their shape, but when completely rotted, exude watery droplets and eventually get mummified. Abundant pale coloured, punctiform fruiting bodies of the fungus can be seen on the entire fruit. The isolations revealed the presence of a species of *Coniella* Hohn. The fungus was isolated in pure culture. It is an undescribed species [pycnidia upto 170 μ in diam., conidia 5·5–11 × 2·8–4·2 (–5·5) μ] and very close to a species which Dr. B. C. Sutton of Commonwealth Mycological Institute, Kew, will be describing as *Coniella noviae-zelandiae* (Per. Comm.). Therefore, we are disposing this fungus under *C. noviae-zelandiae* Sutton (Fig. 1).

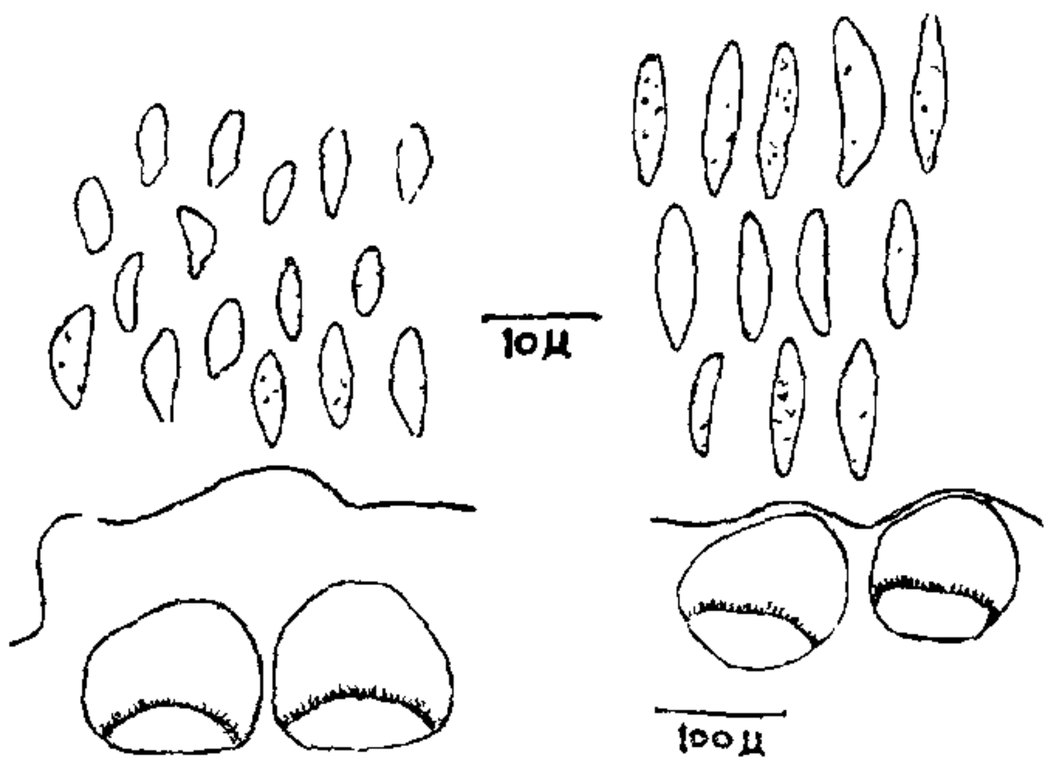

Fig. – 1 Fig. – 2

FIGS. 1–2. Fig. 1. *Coniella noviae-zelandiae* Sutton : pycnidia and Pycnidiospores, Fig. 2. *C. granati* (Sacc.) Sydow and Petrak : Pycnidia and pycnidiospores.

Pathogenicity of the fungus has been tested on fruits under laboratory conditions. The unripe fruits were surface sterilized and inoculated with the organism, under aseptic conditions, by the method of Granger and Horne[2]. Some inoculated fruits as well as healthy ones were incubated in desiccators. The characteristic symptoms appeared on the inoculated fruits in four days. They completely rotted within 6–7 days.

In addition to the fruit rot described above, parasitization of young fruits by another species of *Coniella*[3], *C. granati* (Sacc.) Petrak and Sydow (Pycnidia upto 135 μ in diam., conidia 9–14 × 2·5–3·2 μ Fig. 2) was also observed during late of August 1977 on the same local variety. The species has been described from Italy[3] occurring on calyces, petals and rarely on the leaves of this host. From India it is being reported for the first time causing fruit rot, and raises the number of species of *Coniella* from India to four[1-4].

The specimens have been deposited in Herbarium Commonwealth Mycological Institute, Kew, Surrey, England, under the accession Nos. IMI 217519 and 217520.

