On dead stem of *Murraya paniculata* Jack (Rutaceae); Kankeshwar, 8/12/83, Leg. Ramesh, LFM No. 11.

The present collection differed from other known species of *Mycosphaerella* in its morphological characters and dimensions of asci and ascospores, and hence described as new taxon.

M. mangiferae sp. nov. (figure 2).

Ascocarpia (pseudothecia) dispersa, immersa, nigra, globosi, 521 μm × 560 μm, cum ostiolis erumpentibus; muri, pseudotheci compositii e 2–3 stratis cellularum atrobrunnearum, cum muris crassis et polyedricis, pseudoparaphyses desunt. Asci obovoidei bitunicati, 8 spori, 157–302.3 μm × 11.7–19.5 μm. Ascosporae conglomeratae, leviter clavatae, cum apicibus rotundaris, uniseptatae, hyalinae 35.1 μm × 19.5–23.4 μm.

Typus lectus ad cortice *Mangiferae indica* Linn. (Anacardiaceae); Trimbakeshwar, 4/10/83, Leg. Ramesh, LFM No. 12.

Etymology: Specific epithet referring to the host *Mangiferae* from which the species was collected initially.

M. mangiferae sp. nov. (figure 2).

Ascocarps (pseudothecia) scattered, immersed, black, globose, 521 μm × 560 μm, with an erumpent ostiole; pseudothecial wall composed of 2–3 layers of dark brown, thick-walled polyhedral cells. Pseudoparaphyses absent. Asci obovoid-clavate, bitunicate, 8 spored, 157–302.3 μm × 11.7–19.5 μm. Ascospores conglomerate, weakly clavate with rounded apices, 1 septate, hyaline, 35.1 μm × 19.5 μm–23.4 μm.

On dead stem of *Mangiferae indica* Linn. (Anacardiaceae); Trimbakeshwar, 4/10/83, Leg. Ramesh, LFM No. 12.

The present collection differs from other known species of *Mycosphaerella* in its morphological characters and dimensions of asci and ascospores, hence it is referred as a new taxon.

The author is indebted to Dr S. D. Patil for guidance and to UGC for financial assistance.

28 November 1985

1. Lindau, G., In: Engler und Prantl, Die Naturlichen, Pflanz enfamilien Wihelm, Engelmann. Leipzig, 1897, p. 321.
2. Bessey, E. A., *Morphology and taxonomy of the fungi*, Blaikstons Sons and Co., Philadelphia, 1950.
3. Gaumann, E. A., (Trans. by F. L. Wynd) *The fungi*, Hafner Publishing Co., New York, 1952.
4. Luttrell, E. S., *Mycologia*, 1955, **47**, 511.
5. Barr, M. E., *Contr. Univ. Michig. Herb.*, 1972, **9**, 523.
6. Von Arx, J. A. and Müller, E., *A re-evaluation of the bitunicate Ascomycetes with keys to families and genera*. Centraalbureau Voor Schimm. Baarn, Netherlands, 1975.

A NEW LEAF SPOT DISEASE OF *SOLANUM MELANGENA* L (BRINJAL) CAUSED BY *HELMINTHOSPORIUM HALODES* DRECH

V. PRABHAKARA RAO, G. W. DHANDE and G. S. PENDSE

Indian Drugs Research Laboratory, Pune 411005, India.

WHILE brinjal leaf-spot disease caused by *Helminthosporium speciferum* (Bain) Nicot has been reported by Singh *et al*[1], this is the first time that *H. halodes* is being reported on *Solanum melongena* L (brinjal)[2,3].

The spots appeared as irregular, light to dark greyish in colour which later changed to dark brown as the leaves matured. The outer margins of the leaves presented a wrinkled appearance and at times the complete leaf was affected which subsequently droops.

Isolations were made from the affected portions of the leaves on potato-dextrose-agar plates and later transferred to PDA tubes. The fungus showed mycelium and was profusely branched and septate. Conidia and conidophores are olivaceous to brown in colour. The conidia are borne in clusters, having one end tapering with a hilium and the opposite end rounded. Conidia are 3 to 10 septate. Conidiophores measured 198.2 μ in length and 5.3 μ in breadth and the conidia 70.6 μ in length and 15.2 μ in breadth.

Pathogenicity of the fungus has tested by spraying a spore suspension on a month-old brinjal seedlings. Typical symptoms of leaf spots developed within a week.

Re-isolations of these spots on PDA plates yielded colonies of the fungus. It tallied with the description of *H. halodes* given by Drechsler[4] and was identified as *H. halodes* Drech. The culture of this fungus has been deposited at the Type Culture Collection, IARI, New Delhi.

