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A NEW FUNGAL DISEASE OF *VERNONIA DIVERGENS*

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DURING a recent survey an unrecorded leaf spot disease was observed on plants of *Vernonia divergens* Edgew. growing in the botanical garden of Jiwaji University. The disease occurred from July (1979)–February (1980). Initially the leaf spots were small, circular with distinct concentric rings and 0.5–2.2 cm in diameter but later became irregular giving blighted appearance to the leaves.

The pathogen was isolated on P.D.A. following surface sterilization technique.

Mycelium of the fungus in culture branched, septate, brownish black in colour, 3.3–6.4 μ m broad; conidia muriform, deep brown, forming in short unbranched chains on simple conidiophores, 46–53.5 \times 24–27 μ m; beak generally absent if present, septate, measuring 2.6–4.5 \times 3–3.9 μ m. The fungus was identified as *Alternaria alternata* (Fr.) Keissler. Identity of the fungus was later confirmed by C.M.I. (I.M.I. No. 247179).

Pathogenicity of the fungus was tested on healthy leaves using 10 day old, single spore cultures. The characteristic symptoms developed after 6–7 days of inoculation.

A. alternata has a wide range of hosts¹ in India, but occurrence of the fungus on *V. divergens* is the first report for the country.

The authors are grateful to Prof. R. R. Das for providing necessary facilities and to Dr. A. Johnston, Director, C.M.I., England, for helping in the identification of the fungus.

May 11, 1981

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ON THE EPIDERMAL FIBRE-LIKE SCLEREIDS IN THE TWO SIBLING GENERA OF THE POACEAE

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THE occurrence in the two sibling genera of *Pharusae*: *Pharus* of the new world and *Leptaspis* of the old world, long epidermal cells that are fibre-like tempted us to re-examine their characteristic features with a view to elaborate whether they could be treated under sclereids. Furthermore, we felt that precise information about their nature is necessary to avoid the sort of difficulties which can arise when, for instance, the term is easily mistaken for fibres of very different origin.

