the toxicity due to Cd. While there was 18% reduction in the dry-matter yield with 8 mg Cd/kg soil in the case of no addition of Zn, reduction in yield was only 5% when the same level of Cd was applied along with 40 mg Zn/kg soil. Zinc content, at the highest level of Cd, showed a significant increase, from 14.5 μg/g in no-Zn control to 114 μg/g with 40 mg Zn/kg soil. The corresponding decrease in the Cd content was from 16.6 to 6.2 μg/g. The results thus indicate an antagonistic effect of Zn on Cd uptake and vice versa. Wallace *et al*[4] observed in bush bean that Cd tended to depress Zn uptake and when Zn was added without chelating agents it reduced the toxicity of Cd. In fact several workers have reported antagonistic effect of Cd and Zn on each other in different crop plants[3, 6, 7].

Increasing levels of Zn decreased the per cent reduction in Zn content caused by Cd application. At 8 mg Cd/kg soil, per cent reduction in Zn content decreased from 46 in no-Zn treatment to 21 with the addition of 40 mg Zn/kg soil. Increasing levels of Zn in the soil help to reduce the inhibitory effect of Cd on Zn uptake. This behaviour is characteristic of competitive inhibition.

The present results thus indicate that addition of increasing amounts of Cd to the soil significantly reduces both dry-matter yield and Zn content and increases Cd content of maize. Applying increasing levels of Zn to such soils can effectively reduce the Cd toxicity, ameliorate Zn deficiency and thus increase crop yields.

11 July 1988

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TYROMYCES SUBCAESIUS DAVID, A NEW RECORD FROM INDIA

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DURING routine collections of wood-rotting fungi in West Bengal in 1987, a species of *Tyromyces* hitherto unrecorded from India was encountered. This fungus is described and illustrated in the present paper. Dried materials are deposited in the Mycological Herbarium of the Visva-Bharati University (VBMH) and a part of it also in the Herbarium of the Division of Mycology and Plant Pathology, Forest Research Institute, Dehra Dun, India. (FRI, Herbarium No 8630).

Tyromyces subcaesius David, *Bull. Soc. Linn. Lyon. Spec.* Vol. 119–126, 1974

Morphology: Basidiocarp (figure 1) pileate, dimidiate, pileus 5–8 × 2.5 × 1.5–2.5 cm, soft when fresh, hard but light in weight when dry; surface pubescent, azonate, greyish blue; margin thin and slightly

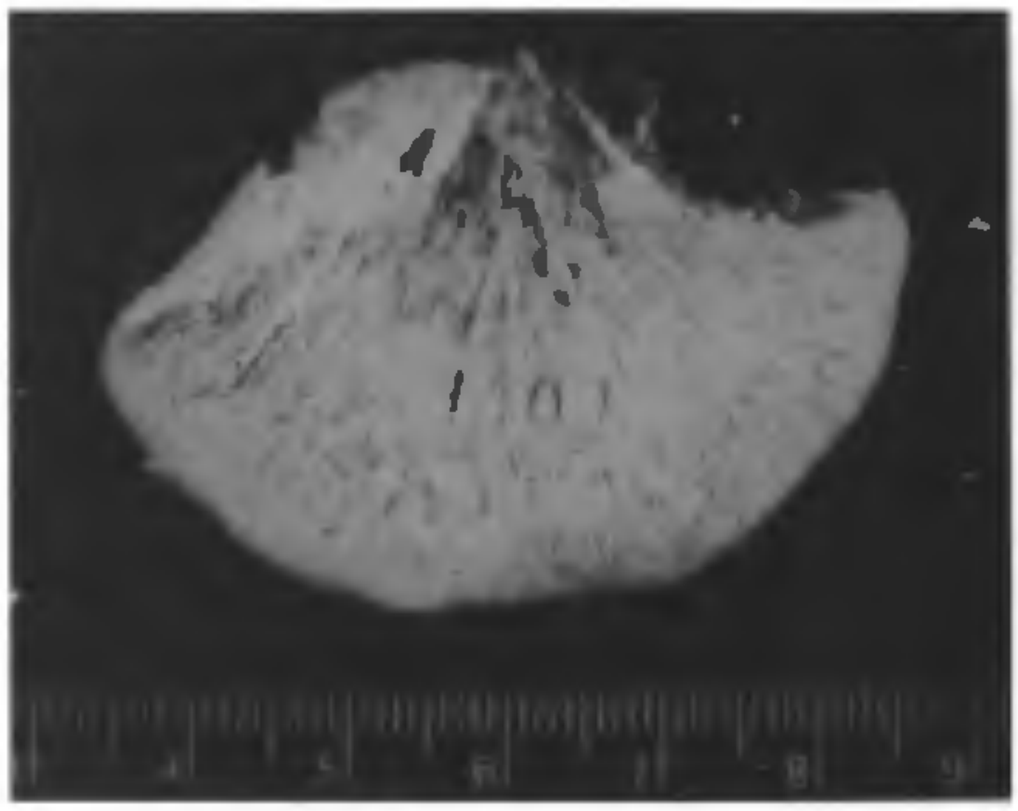
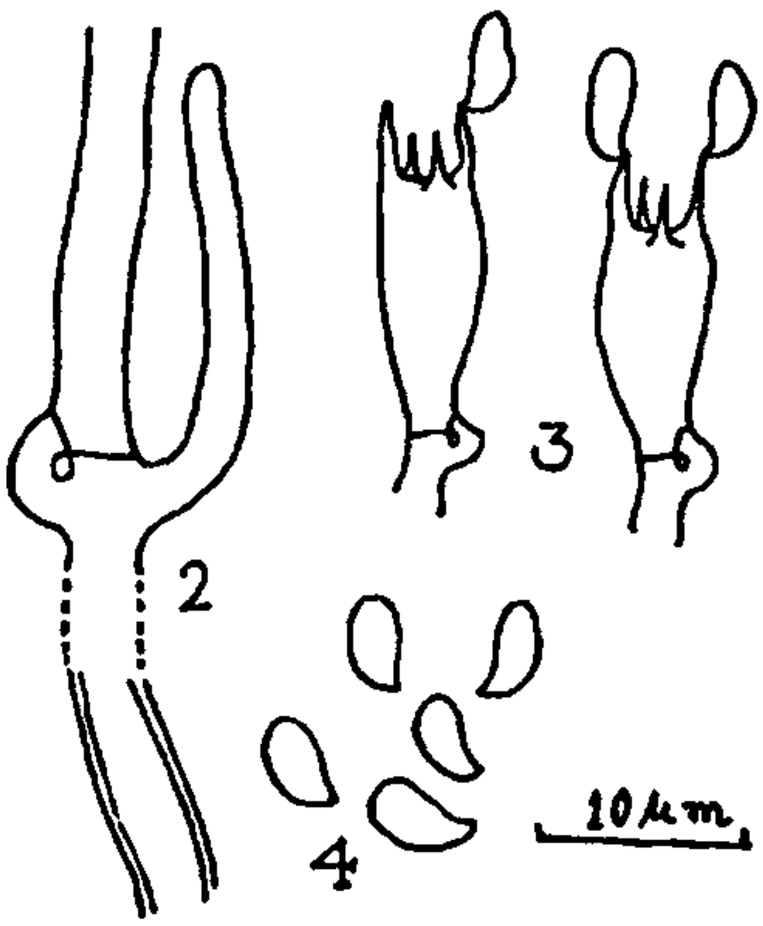


