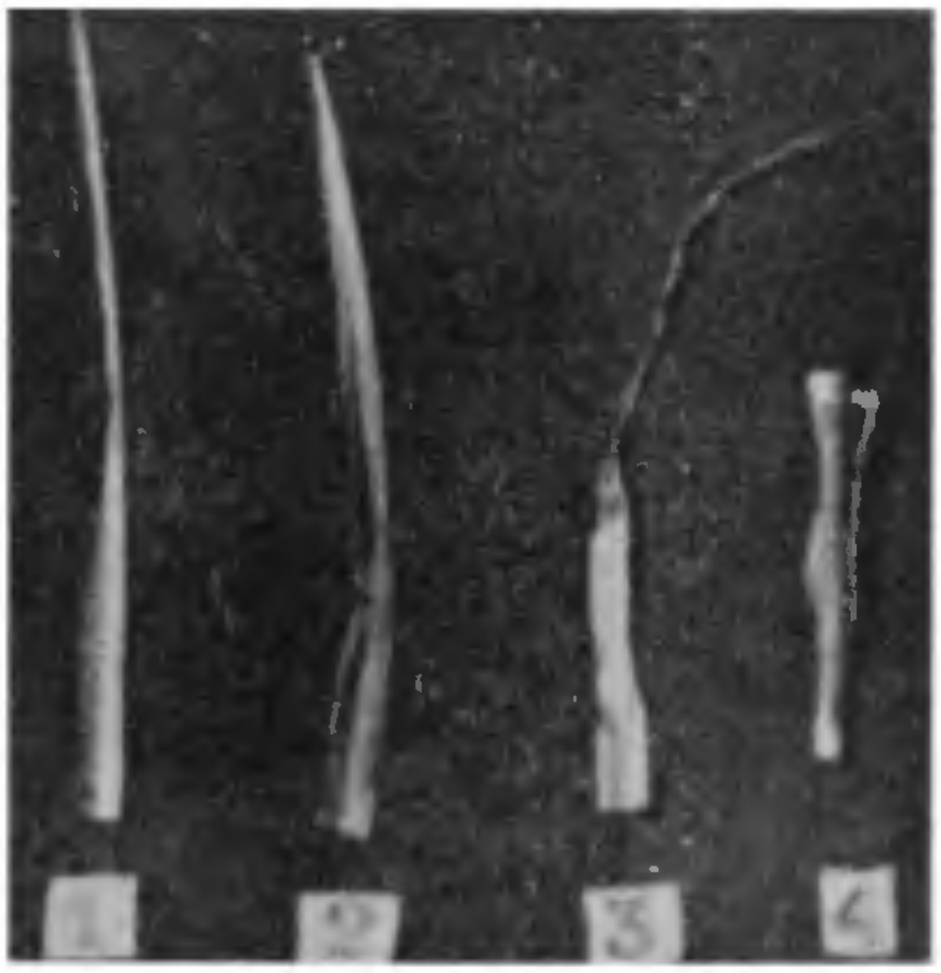
A LEAF SPOT DISEASE OF TUBEROSE (*POLIANTHES TUBEROSA* L.) CAUSED BY A NEW SPECIES OF *ALTERNARIA*

THE Tuberose (*Polianthes tuberosa*) is one of the popular commercial flowers grown in Tamil Nadu. A leaf spot disease was observed during August–December 1976 on Tuberose plants grown around Coimbatore. The disease manifests itself in the form of brown spots with faint concentric rings on the midrib and rarely on the margins of the leaf (Figs. 2–3). Occasionally spots were seen on the peduncle (Fig. 4). Infection soon leads to the drying up of the parts affected. The spots started as brown specks and attained a circular to oval shape measuring 10–30 mm in length and 4–5 mm in diameter. The number of spots per leaf varied from 1–10 and very often spots enlarged and coalesced into bigger patches. Infection on the peduncle was as dark brown patches of 10–50 mm. in length. The pathogen was a species of *Alternaria*. Pathogenicity was successfully proved by spraying spore suspensions from oat-agar cultures on healthy leaves (injured and uninjured) and it was found that a greater number of spots were produced on injured leaves than on uninjured leaves. The fungus failed to infect *Lycopersicon esculentum* Mill., *Solanum melongena* L., *Nicotiana tabacum* L., *Crossandra infundibuliformis* Nees., *Amaranthus gangeticus* L., *Capsicum annuum* L., *Jasminum grandiflorum* L., and *Chrysanthemum indicum* L.



