Figures 1–3. Symptoms of rust disease caused by *Aecidium hartwegiae* Thuem on leaves of *Chlorophytum tuberosum* L.

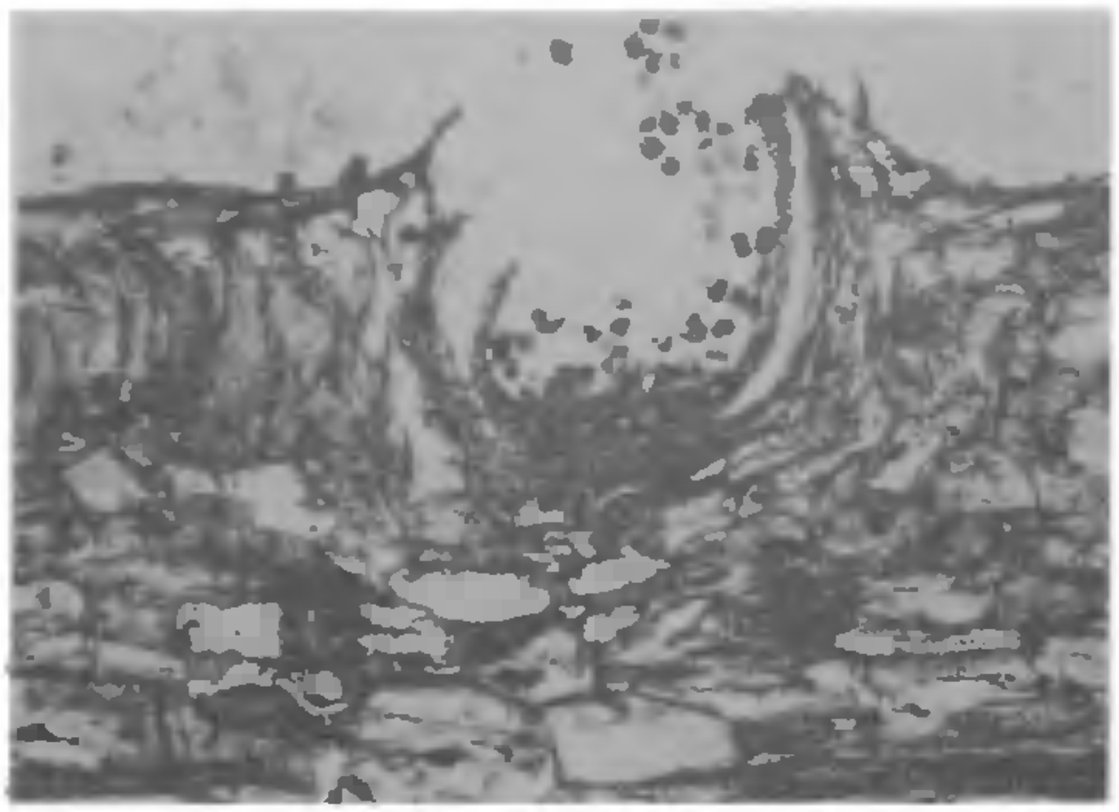

Figure 4. Cross-section passing through a pustule showing the pycnidium.

leaves as elliptic pale coloured hallows, 1–2 cm in diam. in which the aecidia develop in due course as minute dots aggregated in centre (figure 1–3).

Pycnidia amphigenous, abundant in centre, at first brownish, becoming darker with maturity, 120–145 μm in diameter. Aecidia hypophyllous, gregarious, often concentric, cupulate with a whitish deeply incised revolute margin, 250–300 μm in diameter. Aecidiospore globose, slightly angular, almost hyaline, covered with small wart like outgrowth, 17–20 μm, epispore 1–1.5 μm thick.

On living leaves of *Chlorophytum tuberosum* L. Loc.-Shankargarh; *Legit.-P. K. Yadava*, Jan. 1984. I. M. I.-288155.

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AN UNRECORDED LEAF BLIGHT DISEASE OF TARAMIRA (*ERUCA SATIVA* MILL) FROM INDIA CAUSED BY *ALTERNARIA BRASSICICOLA* (SCHEW.) WILTSHIRE.

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TARAMIRA (*Eruca sativa* Mill) is an important oil seed crop, which suffers from the leaf blight disease, in the districts of Agra, Mathura and Mainpuri[1,2].

