

viously defined loci. Since both the mutants behaved in the same way, only one of them (*fpa* 74) was subjected to meiotic analysis. It was mapped on the left arm of linkage group I, distal to the *pro* A locus (table 1). The locus symbol 0 was assigned to this new isolate.

From the results of the two crosses presented in the table it is evident that there is some interaction between FPA-resistance of a mutant at the locus *fpa* 0 and leucine requirement of the auxotroph. However, there is no interaction between FPA-resistance on the one hand and proline, *p*-amino-benzoic acid or biotin requirement on the other. In the second cross, very few (only 3 out of 386 progeny tested) *lu* A 1, *fpa* 0 74 recombinants were recovered. The recombinants, which could be detected, formed very small and poorly conidiating colonies even on minimal medium supplemented with all the growth factors, indicating thereby that *fpa* 0 74 is able to utilize leucine of the medium only sparingly.

Based on the growth behaviour on limited media and genetic interaction, it can be concluded that the recessive mutant *fpa* 0 74 is defective in the uptake of acidic, basic and neutral amino acids.

Financial support from the Department of Science and Technology, Government of India, is gratefully acknowledged. Thanks are extended to Professor R.P. Sinha for his interest, encouragement and valuable suggestions.

16 October 1984

1. Sinha, U., *Ph.D. Thesis, University of Glasgow, U.K.* 1967.
2. Sinha, U., *Genetics*, 1969, **62**, 495.
3. Srivastava, S. and Sinha, U., *Genet. Res. Camb.* 1975, **25**, 29.
4. Piotrowska, M., Stepién, P. P., Bartnik, E. and Zarkzewska, E., *J. Gen. Microbiol.*, 1976, **92**, 89.
5. Kinghorn, J. R. and Pateman, J. A., *J. Gen. Microbiol.*, 1975, **86**, 174.
6. Jacobson, E. S. and Metzenberg, R. L., *Biochim. Biophys. Acta*, 1968, **156**, 140.
7. Surdin, Y., Sly, W., Sire, J., Bordes, A. M. and Robichonschultzmaster, H. De., *Biochim. Biophys. Acta*, 1965, **107**, 546.
8. Singh, M. and Sinha, U., *Genet. Res. Camb.*, 1979, **34**, 121.
9. Sinha, U. and Tiwary, B. N., In: *Aspects of plant sciences*, (ed.), S. S. Bir. Today and Tomorrow Printers and Publishers, New Delhi (in press) 1984.
10. Calhoun, D. H. and Jensen, R. A., *J. Bacteriol.*, 1972, **109**, 365.
11. McCully, K. S. and Forbes, E., *Genet. Res. Camb.*, 1965, **6**, 352.
12. Singh, M. and Sinha, U., *Experientia*, 1976, **32**, 1144.
13. Singh, M. and Sinha, U., In: *Current approaches in cytogenetics*, (eds), R. P. Sinha and U. Sinha Spectrum Publishing House, Patna and Delhi, 1983, p. 37.

FOLIAR VENATION IN *GLOSSOSTIGMA SPATHULATUM* ARN. EX BENTH.

S. C. PALIWAL and G. S. LAVANIA

Department of Botany, Paliwal Degree College, Shikohabad 205 135, India.

* Department of Botany, R. B. S. College, Agra 282002, India.

GLOSSOSTIGMA SPATHULATUM Arn. ex Benth. is a minute, tufted herb belonging to the family Scrophulariaceae. During a survey of the aquatic vegetation of the district Mainpuri its plants were found growing on the wetland, both in field and submerged state in the water which collected in a depression in the same vicinity. The former population has been referred to as the wetland-form and the latter water-form. Morphologically, the two were different in that the wetland-form was in copious flowering whereas the water-form was sterile.

That the environment causes marked influence on the leaf venation is borne out from a number of reports in the literature¹⁻³. Besides, it has also been opined by some authors that aquatic medium alters the organization of venation to variable degrees. The present study was, therefore, undertaken to examine and compare the foliar venation in a form which shows luxuriant growth in two conditions, from the point of view of availability of water.

The material was collected from the fields near village Ujrai in the district Mainpuri, U. P. The plants were fixed in FAA and then stored in 70% alcohol. The leaves were cleared following the method outlined by Paliwal & Kakkar⁴. The sketches of the venation pattern were made using a camera lucida under low power of the compound microscope.

The major venation pattern of leaves of both the exposed as well as submerged specimens is of hypodromous type. The minor venation pattern, on the

other hand, shows a striking difference in the two categories of leaves. In the water-form only 2—3 lateral or 2° veins arise from the principal or 1° vein and the areole formation is hardly discernible. Even 2° veins are not continuous but are subtended by small free vein-endings (figure 1). On the contrary, in the wetland-form the venation is more elaborate with well-organized areoles which possess a few simple vein-endings. Here one rarely comes across free vein-endings (figure 2).

The simplicity in venation pattern of the water-form of *G. spathulatum* appears definitely related to the aquatic medium in which the plant remains submerged. This is because the leaf in a submerged state absorbs water from the whole of the surface and hence an elaborate venation pattern, essential for the conduction of water to all the tissues of the leaf, is not required.

The authors thank Prof. G. S. Paliwal for comments on the paper. One of us (SCP) is also grateful to the

authorities of Paliwal Degree College, Shikohabad for assistance.

16 October 1984

- 1* Lucic, P. C., M. A. Thesis, Univ. of Calif. Berkley, 1970.
2. Manze, U., *Geol. Inst. Univ. Koln.*, 1968, 14, 1.
3. Sehgal, Lalita and Paliwal, G. S., *J. Linn. Soc. (Bot.)*, 1974, 68, 173.
4. Paliwal, G. S. and Kakkar, Lalita, *Acta Agronom. Acad. Scien. Hungar.*, 1969, 18, 406.

