

the latter these acquire variable dimensions. Phylogenetically, the latter is considered as primitive, since it occurs in the fossil representatives of the lower groups including the gymnosperms. The storied cambium is, however, recorded only in comparatively fewer taxa of the angiosperms. The purpose of this note is to record the occurrence and organization of the storied cambium, an additional interesting feature for *Salvadora persica* L.



FIGS 1-2. Fig. 1. Cambium of *S. persica* in tangential section showing storied arrangement of fusiform initials,  $\times 130$ . Fig. 2. Enlarged portion of Fig. 1, showing the beaded appearance of the fusiform initial cell walls and the nuclei in the ray and fusiform initials,  $\times 550$ .

During the survey of the cambial organization and its seasonal activity in a number of tropical trees a common indigenous tree *Dalbergia sissoo* was reported to possess a storied type of cambium by Paliwal and Prasad<sup>1</sup>. This was later confirmed by Ghouse and Yunus<sup>3</sup>, as a substitute material for *Robinia pseudoacacia*, the well-known European tree exhibiting this feature. More recently the same authors have listed more plants, common to northern India possessing the storied cambium.

Our material has been collected from a tree growing at the Old Delhi Ridge, from the main tree trunk at breast height. Small pieces of wood ( $1\frac{1}{2} \times 3$  cm), containing bark were fixed in craf III for 24 hrs. They were finally preserved in 70% alcohol after washing thoroughly with water. Transverse and longitudinal sections were cut at 15-20  $\mu$ m with the help of Reichert Sliding Microtome. The sections were passed through tannic acid-ferric chloride-lacmoid series as outlined by Cheadle *et al*<sup>2</sup>. Mounting was done in Eukitt.

As seen in tangential longitudinal sections, the fusiform initials are shorter and arranged in regular tiers one above the other. The cell walls of the fusiform initials showed beaded appearance due to the primary pit fields. These are uninucleate and highly vacuolate. Divisions occur in them by means of radial longitudinal walls. The rays are uni- to multiseriate and isodiametric in outline.

During the span of a year, the length of the fusiform initials varies from 120  $\mu$ m to 156  $\mu$ m and the breadth from 12  $\mu$ m to 16  $\mu$ m. The dimensions of the ray initials range from 14.5  $\mu$ m to 20.0  $\mu$ m.

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1. Bailey, I. W., *Am. J. Bot.*, 1923, 10, 499.
2. Cheadle, V. I., Gifford, E. M. Jr. and Esau, Katherine, *Stain Technol.*, 1953, 28, 49.
3. Ghouse, A. K. M. and Mohd. Yunus, *Curr. Sci.*, 41, 569.
4. Paliwal, G. S. and Prasad, N. V. S. R. K., *Ibid.*, 1971, 40, 114.

#### STALK END ROT OF GRAPES

DURING months of April and May 1975 a stalk end rot of grapes was observed at Allahabad. Percentage infection of the fruit varied from 3 to 5.



FIG. 1. Stalk-end rot of grapes.

Affected berries showed brownish flaccid rot at the stalk-end. The affected fruits fall off with the slightest touch to the bunch. The rot starts as a small circular to oval water-soaked spot which enlarges and becomes brown with time. White mycelia of the fungus develop on the centre of the diseased area and later black conidial heads of the fungus develop. Affected tissues become pulpy and shrink. The rotted fruit emit a fermented odour.

Isolations made from the diseased tissues as well as from the mouldy growth revealed the presence of *Aspergillus niger* van Tieghem. Pathogenicity tests were made by spraying the conidial suspensions on pricked berries which

developed rot. The fungus closely resembles with description of *A. niger* as described by Raper and Fennell<sup>1</sup>. *A. niger* is well known to be present in the atmosphere, storage places and also on the surface of various fruits<sup>2</sup> and therefore it is advisable that grapes should be picked and preserved avoiding injuries to the berries.

Rot of grapes due to *A. carbonarius* (Bain.) Thom has been already reported<sup>3</sup>, but this is a new record of *Aspergillus niger* on the berries of *Vitis vinifera* L. from India.

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1. Raper, K. B. and Fennell, D. I., *The Genus Aspergillus*, The Williams and Wilkins, Co., Baltimore, 1965, p. 686.
2. Sinha, S., *Proc. Ind. Acad. Sci.*, 1946, 24 B, 198.
3. Gupta, S. L., *Sci. and Cult.*, 1956, 22, 167.

#### ABNORMAL FEMALE CONES OF *ZAMIA FLORIDANA* A. DC. (CYCADACEAE)

*Zamia floridana* A. DC., a native of Florida, cultivated in the Experimental Garden of the Botanical Survey of India, Central Circle, Allahabad, produced both normal and abnormal female cones on a single plant. The plant under study produced eight cones. Out of these, six were normal and two abnormal in external morphological characters.

