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THE FIRST INTERGENERIC HYBRID BETWEEN *CODONANTHE* AND *NEMATANTHUS* (GESNERIACEAE)

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All species of the epiphytic genus *Nematanthus* Schrader are native to southeastern Brazil. The nine species presently in cultivation in the United States are diploids, with a base chromosome number of $n = 8$. These species artificially interbreed readily and produce fertile offspring, with one or two exceptions (Saylor, 1969). The author's hybridization program with species of *Hypocyrta* Martius and *Nematanthus* led to the uniting of these genera (Saylor, 1971; Wiehler, 1972; Moore, 1973).

Codonanthe (Martius) Hanstein, a genus of ant-nest epiphytes distributed throughout the neotropics (Moore, 1973), is a member of the same tribe (Episcieae) as *Nematanthus*, and shares with it the same base chromosome number of $n = 8$. All other genera in this tribe have a base chromosome number of $n = 9$. The generic features of *Codonanthe* are: association with epiphytic ant-nests, a funnel-shaped, usually white corolla with a broad limb, specialized anthers (broad connectives), and the fruit a soft berry (except in four species). The generic characteristics of *Nematanthus* are: its geographic limitation, epiphytism (but not in symbiosis with ants), an odd-shaped, pouched or laterally compressed, red or yellow corolla with a constricted entrance and a small limb, and a fleshy, capsular fruit.

The author was attracted to *Codonanthe* and *Nematanthus* in a bigeneric breeding program because these genera share the same chromosome number. There are diploid and tetraploid species in *Codonanthe* (Wiehler, 1975), but all cultivated species of this group from southeastern Brazil are diploid. From this brief analysis one may reach the conclusion that the Brazilian species *Codonanthe carnosa* Gardner, *C. devosiana* Lemaire, *C. gracilis* (Martius) Hanstein, and *C.* sp. 'Frances Batcheller' are promising candidates for a breeding program with species of *Nematanthus*.

Codonanthe gracilis was selected as the pollen parent because of its relatively large flowers. It was used with several *Nematanthus* hybrids which have flowers with styles of similar length. The first successful pollination was effected upon an unnamed but very floriferous seedling identified only as *Nematanthus* hybrid No. 3I31B. This is a complex hybrid with the formula *N. wettsteinii* (Fritsch) H. E. Moore × (*N.* 'Green Magic' × *N.* 'Black Magic'); These two cultivars are siblings from the cross *N. wettsteinii* × *N.* 'Stoplight.' The latter was obtained by Dr. Robert E. Lee of Cornell University by crossing *Nematanthus fritschii* Hoehne with *N. longipes* DC. (Lee, 1967). There are thus three species involved in *Nematanthus* No. 3I31B.

The seed parent, *Nematanthus* No. 3I31B, is a compact, spreading, trailing plant with shiny, fleshy, light green, glabrous leaves, up to 32 × 17 mm (Figure 1a). Pronounced deep red markings along the central vein on the underside of most leaves clearly display the inheritance from *N. fritschii*. The flowers are similar to those of *N. wettsteinii*, but the calyx lobes are shorter, and the limb of the orange corolla is not as clear a yellow as that of the species (Figure 1b-c).

The pollen parent, *Codonanthe gracilis*, is a rather open trailer with long and thin pendent branches, rooting at the nodes, with internodes 3-6 cm long, and dull, leathery, light green, glabrous leaves, up to 5 × 1.5 cm (Figure 2a). The flowers are produced nearly year-round. The calyx is

