

served fossil impressions of jelly-fish from the Mand-saur district of Madhya Pradesh which form the important biological evidence for these rocks.

The structure is semicircular and rectangular with maximum diameter about 12 mm indicate the imprint of medusoid coelenterate. The central part is a circular depression which represents mouth of the soft bodied animal. The six radiating ridges are the mesenteries which partition the internal body of the animal.

The impressions indicate that the free swimming, soft-bodied organisms lived in shallow low energy environment during late precambrian time.



Figure 1. Fossil impressions of Jelly-fish.

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TWO NEW POST HARVEST DISEASES OF FRUITS FROM INDIA

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DURING a survey of vegetable market at Gwalior two unrecorded fungi were obtained from *Pyrus communis* L. (Pear) and *Abelmoschus esculentus* W. & A. (Ladyfinger). The organisms were isolated on potato dextrose agar medium and they satisfied Koch's postulates. A brief description of the diseases is given below:

1. Dry rot of *P. communis* caused by *Fusarium solani* (Mart.) Sacc.

The lesions appeared as water-soaked areas and were oval or irregular during the early stages. The infected fruit shrivelled gradually. Subsequently the conidia of the fungus appeared in the diseased portions. Entire fruit got dried up within 10-15 days of infection.

The culture has been deposited in C.M.I., England (IMI 257133).

2. Dry rot of *A. esculentus* caused by *Aspergillus flavus* Link. ex Fries.

After two or three days of infection the fruits started drying from the apical end and in 10-12 days these dried completely. In the advanced stage, the fruit showed conspicuous mouldy growth.

The culture has been deposited in C.M.I., England (IMI 257134).

A review of available literature^{1,2} indicates that both the diseases are being reported for the first time from India.

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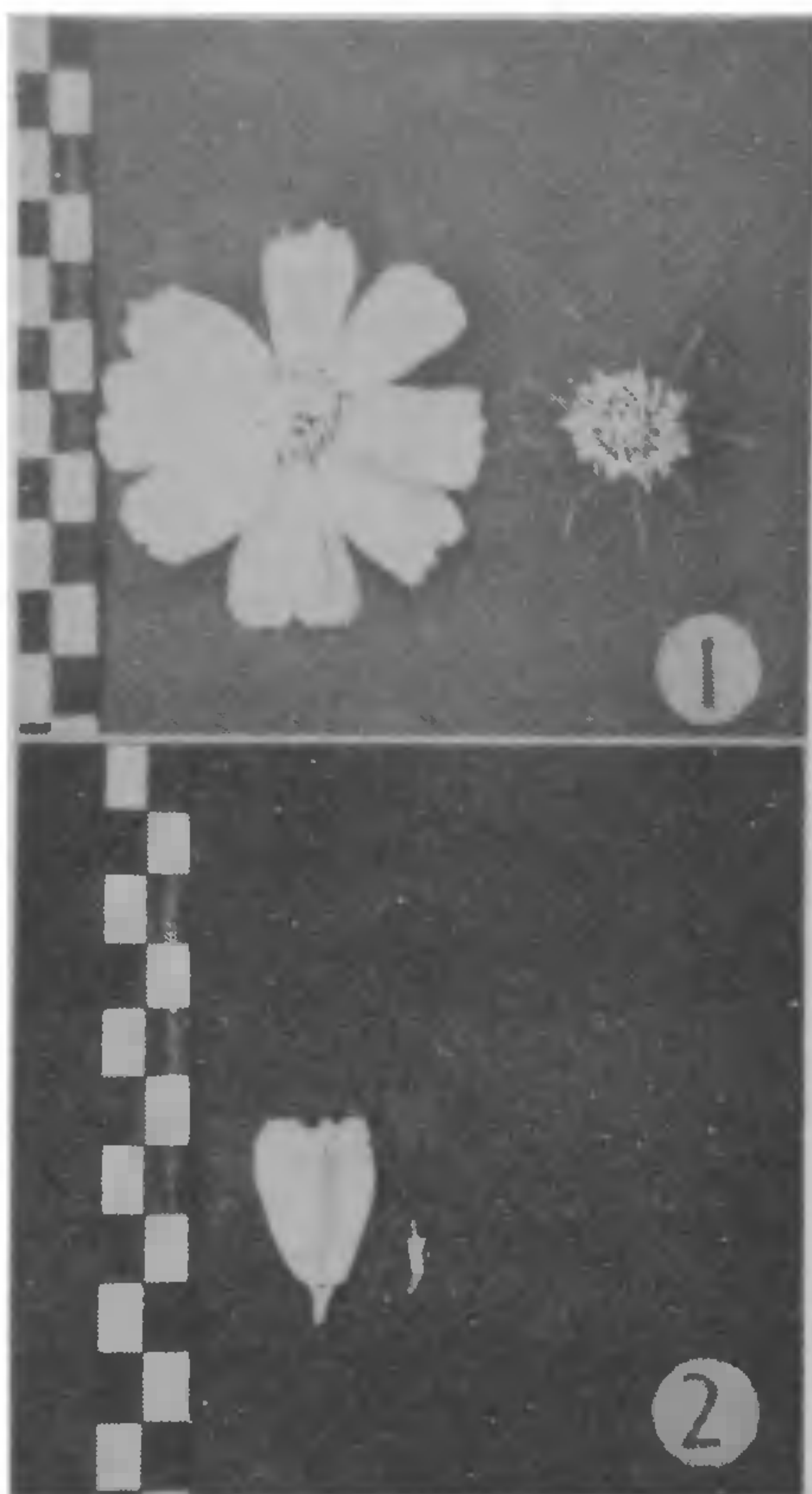
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A TERATOLOGICAL COSMOS WITHOUT RAY FLORETS

