

of the vascular system. The occurrence of a typically diarch root as reported in the dicotylous seedlings<sup>3</sup> suggests an ontogenetically normal vasculature. The number of vascular bundles supplying the cotyledon indicates that syncotyly resulted by fusion of two cotyledons (normal cotyledons have three traces each). This explains the normal structure of the root also. As suggested by Banerji<sup>5</sup> the reported abnormalities like tricotyly, hemitricotyly and syncotyly seem to be the result of repeated cultivation.

SCG acknowledges the award of a Post-doctoral Fellowship by the CSIR, New Delhi.

March 16, 1981.

1. Esau, K., *Hilgardia*, 1940, **27**, 793.
2. Kavathekar, K. Y. and Pillai, A., *Phytomorphology*, 1977, **27**, 240.
3. Pillai, A. and Goyal, S. C., *Ibid.*, 1980, **29**, 38.
4. Thoday, D., *Nature*, 1939, **144**, 571.
5. Banerji, M. L., *Bull. Bot. Soc. Beng.*, 1957, **11**, 1.

## **NEOTROTTERIA MANGIFERAE SP. NOV. AND VALSEUTYPELLA KHANDALENSIS SP. NOV.— NEW RECORDS FROM INDIA\***

J. G. VAIDYA

Department of Botany, University of Poona  
Poona 411 007, India

DURING a mycological survey of Maharashtra State, two allantosporous Ascomycetes were collected, viz., *Neotrotteria* Sacc. and *Valseutypella* Höehnel. These genera were not previously reported from India. The present collections have been assigned to two new species namely *Neotrotteria mangiferae* and *Valseutypella khandalensis* because they differ from the existing species of the respective genera in gross morphology and also on host character. Their material has been deposited with Ajrekar Mycological Herbarium (AMH) under accession numbers indicated at respective places.

*Neotrotteria mangiferae* sp. nov. (Fig. 1).

Stroma globular, black, scattered, superficial, measure 1-2.5 mm broad. Upper surface with mycelial spines, 2-5 perithecia perstroma. Perithecia globose, non ostiolate, seated on a black subicle, cluster of asci situated opposite sides to each other, measure 300-400  $\mu$ m broad. Asci clavate, stipitate, multi-spored, measure 90-120  $\times$  20-20  $\mu$ m. Ascospores allantoid arranged in 4-5 vertical rows, hyaline, unicellular, 5-10  $\times$  2-3  $\mu$ m.

\* Part of Ph.D. Thesis approved by the University of Poona, 1977.

Stromata globosa atra, discreta, superficialia, 1-2.5 mm lata. Paginae superni cum myceliales spina. 2-3 perithecio in stromati. Perithecio globoso, non ostiolato, insidens in atra subiculo, fasciculis asci situs oppositus inter se, 300-400  $\mu$ m latus. Asci clavati, longi stipitati, multispori 90-120  $\times$  20-30  $\mu$ m. Ascosporeae allantoidae, dispositae illice 4-5 in verticalis seriatae, hyalinae, unicellulareae 5-10  $\times$  2-3  $\mu$ m.

