A thick suspension was made by using suspending media from fresh slant cultures of bacterial strains and 72 hr cultures of yeast strains. For lactobacilli cell the mass was separated by centrifugation before preparing the suspension. One or two drops of the suspension were transferred to the tubes containing the beads. The tubes were rotated to smear the suspension on beads and then kept in a vacuum desiccator containing silica gel, at 6–8°C. For survival test, deMan Rogosa-Sharpe medium[2], soyabean casein digest and antibiotic assay medium[3]—I were used respectively for lactobacilli, yeast and other cultures. Important characteristic tests were carried out to check the identity of viable cultures. A total of 40 different strains were studied. The cultures: *Staphylococcus aureus*, *S. epidermidis*, *Salmonella typhi*, *S. typhimurium*, *Sarcina lutea*, *Escherichia coli*, *Klebsiella pneumoniae*, *Shigella sonnei*, *Pseudomonas aeruginosa*, *Alcaligenes faecalis*, *Bordetella bronchiseptica*, *Saccharomyces cerevisiae*, *Candida albicans*, *Micrococcus glutamicus*, *M. flavus*, *Lactobacillus plantarum* (Strains: Rbt; CW; ATCC8014), *L. acidophilus* (Strains: Bf; Rt; Pg), *L. leichmannii*, *Streptococcus faecalis* survived for the whole period of study *i.e.* 12.5 months. *L helveticus* survived 7.5 months and another strains of *L. helveticus*-Gp and *L. salivarius*-Dg survived only for 5 months.

In the present suspending medium gelatin was used to provide a protective layer on the microbial cell and ascorbic acid was employed as an antioxidant. In this experiment other than *L. leichmannii*, *L. plantarum* (ATCC8014) and *S. faecalis* all the lactobacilli strains were of intestinal origin and two of them (*L. acidophilus* CA and HA) did not grow even after two and a half months. These strains were anaerobic. Possibly drying on beads deprived them of anaerobic environment.

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MODIFICATION OF SEX EXPRESSION IN MULBERRY BY COLCHICINE

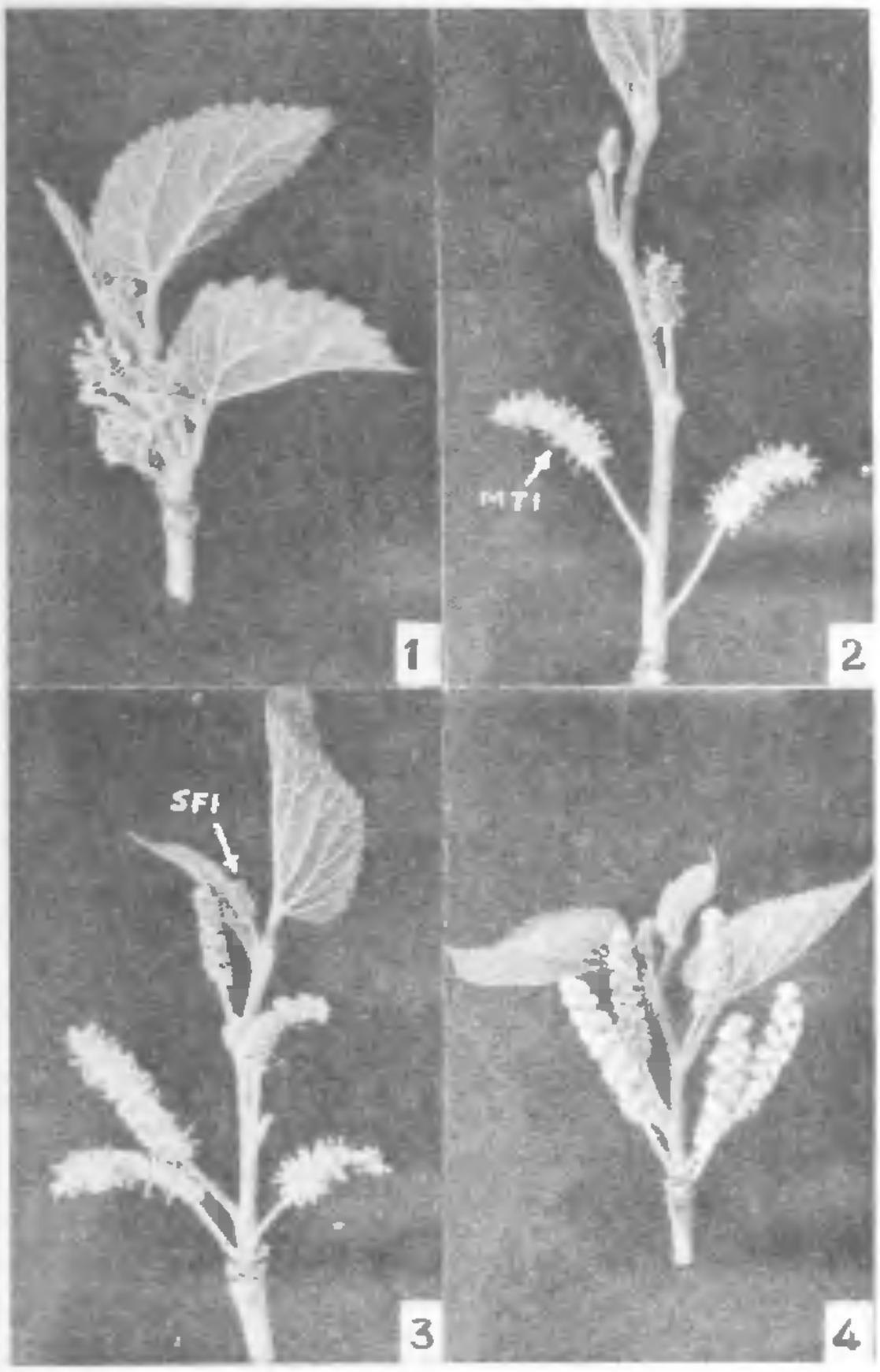
N. K. DWIVEDI, A. K. SIKDAR, S. B. DANDIN and C. R. SASTRY
Mulberry Breeding and Genetics Section, Central Sericultural Research and Training Institute, Mysore 570008, India.

