# *OLIVERIANA*: A MEMBER OF THE TRIBE *ONCIDIEAE*

By

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In connection with the preparation of an Orchid Flora of Colombia and Ecuador, sundry unidentified collections from that area appeared to be referable to the obscurely known, monotypic genus *Oliveriana*. However, when the type of *Oliveriana egregia* Rchb. f. was examined, these collections proved to represent an as yet undescribed species.

When Reichenbach established the genus in 1876, he had at hand only a portion of an inflorescence with six flowers, which he received from Gustav Wallis, a collector for Linden for his then famous horticultural establishment.. This is about all that was known of this genus in 1876. With the discovery of a second species, now called *O. Lehmannii*, our information of the genus has been somewhat enlarged and it becomes possible to determine with certainty its position in the tribe *Oncidieae*.

*Oliveriana* was thought by Reichenbach to bear affinity with *Koellensteinia* and *Warrea* of the *Zygopetaleae*. It is rather difficult to understand his choice, because, apart of the general appearance of the inflorescence, no definite characters of the floral structure substantiate such an opinion. In 1881, in his "Notes on Orchideae", Bentham expressed doubts about Reichenbach's estimate by saying: "*Trichopilia* Lindl., about sixteen species, should, I think, include *Pilumna* Lindl., *Leucochyle* Kl., *Helcia* Lindl., and, perhaps, *Oliveriana* Rchb. f. .... *Oliveriana* Rchb. f. is only known to me from Reichenbach's character, in which I can see nothing to separate it from *Trichopilia*, except that the peduncle or scape bears six flowers instead of one to three". Two years later, in 1883, he cited *Oliveriana* as a synonym of *Trichopilia* in Bentham and Hooker, Genera Plantarum. In the same year, Reichenbach redescribed and illustrated *Oliveriana egregia* in Xenia Orchidacea where he also registered an overwhelming attack on Bentham's judgment; but, in this tirade, he failed to give any additional information about the genus.

In 1888, Pfitzer, in his systematic treatment of orchids for Die Natuerliche Pflanzenfamilien, maintained *Oliveriana* as a good genus, but he followed Bentham in placing it in the group with *Trichopilia* and *Helcia*. The same procedure was also followed by Schlechter in his Systema Orchidaceurum in 1926.

After having studied the type of *Oliveriana egregia*, as well as ample material of above mentioned new species, I am inclined to think that this genus is a member of the *Oncidieae* rather than of the *Trichopilieae*, if, indeed, these two subtribes can be maintained as separate. The lip in *Oliveriana* is adnate to the column, but this adnation is limited to the claw only, in the same manner as in *Aspasia*. Bentham has recognized this adnation as a criterion of taxonomic value and applied it as one of the

differentiating characters within *Oncidieae*. He characterized the second series within *Oncidieae* by the caption: "Labellum ecalcaratum basi columna adnatum", in which he included *Trichopilia, Aspasia, Cochlioda* and *Dignathe*. Later Pfitzer followed the same grouping as Bentham, but kept *Trichopilia* in its own subtribe. Finally Schlechter maintained *Trichopilieae* in Pfitzer's sense, created a new subtribe for *Cochlioda* and assigned *Aspasia* and *Dignathe* to the *Oncidieae*.

In both of the genera, *Aspasia* and *Oliveriana*, the claw of the lip is adnate to the column for its full length. Indeed, these two taxa might be considered as congeneric, were it not for their vegetative difference; *Aspasia* has a short, erect stem terminated by a pseudobulb, whereas *Oliveriana* has a long, trailing, occasionally branching rhizome without a pseudobulb and terminated by a set of distichously arranged leaves. In both genera the inflorescence is borne from lower leaf-axils, and it varies from one to many-flowered.

