

Notes on *Eurystyles* (Orchidaceae), with a description of a new species from Mesoamerica

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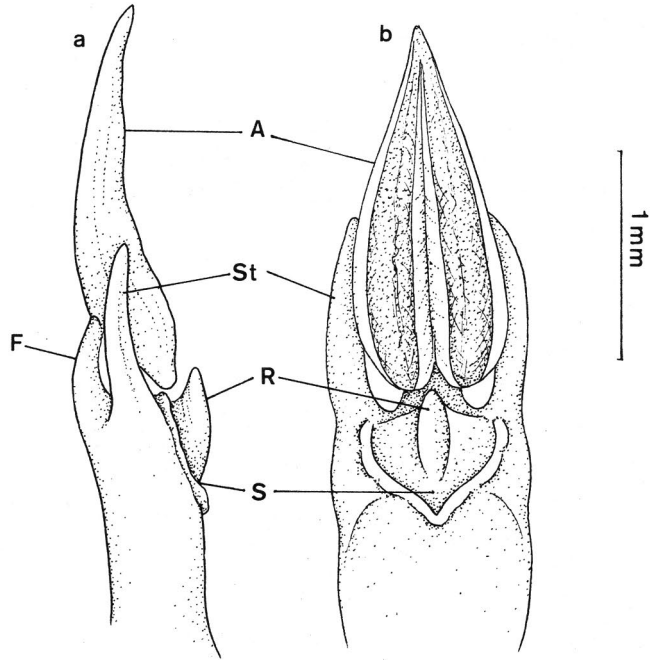
ABSTRACT: The taxonomic position of the orchid genus *Synanthes* Burns-Balogh, H. Robins. & M. S. Fost. is discussed and it is considered to be inseparable from the genus *Eurystyles* Wawra. *Synanthes bertonii* Burns-Balogh, H. Robins. & M. S. Fost., the type species of *Synanthes*, is transferred to *Eurystyles* as *E. bertonii* (Burns-Balogh, H. Robins. & M. S. Fost.) Szlach., *comb. nov.* *Pseudoeurystyles* Hoehne is considered as a subgenus, *Eurystyles* Wawra subgen. *Pseudoeurystyles* (Hoehne) Szlach., *stat. et comb. nov.* A new species, *Eurystyles cornu-bovis* Szlach., is described from Panama and Costa Rica and it is placed in the separate, newly established section *Dressleranthus* Szlach. A key to the infrageneric taxa of *Eurystyles* is given.

KEY WORDS: Angiospermae, Orchidaceae, *Eurystyles*, *Synanthes*, Mesoamerica

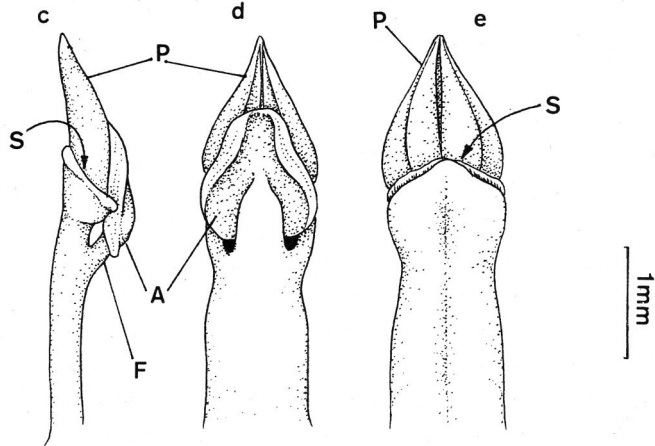
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The genus *Eurystyles* Wawra is composed of small, neotropical, epiphytic orchids with a capitate, usually dense inflorescence, untwisted, sessile ovary and adnate column foot. It was described by Wawra (1863) and placed in the order Zingiberales. Schlechter (1920) proposed the new genus *Trachelosiphon* Schlecht. with four species. Three of these he transferred from the genus *Stenoptera* Presl and one from *Stenorhynchos* L. C. Rich. *ex* Spreng. However, three years later Schlechter (1923) noticed that in no way did his *Trachelosiphon* differ from the earlier described *Eurystyles*. Hoehne (1943) recognized the new genus *Pseudoeurystyles* Hoehne for a group of small epiphytes with the lip lacking the nectar glands and the gynostemium, which are present in *Eurystyles*. Garay (1982) merged the two genera. According to his concept, *Eurystyles* includes 13 species. Burns-Balogh *et al.* (1985) proposed the genus *Synanthes* Burns-Balogh, H. Robins. & M. S. Fost., closely related to *Eurystyles*. According to these authors it differed from that genus primarily in the structure of the gynostemium. In addition, Burns-Balogh *et al.* (1985) also recognised *Pseudoeurystyles* as a genus of its own.

