol. Orchid., *Oncidium* 24. 1855.

Concocidium endocharis (Rchb.f.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium endocharis* Rchb.f., Gard. Chron., n.s., I: 206. 1884.

Concocidium gracile (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium gracile* Lindl., Bot. Reg. **23**: t. 1920. 1837.

Concocidium graminifolium (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Cyrtochilum graminifolium* Lindl., Ann. Nat. Hist. **4**: 384. 1840.

Concocidium ottonis (Schltr.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium ottonis* Schltr., Orchis **8**: 61. 1914.

3. *Vitekorchis* Romowicz & Szlach., *gen. nov.*

Oncidium Sw. sect. *Excavata* Krzl.

Hoc genus *Oncidio* Sw. *affinis videtur sed differt tegula parva plana que, plus minusve viscidio aequilonga, pseudobulbis magnis unifoliaceisque, marginibus acutis basi foliis paucis circumcinctis et petalis maioribus sicut sepalis.*

GENERIC TYPE: *Vitekorchis excavatum* (Lindl.) Romowicz & Szlach. (= *Oncidium excavatum* Lindl.).

ETYMOLOGY. Dedicated to Dr. Ernst Vitek, the Curator of the Herbarium in Naturhistorisches Museum, Vienna.

Leaf single at the pseudobulb apex, basal leaves numerous. Petals larger than sepals. Gynostemium erect, elongate, stout. Column part *ca* twice longer than anther, basally fused with the lip, widely winged near the stigma, wings flabellate to obliquely ovate-triangular, uneven and papillate on margins. Column foot absent. Anther subventral, incumbent, operculate, ovoid, obscurely 2-chambered, papillate. Connective narrow, slightly thickened on the dorsal surface, more or less apically elongate. Pollinia 2, obliquely oblong obovoid,

slightly dorsiventrally flattened, hard, very unequally and deeply cleft, empty inside. Caudiculae sticky, amorphous. Apical clinandrium obscure. Stigma large or small, ovate to elliptic, deeply concave. Rostellum very short, conical-digitate in the middle, obtuse. Viscidium single, oblong elliptic, thick, fleshy. Tegula single, as long as viscidium or shorter, oblong, thin, lamellate, flat. Rostellum remnant bi-lobulate at the middle.

NOTE. The new genus is closely related to *Oncidium*, from which it differs by the unifoliate pseudobulbs with sharp edges, partially hidden by numerous basal leaves, by petals distinctly larger than sepals and by the small, flat tegula, which is subequal in length to the viscidium.

Vitekorchis boothianus (Rchb.f.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium boothianum* Rchb.f., *Bonplandia* 2: 14. 1854.

Vitekorchis buchtienii (Schltr.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium buchtienii* Schltr., *Repert. Sp. Nov. Regni Veg.* 27: 81. 1929.

Vitekorchis callistum (Rchb.f. ex Krzl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium callistum* Rchb.f. ex Krzl., *Pflanzenr.* 4. 50: 194. 1922.

Vitekorchis excavatus (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium excavatum* Lindl., *Sert. Orchid.* t. 25, 3. 1838.

Vitekorchis foveatus (Lindl.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium foveatum* Lindl., *Fol. Orchid., Oncidium* 52, 183. 1855.

Vitekorchis iricolor (Rchb.f.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium iricolor* Rchb.f., *Bonplandia* 2: 91. 1854.

Vitekorchis klotzschianus (Rchb.f.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium klotzschianum* Rchb.f., *Bot. Zeitung.* 10: 695. 1852.

Vitekorchis lepidus (Lind. & Rchb.f.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium lepidum* Lind. & Rchb.f., *Gard. Chron.* 1053. 1870.

Vitekorchis lucasianus (Rolfe) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium lucasianum* Rolfe, *Kew Bull.* 185. 1894.

Vitekorchis obryzantus (Rchb.f.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium obryzatum* Rchb.f., *Bonplandia* 2: 108. 1854.

Vitekorchis platyphilus (Schltr.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium platyphilum* Schltr., *Repert. Sp. Nov. Regni Veg., Beih.* 27: 114. 1924.

Vitekorchis vasquezii (E. A. Christ.) Romowicz & Szlach., *comb. nov.*

Basionym: *Oncidium vasquezii* E. A. Christ., *Lindleyana* 11(1): 21. 1996.

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