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CONTROL OF *CHRYSANTHEMUM ASPERMY* VIRUS BY HEAT THERAPY*

Chrysanthemum [*C. morifolium* (Ram) Hemsl.] is a well adopted ornamental annual due to its large variation in flower colour, type and size. This plant is propagated vegetatively and thus has the advantage of the duplication of desired genetic characters. The vegetative method of propagation poses a complication if the propagule, *viz.*, sucker or cutting is infected with transmissible infectious agent(s). Heat therapy of virus infected plants albeit reported earlier became popular after the work of Hollings and Kassanis[1] and Fenton[2]. Present communication deals with the results obtained by heat therapy of the *Chrysanthemum aspermy* virus[3] (CAV) infected *Chrysanthemum* plants.

Fifteen suckers obtained from infected plants of *Chrysanthemum* of approximately same age (45 days old) were kept in an electrically operated hot air chamber with light and temperature control. The chamber, adjusted at specific temperatures, was set one day before keeping the plants. A tray (30 × 30 cm) filled with water was also kept to maintain the humidity inside the chamber.

The plants were exposed at different temperatures, *viz.*, 35°, 40°, 45°, 50° and 55° C for 2, 4, 6 and 8 hrs. Exposure at 35° C was extended upto one week. Thereafter, the plants were removed from the chamber and kept at room temperature (25–28° C) for 4 hrs. The treated plants were then shifted to a glass house (28–30° C). Observations regarding growth of the plant., time of flowering, size of flowers and number of depressions of florets were recorded.

The results showed that the plants did not resist temperature above 50° C. Exposure at 35° C for 2, 4 and 6 hrs and at 40° C for 2 hrs did not cause any apparent injury to plants. Hot-air treatment of CAV infected plants at 40° C for 2 hrs and 35° C for 6 hrs stimulated growth of plants. Treatment at 50° C for 2 hrs resulted in an early flowering as compared to

that at lower temperature. Treatment at 40° C for 2, 4 and 6 hrs also resulted in increased size of heads.

Depression on the florets was the chief symptom of the virus under investigation. Treatment of plants at 35° C for different periods (2, 4, 6 and 8 hrs) showed a decrease in the number of depressions per floret. Plants treated at 40° C for 2 hrs produced an average of only one depression per floret. Exposure above 40° C for 2 hrs caused some decrease in the number of depressions per floret but none of the treatments was as effective as that at 40° C for 2 hrs (Fig. 1).

FIG. 1. *Left* — Untreated infected *Chrysanthemum* plant. *Right* — Treated infected *Chrysanthemum* plants.

Heat treatment at 40° C for 2 hrs was found to be the best; as it reduced the number of depressions per floret and time of flowering and improved the size of flowers but could not free the plants totally from CAV infection. It is proposed to couple the meristem tip culture along with heat treatment to have virus-free propagules.

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EFFECT OF 2, 4-D ON SEED GERMINATION, HYPOCOTYL ELONGATION AND AMYLASE ACTIVITY IN *PHASEOLUS RADIATUS*

THE use of 2, 4-Dichlorophenoxy acetic acid (2, 4-D) to promote[1] or inhibit[2,3] seed germination is knowu for some time. The present investigation deals with the effect of 2, 4-D on germination, hypocotyl and radicle elongation and amylase activity of the seedlings of *P. radiatus*.

Seeds of *P. radiatus* obtained from NSC were soaked for 24 hours in aqueous solutions of 2, 4-D in the range of 0–1000 ppm in triplicate. Germination percentage, hypocotyl and radicle elongation (mm)[3] and amylase activity[4] were studied in two days old seedlings at pH 5·6 and temperature 31 ± 1·5° C.

The average seed germination of *P. radiatus* was 100% in 0, 1 and 10 ppm, 50% in 500 ppm and 16·6% in 1000 ppm of 2, 4-D proving that the auxin herbicides inhibited seed germination[5]. Further, the average hypocotyl length was reduced by 2·5 times (9·6 mm) in 1 ppm, 5 times (4·9 mm) in 10 ppm and almost 50 times (0·5 mm) in 1000 as compared to control (23·7 mm). The inhibitory effect was observed even at 1 ppm on the radicle growth. An enormous fall in the amylase activity (30%) was observed at 1 ppm as compared to control and the average amount of starch reacted varied inversely with the amount of 2, 4-D added. The variation in reaction times followed a zero order kinetics from 1 to 200 ppm and fractional order (0·3) from 500 to 1000 ppm of 2, 4-D. Amylase activity seemed to be modified due to additional molecules of 2, 4-D adsorbed to the protein surface with consequent loss of its catalytic activity[6].

It was thus concluded that 2, 4-D inhibited hypocotyl and radicle elongation which appeared to be coupled with enzyme activity during germination of *P. radiatus*.

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