*Oncidieae*, as I understand it, is a very natural group, though the genera within this complex are very poorly differentiated. Among the sundry systems proposed to date, Pfitzer's classification seems to have the most realistic approach, although the various grexes (alliances), as he has circumscribed them, somewhat merge into each other. A similar situation is to be found in many of Schlechter's subtribes, of which *Trichocentreae, Comparettieae, Trichopilieae* and *Cochliodeae*, in the light of recent hybridization experiments, apparently should be united with *Oncidieae*. The various intergeneric crosses known to date are depicted on the attached diagram (fig. 1.), which, at same time, expresses visually the close interrelationships of these genera. Although members of *Capanemieae, Brachtieae* and *Lockhartieae* have not yet been tested experimentally, morphological studies confirm their position also within the *Oncidieae* complex.

*Capanemia* and *Hybochilus* cannot be maintained as good genera, since the characters upon which they are based, are all present in the earlier genus *Leochilus*.

*Brachtia* is closely allied to *Systeloglossum*, both having a prominent nectary, a character observable in various degrees in other genera, such as *Symphyglossum, Cochlioda, Dignathe*, etc.

*Lockhartia*, although it has been kept separate from the genus *Oncidium* even today on the account of its vegetative growth, especially its equitant leaves, is in reality to be regarded as belonging to a group of closely related species of the genus *Oncidium* of the section *Iridifolia*, both of which have possibly evolved from a common ancestral stock. The *Oncidium* section *Iridifolia* is characterized by having an abbreviated stem vevarig is greatly elongated and invested through its entire length with similarly formed equitant leaves. The inflorescence, in both groups, is borne in the axils of the upper leaves.

This view is likewise supported by cytological observation in the case of *Lockhartia Oerstedii*, where metaphase counts have shown the chromosome numbers to be 2n=14 (Garay, unpublished). This discovery is, indeed, significant, because there appears to be a definite correlation in *Lockhartia* between the chromosome numbers and the vegetative aspects in an exactly similar way as in *Oncidium pusillum* of the section *Iridifolia*, where 2n=10 has been found.

*Lockhartia* has been kept separate from the *Oncidium* complex by most authors on account of the absence of articulation of the leaves. If this criterion should prove to be a valid reason for tribal or subtribal separation, then the section *Iridifolia* of the genus *Oncidium* should also be removed into a separate genus and placed next to *Lockhartia*. The evidence at hand, however, suggests that *Lockhartia* together with the section *Iridifolia* represents the most primitive members of the tribe *Oncidieae* as well as of the genus *Oncidium* proper. The basic chromosome number of *Lockhartia*, x=7, is clearly within the range of other chromosome counts so far observed in the *Oncidieae*, which are all, essentially, multiples of seven. The chromosome number of *Oncidium pusillum*, n=5, is somewhat aberrant in this complex, and is due probably to loss or reduction.

The circumscription of certain genera of the *Oncidieae* is, as mentioned above, often erroneous and absurd. Genera, such as *Solenidium*, *Oncidium*, *Miltonia*, *Brassia*, *Odontoglossum*, *Aspasia* and *Oliveriana* differ from each other solely by the angle between the lip and the column (fig. 2.). These genera are, indeed, wholly artificial, and, at best, they may be considered as sections of the genus *Oncidium*. As a noteworthy fact, it may be mentioned here, that a cross between *Aspasia principissa* and *Brassia Gireoudiana*, known in horticulture as *Brapasia Serene*, duplicates the characters of the genus *Miltonia*, and apart from its color, it is not unlike *Miltonia Clowesii* Lindl.

To the taxonomist as well as to the horticulturist, it is a terrifying thought to unite all these genera with *Oncidium*, but it seems inevitable, since the information gained from experiments in hybridization and from cytological studies strongly point in that direction.

At that time, very likely, the genus *Oliveriana* will also become a part or a section of *Oncidium*. For the time being, however, I recognize it as a distinct entity, and proceed to give a new emended description for further clarification.