In flowering plants, regulation of sex expression has been attributed to genetic, environmental and chemical factors[1]. Induction of flowers with opposite sex or mixed type of sexes has been reported by several workers both in monoecious and dioecious plants using growth regulators[2], chemicals of morphactin group[3,4] and certain ions[5]. However, there is no report on the modification of sex expression in these plants by colchicine.

The present observation is an offshoot of a project designed to improve the nutritive quality of leaves by inducing tetraploidy and subsequently evolving triploids by hybridization with different desirable diploid strains. When buds of female mulberry variety *Kanva*-2 started sprouting, they were treated with 0.4% aqueous solution of colchicine (Loba, India) prepared in 5% glycerine, for 8 hr for three consecutive days. The buds were wrapped with a piece of cotton wool, and colchicine solution was given from a glass dropper from time to time to keep it moist. After the treatment, cotton wool was removed and the buds were washed with distilled water. Six buds treated in 5 replications. Controls received only distilled water treatment. Healthy female inflorescences were produced by control buds (figure 1). Immediate effects of colchicine treatment were suppression of female inflorescences, production of mixed type of inflorescences and male inflorescences (figures 2–4). The frequency of production of male (43.27%) and mixed type of inflorescences (25.96%) was higher than that of suppressed (23.08%) and healthy female (7.69%) inflorescences. Pollen fertility was 86% as determined by staining with 2% acetocarmine in glycerine solution.

Sex expression is controlled by the optimal balance between endogenous auxin and gibberellin[1] and/or between gibberellin and ethylene[6]. Auxin[2] and ethylene[7] promote femaleness and gibberellin[5] favours maleness in dioecious plants. Decrease in auxin/ethylene level and or increase in the level of gibberellin induces the development of male flowers on female plants and *vice versa*[1].

In the opinion of the present authors the modification of sex expression in female plants of *Morus alba* L. Var *Kanva*-2 is either due to the imbalance between



Figures 1–4. Control and colchicine treated flowering branches. **1.** Control branch bearing female inflorescences. **2.** Treated branch bearing famale, mixed type and male inflorescences. **3.** Treated branch bearing suppressed female and male inflorescences. **4.** Treated branch bearing only male inflorescences. (MTI-Mixed type inflorescence; SFI-Suppressed female inflorescence)

endogenous level of hormones or due to the induction of mutation by colchicine. Further studies are under progress to confirm either of the possibilities in this dioecious cultivar.

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ONCOLITES FROM THE DELHI SUPERGROUP

S. P. SINGH and R. RAVINDRA
Glen View, Laitumukhra, Shillong 793003, India.

THE note reports the discovery of oncolites from the middle Proterozoic rocks of Delhi Supergroup in the North-eastern Rajasthan. The oncolites were recorded in the older formations of Ajabgarh Group around the area 5 km north of Ajabgarh village (27° 11′ : 76° 17′ 30″).

Geological Setting: The Ajabgarh valley has exposed various units of the Delhi Supergroup (figure 1). The oldest rock units are the basic volcanics belonging to the Raialo Group. These include massive to vesicular amygdaloidal basaltic flows, wherein vesicles are filled with the aggregates of quartz or calcite. The rocks of Alwar Group overlie the volcanics with profound unconformity. The basal beds (Rajgarh Formation) are marked by the conglomerate and arkose followed by the quartz-sericite schist and quartzite (Kankwari Formation). The conglomerate is essentially polymictic with clasts of quartzite, basic rock and quartz.

The Ajabgarh Group is marked by a carbonate and volcanic sequence in the lower parts and a psammopelitic assemblage in the upper parts. Out of the five formations of Ajabgarh Group, only two are exposed in the area considered. These are the Kushalgarh and Seriska Formations. The former is a banded siliceous marble with minor quartzite and phyllite partings within it. The latter is represented by silicified quartzite, breccia etc. The breccia shows fragments of