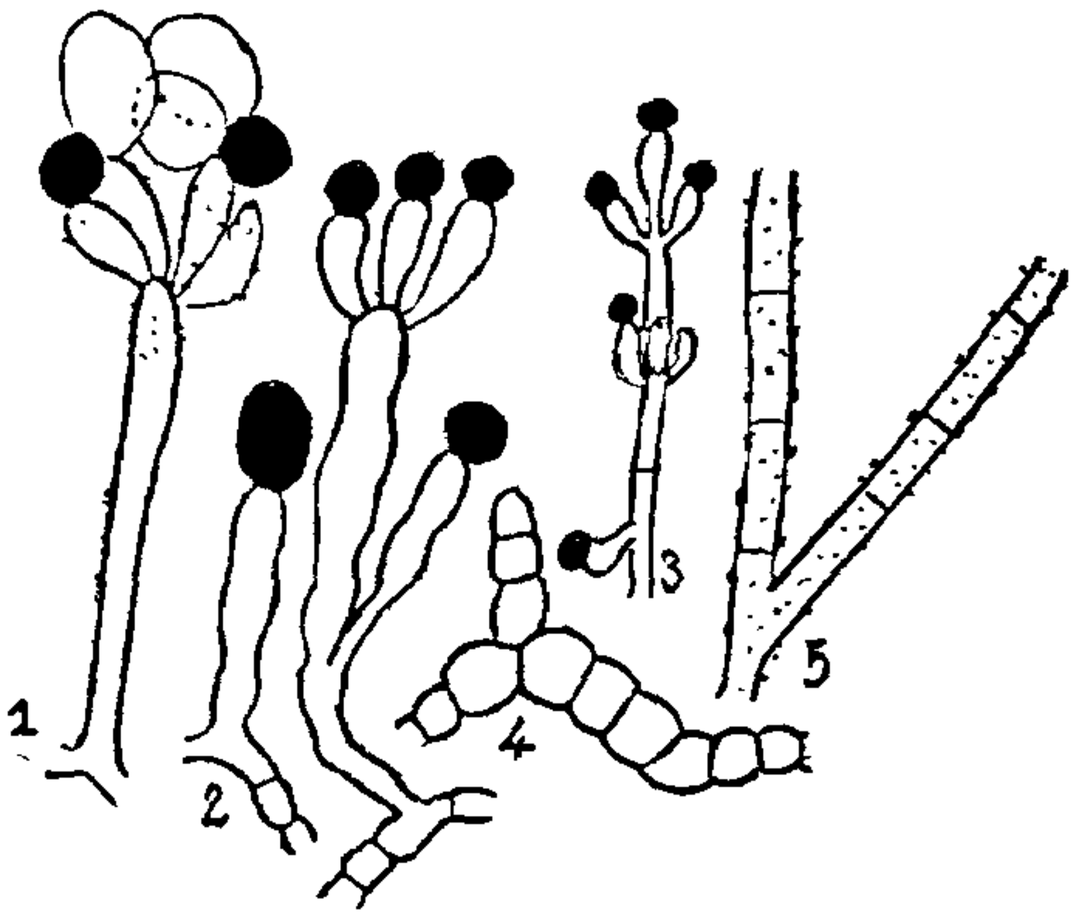
presence of L-glycine, maximum biomass developed but sporulation was poor. When the fungus was grown in a medium containing potassium nitrate, ammonium sulphate or ammonium chloride, swollen mycelial phase developed (Fig. 4). In the presence of calcium nitrate conidiophores developed whorls of phialides (Fig. 3). Mycelium appeared rough when it was grown in a medium containing DL-methionine (Fig. 5).



FIGS. 1–5. Morphological variations observed under different nutritional conditions. Fig. 1. Showing rough phialides and swollen abortive conidia (hyaline ones), × 500. Fig. 2. Irregularly swollen mycelium and spore bearing structures, × 500. Fig. 3. Conidiophore bearing whorls of phialides, × 500. Fig. 4. Swollen sterile hyphal cells, × 500. Fig. 5. Part of rough mycelium, × 500.