## **Oliveriana** Rchb. f.

in Linnaea 41 : 111, 1876; in Xenia Orchidacea 3 : 63, t. 230, f. 1-4, 1883; Bentham in Journ. Linn. Soc. Bot. 18 : 326, 1881; in Bentham and Hooker, Gen. Pl. 3 : 560, 1883; Pfitzer in Engler und Prantl, Die Natuerliche Pflanzenfam. 2, pt. 6 : 220, 1888; Schlechter, Die Orchideen 470, 1914; ed. 2, 464, 1927; L. O. Williams in Caldasia 3 : 14, 1941.

**Etymology**: Named in honor of Dr. Daniel Oliver, F. L. S., F. R. S. (1830-1916), Keeper of the Herbarium at Kew, Professor of Botany at University College, London and editor of Icones Plantarum from 1890-1895.

Sepala petalaque inter se conformia, patentia; labellum columnaes altius adnatum, pars libera, seu lamina convexa, reflexa; columna brevis, erecta, apoda; clinandrium prominens, margine crenulato; anthera densissime muricato velutina; pollinia 2, postice fissa, stipiti elongate anguste triangulari visco parco affixa, glandula anguste triangulari-ligulata.

Herbae epiphyticae, caulis primarius elongatus, scandens, simplex vel rare ramosus, vaginis scariosis remote vestitus; caulis secundarius brevissimus vel vix ullus, numquam in pseudobulbo terminans; folia subcoriacea, articulata, basi distiche imbricantia; inflorescentia ex axillis foliorum inferiorum nata, elongata, laxe pauciflora.

**TYPUS: Oliveriana egregia** Rchb. f.

*Oliveriana egregia* Rchb. f. in Linnaea 41 : 111, 1876; in Xenia Orchidacea 3 : 63, t. 230, I. 1-4, 1883; Schlechter Die Orchideen 470, 1914; ed 2, 464, 1927. - Fig. 3.

Radicibus foliisque in specimine typica non adsunt; inflorescentia, pars quae adest, 18 cm. longa, remote pauciflora, usque ad sexflora; bracteis ovato-triangularibus, acutis, 5 mm. longis; floribus carnosis, patentibus; sepalis inter se simillimis, anguste elliptico lanceolatis, utrinque attenuatis, apice acuminatis, 23 mm. longis, 7 mm. latis; petalis late oblanceolatis, apice acutis vel subacuminatis, 20 cm. longis, 7 mm. latis; labelli lamina in ambitu semiorbiculari, antice truncata cum lobulo subulato in medio; disco pulvinari incrassato, bisulcato, 13 mm. longo, 18 mm. lato; columna humili, crassa; clinandrio crenulato; ovario cylindrico cum pedicello 17 mm. longo.

**COLOMBIA:** Departamento Antioquia; Medellín. **Wallis s. a. Type!** Type in Herb. Reichenbach no. 38,135.

Reichenbach in Xenia Orchidacea illustrates the pollinia as having a deeply divided stipe. This is, however, an erroneous representation, because in examining the type, I found the stipe to be merely retuse and identical with that of **O. Lehmannii**, as depicted on the plate of that species.

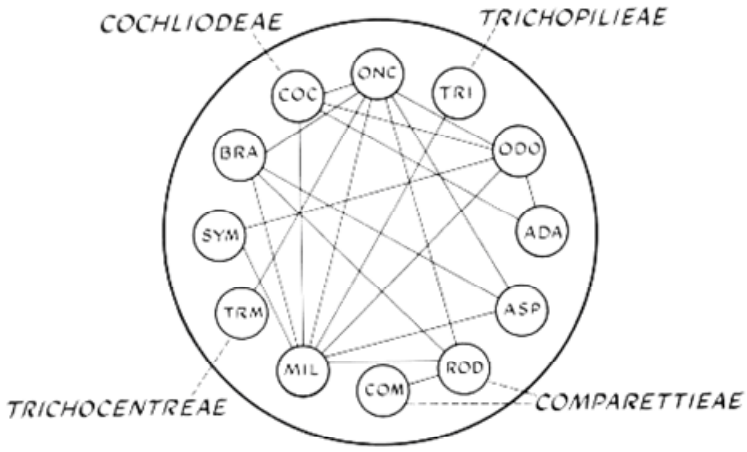
**Oliveriana Lehmannii** Garay, sp. nov. - Fig. 4.