Detailed studies of the type specimens of both species included under *Synanthes*, viz.



FOSTER 83-42



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Fig. 1. Gynostemium structure of *Eurystyles bertonii* (Burns-Balogh, H. Robins. & M. S. Fost.) Szlach. (a-b) and *E. borealis* Hell. (c-e). A – anther; F – filament; R – “rostellum”; S – stigma; St – staminodium; P – pollinium (all drawn from type specimens).

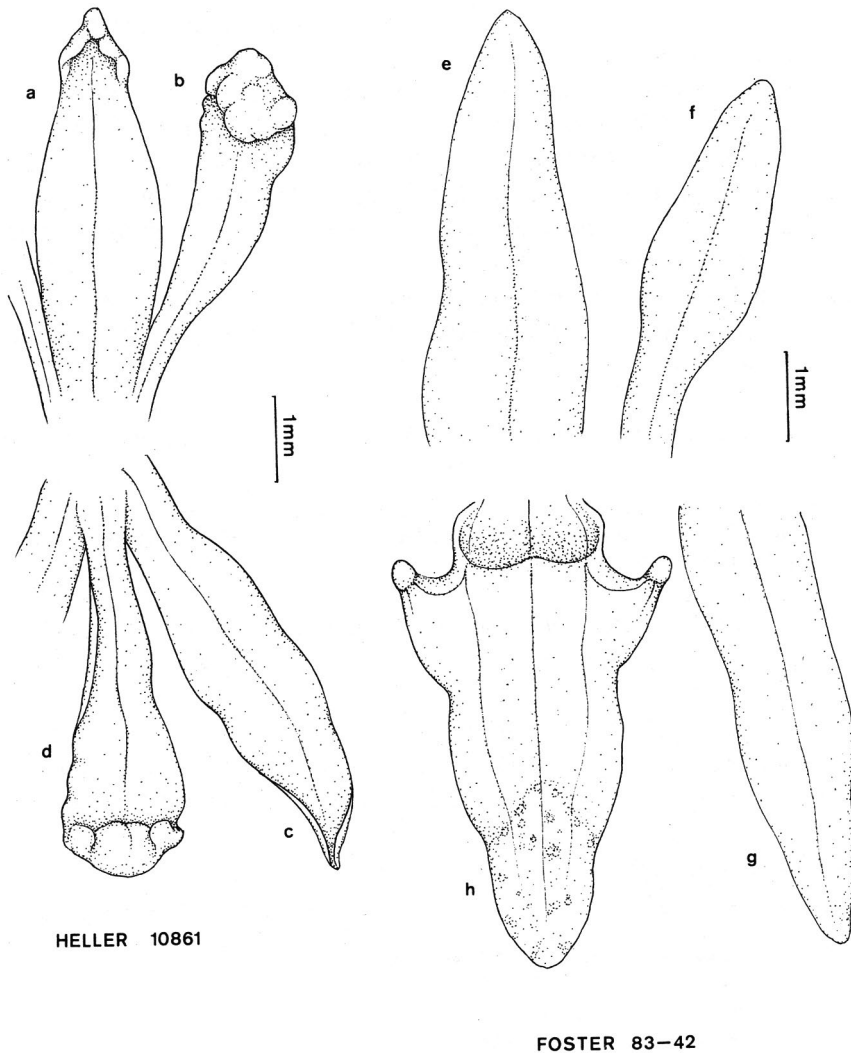


Fig. 2. Floral parts of *Eurystyles borealis* Hell. (a–d) and *E. bertonii* (Burns-Balogh, H. Robins. & M. S. Fost.) Szlach. (e–h). a, e: dorsal sepal; b, f: petal; c, g: lateral sepal; d, h: lip (all drawn from type specimens).

S. bertonii Burns-Balogh, H. Robins. & M. S. Fost. and *S. borealis* (Hell.) Burns-Balogh, H. Robins. & M. S. Fost., indicated that the genus was established on the basis of autogamic species (Figs 1–2). Self-pollination is a fairly frequent phenomenon in this group of orchids. Usually in obligatorily autogamic species, certain simplifications in the structure of gynostemium can be seen, the rostellum and viscidium most frequently undergoing reduction. This is the case, e.g. in certain European orchids of the genus *Epipactis* Zinn., as well as in *Lankesterella costaricensis* Ames and *Beloglottis* Schlecht. As the

autogamic species constitute a specific case of survival strategy, there is no need to isolate them as a separate genus.