The culture filtrates of *S. albipes* inhibited the growth of *B. subtilis* and *P. viridis*. *E. coli* was not inhibited. Yields were improved when the culture was grown in a stationery condition with sucrose, soluble starch or sorbitol as sole carbon source. Under submerged conditions of growth, addition of soyabean and sucrose to the growth medium improved the yields. The chemical nature and various factors influencing the production of the antimicrobial substance are under study.

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CYTOLOGICAL STUDIES IN *ACANTHEPHIPPIUM BICOLOR* LINDL.

THE genus *Acanthephippium* Blume, belonging to the tribe Epidendrae of Orchidaceae, includes about 15 species of terrestrial, rarely epiphytic or lithophytic orchids, distributed in the tropics of the Old World from southern China to the Fiji Islands[1–2]. Of these, chromosome numbers of only three species, *viz.*, *A. pictum*[3], *A. striatum* and *A. sylhetense*[4] have been reported. The present study deals with the karyomorphology and meiosis in *A. bicolor*.

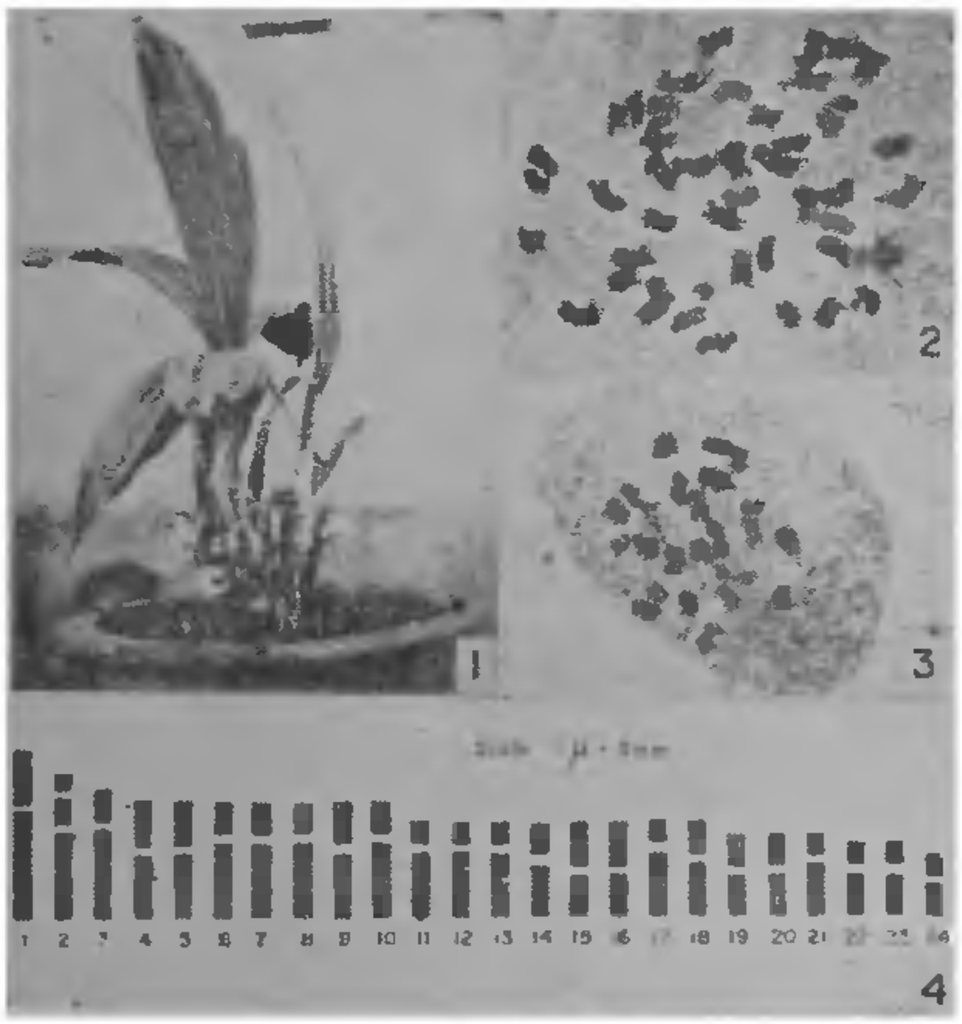
Living material was collected near Aldur, Chikmagalur District (Karnataka State) and maintained in the green house of the Department of Botany, Manasagangotri, Mysore.