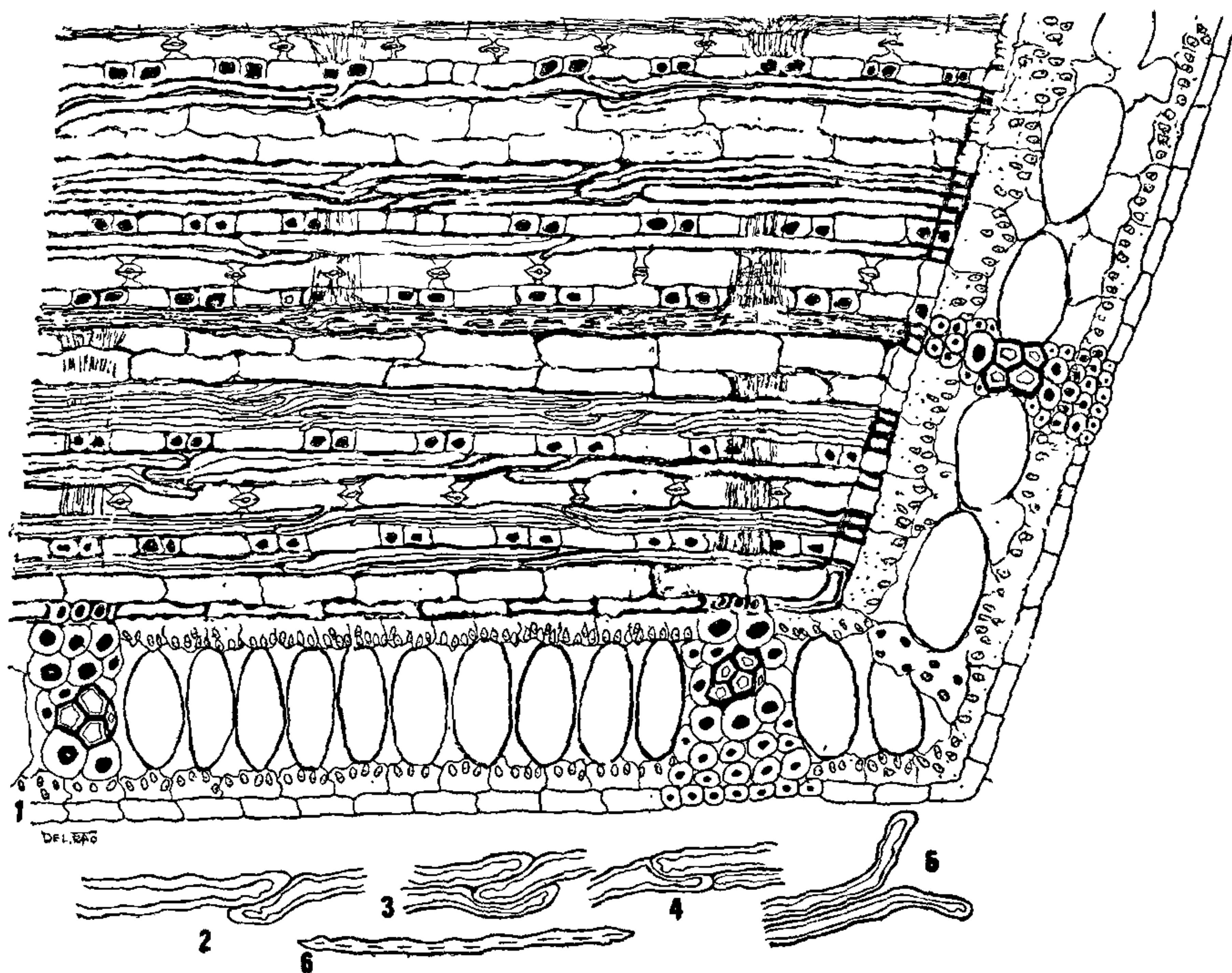
Materials

Leptaspis urceolata (Roxb.) R. Br. Papua, Normanby isl., Waikaiuna, L. J. Brass 25387 (US); *Pharus latifolius* L., Brazil, Porto Seguro, Itamaraju, T. R. Soderstrom, George F. Russell and Jose Hage 2209 (US).

Leaf sectors were cleared by soaking them in 5% sodium hydroxide overnight at 60°C. Next they are washed in water thoroughly and subjected to trichloroacetic acid–phenol (2:1) treatment for 10–15 minutes at 60°C¹. This modified technique is very helpful for clearing tannin and silica bearing leaves.

Studies of the cleared leaf segments, sections parallel and transverse to the main veins revealed two interesting patterns: surface mosaic pattern and cross sectional patterns of sausage or fusoid-shaped translucent *giant cells* in rows (Fig. 1).

The surface pattern has a few anatomical features of distinct morphogenic interest. Most distinctive is the co-occurrence of epidermal cells adjacent to the file of short often long and fibre-like commonly restricted to longitudinal rows². These long cells conform to elongated epidermal cells, single or in doubles, and often vary in their numerical numbers



FIGS. 1-6. Fig. 1. Semi-diagrammatic sketch of a leaf segment of *Leptaspis urceolata* (L. J. Brass 25387, US) showing: surface view—fibre-like sclereids; sectional view—giant translucent cells in rows, $\times 450$ (approximately). Figs. 2-6. Sclereid endings. $\times 500$ each.

between the veins. They vary in length from 80 to 150 μm , with many in the range of 70 μm . Individually, they have a sinuous outline and in groups, often they have overlapping, dovetailed or diarticulating endings (Figs. 2-6). They have secondary wall of uniform or uneven thickness and lumina of even or uneven width. The secondary wall is weakly striated, does not stain with phloroglucinol and showed no pits. In polarised light, they are readily apparent by their birefringence. Thus, they have many characteristic features in common, and they appear to stand out distinctly as fibre-like sclereids. Further they constitute a part of the dermal system and could be categorised under non-idioblastic tissue patterns³.

The occurrence of leaf sclereids is well documented in botanical literature. In particular, sclereids have not been reported so far in *Poaceae*. Another feature of phylogenetic interest is the recorded presence of enlarged translucent cells observed in trans and cross sectional views. In view of these findings, it is safe

to conclude that the similarity of structural features of the leaves of bamboos and the members of the *Pharacae* is an interesting problem in phylogeny.

The authors are grateful to Dr. T. R. Soderstrom, Botany Department, Smithsonian Institution, U.S.A., for the gift of leaf specimens for this study. Further, our grateful thanks are also due to Prof. Ahmedulla Sheriff for facilities and to the UGC for financial help.

March 26, 1981

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