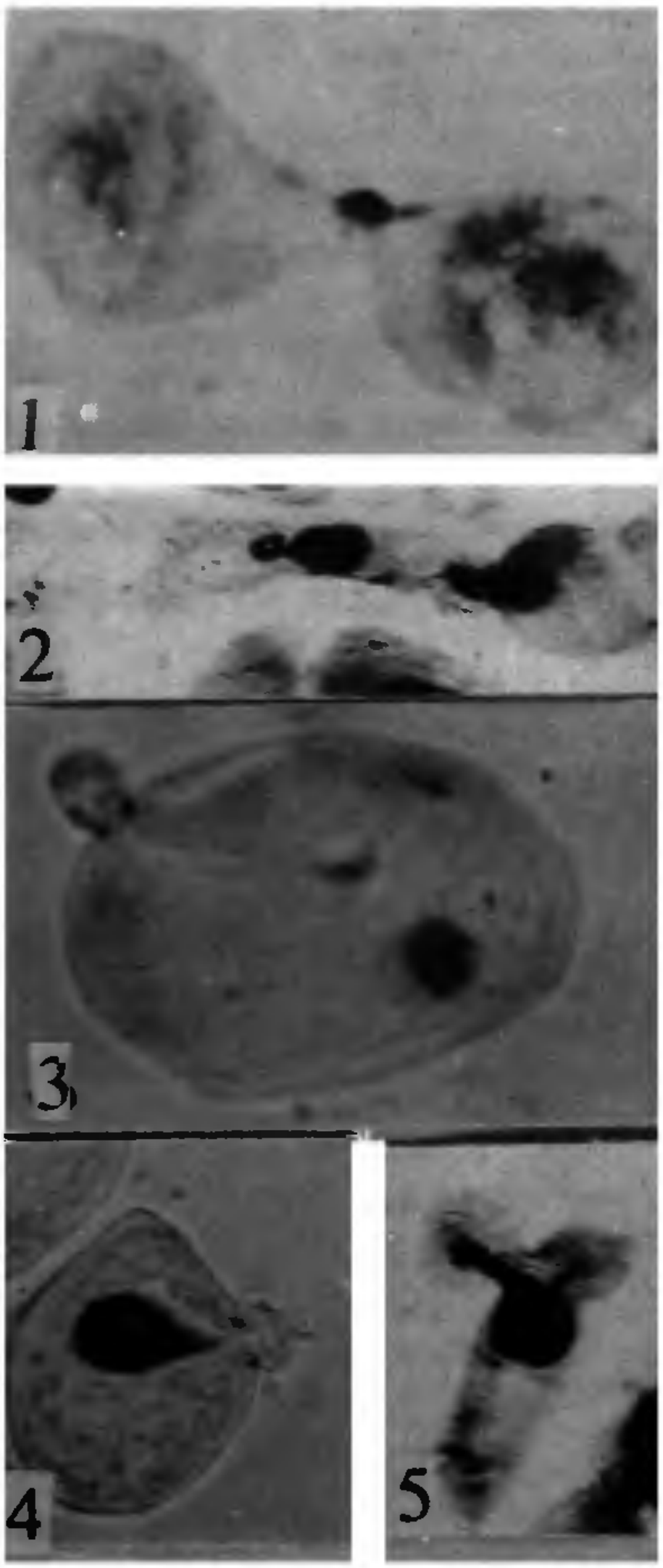
a cytoplasmic channel in the cell wall. In some cases, this also results in the formation of micronuclei (figure 2). Regarding the future destination of the micronuclei, it can be supposed that most of these micronuclei are degenerated in the cytoplasm. Another peculiar nuclear migration similar to that of amitosis was also observed. In this case, successive migration of nuclear material was preceded by the formation of bud-like protuberance on the cell wall (figures 3–5).



Figures 1–5. 1. Migration of nuclear material through cytoplasmic channel. 2. Showing nuclear migration and formation of micronuclei. 3. Development of bud like protuberance on the cell wall. 4. Showing initiation of migration towards the protuberance. 5. Nuclear material migration into the protuberance.

The migration of nuclear material from one cell to another is of wide occurrence in callus cultures of *Triticum dicoccum*. From our investigation, it is assumed that 'communicating channels' are formed between two somatic cells which allow complete or partial migration of chromatin matter from one cell to another as in cytomixis. Although the significance of cytomixis is still debatable, some authors consider these as a mechanism for the production of aneuploid cells[5–7]. The predominance of aneuploid cells with occurrence of nuclear material migration in our findings corresponds to this view. Therefore, the migration of nuclear material may be considered as another possible mechanism for the development of aneuploid cells besides that of chromosome lagging at anaphase and multipolar spindle formation under *in vitro* conditions. In addition, the present results also reflect the possibilities for screening chromosomal variances from a mixoploid culture.