The lesions on leaves are dark brown to almost black, zonate, 1–10 mm in dia. Leaf bits from infected portions were surface-sterilized using 0.1% $HgCl_2$, washed and transferred on PDA medium and incubated at 28°C (± 1°C) for 5 to 7 days. The colonies which developed around these leaf bits were dark brown to black in colour. The conidia measured 14.3–86.4 × 8.2–19.6 μm and arose always in long chains, without beak, dark brown in colour with 5–8 transverse septa. The conidia of *A. brassicae* (Berk.) Sacc measured 86.4–252.6 × 14.7–32.6 μm, mostly with 10–11 septa with long beaks and were light yellow in

colour. Thus the present isolate *A. brassicicola* (Schew) Wiltshire is quite different from *A. brassicae* (Berk.) Sacc.

The pathogen has been deposited under accession No. ITCC 2939 with the courtesy of Dr J. N. Kapoor.

The conidial suspension in sterilized distilled water was atomized on taramira plants which were kept in moist chambers (36 hr before and after inoculation). Characteristic symptoms of leaf blight developed on the inoculated plants within 5–7 days and the fungus *A. brassicicola* (Schew) Wiltshire was recovered from the diseased leaves.

The symptoms start appearing during the last week of January and become abundant in the last week of March.

The author thanks Prof. K. G. Mukerji, of Delhi University, Delhi for the confirmation of fungal isolate.

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INFLUENCE OF CHEMICAL ENVIRONMENT ON THE FIDELITY OF RIBOSOMAL PROTEIN SYNTHESIS

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THAT the presence of metabolites other than those which are involved in RNA synthesis, have both qualitative and quantitative effects on nuclear RNA synthesis in plants has already been reported[1]. We report here that common organic acids at low concentrations can introduce errors in the poly(U) programmed reactions as indicated by the increased incorporation of leucine with respect to phenylalanine. Since aminoacids themselves are incorporated in proteins, the effect of aminoacid mixtures was not studied.

Misreading of polynucleotide messengers of the ribosomal protein synthesizing machinery has been reported by several workers[2–5]. Misreading of the genetic code by antibiotics like streptomycin, kanamycin, neomycin and nucleic acid base analogues like 5-bromo uracil has also been reported[6,7]. Apparently this is due to errors in the selection of appropriate aminoacyl tRNAs by the ribosomes influenced by environmental conditions or as a result of mutational events[8,9]. The possibility of interaction of a tRNA with both specific and nonspecific codons with slightly different nucleotide sequences has been recognized. The error frequency is also known to be controlled by Mg^{2+} and elongation factors[10]. Gavrilova *et al*[11] have shown that elongation factor Tu along with GTP reduces the leucine to phenylalanine ratios of the poly (U)-mediated translation process; this error reducing effect is observed only at low but not at high concentrations of Mg^{2+}.

Ribosomes were isolated from wheat germs (Valejo, California, U.S.A.), purified according to the method of Marcus *et al*[12] and the top three-fourths of the 78,000 g centrifugation constituting the S-100 fraction was made 10^{-3}M with respect to dithiothreitol. There were seven control sets. From five of them the following were excluded from the complete system-Poly U, GTP, ATP, energy generating system and the S-100 fraction; the sixth set included RNase and the seventh one contained the complete incubation mixture without any organic acids or sugars.

Table 1 shows that the presence of organic acids (succinic, malic, fumaric and citric) and sugars (fructose, glucose, sucrose) in the incubation mixture markedly affected the poly (U)-mediated ^{3}H-phenylalanine incorporation into protein. A 10^{-6}M mixture of organic acids enhanced phenylalanine incorporation by about 80%; however, when the concentration was raised to 10^{-5}M, an inhibition of the order of 40% was observed. No promotion was observed with sugars at either of the concentrations tried. In the control sets the incorporation was only 1.03–5.17% of that obtained with the complete system and the differences among them were statistically insignificant. The incorporation was least when poly U or the S-100 fraction were omitted from the incubation mixture; the slightly higher incorporation in the presence of the S-100 fraction in the control sets was probably due to the presence in small quantities of the factors required for protein synthesis.

To test whether the inhibition could be a result of misreading of the triplet codon in the presence of organic acids and sugars, the effect of these metabolites on the incorporation of ^{3}H-leucine (codons UUA, UUG, CUU, GUC, CUA or GUC) and ^{3}H-alanine (codons CGU, GCC, GCA and GCG) in the