

*P. aeruginosa* was found in sample No. 20 ( $3.9 \times 10^4/100$  ml) while the highest number (figure 1b) was in sample No. 13 ( $1.4 \times 10^7/100$  ml).

This study has revealed that *P. aeruginosa* is abundant in the Madras city environment. *P. aeruginosa* was present  $10^6$  or more cells per 100 ml of samples examined from the hospital effluents. This should be considered a higher level of contamination when one bears in mind that *P. aeruginosa* is a highly harmful bacterium. Such a level of contamination with *P. aeruginosa* will contribute to added levels of human infections. It is significant that all the samples collected from households also show the occurrence of *P. aeruginosa*. It appears therefore that this bacterium is a common pollutant of the city environment and may involve in causing infections at homes.

The authors thank Dr Sundarraj, Department of Microbiology, Post Graduate Institute of Basic Medical Sciences, Tharamani for his assistance.

12 December, 1984; revised 19 August 1985

1. Smith, D. T., Conant, N. F. and Overman, J. R., *Pseudomonas aeruginosa Pseudomoniasis*, Microbiology, 13th edn. Zinnser Meredith Publication Co., N.Y., 1964.
2. Kunner, B. A. and Clark, H. D., *J. Water Pollut. Control Fed.*, 1974, 46, 2163.
3. McLeod, J. W., *Lancet*, 1958, 394.
4. Forker, E. A., *Am. J. Med.*, 1958, 25, 877.
5. Cho, J. J., Schroth, M. N., Kominos, S. D. and Green, S. K., *Phytopathology*, 1975, 65, 425.
6. Green, S. K., Schroth, M. N., Cho, J. J., Kominos, S. D. and Vitanza-Jack, V. B., *Appl. Microbiol.*, 1974, 28, 987.
7. Highsmith, A. K. and Abshire, R. L., *Appl. Microbiol.*, 1975, 30, 596.
8. American Public Health Association. Estimation of Bacterial Density. Standard methods for the examination of water and waste water, 13th edn, A.P.H.A., Inc., N.Y., 1971.

## TRAMETES MENZIEZII (BERK.) RYV. IN INDIA

A. B. DE

Department of Botany, Burdwan Raj College,  
Burdwan, India.

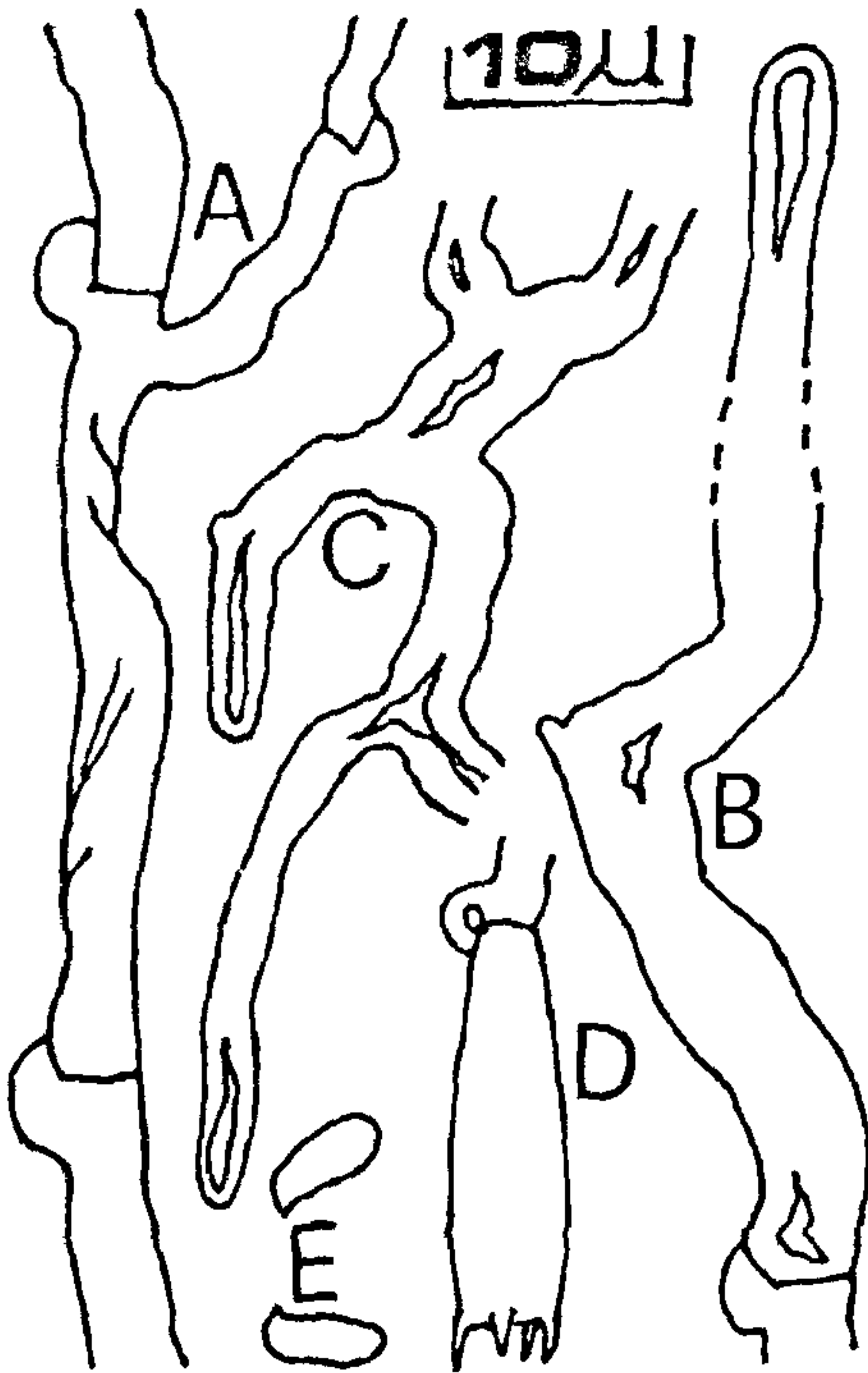
DURING a mycological survey at Zero, Arunachal Pradesh, India in November 1981, several sporophores were collected on a stump of *Quercus* sp. These were identified as *Trametes menziesii* (Berk) Ryv, a species hitherto unrecorded from India<sup>1,2</sup>. This fungus is briefly described in this note.