Epiphytica, rhizomate cauliformi, longe repenti, vaginis scariosis, obliquis, remotis vestito; radicibus filiformibus, leviter flexuosis, glabris, ex axillis vaginarum natis; foliis distichis, oblongo-obovatis vel oblongo-ellipticis, apice acutis canaliculatisque, basin versus in vaginas conduplicatas imbricantesque sensim attenuatis, usque ad 25 cm. longis, 5 cm. latis; inflorescentiis solitariis vel duabus, remote pauciforis (5-8-floris); ex axillis foliorum inferiorum natis, usque ad 35 cm. longis; bracteis obliquis, ovato-triangularibus, acutis, 5 mm. longis; floribus carnosis, patentibus; sepalis petalisque extus atropurpureis, intus griseis, labello albido cum callo flavescenti; sepalis inter se simillimis, ellipticis vel ovato-ellipticis, apice obtusiusculis, reticulato-venosis cum nervo mediano dorsaliter sub apicem leviter carinato-mucronatis, 20-25 mm. longis, 9-10 mm. latis; petalis obovatis, apice obtusiusculis, basin versus paululo angustatis, 17-22 mm. longis, 8-9 mm. latis; labelli ungue columnae adnato, lamina 10-15 mm. longa, 14-17 mm. lata, convexa, reflexa, suborbiculari-reniformi, antice biloba, lobis rotundatis, disco pulvinari-incrassato, incrassatione obscure bisulcato; columna humili, crassa, clinandrio ciliolato; ovario cylindrico cum pedicello 2 cm. longo.

**COLOMBIA:** Minas Iryá. **F. C. Lehmann no. B. T. 231** (Herb. Ames no. 87, 234). Putumayo; Bosque alto al norte del Valle de Sibundoy, hacia la mina de San Francisco. Alt. 2800 m. **M. Ospina-Hernández & J. M. Idrobo no. 147. Type!** (Herb. Ames no. 69,226); (Herb. Col. Inst. Ciencias Nat.). Departamento del Huila; Cordillera Oriental, vertiente occidental, entre Gabinete y Andalucía. Alt. 2300 m. **J. Cuatrecasas no. 8,666** (Herbario Nacional Colombiano Nº 21,693).

This new species is dedicated to F. C. Lehmann (1850-1903, German botanist and explorer, Consul in Popayán from 1878 until his death, and ardent collector and student of orchids of Colombia and Ecuador.