My studies have shown no difference in the structure of the gynostemium in *Eurystyles* and *Pseudoeurystyles* to be so distinct as it would appear from the observations of Burns-Balogh *et al.* (1985) (Fig. 3). Quite a substantial group of species have an intermediate type of structure of the rostellum and stigma. In the case of both genera, however, the lip has a different structure – in *Pseudoeurystyles* it is almost identical as in species of the genus *Lankesterella* Ames (Fig. 4). In view of the above facts, I would propose to reduce *Pseudoeurystyles* to the subgenus within *Eurystyles* and to accept *Synanthes* as a synonym of *Eurystyles*. Accordingly the following nomenclatural changes are necessary.

***Eurystyles* Wawra, Oesterr. Bot. Zeitschr. 13: 223. 1863. Type species: *E. cotyledon* Wawra.**

Synanthes Burns-Balogh, H. Robins. & M. S. Fost., *Brittonia* 37(2): 158. 1985, *syn. nov.* Type species: *Synanthes bertonii* Burns-Balogh, H. Robins. & M. S. Fost., *Brittonia* 37(2): 159, f. 1–12. 1985 ≡ *Eurystyles bertonii* (Burns-Balogh, H. Robins. & M. S. Fost.) Szlach., *comb. nov.*

Eurystyles* Wawra subgen. *Pseudoeurystyles* (Hoehne) Szlach., *stat. et comb. nov.

Pseudoeurystyles Hoehne, Arg. Bot. Estado São Paulo 1(6): 129. 1943. Lectotype species: *P. lorenzii* (Cogniaux) Hoehne.

In 1989 I began to collect material for the revision of *Eurystyles sensu lato*. A year later, I was informed by Dr. R. Dressler, Gainesville, that he had found a new representative of small epiphytic *Spiranthinae* in Panama which proved it to be a new species.

***Eurystyles cornu-bovis* Szlach., *sp. nov.* (Fig. 5)**

Folia bracteaeque marginibus non ciliatis; auriculae labelli incrassationibus cornuboviformibus praeditae.

