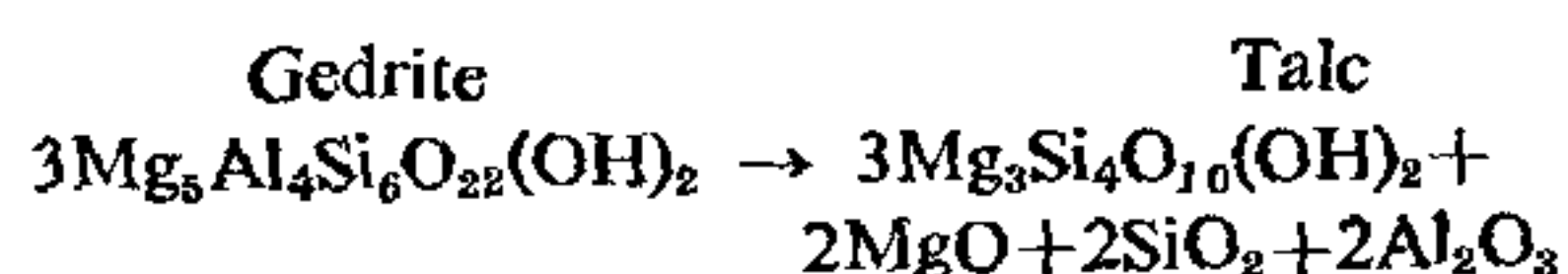


in the gedrites. The corundums show fascinating colour variation from violet pink, pink, light pink to white. A few crystals are prismatic ranging upto 3 cm in length whereas others are flattened and wafer-like with a thickness of about 3 to 5 mm, characterised by hexagonal form. The chemical analysis of coloured corundums are listed in Table I. The higher the concentrations of Cr, Fe, Ti, and Co, the darker is the colour imparted to the corundums of the present investigation.

The gedrite relics in the talc confined to the shear zones suggest that talc is an alteration product from the gedrite along the shear zones as expressed by the following reaction :



The liberated MgO and SiO<sub>2</sub> in the reaction have been fixed in chlorite, which occurs as a widespread accessory with talc, while the Al<sub>2</sub>O<sub>3</sub> has crystallised into corundum. The association of corundum with tectonically emplaced gedrites along shear zones has the potentialities of being used as a criterion in geological prospecting of corundum in the Khammam region of Andhra Pradesh.

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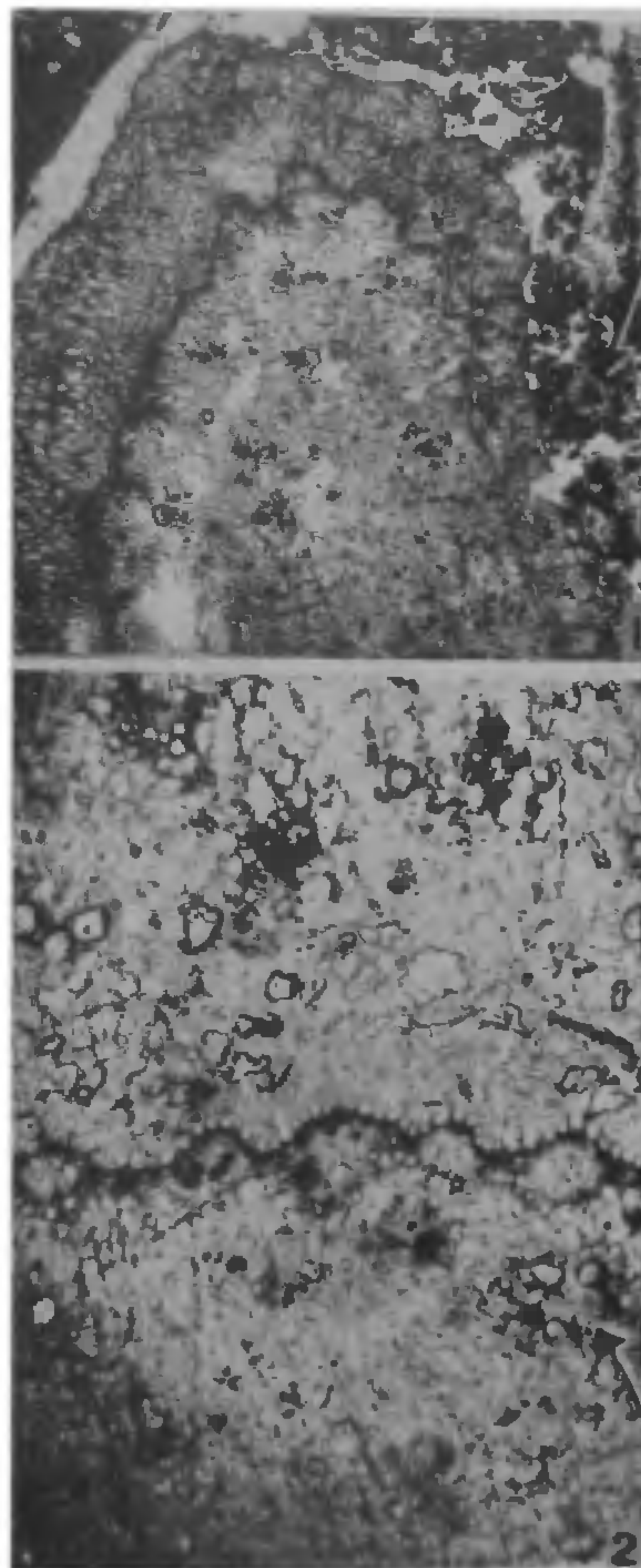
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### A FOSSIL AXIS (XYRIDACEAE) FROM MOHGAONKALAN

THE fossiliferous chert, collected from the Deccan Intertrappean exposures of Mohgaonkalan, M.P., India, on breaking exposed an axis, a part of the leaf sheath, a bud and roots.

