

KARYOTYPE ANALYSIS OF *CHLOROPHYTUM TUBEROSUM* BAKER AND *C. LAXUM* R. BR.

Chromosome numbers of different species of the genus *Chlorophytum* under the tribe Asphodeleae of Liliaceae have been reported in *Chromosome Atlas of Flowering Plants*, by Darlington and Wylie (1955), Baldwin and Speese (1951), Kumar and Shama Rao (1958), Boraiah (1966), etc. A study of the literature on the genus *Chlorophytum* shows that chromosome numbers within the genus can be arranged in two series referable to basic numbers of 7 and 8. Recently, during the course of cytological studies chromosome numbers of *C. tuberosum* Baker and *C. laxum* R. Br. were found to be $n=8$. As nothing is known regarding the precise morphology of somatic chromosomes of these two species, a detailed karyotype analysis is attempted.

Plants were collected from Shevaroy Hills, South India and voucher specimens (Datta, 9524 & 2756) have been deposited in the herbarium of the Central Botanical Laboratory, Calcutta.

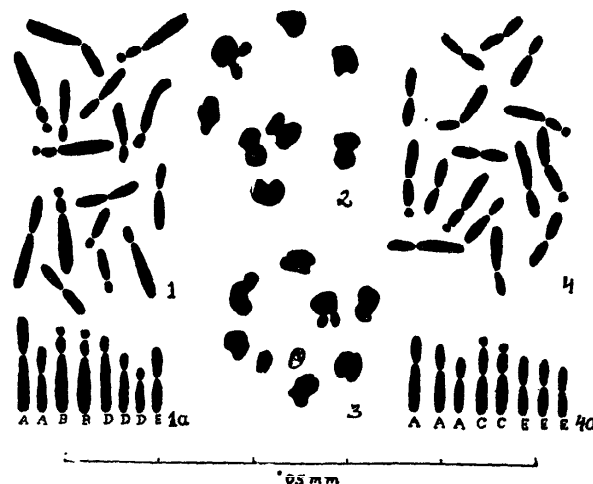
Observations on somatic chromosomes were made from root tips pretreated with saturated solution of paradichlorobenzene for 2 hours at 12°C and stained in 2% aceto-orcein and (N)HCl mixture (9:1). Squashing was done in 1% acetic-orcein. For meiotic study flower buds were fixed in aceto-alcohol (1:3) and pollen mother cells were smeared in 1% propiono-carmin. Slides were made permanent in euparal.

Depending on the morphology and size differences, chromosomes can broadly be classified into the following types. Type A: long to medium sized chromosome with nearly median primary constriction. Type B: long chromosome with two constrictions, primary and secondary, one submedian in position and the other subterminal at the distal end of the short arm. Type C: long chromosome with two constrictions, primary and secondary, one being median to nearly median in position and the other subterminal at the distal end of one arm. Type D: long to medium sized chromosome with submedian primary constriction. Type E: long to medium chromosome with median primary constriction.

***Chlorophytum tuberosum* Baker** ($2n=16=A_4+B_4D_4+E_2$).

Sixteen chromosomes are present in the somatic complement. They are graded as ranging from

4.8μ to 10μ . Four chromosomes bear secondary constrictions (Figs. 1 and 1a).



Figs. 1-4a: 1&1a. *Chlorophytum tuberosum*, somatic metaphase showing $2n=16$ chromosomes and idiogram. 2&3. *C. laxum*, meiotic 1st metaphase showing 8II and $7\text{II}+2\text{I}$ respectively. 4&4a. *C. laxum*, somatic metaphase showing $2n=16$ chromosomes and idiogram.

***Chlorophytum laxum* R. Br.** ($2n=16=A_6+C_4+E_6$).

Sixteen chromosomes are present in the somatic complement. They are graded as ranging from 5.4μ to 8.2μ and four chromosomes bear secondary constrictions (Figs. 4 and 4a).

Majority of pollen mother cells at diakinesis and metaphase I, have eight bivalents (Fig. 2). A few, however, show seven bivalents and two univalents at metaphase I (Fig. 3).

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NITYANANDA DATTA AND KRISHNA MITRA

Botanical Survey of India, Calcutta

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