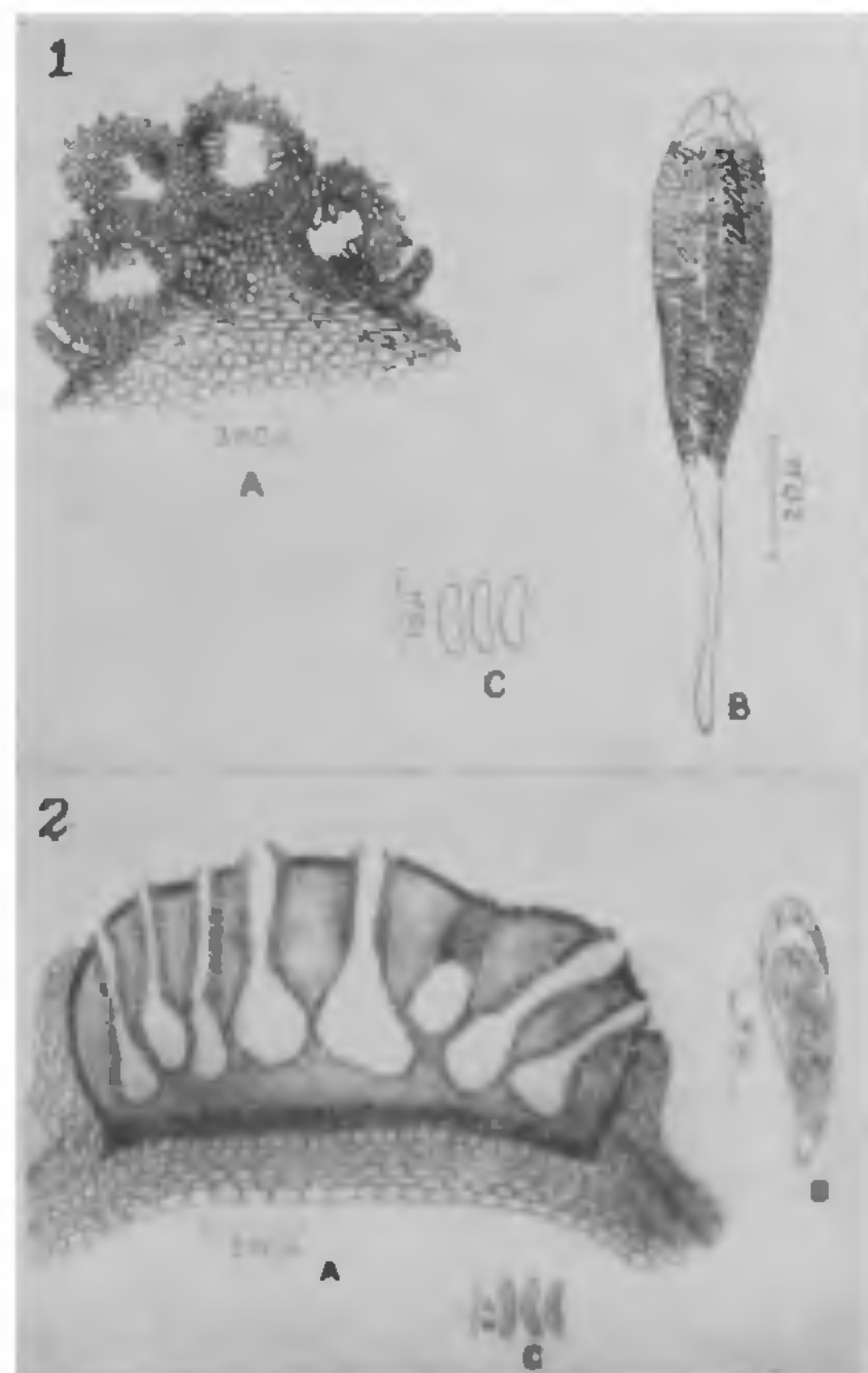
In ligno putrido *Mangifera indica* L.

*Holotypus* AMH-3298 on *Mangifera indica* L.

*Typus locus*: Karnala, Raigad (Recently changed by C.M., Maharashtra State) District, Maharashtra State.

*Valseutypella khandalensis* sp. nov. (Fig. 2).

Eustroma diatrypoid, composed of fungus tissue only, globular-elongated, scattered, measure 1-3 mm broad. upper surface rugosus with elevated osticles, 10-20 perithecia per stroma. Perithecia globose to subglobose, irregularly bistratose, crowded with long broad neck, arrange parallel to each other, measure 150-350  $\mu$ m high and 250-350  $\mu$ m broad with 80-260  $\mu$ m long and 40-80  $\mu$ m broad neck. Asci clavate, stipitate, octosporous, subhyaline 20-30  $\times$  5-7  $\mu$ m Ascospores



FIGS. 1-2. Fig. 1. *Neotrotteria mangiferae* Sathe and Vaidya sp. nov. Fig. 2. *Valseutypella khandalensis* Sathe and Vaidya sp. nov. A. Section of Stroma; B. Ascus; C. Ascospores.



allantoid, biserial, unicellular, subhyaline, light olivaceous grey, measure  $4-8 \times 1-2 \mu\text{m}$ .

Eustromata diatrypoidea, omnino ex tantum fungosus testa, globosa, elongata, sparsa 1-3 mm lata, Pagina superni rugatus cum altus ostiolatus, 10-20 perithecio in stromata. Perithecio globosa vel subglobosa, asymmetrica bistratosa, congesta, ad lata longa collum, dispositi parallelae inter se,  $150-350 \mu\text{m}$  alta et  $250-350 \mu\text{m}$  lata, cum  $80-260 \mu\text{m}$  longa et  $40-80 \mu\text{m}$  lata collum. Asci clavati, stipitati, octospori, subhyalini  $20-30 \times 5-7 \mu\text{m}$ . Ascospores allantoidae, biserialae, unicellulae, olivaceo-griseae  $4-8 \times 1-2 \mu\text{m}$ .