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AFLATOXIN CONTAMINATION IN NORMAL AND INSECT-DAMAGED KESARI (*LATHYRUS SATIVUS* L.) IN ANDHRA PRADESH

B. N. REDDY AND M. NUSRATH
Department of Botany, Osmania University, Hyderabad 500 007, India.

CONSUMPTION of Kesari dal has been banned because of its causing lathyrism or paralysis of the lower limbs. A limited survey of (66 samples) contaminated Kesari

from the tribal areas of Medak district, Andhra Pradesh was conducted. All the samples collected were categorised into insect-damaged and non-insect damaged. The associated fungi with Kesari grains were isolated, identified and the relative abundance of fungi was determined by counting percentage of the total number of colonies of all fungi. The moisture content of these grains was determined by hot air oven method. The samples were observed under long wave (360 nm) UV light for bright greenish-yellow fluorescence[1]. The BGY positive samples were extracted for aflatoxins by the technique employed by Pons *et al*[2]. The confirmation of aflatoxins was carried out accurately by comparing the R_f values of sample extracts with those of standards on the same silica gel plates in different solvent systems. Chemical confirmation was also done with trifluoroacetic acid[3].

Aspergillus flavus group was dominant followed by *Pencillium* and *Fusarium* among the fungi associated with the grains. Moisture content of the samples is in the range of 9–21%. Out of 66 samples collected 36 were insect-damaged and 30 non-insect damaged. Among all the samples screened only 26 gave BGY fluorescence of which 12 are of insect and 7 non-insect (normal) damaged samples were contaminated with one or more aflatoxins. The aflatoxins in these samples ranging in concentration from 12 to 115 ppb. Among all the aflatoxins detected aflatoxin B_1 was recorded the highest (115 ppb) and the lowest aflatoxin G_1 (12 ppb) was in insect and normally damaged samples respectively. Aflatoxin G_1 was present only in one normally damaged sample. All the samples containing toxin were BGY positive[4]. In 75% of insect damaged and 57% of normally damage samples the aflatoxin was above the tolerance level of 20 ppb. Even though the Kesari grains are very hard, the damage caused by insects was very high. Aflatoxin incidence was significantly higher in insect-damage samples, probably due to the invasion of toxigenic fungi into the damaged seeds[5].

Kesari itself nas a volatile toxic alkaloid which causes paralysis. But when it is contaminated with aflatoxins, the resultant synergetic toxic effect is more hazardous to human health. Scientists and educationists should warn the tribals, of the possible adulteration of Kesari dal with 'tur', or 'chana' due to its close resemblance and also mixing with powdered chana by greedy traders.

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POLYGALACTURONASE PRODUCTION BY *RHIZOCTONIA SOLANI* KÜHN—THE CAUSAL ORGANISM OF SHEATH BLIGHT DISEASE OF RICE.

P. RAMALINGAM
Department of Botany, Government Arts College, Cuddalore 607 001, India.

SHEATH blight disease caused by *Rhizoctonia solani* Kühn is one of the major diseases of rice in tropical Asia. The pathogen is a soil-borne facultative saprophyte and survives as sclerotia or mycelia with a wide spectrum of host range. The various isolates of *R. solani* are known for their production of the enzyme polygalacturonase[1]. This enzyme plays an important role in pathogenesis. However, its production by the rice isolates and its relationship with the virulence have not been examined. In this paper, a report on the production of polygalacturonase by two differentially virulent isolates of *R. solani* obtained from rice is presented.

The least virulent (R_1) and virulent (R_5) isolates *R. solani* collected from the University Botany Laboratory Culture collection, University of Madras, Madras and University of Agriculture Sciences, Bangalore, were used. The virulence of the pathogens was assessed on the basis of disease severity index[2]. Culture filtrates for enzyme assay were obtained periodically from culture grown on liquid media at 32° C. The enzyme polygalacturonase activity was determined by the viscosimetric method and the reaction components were temperature-equilibrated and mixed in the following proportions: 5 ml of 1.6% sodium polypectate, 1 ml of 0.5 M acetate buffer (pH 4.5) and the enzyme solution with distilled water were mixed to a final volume of 8 ml. Five ml of this reaction mixture were added to a viscosimeter at 0 time. The activity was converted to viscosimetric units by calculating the reciprocal of the time required for 1