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GUIGNARDIA FRUIT ROT OF GUAVA—A NEW DISEASE FROM BANGALORE

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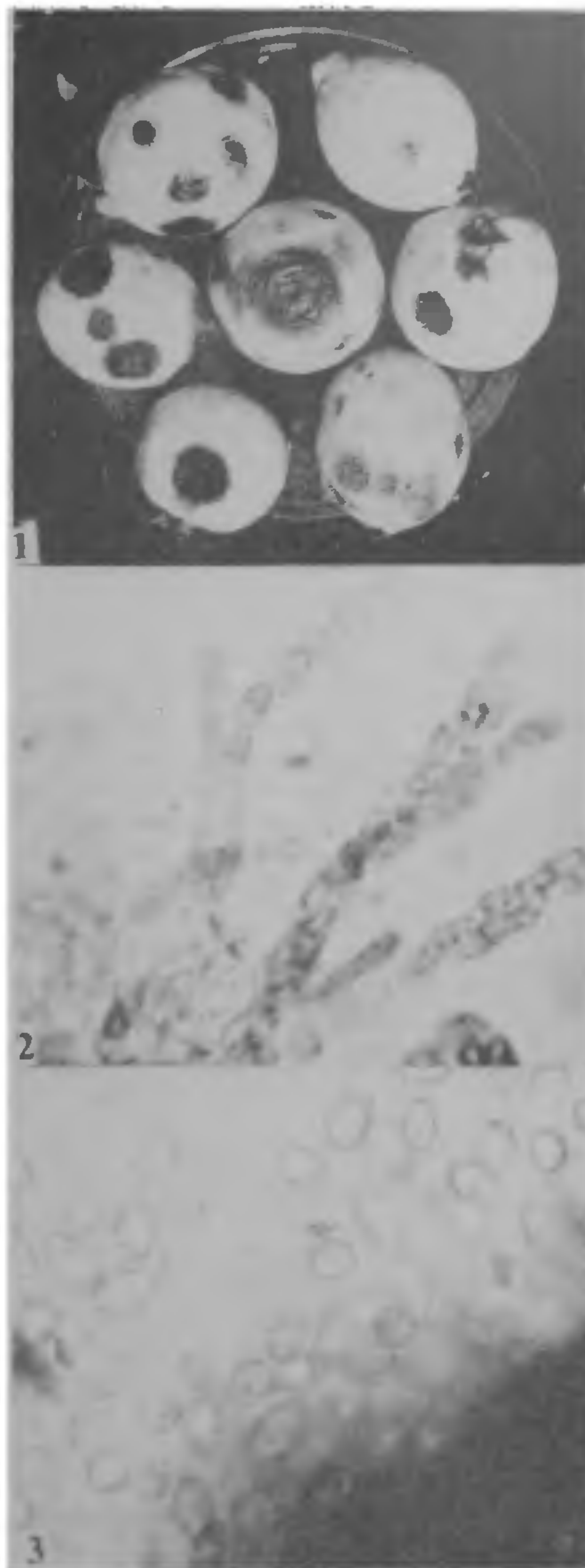
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DURING August–September, 1980 a new fruit rot of guava was observed on the variety Beaumont in transit as well as in the field. The variety is especially suited for jelly preparations because of its high lycopine pigment, pectin content and acidity.

Symptoms:

In the initial stage the infection develops as minute depressed or flattened spots on the ripening fruits. In these spots the fungus generally develops in a concentric manner. Because of the dark-coloured mycelium, the symptom appears very marked on ripening golden yellow fruits (figure 1). One to several spots may occur, may coalesce and form bigger lesions. No fungal fruiting structures have been observed to develop on infected fruits. The fungus was isolated on potato Dextrose Agar on which it produced both ascigerous as well as pycnidial stage after 10 days of incubation under laboratory conditions. Pathogenicity was established by inoculating healthy fruits under laboratory conditions. Typical symptoms appeared 6–8 days after inoculation. Since there is no species of *Guignardia* which has been reported to cause infection of guava it is being described as new to science as *Guignardia psodii* sp. nov. (figures 2 & 3).

