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V. G. LILY.

Kayangulam, Krishnapuram 690533,
Kerala. July 1, 1974.

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A NEW LEAF BLIGHT OF *CLERODENDRON FRAGRANS*, R. BR.

A SEVERE leaf blight disease of *Clerodendron fragrans*, R. Br., a roadside and a popular ornamental plant, was observed during the summer season of 1973 and 1974 around Madanapalle, Chittoor District, Andhra Pradesh. The disease manifests itself in the form of irregular grey brown necrotic areas or patches measuring 4–14 mm long in size. The disease is very characteristic in that the patches appear or begin mostly along the margins and tips of the leaves. These areas gradually extend downwards along the margin involving the major part of the leaf tissue, ultimately resulting in blight (Fig. 1). In cases of severe infection, the plants

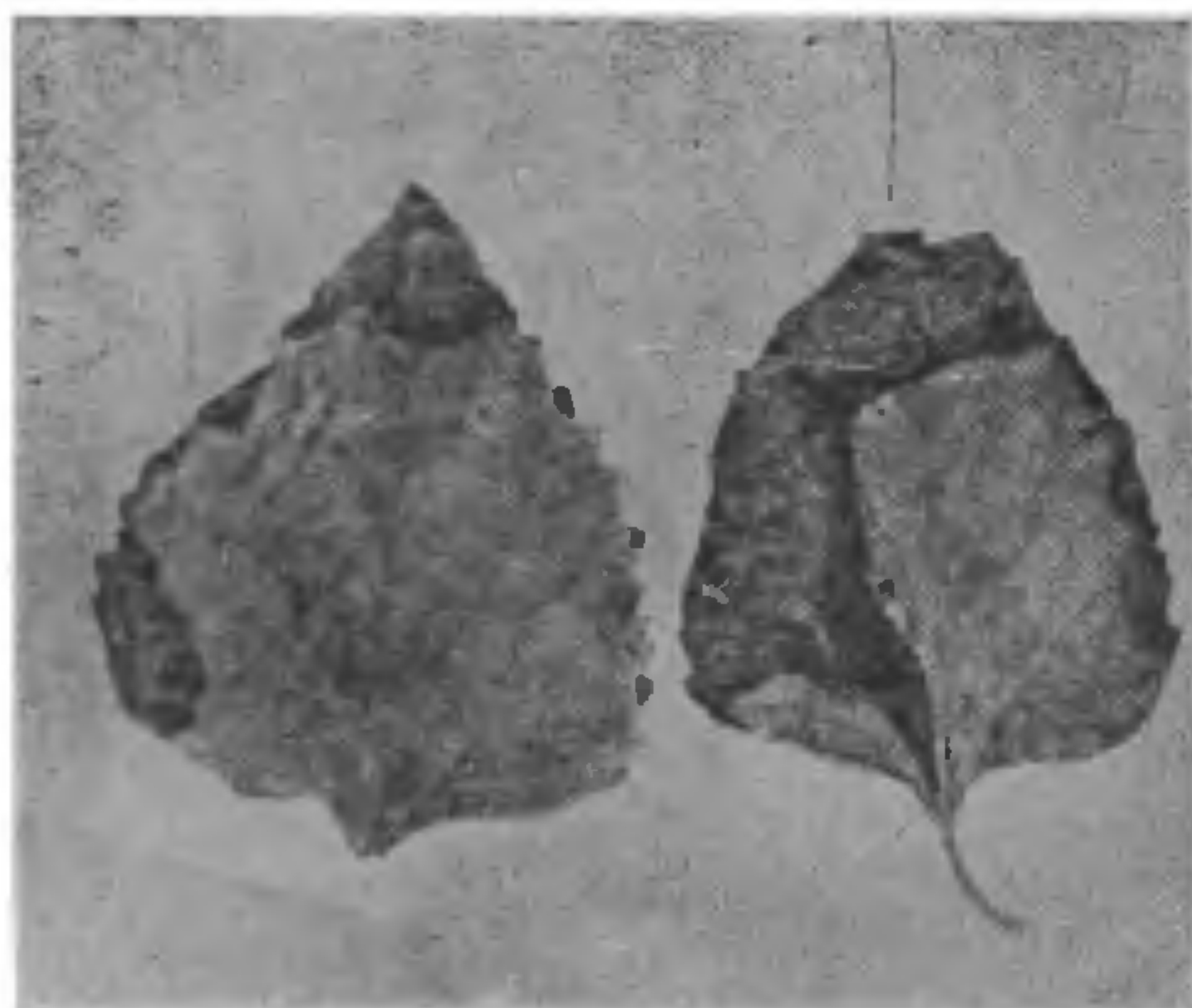


FIG. 1

look withered and could be spotted from a distance. Individual spots appear very rarely in the middle of the leaves. Severe attack results in complete drying of the leaves and occasional defoliation. The young as well as mature leaves were seen to be equally attacked.