FIGS. 1–4. Fig. 1. Healthy leaf of *P. tuberosa*. Figs. 2, 3. Infected leaves with spots. Fig. 4. Infected peduncle.

Colonies on oatmeal agar were dark brown to olivaceous. Sporulation was observed in 7–10 days-old cultures. The olivaceous to brown mycelium was septate and branched; conidiophores septate, brown to olivaceous and geniculate; conidia brown single, clavate, with a long beak, 3–7 horizontal septa and 1–2 vertical septa; conidia (with beak) measured 25·60–76·80 μ × 6·4 – 19·20 μ with a mean of 58·88 μ × 12·42 μ.

From perusal of literature it appeared that *Alternaria* has not been recorded on *P. tuberosa* so far. The characters of our fungus do not conform to any of the species of this genus so far described. Further, the failure of our fungus to infect any of the plant species other than its original host also indicated that the fungus is a new species, and it is being described as such here:

Alternaria polyanthi sp. nov.

Hypha septatis, ramulosis, olivaceo—brunnea, conidiophori septatis olivaceo—brunneae, geniculatus, conidia, singula, clavate, brunneae, rostrate, septis transversis 3–7, septis verticalibus 1–2, 25·26–76·8 μ × 6·4–19·20 μ mediet 58·88 × 12·42 μ.

Typus lectus in foliis viventibus *polianthes tuberosa* L. in Coimbatore.

Dr. J. L. Mulder, Commonwealth Mycological Institute, Kew, Surrey, England, has kindly examined the fungus and confirmed that the fungus does not belong to any of the species so far described. We are very thankful to the Director and Dr. J. L. Mulder of the CMI, Kew, Surrey, England, for this courtesy. This is also the first record of *Alternaria* on *P. tuberosa*. The fungus culture has been deposited at CMI, Kew, Surrey, England, as IMI No. 208165. The diseased leaf specimen and the culture have been deposited at the Plant Pathology Herbarium, Tamil Nadu Agricultural University, Coimbatore (No. H.R. 12: 16).

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TUBERCULINA COSTARICANA SYD.: A NEW HYPERPARASITE ON GROUNDNUT RUST (*PUCCINIA ARACHIDIS* SPEG.)

THE plants of groundnut (*Arachis hypogaea* L.) growing in Experimental Farm, Agricultural University, Jabalpur, suffered with a rust *Puccinia arachidis* Speg during August–September 1975 and 1976. In September 1976, the hypophyllous uredia were found covered with a light purplish fungal coating. The development of uredosori and uredospores was almost checked and the whole sorus was covered by the hyperparasite.

The fungus was isolated in pure culture on potato-dextrose-agar medium from the infected rust pustules. Pathogenicity of the organism was established by spraying conidial suspension in sterilized tap-water from a 15 day-old culture in P.D.A., on a 2 month old rust uncontaminated peanut plants. The inoculated

plants were incubated in polyethylene bags for 3 days. Suitable control was also maintained. The uredia were covered with a light purplish coating, producing abundant conidia in sorus within 5 days. Reisolations yielded identical culture of the organism. The uredinicolous nature of the fungus with smooth sporodochia, hyaline, amerospores confirm the genus *Tuberculina*[5] Sacc. The detailed characters are as follows:

Sporodochia light purplish, flat, extensive; conidiophores simple, nonseptate, hyaline; conidia produced acrogenously, single hyaline, smooth, thin-walled, 1-celled, slightly ellipsoid to elongate-fusiform or obovate, 7·2–10·7 × 5–5·8 μ (Fig. 1).