Figure 1. Basidiocarp of *Tyromyces subcaesius* David.



Figures 2–4. *Tyromyces subcaesius.* **2.** Generative hyphae; **3.** Basidia and **4.** Basidiospores.

incurved; context white, soft when fresh, hard on drying; pore surface white to ashy blue, pores angular and finely dentate, 4–5 per mm, pore tubes up to 5 mm long.

Anatomy (figures 2–4): Hyphal system monomitic. Generative hyphae hyaline, thin to slightly thick-walled, branched, with prominent clamp connections, 2.5–6 µm wide (figure 2); basidia hyaline, clavate, inamyloid, 10–12 × 3.5–4.5 µm (figure 3); basidiospores hyaline, thin-walled, allantoid, inamyloid, 4.5 × 1–1.3 µm (figure 4).

Habitat: Growing on logs of deciduous trees.

Specimen examined: VBMH 851461.

EVALUATION OF COTTON GERMPLASM FOR RESISTANCE TO WHITEFLY *BEMISIA TABACI* (GENNADIUS)

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WHITEFLY, *Bemisia tabaci* (Gennadius) in cotton has emerged as a major pest during recent years in southern (Andhra Pradesh, Tamil Nadu and Karnataka) and central (Maharashtra and Gujarat) cotton-growing states of India. Prolonged dry spell coupled with high temperature and relative humidity during the crop period, excessive and indiscriminate use of broad spectrum insecticides, high dose of nitrogenous fertilizers, close spacing, sowing of some susceptible varieties/hybrids, availability of alternate cultivated or wild host plants and monocropping appear to be mainly responsible for the recent outbreak of whitefly in cotton. High incidence of this pest was first reported in 1984–85 from Andhra Pradesh. The loss in yield of seed cotton was reported[1] to be 10–45%. The available insecticides are not much effective against this pest. Hence, 24 elite cotton germplasm lines were screened with a view to identifying resistant lines for utilizing them in the breeding programme.

The 24 lines of cotton germplasm were tested for their susceptibility to whitefly at this Institute during 1986. Maximum population of whitefly was observed during the second week of November. TXORHU 1–78, TXORSC-78 and T X Maroon 2–78 had very low population (0.5 to 1.1 adults/leaf) of whitefly. In these lines, the number of hairs was very low in lamina as well as in mid-rib. Germplasm lines, 101–102 B, CTI 425–45, CPI 25/1, JR 80, Reba B 50, BJA 592 and Laxmi had high population of whitefly and the number of hairs on leaf lamina and mid-rib was very high (table 1).

Table 1 *Incidence of whitefly on some germplasm of cotton*

Germplasm	Population of adult whitefly/leaf 13.11.86	29.11.86	No. of hairs on lamina hairs/cm²	midrib hairs/cm²
TXORHU 1–78	0.5	0.1	14	31
TXORSC –78	0.7	0.2	5	6
TX Maroon 2–78	1.1	0.2	12	11
24–8 (Nect.)	1.7	0.5	7	19
STA–7 (Okra)	1.7	0.3	65	53
20–3	2.8	0.5	79	66
TX Bonham	3.7	0.7	12	80
Tashkent 1	3.3	0.1	46	14
Aub—NE 213	3.5	0.3	74	34
Stone-Ville 825	4.3	0.4	219	101
Tamcot SP 21	5.5	1.4	54	37
Tamcot SP 23	4.3	0.6	136	100
Tamcot SP 37 H	8.2	0.2	71	42
Tamcot SP 37	3.9	0.2	118	69
Tamcot SP 215	4.9	0.4	47	16
Tamcot-Camde	2.2	0.5	148	115
Dunn 118	4.6	1.0	162	115
101–102 B	15.3	2.4	869	311
CTI 425–45	12.7	3.4	824	306
CPI 25/1	18.9	4.8	533	297
JR 80	13.7	17.9	856	211
Reba B 50	26.8	3.0	308	212
BJA 592	32.2	5.2	466	308
Laxmi	22.1	4.4	448	195