The axis is 1.2 to 2 cm in diameter and 2.5 cms in length. The cortex and the central cylinder are aerenchymatous with irregularly placed typical monocotyledonous vascular bundles (Fig. 2). The bundle sheath is two layered, the outer parenchymatous and inner fibrous. Two metaxylem vessels having scalariform thickening lie one on each lateral side of the bundle. The protoxylem vessels lie towards the centre and the phloem towards the periphery but above the xylem parenchyma which lies in between the metaxylem vessels. The cortex is separated from the central cylinder by a layer of large cells, which have characteristic 'U'-shaped thickening on their inner walls, known as endodermoid layer<sup>3</sup> (Figs. 1 and 2). It is followed by 3-6 cells thick sclerenchymatous beaded zone, which imbeds vascular bundles at

regular intervals, the sclerotic cylinder<sup>4</sup> (Fig. 2). endodermoid layer and the sclerotic zone are hitherto known from fossil monocots : Cannace<sup>2</sup>, Cyclanthaceae<sup>2</sup>, Heliconiaceae<sup>6</sup>, Musaceae<sup>1</sup> Nymphaeaceae<sup>4</sup>.



FIGS. 1-2. Fig. 1. T.S. axis showing cortex, central zone and roots (Arrow),  $\times 6$ . Fig. 2. T.S. of axis magnified to show endodermoid layer, sclerotic zone and vascular bundle (Arrow),  $\times 45$ .

Transverse section of the axis shows a part of leaf sheath and a number of roots which are present around the part of the axis (Fig. 1). In l.s. a root and a bud are seen to originate opposite to each other from the

node of the axis. The mesophyll of the leaf and bud, and the cortex of the axis and root is aerenchymatous. About 6-9 radial exarch vascular elements are present in the roots. Further, the axis is flattened. All these characters suggest the marshy and plagiotropic nature of the axis. Such axis in addition to the above characters is found in Nyridaeae than in Commelinaceae and other monocotyledonous plants. Further, the closer comparison is found with *Achlyphila* of Nyridaeae in respect of above described characters.

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Nagpur, April 30, 1979.

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#### AN UNRECORDED POST-HARVEST ROT OF APPLE

SAMPLES of diseased apple fruits were collected from markets of Karnal and Kurukshetra. Isolations from these samples yielded two species of *Fusarium*, viz., *F. solani* (Mart) Sacc. and *F. equiseti* (Corda) Sacc. Both the species incite quite similar symptoms. Lesions occur at any point on the outer surface of the fruit. They are inconspicuous in the early stages but eventually become distinctive as the whole fruit gets involved with white or pinkish colonies of the two fungi.

The pathogenicity of both the species was tested on healthy fruits of apple by artificial inoculation. It was found that both the species invade the fruits through the injured surface.

A survey of literature showed no previous records of *Fusarium solani* and *Fusarium equiseti* on apple and are, therefore, new records. The cultures have been deposited at C.M.I., Kew, Surrey, England, (I.M.I. 234441 and I.M.I. 234437).

Authors are grateful to Mr. A. Johnston, Director and Dr. C. Booth for identification of the two fungi.

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#### ADDITIONS TO THE FUNGI OF INDIA

DURING the course of an investigation on fungi causing diseases on plants, the author came across the following fungi which appear to be new to country after a perusal of the literature<sup>1</sup>.

##### 1. *Puccinia phyllostachydis* Kus.

On living leaves of *Phyllostachys mannae*, Shillong City, December 1977. Leg. R. C. Srivastava, IMI No. 234990 a and 234991 a.

##### 2. *Puccinia canaliculata* (Schw) Lagerh.

On living axis and leaf parts of *Cyperus kyllingia*, Shillong City, Jan. 1978, Leg. R. C. Srivastava, IMI No. 234996.

##### 3. *Gyrothrix flagella* (Cooke and Ellis) Pirozynski

On living leaves of *Cymbidium elegans*, causing leaf spots, Jan. 1978, Leg. R. C. Srivastava, IMI No. 235002.

##### 4. *Leptoxyphium* sp.

On living leaves of *Kigalia pinnata*, I.B.G., Calcutta, Nov. 1977, (evident as black powdery coating on lower sides of leaves), Leg. R. C. Srivastava, IMI No. 234998.

##### 5. *Phyllachora punctum* (Schw.) Ort. and Stev.

On living leaves of *Isachne fischeri*, Nov. 1977, Leg. R. C. Srivastava, IMI No. 234982.

Specimens of these have been deposited in the Herbarium of Commonwealth Mycological Institute, Kew, England on the numbers given above.

Author is thankful to the Director, C.M.I., Kew, England, for his help in confirming the identity of these fungi.

Botanical Survey of India,  
Shillong 793 003,  
May 9, 1979.

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#### CYTOMIXIS IN THE POLLEN MOTHER CELLS OF *HEMEROCALLIS* LINN.

TRANSFUSION of nuclear substances into the cytoplasm of an adjacent cell, has been termed cytomixis. This phenomenon was for the first time discovered in the pollen mother cells of *Crocus vernus* by Koernicke<sup>1b</sup> and in *Galtonia candicans* by Digby<sup>7</sup>. Later the same process was also found by Gates<sup>8</sup>, who, while studying the pollen development in *Oenothera gigas* and *O. bienis* had recorded chromatin extrusions from nucleus of one pollen mother cell, through plasma strands into the cytoplasm of a contiguous cell. He considered this phenomenon to be natural and called 'cytomixis'.