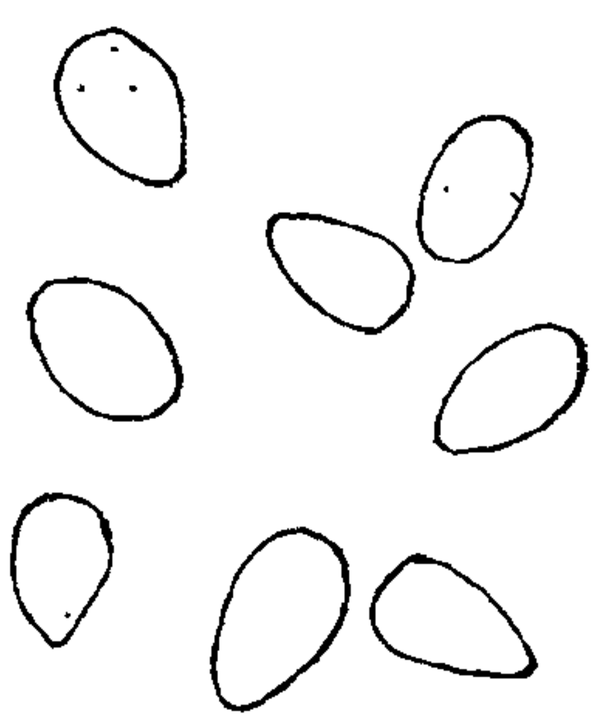

FIG. 1. Mature conidia of *T. costaricana* Syd.

On the basis of the above morphological characters of the fungus, it is identified as *T. costaricana* Sydow (*Ann. mycol. Berl.* 1927, **25**, 154). Of the two species of *Tuberculina* recorded in India[1–3,6–8], on various rusts, genus like *Phakopsora, Uromyces, Aecidium* and *Ravenelia*, only *T. persicina* (Ditm.) Sacc. parasitizes the genus *Puccinia*[1] (*P. heterospora* Berk. and Curt.). No record of *T. costaricana* on *Puccinia arachidis* is available in the literature. It is the first record of this species of hyperparasite on the genus *Puccinia* (*P. arachidis* Speg.).

The specimen has been deposited in Herb. IMI, Kew, No. 207774 and in the herbarium, Department of Plant Pathology, J.N. Agricultural University, Jabalpur.

The authors express their thanks to Dr. A. Johnston, Director and his staff of the Commonwealth Mycological Institute, Kew, for their help in the identification of the species.

Department of Plant Pathology, J.N. Agricultural University, Jabalpur 482 004, M.P., India, *January* 3, 1977.

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CHROMOSOME NUMBER OF THE CESTODE *LYTOCESTUS INDICUS*

THE pausity of knowledge on the cytology of Cestodes has been traced to the technical difficulties like the small sizes of their cells and chromosomes, short duration of stages, presence of tough cuticle, powerful muscles and the syncytial nature of parenchymatous cells rendering the material arduous for squashing[1]. Among the 37 genera and 89 species of Caryophyllidea only few a members such as *Archigetes sp.*[2], *Hunterella nodulosa*[3], *Atractolytocestus huronensis*[4] and *Glaridacris laruei*[5] have been studied for their chromosome numbers. The genus *Lytocestus* belonging to the subfamily Lytocestinae and possessing seven species[6,7] has not been investigated for its cytology. The chromosome number of *Lytocestus indicus* is reported here.

The parasites collected from the fresh water fish *Clarias batrachus* were washed in Ringer's A solution[8] and treated for 2 hours at room temperature in the same solution containing 1 part of 0·05% colchicine to 5 parts of the former. Material was fixed in acetic alcohol and processed by the haematoxylin squash method described elsewhere[9] by a slight variation of using the mid regions of parasites containing the testes instead of the entire parasites for processing. The testes were teased before squashing in a drop of 45% acetic acid on a slide employing a binocular microscope.

A lack of divisional figures in sufficient numbers was noticed in the material collected from the hosts at different time intervals. It has been shown in *Diphyllobothrium dendriticum*[10] that starvation of the host reduces the mitotic activity, and that nutrients keep the same at a higher level. It is not known whether the absence of divisions described here is due to a similar situation. In instances where divisions were found, they were seen in abundance. Diffi-