Acanthephippium bicolor[5] is a pseudobulbous, terrestrial orchid (Fig. 1). The ovoid pseudobulbs are 5 to 7·5 cm in height and elongate into a stout, short, fleshy stem. Each pseudobulb bears 3–9 leaves with sheathing bases. The short flowering scape, bearing 3–7 flowers, arises laterally at the base of the pseudobulb. The large flowers have gibbous base and look like jugs. The yellow tepals bear red dots at the tips. The single anther is two celled and bears eight pollinia.

For somatic studies, young root tips and stem tips were collected, pre-treated with 0·002M 8-Hydroxyquinoline at 10–12° C for 2–3 hours and fixed in 1 : 3 acetic-alcohol. Squash preparations were made after hydrolysing the tips in a mixture of 1% aceto-orcein (9 parts) and 1N HCl (1 part). For meiotic studies, young flower buds were fixed in acetic-alcohol for 24 hours and the anthers were squashed in 2% aceto-carmine.

From the somatic metaphase preparations, it is observed that the chromosome number for *A. bicolor* is $2n = 48$ and it is the first report for the species (Fig. 2). The chromosomes fall into two groups of sharp gradations, measuring from 2·15 μ to 6·45 μ.

The karyotype analysis reveals the following types of chromosomes: (1) two pairs of comparatively long chromosomes with sub-median primary constriction, one of which possesses secondary constriction (0·64 μ) on the short arm; (2) nineteen pairs of medium sized chromosomes, of which nine pairs are with median or near median primary constriction, six pairs with sub-median primary constriction, and four pairs with sub-terminal primary constriction; (3) three pairs are short, among which one pair has near median primary constriction and two others have sub-median primary constriction (Fig. 4).



FIGS. 1–4. Fig. 1. Plant with inflorescence, × 0·2. Fig. 2. Somatic metaphase plate showing $2n = 48$, × 1,600. Fig. 3. Metaphase I showing 24 bivalents, × 1,200. Fig. 4. Idiogram.

Meiosis is normal in most of the cases, showing 24 bivalents at diakinesis (Fig. 3). During anaphase I regular disjunction of 24 chromosomes to each of the poles was noticed. However, in a few instances laggards and bridges were observed in metaphase I and anaphase I respectively. This bridge formation could be either due to inversion or translocation. The pollen tetrads are isobilateral, linear or T-shaped.

The previous reports of chromosome numbers for other species of *Acanthephippium*[3-4] reveal that the genus has more than one basic number. The number of chromosomes recorded in the present study tallies with Tanaka's[3] report for *A. pictum* in having $2n = 48$, while Mehra and Vij[4] recorded $2n = 40$ for *A. striatum* and *A. sylhetense*.

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DAMPING-OFF OF SEEDLINGS IN METHI (*TRIGONELLA FOENUM-GRAECUM* L.) A NEW RECORD

METHI (*Trigonella foenum-graecum* L.) is an economically important Kharif crop in India, grown under irrigation in other seasons. Its leaves and young pods are used as vegetables and the seeds as condiments.

During August and September (1977 and 1978) a severe "damping-off" of seedlings of Methi was observed in the vegetable fields around Gwalior, M.P. The disease appeared in patches of different sizes. It was characterized by browning and rotting of the tissue in the collar region of the young seedlings which topple (Plate I). The disease spread very fast, and in 3–5 days, there was a total loss of the crop.

PLATE I A-B

Isolations from the infected portion of seedlings consistently yielded a non-sporulating, septate fungus, having a cottony mycelium. Fungus produces sclerotia abundantly on PDA, the sclerotia consist of a mass of loosely interwoven hyphae without any marked zonation. The isolate was maintained on PDA slants,