Colonies on potato Dextrose Agar greenish grey, becoming bluish black with abundant aerial mycelium, reverse dark grey to black, submerged mycelium consists of green to brownish black hyphae. Ascocarps numerous, carbonaceous, intermixed with pycnidia, dark brown, single or aggregated in groups forming stromata. Individual stroma globose to broadly cylindrical with short to long necks beset with



Figures 1–3. 1. *Guignardia psodii* sp. nov. infection on guava fruits. 2. and 3. Ascus and pycnidiospores of *Guignardia psodii* respectively $\times 600$.

dark brown hyphae. The wall of the ascocarp is stromatic and composed of several layers of pseudoparenchymatic cells which are more thickened and deeply pigmented on the outside; asci subclavate to cylindrical pedicelate, bitunicate, thickened, 8-spored $62.5-87.5 \times 10-12.5 \mu\text{m}$; ascospores hyaline one-celled, ellipsoidal, wider in the mid region, guttulate, distichous or rarely monostichous, $12.5-17.5 \times 5-6.25 \mu\text{m}$, ends rounded with gelatinous plugs. Pseudoparaphyses not observed. Pycnidia variable in shape, brown to black, solitary or in groups with short or longer beaks, beset with dark brown hyphae. The pycnidial wall composed of several layers of pseudoparenchymatous, brown compressed, thick walled pigmented cells, holoblastic, simple cylindrical or conical. Conidia (blastospores) hyaline, one-celled, guttulate $10-12.5 \times 5-7.5 \mu\text{m}$, surrounded by a thick gelatinous envelope with an apical appendage $5-8 \mu\text{m}$ long.

On guava fruits (*Psidium*), Hesaraghatta, Bangalore, 15 Sept. 1980. Holotype ITCC 3028. Latin diagnosis: *Guignardia psidii* sp. nov.

Status pycnidialis Phyllosticta, colonise in agar 'potato Dextrose' veridigriseae derique lazulino nigrae, mycelio aereo abundant, reversum nigrogriseum vel nigrum. Mycelio subimmerso viridi vel brunneo nigro. Ascocarpi numerosi, interspersa inter pycnidia, atrobrunnei, solitarii vel aggrigaticum stromate, stroma solitarium, globosum vel late cylindricum, brevibus vel longis cum collis hyphis atrobrunneis inductis. Parieti ascocarpi stromatico composito e stratis compluribus cellularum pseudoparenchymaticarum quae in exteriori densiores, obscuriores sunt. Asci subelevati vel cylindrici, stipitati, bitunicati, octospori, denso parieti, $62.5-87.5 \times 10-12.5 \mu\text{m}$. Ascosporae hyalinae, unicellulares, ellipsoideae, latiosae in media, guttulae, distichae vel monostichae $12.5-17.5 \times 5-6.25 \mu\text{m}$ funibus rotundatis, obturamentis gelatinosis, pseudoparaphyses non visae. Pycnidia interspersa interascocarpos, fusca vel nigra solitaria vel caespitosa, ostiolata, paries pycnidialis composita cellulis pseudoparenchymaticis, compressis cellulae conidiogenae holoblasticis, simplicibus, cylindricis vel conicis, conidia hyalina, unicellularia, guttulata $10-12.5 \times 5-7.5 \mu\text{m}$, tunica gelatinosa appendice apicali $5-8 \mu\text{m}$ long hyalinae.

(ex Fructibus psidii, Hesaraghatta, Bangalore 15 Sept. 1980 Holotypus ITCC 3028.)

Sivanesan¹ described a species of *Guignardia* on *Pinus* with *Phyllosticta* as its conidial state similar to the one described here. However it differs in having

entirely different host. Kapoor and Tandon² described a fruit rot caused by *Macrophoma allahabadensis* whose conidia are ellipsoidal to fusiform measuring $10.5-24.5 \times 3.5-5.3 \mu\text{m}$. While the conidia of the present fungus measure $10-12.5 \times 5-7.5 \mu\text{m}$ and oval to globular in shape.

The authors are grateful to Dr K. L. Chadha for his interest and facilities. They also express their gratitude to Dr H. S. Sohi, for confirming the identity of the fungus.

14 December 1983

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CB II—A POTENTIAL DONOR AGAINST BACTERIAL BLIGHT OF RICE AND ITS GENETIC ANALYSIS FOR RESISTANCE

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BACTERIAL blight of rice caused by *Xanthomonas campestris* pv. *oryzae* is one of the most serious diseases of rice in India as well as in other Asian countries^{3, 4} for which economic and efficient chemical control measures are lacking, and developing varieties resistant to this disease appears to be the most appropriate control measures. Efforts are continuously being made to screen germ plasm and identify new sources of resistance. Chinsurah Boro II (CB II) was identified as one of the potential donor for resistance to bacterial blight of rice employing various artificial and natural inoculation techniques in different seasons from 1978 to 1982, utilizing a virulent local isolate CXO₃ of *X. campestris* pv. *oryzae*. Plants were repeatedly clip² and spray-inoculated separately at the maximum tillering and reproductive growth stages with bacterial suspension containing 10^9 cells/ml. The natural incidence of the disease was also studied on this cultivar up to the application of 90 kg nitrogen/hectare along with susceptible check 'Krishna'. The disease score¹ in CB II in artificial as well as in natural conditions varied from 1-3 at both maximum tillering and reproductive stages while in susceptible check, the score varied from 7 to 9.