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COSMOS bipinnatus Cav., a member of the family Asteraceae (Compositae) is a tropical ornamental annual reaching a height of 150-300 cm. The leaves are 5-10 cm long and bipinnatifid into filiform lobes. The heads are heterogamous 4-8 cm across with an array of truncate ray florets in white, pink or crimson colours and yellow disc florets. The ray florets are usually female but sometimes sterile with conspicuous absence of the entire gynoecium. The achenes are glabrous 0.8-1.5 cm long with an abrupt beak much shorter than the body.

In a population of 100 plants grown at the Nagarjuna University, Botanic garden, two abnormal plants showing the absence of ray florets in all the inflorescences could be located (figure 1). These are similar to their sibs in leaf characters but differ in other parameters (table 1). The capitulum diameter, size of the floret of the outermost whorl and percent seed set are drastically reduced (figure 2, table 1). The disc florets of the mutant are similar in all respects to the normal ones. However, when carefully examined the outer florets of the mutant exhibits a slight tinge of purple and a slight increase in size thereby indicating that the ray florets during ontogeny converted themselves into discs.



Figures 1&2. 1. Inflorescences of the normal and mutant *Cosmos*. 2. Florets of the outermost whorl of normal and mutant heads.

TABLE 1

*Morphometrics of the control and mutant plants of *Cosmos bipinnatus* Cav.*

Character	Control	Mutant
Height (cm)	180	185
Pedicle length (cm)	11.3	15
Capitulum diameter (cm)	4.28	1.6
Floret size in the outer most whorl (cm)	2.6 × 1.2	1 × 0.4
Disc floret size (cm)	1.2 × 0.1	1.28 × 0.15
% Seed set	8.4	2.63

All measurements are the averages of ten except the height of the mutant plant which is an average of two plants.

Cytological studies of the normal and mutant plants revealed normal meiosis with regular formation of 12 bivalents as recorded by earlier workers^{1,2} and 100% pollen fertility. Because of the absence of detectable chromosomal abnormalities and heritability of the character, the abnormality can be ascribed to gene mutation/mutations, which are helpful in bringing out the diversification of the species. The observations further indicate that there is a reversal from derived unisexual condition to bisexual state making the head homogamous. Hence, the present teratological condition in all probability represents an atavistic tendency.

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HYDROCARBON UTILIZATION BY *AEROMONAS*, *ARTHROBACTER*, *BREVIBACTERIUM*, *CORYNEBACTERIUM*, *MICROCOCCUS*, *MYCOBACTERIUM*, *NOCARDIA* AND *SERRATIA* SPP.

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MORPHOLOGICAL, cultural and biochemical characteristics of 10 bacterial isolates capable of utilizing