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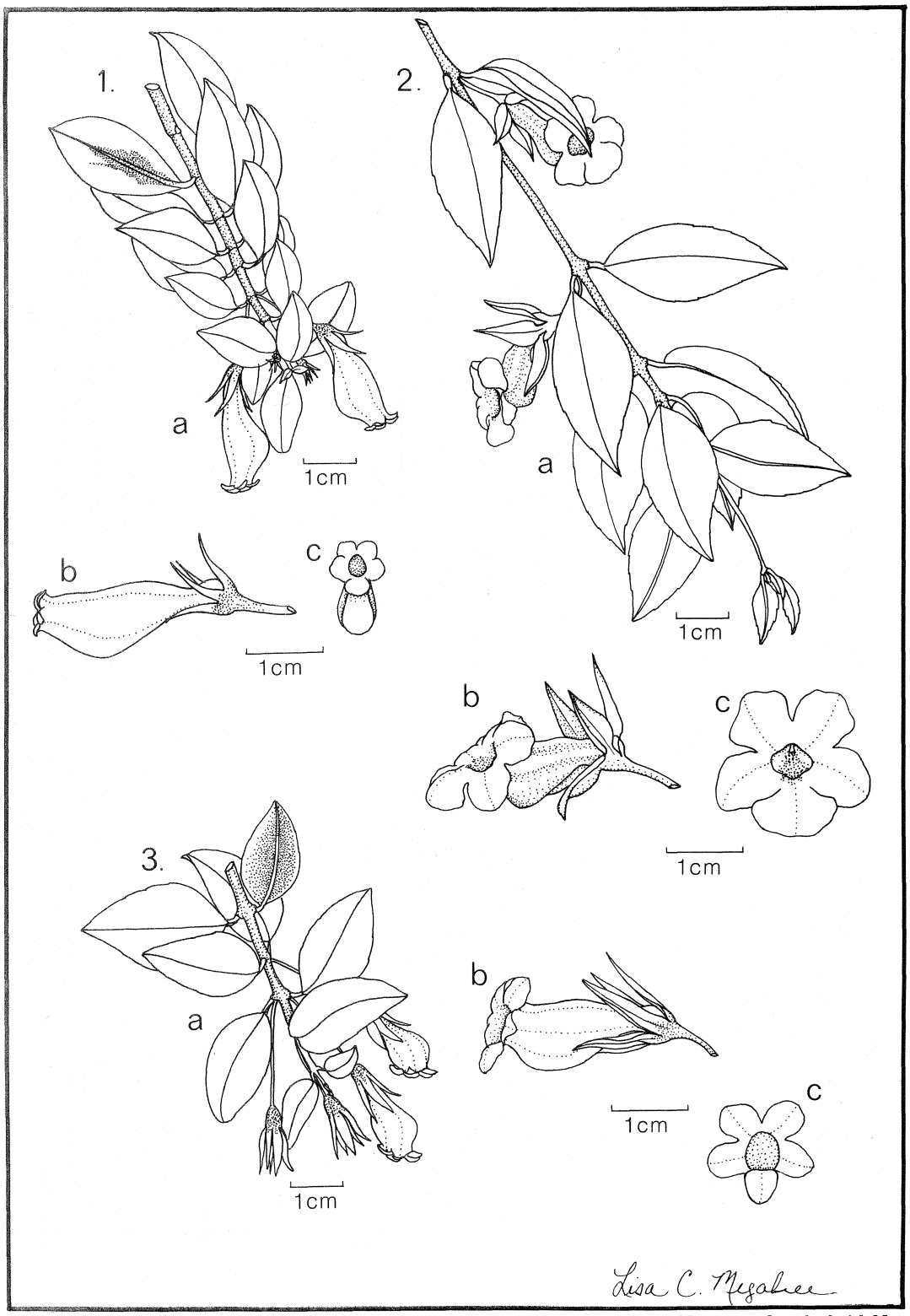

Figures 1-3: The intergeneric hybrid *Codonatanthus* and its parents. 1. *Nematanthus* hybrid No. 3I31B; 2. *Codonanthe gracilis;* 3. × *Codonatanthus* 'Fiesta.' (a, habit; b, flower; c, face view of limb.)

spreading and light green, with red tips. The corolla is white, with a yellow spur, and red-brown speckles in the throat (Figure 2b-c). The fruit is a shiny orange berry.

Seeds from this cross were planted 19 March 1977, and the first blooms opened one year later almost to the day. Since most gesneriads in the tribe Episcieae, including *Nematanthus*, have generally taken two or more years to come to bloom from seed, this was a promising indication of hybrid vigor and unusual floriferousness in an intergeneric gesneriad hybrid. This hybrid between *Nematanthus* and *Codonanthe* is herewith designated × *Codonatanthus.*

Because of the hybrid make-up of the *Nematanthus* parent, a considerable amount of variation was to be expected among the siblings in the first hybrid population of × *Codonatanthus.* Half a dozen seedlings have bloomed at the time of this writing, and all have the general habit and the broad corolla limb of the pollen parent, *Codonanthe gracilis*, and flowers otherwise intermediate between the two genera (Figure 3a-c). The color of the corollas is a clear rosy red similar to that of *N.* 'Stoplight'. The lobes of the limb are cream-colored, with a very slight infusion of red in most seedlings. The calyx lobes are light green shading to a bright red at the base.

The majority of the seedlings have plain green leaves. One seedling, however, has a conspicuous red flush on the underside of most leaves, particularly when it is grown in bright light. The red flush covers the entire surface, except for a 2 mm edge, which remains bright green. The leaves of this seedling are ovate, about 3.8 × 2 cm, with acuminate tips, and the internodes of the stem range from 1-2.5 cm in length.

This seedling, because of its many spritely flowers and foliage characteristics, has been selected for introduction into general cultivation and will be known as ×*Codonatanthus* 'Fiesta.' There appears to be a possibility for further hybridization with this cross. The most surprising discovery about ×*Codonatanthus* 'Fiesta' and those of its siblings which have already bloomed is the fact that the pollen tests at least 50% stainable with acetocarmine.

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Editor's note: The holotype of × *Codonatanthus* Saylor, (× *C.* 'Fiesta,') has been deposited at SEL: 30 July 1978, *Wiehler 78129.*