The authors thank the Department of Science and Technology, New Delhi for financial assistance. Thanks are also due to Dr V. G. Rao, M. A. C. S., Pune

for helping in the identification of the species of this fungus.

1 October 1985; Revised 10 December 1985

1. Singh, D. V., Raychaudhuri, S. P. and Sethi, M. I., *Curr. Sci.*, 1970, **39**, 181.
2–3. Bilgrami, K. S., Jamaluddin and Rizwi, M. A., *Fungi of India* Parts I & II, 1979 1981, Today and Tomorrow's Printers & Publishers, New Delhi.
4. Drechsler, C., *J. Agric. Res.*, 1923, **24**, 641.

ASPECTS OF HOST PREFERENCE IN TWO SPECIES OF APHIDS AND A JASSID (HOMOPTERA: INSECTA) INFESTING FERNS

A. MOHAN DANIEL and
S. S. CHANDRASEKAR
Entomology Research Institute, Loyola College, Madras 600 034, India.

THE inability of phytophagous insects to efficiently utilize ferns and consequent paucity of insects feeding on ferns was first noticed by Schneider[1] and Brues[2]. Though such resistant factors in ferns like texture[3], aminoacid deficiency[4], poor nutritional composition[5], toxins[6,7], cyanogen[8], presence of thiaminase[9], exogenous ecdysone[10,11], and 'water soluble factors'[3] have been implicated, no adequate explanation is yet available to prove the influence of those factors on host resistance. However two aphid species, *Micromyzodium filicum* David and *Micromyzus nigrum* van der Goot and the jassid *Kolla tigrina* Distant appear to efficiently utilize and the fern host for their growth and development. In view of this anomaly, the present investigation was undertaken to study the variations in the chemical composition of eleven species of ferns, both infested as well as uninfested, to assess some of the biochemical parameters involving the degree of host preference in these insects.

The aphid species *Micromyzodium filicum* and *Micromyzus nigrum* are known to infest the ferns, *Pteris quadriaurita* Tetz, *Pteris quadriaurita* var *argyrarea*, *Blechnum braziliensis* and *B. orientale*. A comparatively meagre infestation of *Micromyzodium filicum* was also noticed in *Pityrograme chrysophylla* (Golden fern) and *Pityrograme pullchella* (Silver fern). An overall analysis of the population of these species on *P. quadriaurita*, *B. orientale* and *B. braziliensis* revealed that the species of *Blechnum* are preferred by these aphid species and their infestation on fern hosts is evident only at altitudes above 1,900 meters. The jassid *Kolla tigrina* does not exhibit any aggregation on the host plant, and no external morphological damage on the infested frond was evident. Consistent collections from areas in Anamalais and Nilgiris revealed the occurrence of this species in association with ferns only above 1,900 m.

Biochemical analyses of eleven species of ferns (table 1) revealed that the range of lipid concentration for insect attack is between 8–12 mg/g. In *Blechnum* species, though the concentration of total phenols appeared to be very high, the aphids tend to exploit the hosts for their nutritional requirement. Such a comparatively higher concentration of phenols may generally act as a repellent because of their high toxic nature. Adaptive specialization of aphids enables them to pierce and feed on the nutritious contents of phloem. But in the case of *Pteris quadriaurita*, a comparatively low concentration of phenols (2.2 to 9.5 mg/g) was noticed, alongside with an equally low amount of carbohydrates as compared to the rest of the ferns. A comparative assessment of the protein content in the ferns revealed that protein concentration is very high (6.25 to 7.00 mg/g) only in the case of *Pteris* species. A comparison of the nitrogen content of the different fern hosts revelaed that aphids prefer to feed on a high concentration of nitrogen for better survival and growth[12]. It is clear that the maximum utilization of fern hosts by aphids occurs only when the nitrogen content ranged from 0.04 to 1.12 mg/g. Any deviation from this range resulted in the absence of aphids. Though *Lomaria gibba*, *Diplazium lasiopteris* Kunze, *Cyrtomium falcatum* Pappe (var *caryotideum*), and *Gleichenia* sp have almost an equal concentration of carbohydrates as compared with that of *Blechnum* species, no infestation of aphids was evident on these hosts. Though *Tectoria macrodonta* showed an equal concentration of phenol as that of *Blechnum* species, the former host was not preferred. Hence, it appears that the low concentration of carbohydrate alongside with the low concentration of phenols (as in *P. quadriaurita* var *argyrarea*) or a low concentration of carbohydrate and a high concentration of phenols (as in *Blechnum* species) appears to act as attractants towards aphids infesting ferns. Nitrogen concentration for aphid infestation appears to range from 0.42 to 1.42% and concentrations below and above this level tend to act as deterrents for insect attack. This is supported by the fact that fern hosts like *Polypodium*