# TRIBE ONCIDIEAE

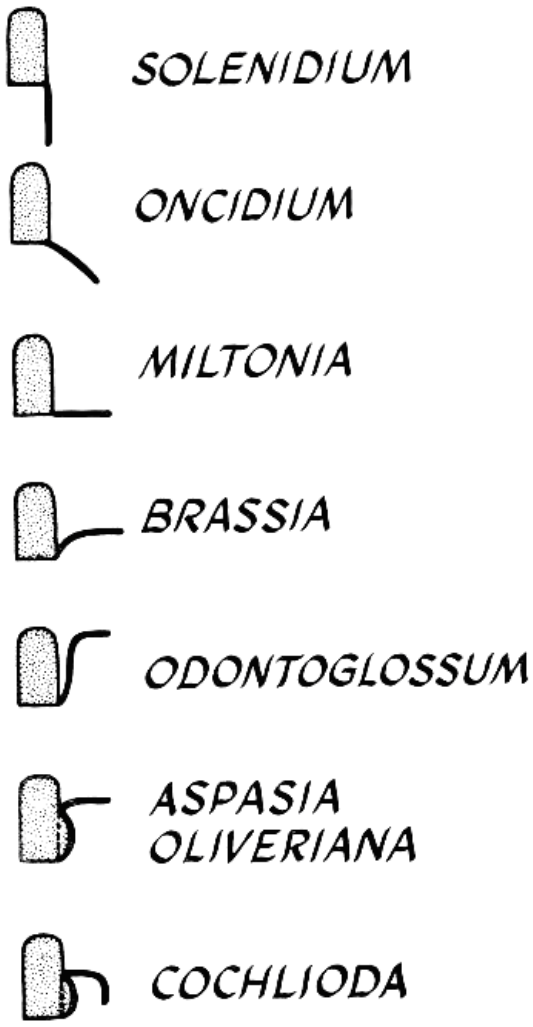



ADA = ADA
ASP = ASPASIA
BRA = BRASSIA
COC = COCHLIODA
COM = COMPARETTIA
MIL = MILTONIA

ODO = ODONTOGLOSSUM
ONC = ONCIDIUM
ROD = RODRIGUESIA
SYM = SYMPHYGLOSSUM
TRI = TRICHOPILIA
TRM = TRICHOCENTRUM

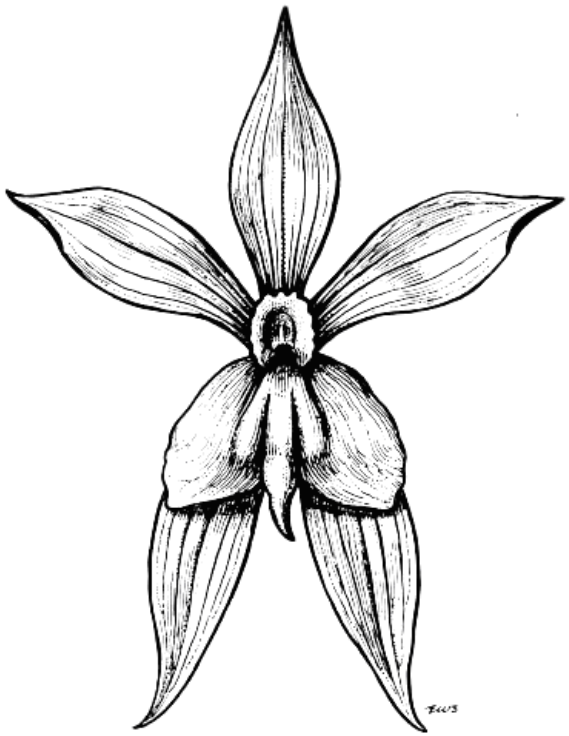
DIAGRAMATIC REPRESENTATION OF THE KNOWN ARTIFICIAL INTERGENERIC CROSSES.

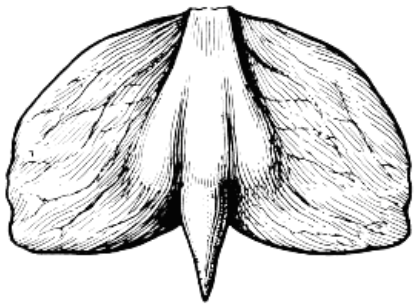
FIG. 1




DIAGRAMATIC REPRESENTATION OF THE ANGLE BETWEEN THE COLUMN AND LIP IN VARIOUS GENERA OF THE ONCIDIEAE.

