cv. 'WI' and 'Red Prince Anne' was at the median, that of 'Nigeria' at the subterminal and cv. 'Innocence' at the terminal position (Fig. 2). Karyotype in cv. 'WI' and 'Innocence' was symmetrical (2A category of Stebbins') and can be resolved into 9 more or less homomorphic sets with the varying number of chromosomes in each set. Out of the 30 pollen mother cells (PMCs) studied in 'Innocence', nearly 80 per cent had one B-chromosome (Fig. 3). In cv. 'Ghenghiskhan' (Fig. 4) only 44% of the PMCs contain 1B-chromosome, which could not be located in root mitoses. In both the cultivars meiosis was characterised by the presence of multivalents, bivalents, univalents, etc. The B-chromosome was never found to pair with any A-chromosomes and during anaphase I it was either found to disjoin normally or get included in one of the poles without undergoing division. Though pollen stainability was appreciably high (60 to 65%), there was no seed formation.

The occurrence of one or two fragments or small odd chromosomes in cultivars of Chrysanthemum morifolium has been reported by various workers. However, the exact nature of these chromosomes was not ascertained. In the present study, one telocentric B was observed in cv. 'Innocence' (2n = 56). It is possible that this might have originated as a result of misdivision of an iso-B-chromosome, as was observed by Dowrick in Chrysanthemum species like C. corymbosum var. poterifolium and C. millesfolium (both 2n = 18). The subsequent loss of one of the telocentrics could result in the occurrence of one B-chromosome in the somatic complete. The presence of one B-chromosome in the germ cells of 'Ghenghiskhan' (2n = 72) and its complete elimination from the root tip cells may be attributed to its unstable nature. In such case, the B-chromosome will be ultimately eliminated due to lagging at anaphase or non-disjunction. The presence of B-chromosome did not affect the pollen fertility, which may be due to the polyploid nature of the taxa. Though the exact nature of the origin and mode of their transmission is not known, they are maintained in the cultivars through vegetative propagation.

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LEAF DICHOTOMY IN CODIAEUM VARIEGATUM BLUME

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Leaf teratology has been reported in several plants by several workers. Banerjee enlisted plants showing leaf forking. As far as the authors are aware no attempt has been made to study how forking occurs in leaves. The present investigation has been undertaken to throw light on this point. During our observations in the gardens of the university campus, we have come across an interesting case of dichotomous, rarely trichotomous forking of leaf lamina in addition to normal simple leaves in clones of Codiaeum variegatum. In clones out of many plants, only one plant manifested such leaves. Worsdell stated that forked leaves occur perhaps most commonly in plants with their leaves arranged in an opposite decussate manner, but this is not true in this case. The leaves are simple, pinnate, univenied and alternately arranged on the axis in Codiaeum variegatum (Fig. 1 D). The dichotomous incision of the lamina starts from apex, gradually extends to base, associated with the forking of the primary vein resulting in the formation of two separate "leaflets" with a common petiole (Fig. 1: B.D). Dichotomous forking of the lamina does not change only the leaf morphology but increases the total leaf area also. Sometimes the apex shows trichotomous incision (Fig. 1 C). Such forking is not restricted to young leaves only, but has been observed in fully matured leaves also (Fig. 1 E). The compound leaf as an advanced type, is believed to have arisen by evolutionary dissection of the simple leaf. In ontogeny, the leaflets develop as do the lobes of a simple leaf—by the development of lateral primordia on the median axis. The development of the compound leaf of the palms is wholly different—by an ontogenetic splitting of the primordium (Eames). But here the compound leaf has arisen by the dichotomous or trichotomous forking of the simple young mature leaves. The abnormality found in this plant also
HELICOMINA CARBONICA SP. NOV.

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The genus Helicoma Olive was erected in 1948 to accommodate plant pathogenic Helicoma like species having both curved and straight conidia (Olive, 1948).

During the course of studies on Hyphomycetes an undescribed species of Helicoma distinct from all the known species in both morphology and culture characters was observed growing on YpsS agar plates as laboratory contaminant. The characters recorded here are those of monosporic culture grown on malt agar at 28°C.

Helicoma carbonica A. Subrahm. sp. nov. (Figs. 1–10).

On malt agar at 28°C growth restricted; colonies heaped, buff black in colour with irregular margin; diffusible pigment none; reverse colony black; sporulation moderate.

Mycelium brown 2.0 μ in diameter septate, smooth and branched; conidiophores pale brown, aseptate or rarely septate, unbranched, elongate with conidium bearing distal end slightly enlarged, 10–11 × 2.0–2.5 μ or short and narrow at the base with enlarged terminal

Fig. 1 A–E. Showing the direct photos of cleared leaves using the method of Rao et al.6 A, Normal leaf; B–E, Showing the dichotomous, trichotomous incision of the lamina. (A—1.5 ×; B—3 ×; C—1 ×; D—1.5 ×; E—1 ×).

threw some light on phylogenetic relationship. (See also Kalyanasundaram7, Datta and Mitra6 and Bennet3).

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Figs. 1–10. Helicoma carbonica sp. nov. Fig. 1. Aseptate conidiophore bearing celled conidium 1500 ×. Fig. 2. Conidiophore with slightly enlarged distal end bearing one celled conidium. 1,500 ×. Fig. 3. Conidium in lateral position 1,500 ×. Figs. 4 and 5. Variously bent septate conidia 1,500 ×. Fig. 6. Septate conidiophore bearing a bent conidium 1500 ×. Figs. 7–10. Conidiophore with enlarged distal end bearing more than one conidium. 1,500 ×.