The fungus was isolated by plating on PDA medium and all the single spore isolations made were found to be identical. The fungus was established in pure culture on PDA and its pathogenicity was proved by spraying spore suspension (prepared in sterile water from one week old culture) on the leaves of around one month old healthy plants. Slight injuries were made over some of the leaves with a sterile needle before inoculation. Control plants were sprayed with sterile water only. The inoculated plants were kept inside a humid chamber for 48 hours. Typical blight symptoms developed in 10–12 days in both the injured and uninjured leaves but none in the control. Re-isolations yielded the original fungus.

Aerial mycelium bluish green, cottony, abundant and appearing somewhat powdery with conidial formation and produced dark blue pigmentation on the medium. The hyphae septate, branched and measured 3–4.5 μ in width. On the leaf, the pathogen produced conidiophores and conidia. Conidiophores light to dark brown simple or branched having distinct geniculations. Conidia yellowish brown, obclavate, smooth walled 2–7 (3–8 celled), transverse and 1–2 longitudinal septa with or without beak. The length of the conidia varies (with beak) from 21 to 45 μ and width 3 to 15 μ .

The causal organism has been identified and confirmed as *Alternaria* state of *Pleospora infectoria* Fuckel. (IMI 184579).

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Junior Research Fellow,
Department of Botany,
S.V. University, Tirupati,
and

M. N. REDDY.

Professor and Head,
Department of Botany,
Andhra University, Post-Graduate Centre,
Guntur, August 3, 1974.

A. S. Rao.

CYTOLOGICAL STUDY OF A POLYPLOID O. RADISH OBTAINED AS A RESULT OF INBREEDING

ALMOST all the inbred lines of radish (*Raphanus sativus* L. var. *radicola* Pers.) in the genetic collection of Dr. S. I. Narbut of the Chair of Genetics and Plant Breeding, Leningrad State University, Leningrad (USSR), significantly differ in many characters from their original populations and are generally characterized by reduced fertility¹. One of the lines, namely, LB-274, which was isolated

from the Russian variety "Virovsky bellie", was found to be highly uniform and homozygous with no further segregation in the 8th generation of inbreeding. In contrast to population, its plants had practically no anthocyanin pigments in the stem and leaves and the flowers were dark-violet in colour. In the year 1971, i.e., in the 15th generation of inbreeding, two of its plants appeared to differ from the rest in the size of the leaves, flowers and growth. They were not only completely self-sterile but also produced no seed at all even under panmixis. These plants were suspected to be autotetraploids. A cytological investigation was, therefore, undertaken to see whether these plants were polyploids or not.

For cytological analysis flower buds from suspected polyploid plants as well as the plants of the inbred line, LB-274, were fixed in the Carnoy's solution for six hours. The anthers were squashed in 1% acetocarmine and examined. 50 pollen mother cells were scored in each case.

The plants of the inbred line, LB-274, showed normal meiotic division, forming 9 bivalents at Metaphase-I. The number of rod bivalents, however, varied from one to three per cell. But quite a different picture was found in the plants, suspected to be tetraploids. In them all the p.m.c. were polyploids with various types of configurations known for a typical autotetraploid. No diploid cell was observed. An analysis of 50 cells at meiosis gave the following results :

Quadri-valents	Trivalents	Bivalents	Uni-valents	No. of cells
3	3	5	5	15
2	5	4	5	12
1	7	4	3	9
0	6	5	8	6
5	2	2	6	5
2	4	3	10	3

Their complete sterility may be attributed to highly irregular meiosis and self-incompatibility.

Presence of polyploid cells in the inbred lines of allogamous populations is not new. It has been reported in rye²⁻³. Rees⁴ has noted 1% polyploid cells in an inbred line of rye. Such cells have also been observed in one of the inbred lines of radish, LS-337/25⁵. From these, errors at the pre-meiotic mitoses have been inferred in the homozygotes. It seems that in the present case pre-meiotic errors have led to the formation of unreduced diploid gametes which on fusion gave rise to polyploid plants.

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Department of Botany, NARSINHA DAYAL,
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PEMPHIGUS BURSARIUS LINN. PRODUCING GALLS ON LOMBARDY POPLAR IN KASHMIR

THE Lombardy Poplar, *Populus nigra italica* Muenchh., is commonly grown in Kashmir on the roadsides and is a graceful avenue tree. The author collected a large number of pear-shaped or irregularly purse-shaped galls formed at various positions on the leaf stalks (Fig. 1). The causative agent was subsequently identified as *Pemphigus bursarius* (L.) (Homoptera : Aphididae). These galls were particularly more numerous on the lower leaves. On dissection each gall was found occupied by a large sized fundatrix, a considerable number of alate females, numerous young ones belonging to various developmental stages, honey-dew and cast skins entangled in a white powdery matter.



FIG. 1. Galls of *Pemphigus bursarius* (L.) on Lombardy Poplar. (X) Beak-like escape vent in the gall.

The gall formation gets initiated in early spring when a fundatrix hatching from an over-wintered egg pierces the petiole of an unfolding leaf to suck the sap. The plant cells at this region multiply so as to give rise to a rather lopsided purse-like structure enclosing the fundatrix. The fundatrix reproduces asexually within the gall to give rise to a generation of alate viviparous females which