

demonstrated by other workers using techniques similar to those described here. Sutherland, Lock & Farris (1981) located *Sirococcus strobilinus* Preuss inside seed of four *Picea* spp. after surface sterilization with hydrogen peroxide; and ethanol-soaked seeds of *P. elliotii* Engelm. var. *elliotii* were found to contain *Diplodia gossypina* Cooke (synonym of *L. theobromae* - Punithalingam, 1976) and *Fusarium moniliforme* Sheldon var. *subglutinans* Wollenw. & Reink. (Miller & Bramlett, 1978; Anderson, Belcher & Miller, 1980). A more detailed method was used on *Picea engelmannii* Parry ex Engelm. seed by Wicklow-Howard & Skujins (1980), who dissected out portions of endosperm and embryo after surface sterilization with 0.1% silver nitrate, and obtained *Geniculodendron pyri-forme* Salt, after incubation on V8 juice agar.

The results of this study show that *L. theobromae* is a seed-borne pathogen, although the seed is not its exclusive means either of existence or of transmission. It is theoretically possible to render this seed totally free from *L. theobromae* by increasing disinfectant concentrations and/or sterilization periods. However, as the treatments used during these experiments were subsequently found to have a detrimental effect on seed germination percentages (Rees, 1983), it is more than probable that harsher regimens would exacerbate the situation.

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FIRST RECORD OF A RUST ON *ACACIA MEARNSII* IN SOUTHERN AFRICA

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A rust fungus is recorded on *Acacia mearnsii* for the first time in South Africa. It is a uredinial rust, and comparison with rusts on this host in Australia suggests that it is probably the uredinial state of *Uromycladium alpinum*. The rust and its host range are briefly described.

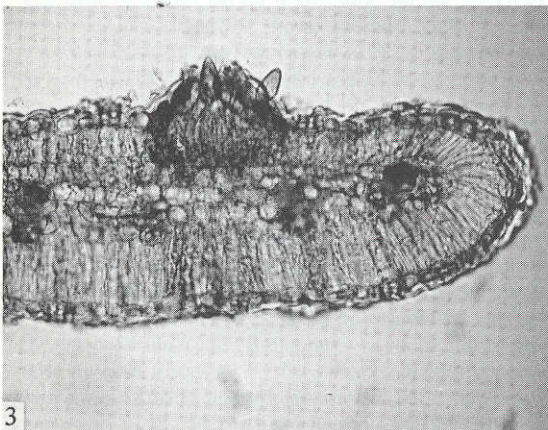
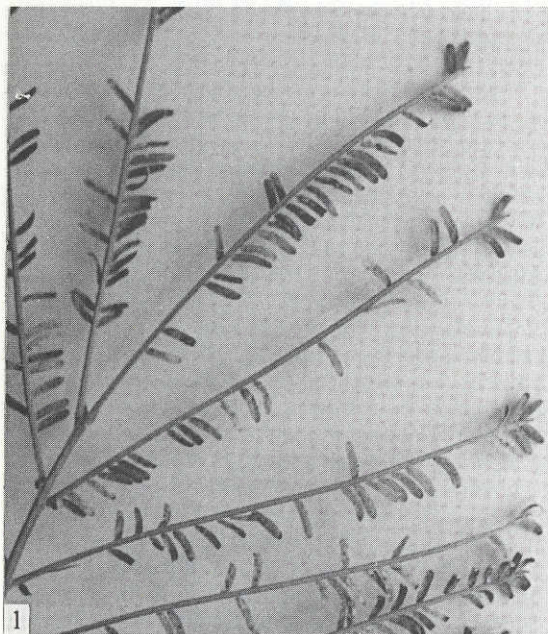
Acacia mearnsii De Willd. is a commercially important plantation tree grown in South Africa for timber, bark extract and pulp, but is also an invasive weed in many parts of the country

(Boucher, 1978). No rust fungi have been recorded on *A. mearnsii* in South Africa (Doidge, 1950; Gorter, 1977). Uredinia of a rust were first observed on leaflets of *A. mearnsii* at Stellenbosch in April

1984. The disease has since been found at Ixopo (Natal), Nelshoogte (Eastern Transvaal), George, Bainskloof (Cape Province) and in Swaziland and can cause severe leaf drop of lower leaves (Fig. 1). This paper describes the fungus, considers its identity and comments on the potential importance of the pathogen.

Uredinia are scattered on both surfaces of leaflets and on leaf rachides, branches and stems. On

leaflets (Figs 2, 3) they are usually surrounded by a circular yellow zone 0.5–1 mm wide or sometimes by a pale brown spot 0.5–1 mm wide, usually with one central sorus per spot, occasionally two or three. Individual uredinia are 100–150 μm diam, 40–60 μm high, subepidermal, and seen initially as small raised blisters which rupture to expose the reddish-brown powdery spore mass. Paraphyses are absent. Urediniospores (Figs 4, 5) are golden



Figs 1–4. Symptoms, uredinia and urediniospores of the southern African rust on *Acacia mearnsii*.

Fig. 1. Chlorosis and leaflet drop caused by the rust on the lower leaves.

Fig. 2. Uredinia of rust on leaflets.

Fig. 3. Transverse section of uredinium of rust on leaflet.

Fig. 4. Urediniospores.

