

THE KARYOTYPES OF *ONCIDIUM MORENOI* AND *O. PUMILUM* (ORCHIDACEAE)

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ABSTRACT. Somatic chromosomes of *Oncidium morenoi* and *O. pumilum* were analyzed in detail. The chromosome number of *O. morenoi* and the karyotypes of the two species are presented for the first time. *O. morenoi* showed $2n=30$ with a karyotypic formula of $14 m + 14 sm + 2 st$. *O. pumilum* presented $2n=30$ and a karyotype composed of $20 m + 10 sm$.

Oncidium, a large and complex genus of the Orchidaceae, is divided into numerous sections (Garay and Stacy 1974) that exhibit considerable variation in chromosome number. In section *Plurituberculata* (to which the taxa analyzed here belong) the following numbers based on somatic tissues have been reported: $2n=26, 28, 30, 32, 34$ and 36 . Species of other sections of the genus have chromosome numbers that ranges from $2n=26$ to $2n=126$ (Phang *et al.* 1979). Although previous karyological studies are available for the genus, in most cases only the chromosome numbers have been reported. Cytology of the genus *Oncidium* has been extensively treated by Dodson (1957), Sinoto (1969), Charanasri and Kamemoto (1975), and others. In the present work somatic chromosomes of two species of *Oncidium* are analyzed. The chromosome number of *O. morenoi* and the karyotypes of the two species are presented for the first time. The chromosome number found in *O. pumilum* agrees with a previous study (Ames and Withner in Sinoto 1969).

Materials studied were:

O. morenoi Dodson et Luer: Paraguay. Amambay, 12 km SE of Bella Vista, *Schinini* 21518 (CTES).

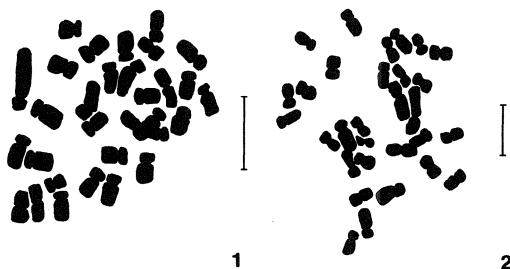
O. pumilum Lindl.: Argentina. Misiones, Teyú Cuaré. *Daviña* 316 (MNES).

Root tips were pretreated in 0.002 M 8-hydroxyquinoline for 4 hours, fixed in a 1:5 mixture of lactic acid and ethanol, and stained by the Feulgen technique. The nomenclature used in the description of the karyotypes is that proposed by Levan *et al.* (1964). Chromosome morphology was determined using the centromeric index ($CI = \text{short arm} \times 100 / \text{total chromosome length}$). Camera lucida drawings were made at an initial magnification of 3400 \times .

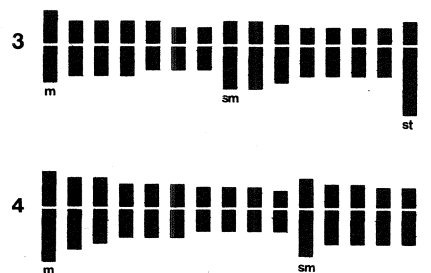
Oncidium morenoi has $2n=30$ chromosomes (FIGURE 1) with a karyotype composed of 14 metacentric (m), 14 submetacentric (sm) and 2 subtelocentric (st) chromosomes (FIGURE 3). Mean chromosome length is $2.54 \mu\text{m}$, ranging from 1.54 to $4.41 \mu\text{m}$, and the total karyotype length is $76.42 \mu\text{m}$.

Oncidium pumilum also has a chromosome number of $2n=30$ (FIGURE 2), but possesses a karyotype of 20 m and 10 sm chromosomes (FIGURE 4). Mean chromosome length in this taxon is $2.66 \mu\text{m}$, ranging from 1.73 to $4.40 \mu\text{m}$; the total karyotype length is $80.04 \mu\text{m}$.

Both species while presenting a high morphological similarity may be distinguished by the form of the lip and flower color (Dodson and Luer 1975). Despite their presumed close relationship based on overall morphology, their karyotypes are different in symmetry and formula. *O. morenoi* has a more asymmetric karyotype



FIGURES 1-2. Mitotic metaphase. 1. *O. morenoi* ($2n=30$). 2. *O. pumilum* ($2n=30$). Scale= $5\mu\text{m}$.



FIGURES 3-4. Idiograms of the two species of *Oncidium*. 3. *O. morenoi* ($14 m + 14 sm + 2 st$). 4. *O. pumilum* ($20 m + 10 sm$). Scale= $5\mu\text{m}$.

due to the presence of the subtelocentric pair and a greater number of submetacentrics pairs.

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