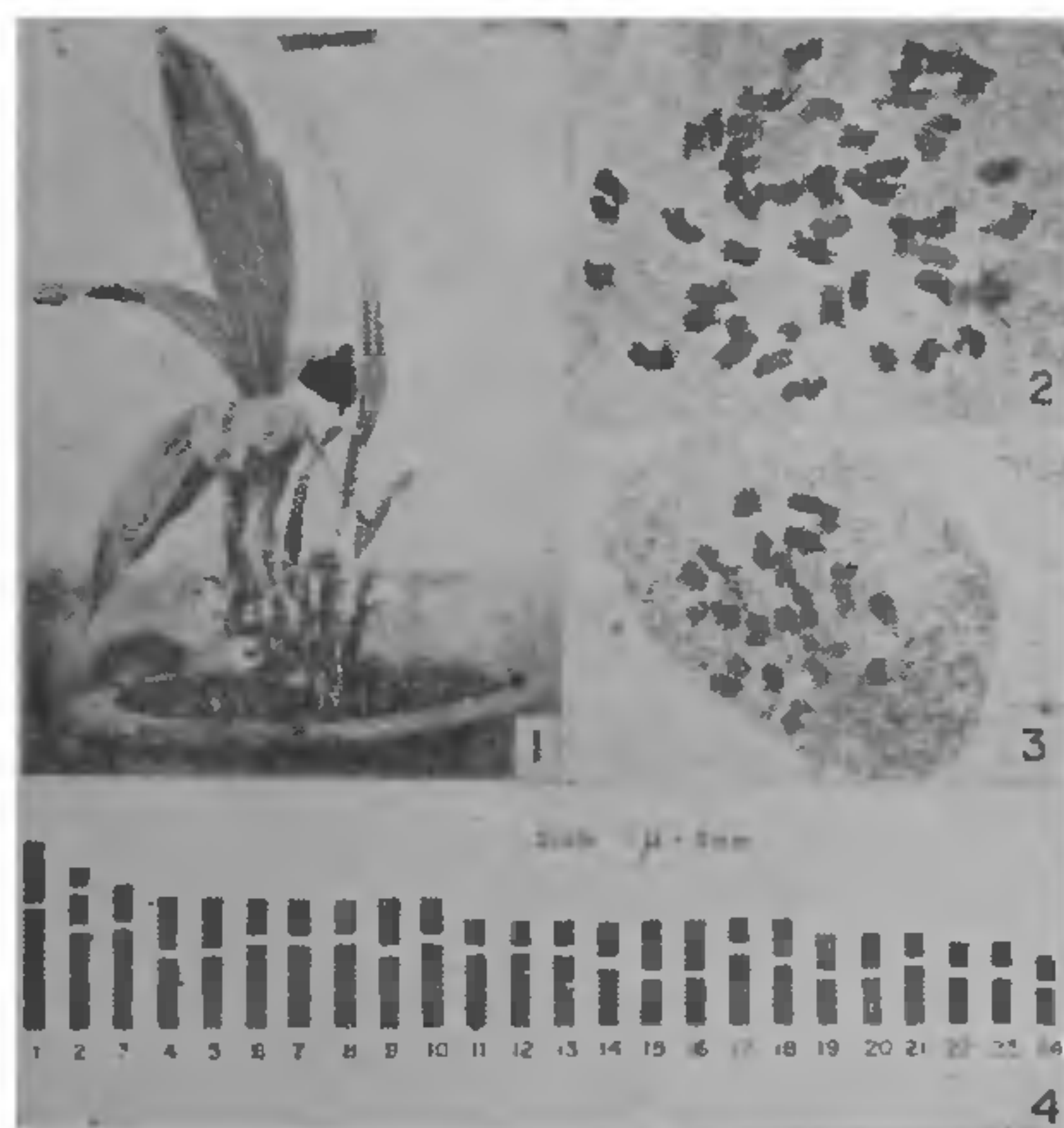


The karyotype analysis reveals the following types of chromosomes: (1) two pairs of comparatively long chromosomes with sub-median primary constriction, one of which possesses secondary constriction (0.64μ) on the short arm; (2) nineteen pairs of medium sized chromosomes, of which nine pairs are with 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, $\times 0.2$. Fig. 2. Somatic metaphase plate showing $2n = 48$, $\times 1,600$. Fig. 3. Metaphase I showing 24 bivalents, $\times 1,200$. 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 isobilateral¹, 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's² report for *A. pictum* in having $2n = 48$, while Mehra and Vij⁴ recorded $2n = 40$ for *A. striatum* and *A. sylhetense*.

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DAMPING-OFF OF SEEDLINGS IN METHI (*TRIGONELLA FOENUM-GRÆCUM* 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,

Pathogenicity tests were performed on 7 day old seedlings in the pots of 6 inch size previously raised in sterilized soil. A mycelial suspension was prepared in distilled water and the soil drenched in the pots with suspension. After inoculation the pots were covered with polythene bags to maintain sufficient moisture for disease development. Symptoms appeared within 5-7 days of inoculation. Isolations from these artificially inoculated plants yielded the same organism. The pathogen is identified as *Rhizoctonia solani* Kuhn [perfect stage *Thanatephores cucumeris* (Frank) Donk] and the culture has been deposited at Commonwealth Mycological Institute, Kew, Surrey, England (IMI 225411).

Rhizoctonia solani Kuhn has been reported on many other plants of the same family¹⁻⁴; but it is being reported as a pathogen on Methi for the first time in India.

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OBSERVATIONS ON SOME TERATOLOGICAL ANOMALIES IN *PEDALIUM MUREX* LINN.

WHILE scanning the weeds that beset the paths along the railway lines in this locality, some of the individuals of *Pedaliium murex* appeared to be conspicuous by their "green" flowers. On closer examination, it was found that the greenness was due to a total transformation of the entire flowers into foliar shoots. Further scrutiny revealed the existence of different degrees of foliation starting from the outer accessory whorls and ending with the inner essential whorls (Fig. 1). Thus it could be seen that in some flowers, the sepals have enlarged into leafy structures; in some others, the usually cream coloured petals have already transformed themselves into foliar expanses; in a few other cases, the stamens have also expanded themselves into spatula-shaped organs showing rudimentary anthers or none; yet in others, even the bicarpellary

syncarpous ovary has opened out into a pair of leafy organs. The last mentioned phenomenon is obviously a case of complete phyllody. Besides the foregoing, in quite a few cases, there were described proliferations of the floral axis beyond the sepals and petals, the proliferated axis again bearing leafy shoots.



FIG. 1 Gradations of phyllody in *P. murex*

Monstrosities of this kind have, of course, been recorded before, although not in this taxon. But then, the significance of such phenomena cannot be ignored. The classical theory of metamorphosis of Goethe would lead us to believe that the flower as a whole is a highly metamorphosed or specialised vegetative shoot adapted to perform the specialised function of reproduction. On the basis of observations on developmental morphology, this classical concept gained further elaboration and support by morphologists like Eames¹, Parkin², Arber³ and others. But the same concept has also been the butt of acute criticism by Saunders⁴. Saunders' view of carpel polymorphism seeks to be a total negation of the aforesaid classical concept. However, the present observations on the floral transformation into foliar shoots with the leafy structures arising as lateral appendages on a proliferated central floral axis, thus leading to a thorough-going phyllody of the flower, leave one in no doubt about the foliar origin of the flower and its various parts. In seeking the evolutionary origin of plant organs, it is such patterns of developmental atavistic throw-backs as witnessed in *P. murex* that would appear to lend crucial support for the classical concept of foliar origin of the flower.

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