Plants tiny. Roots clustered. Stem 2.5–6.0 m long. Inflorescence few- to several-flowered, capitate, dense with minutely glandular axis. Leaves forming a rosette at the base of stem, 2.0–5.0 cm long, 0.6–1.1 cm wide, usually 5–6, lanceolate to elliptic, acute. Margins of blades non-ciliate. Petiole up to 0.5 cm long, broad. Flowers small, erect. Floral bracts ovate-lanceolate, narrowed towards the apex, acute, non-ciliate at the margins. Ovary untwisted, glabrous. Perianth glabrous. Petals and sepals thin, semi-transparent. Lip on distinct, broad claw which is adnate to the sepals tube. At the base of hypochile two auricles with horn-like callus on each. Isthmus wide, usually thickened in the center. Gynostemium erect. Column foot adnate to the ovary. Rostellum long triangular, similar to that of *Sarcoglottis*. Stigma bilobed, both lobes distinctly separated from one another.

TYPE: PANAMA. VERAQUAS. Between second and third branches of Rio Santa Maria, 10–12 km NW of Santa Fe, 4 August 1975, *Dressler 5077* (Holotype: FLAS).

PARATYPES: PANAMA. CHIRIQUI. Camp Hornitio, Fortuna dam site, long. 82°13'W, lat. 8°44'N, to Cerro Fortuna, 16 August 1976, *Dressler 5414* (FLAS); Valle de Fortuna, 7 June 1984, *Dressler s.n.* (FLAS). VERAQUAS. NW of Santa Fe, 4–5 September 1976, *Dressler 5434* (FLAS). CODE. Summit 7 km N of El Cope, area around the Rivera Sawmill, Alto Calverio, 5 July 1977, *Folsom 4166* (MO).

COSTA RICA. PUNTARENAS. Monteverde, Veracruz river valley south of reserve, lat. 10°15'N, long. 84°46'W, 22 August 1986, *Haber ex Bello & Claggett 5379* (MO).

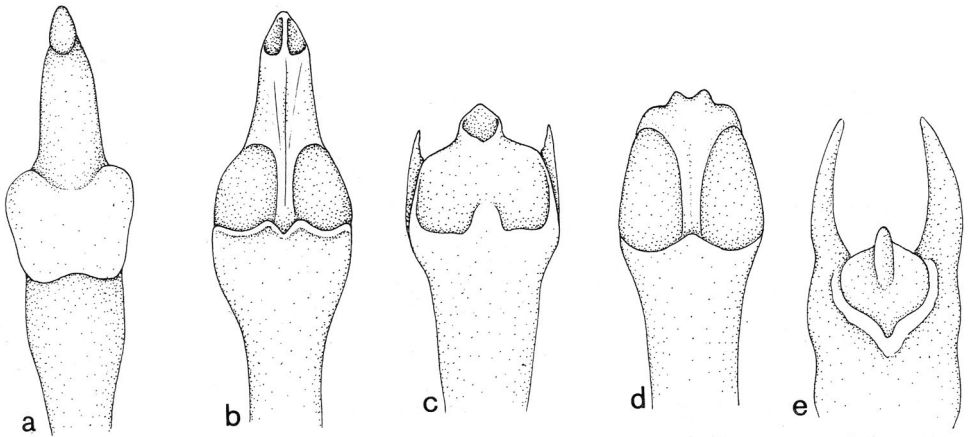


Fig. 3. Gynostemium morphology of *Eurystyles* species. a – *E. cogniauxii* (Kraenzl.) Schlecht. (*Regnell III 1204*, S – holotype); b – *E. cornu-bovis* Szlach. (*Dressler 5077*, FLAS – holotype); c – *E. alticola* Dod (*Dod 609*, US – isotype); d – *E. auriculata* Schlecht. (*Dressler 4911*, FLAS); e – *E. bertonii* (Burns-Balogh, H. Robins. & M. S. Fost.) Szlach. (*Foster 83-42*, US – holotype).