FIG. 2





*Oliveriana egregia Rchb. f.*

LEFT: FRONT VIEW OF FLOWER IN NATURAL POSITION

RIGHT: LIP EXPANDED

FIG. 3

DRAWN FROM THE TYPE SPECIMEN

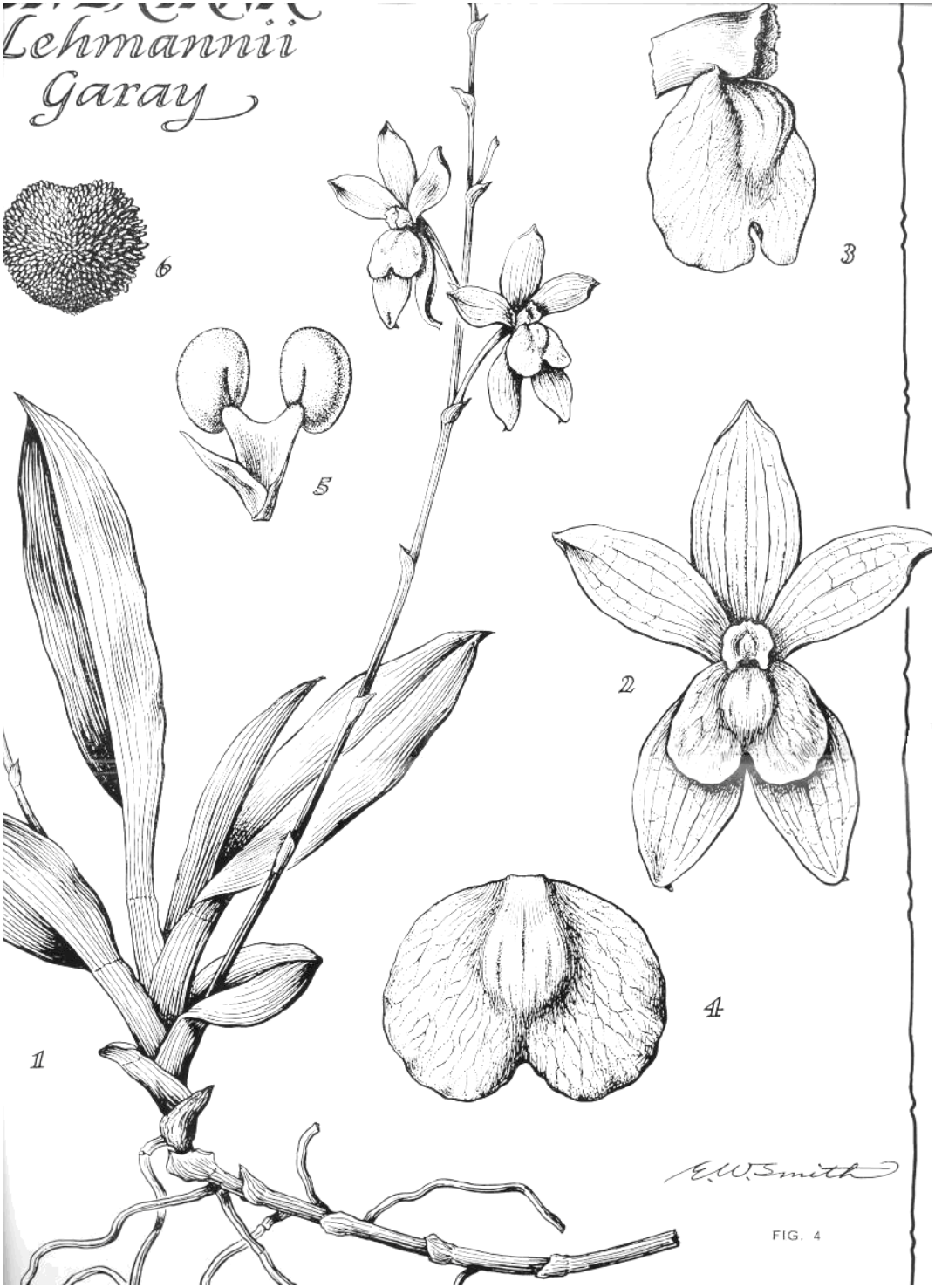



FIG. 4

## ACKNOWLEDGMENT

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*Orchid Herbarium of Oakes Ames Botanical Museum, Harvard University.*