**Morphology:** Basidiocarp (figure 1) annual, pileate, sessile or with a narrow base, imbricate, dimidiate or spatulate, 2.3–3.3 × 2.7–3.3 × 0.2–0.3 cm, tough when fresh, hard and brittle on drying; upper surface smooth, glabrous, ochraceous to reddish brown with numerous narrow concentric zones; margin thin, acute, entire, involute when dry; context creamish, corky, up to 0.1 cm thick; hymenial surface ochraceous to pale tan, spiny, spines narrow, conical, 0.1–0.2 cm long, 2–3 per mm.

**Anatomy:** Hyphal system trimitic; generative hyphae (figure 2A) hyaline with clamp connections, thin-walled, branched, 2–4 μ in diameter, mostly becoming collapsed in dried sporophores; skeletal hyphae



Figure 1. Basidiocarps of *Trametes menziesii* (Berk) Ryv growing on a stump of *Quercus* sp.



**Figure 2.** A–E. Microstructures of *Trametes menziezii* (Berk) Ryv. A, Generative hypha. B, Skeletal hypha. C, Binding hypha. D, Basidium. E, Basidiospores.

(figure 2B) hyaline, aseptate, thick-walled to solid, refractive, long, slightly tortuous, usually unbranched, 2–7  $\mu$  in diameter, apex rounded or pointed and thin to thick-walled; binding hyphae (figure 2C) hyaline, aseptate, thick-walled to solid, much branched with somewhat tortuous long branches, 2–6  $\mu$  in diameter. Basidia (figure 2D) hyaline, thin-walled, clavate, 16–20  $\times$  4–6  $\mu$ , tetrasterigmatic, sterigmata up to 2  $\mu$  long, visible only in fresh materials, soon becoming collapsed and sunken; basidiospores (figure 2E) hyaline, thin-walled, smooth, ellipsoid to cylindrical, apiculate, non-amyloid, 4–7  $\times$  1–2  $\mu$ .

The voucher specimen has been deposited in the Mycological Herbarium of Burdwan Raj College (BRCMH 8111), Burdwan, West Bengal, India and the duplicate material in the herbarium of the Division of Mycology and Plant Pathology, Indian Agricultural Research Institute, New Delhi, India (HC10 37187).

The author expresses his gratitude to Dr Erast Parmasto, Institute of Zoology and Botany, Academy of Sciences of the Estonian SSR, 202400 Tartu, Estonian SSR, USSR for confirming the identification of the fungus. The author is also grateful to Dr Anjali Roy, Department of Botany, Visva-Bharati, Santiniketan, West Bengal for her constant encouragement and helpful suggestions.

25 June 1985; Revised 20 August 1985

1. Bakshi, B. K., *Indian Polyporaceae (on trees and timber)*, ICAR, New Delhi, India, 1971.
2. Bilgrami, K. S., Jamaluddin and Rizwi, M. A., *Fungi of India, Today & Tomorrow's Printers and Publishers*, New Delhi, 1979.

#### PEA SEED BORNE MOSAIC VIRUS IN INDIA—A NEW RECORD

V. S. THAKUR, (late) M. S. THAKUR  
and S. M. PAUL KHURANA

Department of plant Pathology, H.P.K.V.V.,  
P.O. Nauri, Solan and Central Potato Research Institute,  
Smla 171001, India.

GREEN PEA (*Pisum sativum* L) is the second most important vegetable crop next to tomato in Himachal Pradesh, India. During 1981, a large number of pea crops in Solan area were found to exhibit mosaic symptoms. The common varieties grown were Bonville and Arkel wherein the mosaic incidence during 1982 and 1983 ranged between 7 and 35%. Since very little work has been done on pea viruses in India<sup>1,2</sup> efforts were made to identify the causal virus. The infected plants were stunted and exhibited mild to severe mosaic. The plants with chronic infection were pale and had badly deformed and reduced leaf lamina. In most cases, leaves had deep dentation followed by marginal rolling and leaf curling. No visible symptoms were observed on stems and flowers; but flowering was delayed/reduced and consequently the pods were few, small and distorted.

The virus was readily sap-transmitted. It was also easily aphid borne (non-persistently) through *Acyrtosiphon pisum* Harris, *Myzus persicae* Sulz, and *Aphis craccivora* Koch. The seeds in pods from naturally infected plants, were fewer, smaller, pale-green, irregular in shape and shrivelled. In the plants