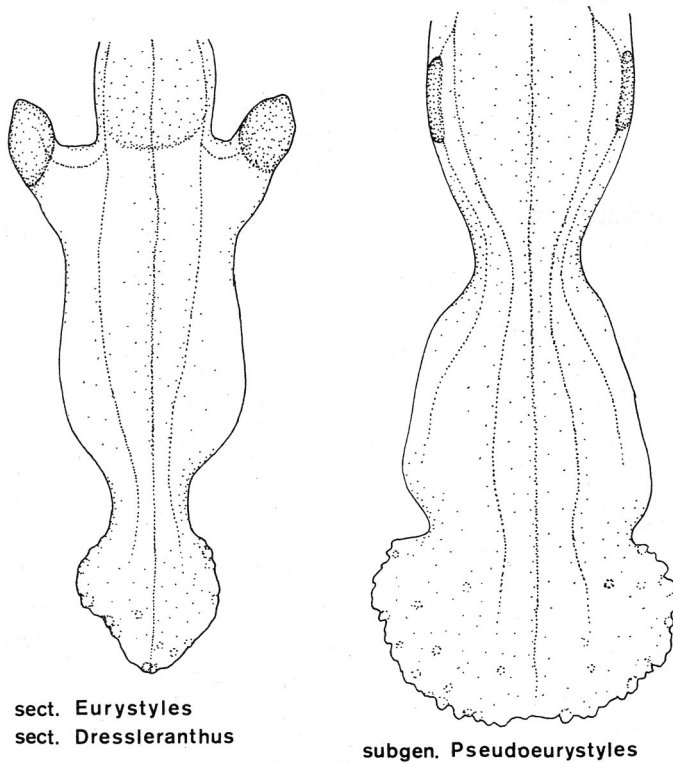


Fig. 4. Lip form in infrageneric taxa of *Eurystyles*.