In ligno putrido *Mimusops elengi* L.

Holotypus: AMH-3299, on *Mimusops elengi* L.

Typus locus: Khandale, Maharashtra State.

The author is grateful to Dr. A. V. Sathe for his guidance, to late Prof. M. N. Kamat for his interest in the progress of this work and to Dr. S. B. David, Head, Department of Botany, University of Poona, for facilities for publishing this work. Thanks are also due to Director, M.A.C.S., for library and laboratory facilities and to Dr. (Mrs.) A. Pande for help in latin rendering.

March 21, 1981.

## HYDROCYANIC ACID CONTENT, A BIOCHEMICAL MARKER FOR REACTIONS TO POWDERY MILDEW IN LINSEED

RAM N. PANDEY, ANIL K. KUSH AND D. P. MISRA  
IARI, Regional Station, Kalyanpur  
Kanpur 208 024, India

LINSEED (*Linum usitatissimum* L.) is an important oil seed crop in India. Besides other diseases, powdery mildew caused by *Oidium lini* (Skoric) is responsible for severe yield losses annually. The presence of HCN in linseed plants has been reported earlier too<sup>1</sup>. Attempts have been made in this investigation to ascertain correlation, if any, with the HCN content in linseed cultivars to their reactions against powdery mildew. Estimation of HCN content in some linseed varieties with known reactions to powdery mildew was made with a modification over earlier report<sup>2</sup>.

During the 'rabi' season of 1979-80, two resistant varieties of linseed, EC 77959, EC 1456; two moderately resistant EC 12351, Nimalini and two susceptible varieties—Mahoba local, Kangra local were grown in the field, with uniform fertility level at the Regional Station, I.A.R.I. Kanpur. For the estimation of HCN content thirty days old seedlings of these cultivars were used. Top leaves of these cultivars (1 g) were

ground in cold ( $4-6^\circ\text{C}$ ) 0.2 M phosphate-buffer (pH 7.0) separately. These were centrifuged at 4000 r.p.m. for 15 minutes at  $4^\circ\text{C}$  and the supernatants were collected and used for quantitative estimation of HCN. The volume of the supernatants in each case was made to 10 ml by adding cold water. Two strips ( $5 \times 1 \text{ cm}$ ) of Whatman filter-paper No. 1, saturated with sodium picrate solution (25 g sodium carbonate + 5 g picric acid in 1000 ml distilled water) were immediately suspended in the tubes containing supernatant from each cultivar. In order to get easy release of cyanide 1.3 ml of 3N HCl was added to each of these tubes before suspending the filter-paper strips. These tubes were kept at  $60^\circ\text{C}$  for 30 minutes. Later, these were brought to room temp. ( $23 \pm 2^\circ\text{C}$ ). The observed cyanide was measured with spectronic-20 (U.S.A.) at  $515 \mu$ . The standard were also run along with experiment taking 0.0, 5.0, 7.5, 10.0, 20.0, 20.0, 25.0, 30.0  $\mu\text{g}$  cyanide (241 mg. of KCN/litre). The experiment was run in triplicate. The results are presented in Table I.

It is seen that the HCN content varies in different linseed varieties considerably. Varieties of indigenous origin like Mahoba and Kangra local carry low HCN content as against the exotics like EC 12351, EC 1456 and EC 77969. Himalini (released for cultivation in Himachal Pradesh) has  $K_2$  in its parentage and this in turn has been derived from a cross with an unknown exotic variety<sup>3</sup>. Similarly more than fifty varieties of linseed were screened for the relation of HCN content against the disease development and an inverse correlation was found. The leaf exudate study was undertaken indirectly by adhering a sodium picrate paper

TABLE I

HCN content in six linseed cultivars with maturity periods and reactions to powdery mildew

Sl. No.	Cultivars	Amount of HCN $\mu\text{g/g}$ of fresh wt.	Maturity in days	Reaction of cultivars to powdery mildew
1.	EC 77959	187.0	140-145	R
2.	EC 1456	193.0	140-145	R
3.	Himalini	155.0	135-140	MR
4.	EC 12351	146.0	125-130	MR
5.	Mahoba local	19.0	125-130	S
6.	Kangra local	23.0	130-135	S

R = Resistant, MR = Moderately resistant, S = susceptible,