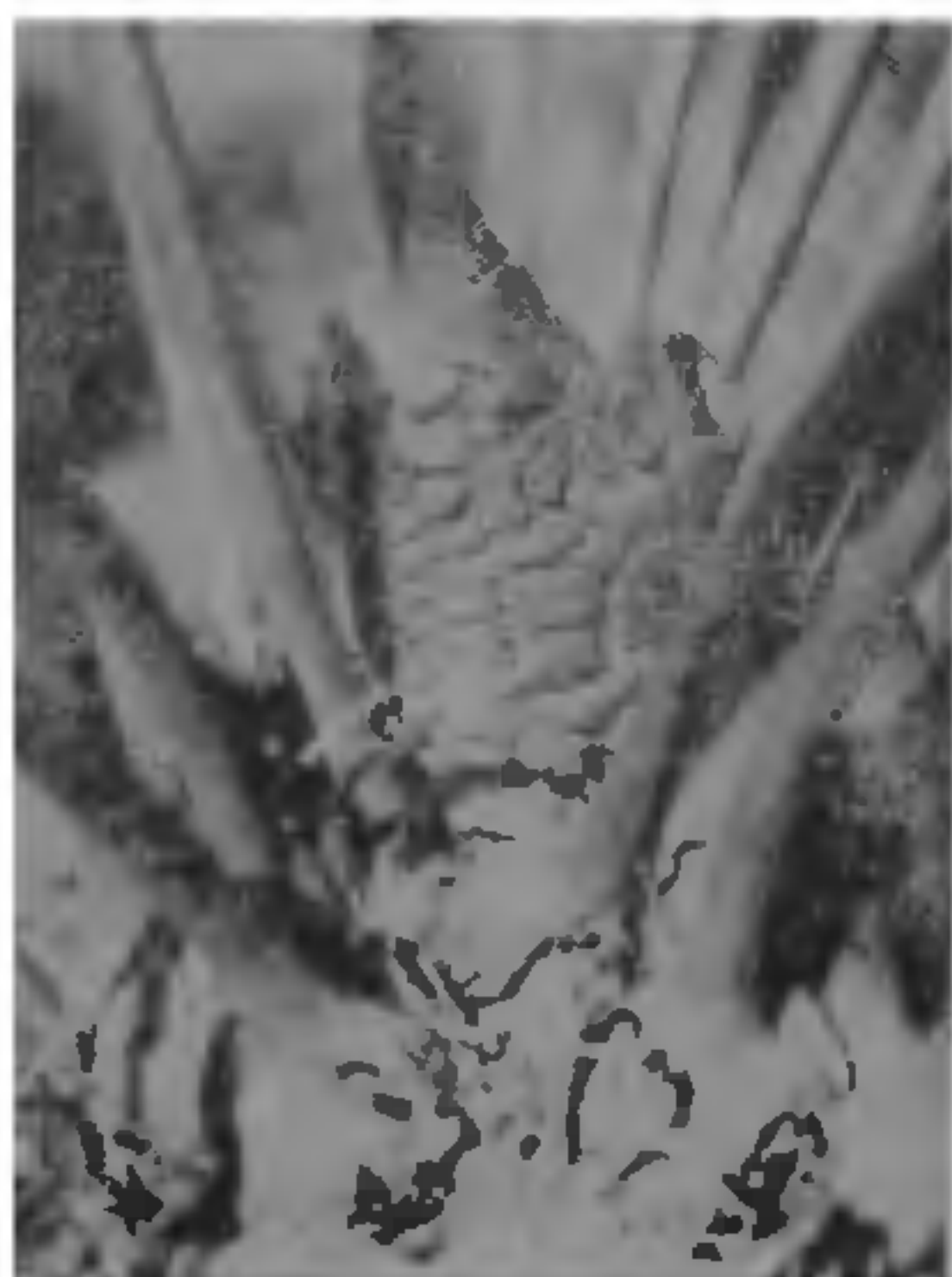


FIG. 1. *Zamia floridana* A. DC. shows bifurcated cone.

Occurrence of multiple cones with normal constituents/individual cones on a single plant of *Zamia floridana* A. DC., have already been reported by Smith (1929), Coulter and Chamberlain (1964) and Graph (1973).

One of the abnormal cones present at the crown exhibited normal middle and distal portions, whereas proximal end showed bifurcation (Fig. 1). The bifurcation originated 1.5 cm below the apex of the cone and directed upward. Megasporophylls were 0.4 cm × 0.2 cm in size and hexagonal in shape.

The second abnormal cone was also normal in the middle and distal end like the first one, but trifurcated at the proximal end. Megasporophylls were 0.8 cm × 0.3 cm in size and hexagonal in shape. Ovules were of normal type in both these cones. The growth of the trunk was noticed to be sympodial and the vascular supply continued in the furcations from the main axis.

The normal and abnormal cones, preserved in F. A. A., are kept in the museum of the Botanical Survey of India, Central Circle, Allahabad.

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1. Coulter, J. M. and Chamberlain, C. J., *Morphology of Gymnosperms*, Allahabad, 1964.
2. Graph, A. B., *Exotica : Pictorial Cyclopaedia of Exotic Plants*, Rutherford, N. J. (U.S.A.), 1973.
3. Smith, F. G., *Bot. Gazette*, 1929, 88, 204.

#### HARKNESSII : A NEW GENERIC RECORD TO INDIA

WHILE collecting fungi at Khandala, the author encountered an interesting pycnidial fungus on leaves of *Memecylon edule* Roxb., which was identified as a species of the genus *Harknessia* Cooke apud Cooke and Harkness. The genus was established by Cooke with *H. eucalypti* Cooke as type species in 1881<sup>1</sup>. Sutton<sup>2</sup>, while studying this genus accepted sixteen species. Critical comparative study revealed that, the present species is new to science and is described in this communication.