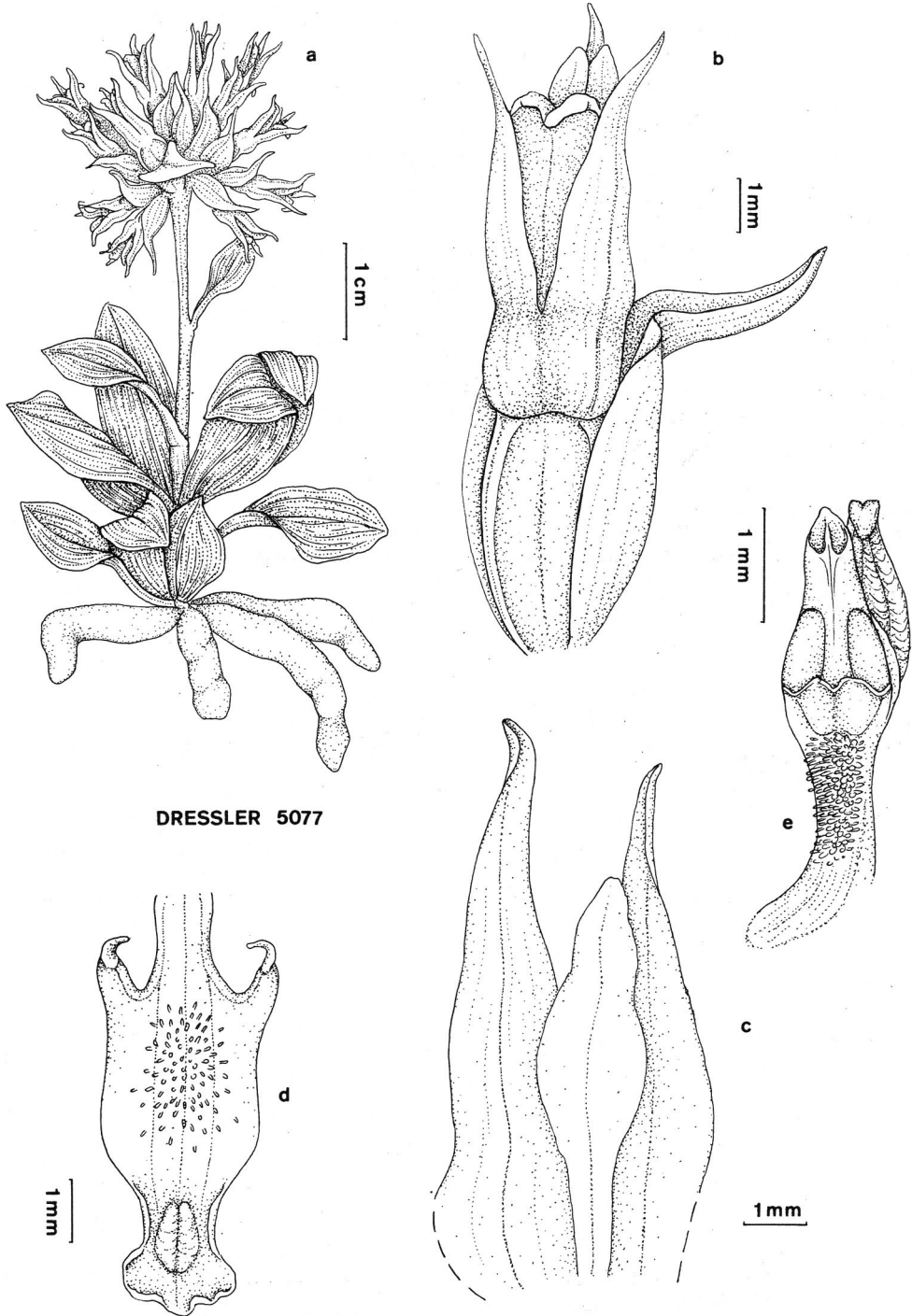


Fig. 5. *Eurystyles cornu-bovis* Szlach. a: habit; b: flower; c: sepals and petal; d: lip; e: gynostemium (drawn from holotype – FLAS).

Eurystyles cornu-bovis differs from all previously described species of the genus primarily in the lack of cilia at the edges of leaves and floral bracts. Another characteristic feature are thickenings on the auricles of the lip, similar to bovine horns. The species occupies an isolated position within the genus and in my opinion fully deserves to be isolated in a separate section.

***Eurystyles* Wawra sect. *Dressleranthus* Szlach., sect. nov.**

Folia bracteeaeque marginibus non ciliatis.

Type species: *Eurystyles cornu-bovis* Szlach.

I would like to name it in honour of Dr Robert Dressler, who discovered the only species belonging here.

Eurystyles is divided into two subgenera of which the type subgenus includes two sections. The infrageneric taxa of *Eurystyles* can be distinguished in the following key (Fig. 4):

1. Nectar glands completely adnate to the lip subgen. *Pseudoeurystyles*
1. Nectar glands form fleshy auricles at the base of lip (subgen. *Eurystyles*) 2
 2. Margins of leaves and floral bracts ciliate sect. *Eurystyles*
 2. Margins of leaves and floral bracts unciliate sect. *Dressleranthus*

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STRESZCZENIE

Autor dyskutuje pozycję taksonomiczną opisanego niedawno rodzaju storczyka *Synanthes* Burns-Balogh, H. Robins. & M. S. Fost. i uważa, że rodzaj ten nie zasługuje na rangę osobnego taksonu, włączając go do rodzaju *Eurystyles* Wawra. *Synanthes bertonii* Burns-Balogh, H. Robins. & M. S. Fost., typ rodzaju, przeniesiony więc został do rodzaju *Eurystyles* jako *E. bertonii* (Burns-Balogh, H. Robins. & M. S. Fost.) Szlach. *comb. nov.* Ponadto autor opisuje nowy gatunek *Eurystyles cornu-bovis* Szlach. z Panamy i Kostaryki, różniący się od innych gatunków tego rodzaju nie orzęsionymi brzegami liści i podsadek oraz występowaniem na uszkach warzki zgrubień w kształcie krowich rogów.