* Not seen in original.

SCHIZOPHYLLUM COMMUNE Fr. ON ENDOSPERM OF *COCOS NUCIFERA* L., A NEW HOST RECORD FROM INDIA

S.N. KAZMI, N.K. SONI and G.P. MISHRA

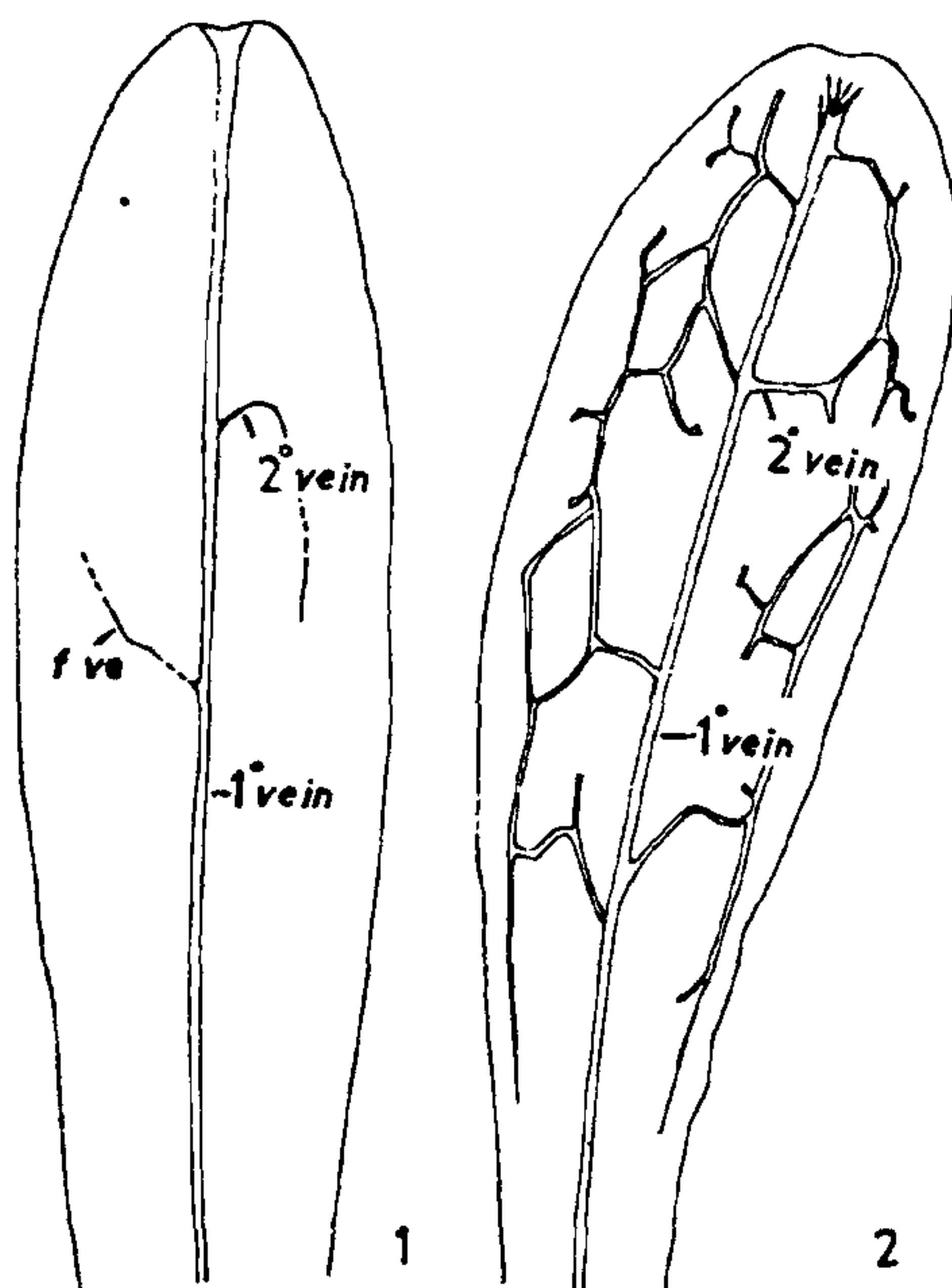
Department of Botany, Dr. H.S. Gour Vishwavidyalaya, Sagar 470 003, India

SCHIZOPHYLLUM COMMUNE Fr. was isolated from the Kernel (endosperm) of coconut, where it causes rotting. The infected endosperm becomes pulpy and emits foul odour, becoming unfit for consumption.

A review of literature revealed that previously *S. commune* was regarded as saprophytic in nature, but later, various workers have observed in it a tendency towards parasitic mode of life. Chaudhari and Johar¹ reported it to be parasitic in mango (*Mangifera indica* L.) and Sheesham (*Dalbergia sissoo*) trees in Punjab. Since then it has been reported to be growing on logs of timber, tree trunks and branches, by various workers^{2, 3} and few workers^{4, 5} collected it growing on wooden logs and basal parts of living trees of *Butea monosperma*, *S. commune* is a widespread fungus occurring on hard woods⁶.

S. commune was first reported as a pathogen of coconut by Dupont in 1926 from Seychelles⁷. Besides this, no other report of its occurrence on coconut is available⁸. However, Dupont has not specified the nature of disease and the part of the plant attacked by it.

In the present study the pathogenic nature of the fungus was tested on healthy fruits by various methods, and Koch's postulates confirmed. Symptoms developed after 5—7 days of inoculation on coconuts.



Figures 1–2. *Glossostigma spathulatum*. 1. Leaf of the water-form showing simple venation pattern. 2. Leaf of the wetland form showing venation pattern (fve, free vein-ending). Both $\times 22$.