

A List of *Eucalyptus* Leaf Fungi and their Potential Importance to South African Forestry*

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SYNOPSIS

Fungi reported from *Eucalyptus* leaves are tabulated, giving their host species and world geographic distribution. A brief evaluation is made of the status of the fungi, and also of recent trends in *Eucalyptus* leaf pathology.

INTRODUCTION

Most of the approximately 600 *Eucalyptus* spp. and varieties are endemic to Australia and Papua New Guinea (Pryor, 1976). *Eucalyptus* spp. have been planted in more than 50 % of all newly afforested areas in South Africa, with *Eucalyptus grandis* Hill: Maid. covering almost 80 % of this area (Department of Environment Affairs, 1987).

More foliar parasites have been recorded on *Eucalyptus* than on any other tree genus (Marks, Fuhrer and Walters, 1982). In 1975 Gibson published a list of pathogens causing leaf and stem disorders of this host. Since then, there has been no complete review of *Eucalyptus* leaf diseases. Many new fungi have been recorded from *Eucalyptus* leaves in recent years, and the lack of a current compilation makes studying these fungi difficult.

Despite the growing importance of *Eucalyptus* spp. to South African forestry, very little is known about the diseases affecting this host locally. Only a few eucalypt leaf pathogens have been recorded (Doidge, 1950; Doidge *et al.*, 1953; Lundquist and Baxter, 1985). Of these, *Mycosphaerella* leaf blotch has had a significant impact on forestry in South Africa. This fungus has caused serious defoliation of *E. nitens* (Deane *et al.* Maid.) Maid. and *E. globulus* Labill., and

only New South Wales provenances of *E. nitens* can safely be used (Lundquist and Purnell, 1987).

Recent examination of *Eucalyptus* stands in various parts of South Africa have shown the presence of numerous previously unreported and undescribed pathogens. The potential impact that these fungi will have on the forest industry is unknown. Field observations suggest that these pathogens are generally more important on young trees. Because the local trend is to harvest eucalypt stands at short rotations, foliar diseases are likely to be of considerable importance in the future.

The aim of this paper is therefore to list all the fungi so far recorded on *Eucalyptus* leaves, with information on their taxonomic position, geographic distribution and reference sources. An attempt is also made to separate pathogens from saprophytes based on current knowledge of these fungi (Tables 1 and 2). It is hoped that this will form a basis for further detailed studies of fungi occurring on leaves of *Eucalyptus*.

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TABLE 1: Fungi occurring as pathogens or assumed to be pathogens on *Eucalyptus* spp.

Fungus	Geographic distribution	Hosts ^a	Symptoms	References
<i>Ascochyta heteromorpha</i> (Sch. & Sacc.) Curci	Italy	<i>Eucalyptus</i> spp. ^a	Leaf necrosis	Gibson, 1975
<i>Aulographina eucalypti</i> (Cooke & Mass.) von Arx & Muller Synonyms: <i>Aulographum eucalypti</i> Cooke & Mass.; <i>Lembosia eucalypti</i> Stevens & Dixon; <i>Lembosiopsis eucalypti</i> Petrak & Syd.; <i>Lembosiopsis australiensis</i> Hansf. Anamorph: <i>Thyrinula eucalypti</i> (Cooke & Mass.) Swart Synonyms: <i>Leptostromella eucalypti</i> Cooke & Mass.; <i>Thyrinula eucalyptina</i> Petrak & Syd.	Australia, New Zealand, Hawaii, S. Africa	<i>E. globulus</i> , <i>E. grandis</i> , <i>E. nitens</i> , <i>E. saligna</i> , and others (see references)	Circular necrotic lesions on upper or lower leaf surface	Dick, 1982; Doidge, 1950; Doidge <i>et al.</i> , 1953; Idczak, 1975; Lundquist & Baxter, 1985; Marks <i>et al.</i> , 1982; Swart, 1986b, 1988; Wall & Keane, 1984

Fungus	Geographic distribution	Hosts	Symptoms	References
<i>Bartalinia terricola</i> Padmabia Luke	India	<i>E. tereticornis</i>	Leaf spots	Mohan & Sharma, 1987
<i>Blastocercivulus eucalypti</i> Swart	Australia	<i>E. obliqua</i>	Necrotic spots which do not penetrate through the lamina Leaf blight	Swart, 1988
<i>Botryosphaeria ribis</i> Gross. & Dugg. Synonym: <i>Botryosphaeria dothidea</i> (Moug.: Fr.) Ces & de Not. Anamorph: <i>Fusicoccum aesculi</i> Cda. Synonym: <i>Dothiorella aesculi</i> Petrak	Wide distribution	<i>E. camaldulensis</i> , <i>E. cladocalyx</i> , <i>E. globulus</i> , <i>E. grandis</i> , <i>E. nitens</i> , and others (see references)		Crous, Knox-Davies & Wingfield, 1989b; Morgan-Jones & White, 1987; Punithalingam & Holliday, 1973; Sinclair <i>et al.</i> , 1987
<i>Botrytis cinerea</i> Pers. Teleomorph: <i>Sclerotinia fuckeliana</i> (de Bary) Fuckel	Argentina, Brazil, S. Africa, and others	<i>E. alba</i> , <i>E. botrioides</i> , <i>E. citriodora</i> , <i>E. rostrata</i> , <i>E. tereticornis</i> , and others (see references)	Leaf spots and damping-off	Abraham, 1948; Hepting, 1971; Raggi, 1947; Wingfield, 1987
<i>Calonectria crotalariae</i> (see <i>Cylindrocladium crotalariae</i>) <i>Calonectria floridana</i> (see <i>Cylindrocladium floridanum</i>) <i>Calonectria ilicicola</i> (see <i>Cylindrocladium ilicicola</i>) <i>Calonectria quinquesepata</i> (see <i>Cylindrocladium quinquesepata</i>)				
<i>Cercospora epicoccoides</i> Cooke & Mass.	Argentina, Australia, USA	<i>E. cinera</i> , <i>E. globulus</i>	Leaf spots	Chupp, 1953; Dick, 1982; Lanier, 1986; Sinclair <i>et al.</i> , 1987
<i>Cercospora eucalypti</i> Cooke & Mass.	Argentina, Australia, Brazil, Formosa, India, New Zealand, S. Africa, S.E. Asia, Zaire	<i>E. camaldulensis</i> , <i>E. delegatensis</i> , <i>E. fastigata</i> , <i>E. globulus</i> , <i>E. nitens</i> , <i>E. regnans</i> , and others (see references)	Leaf spots	Chupp, 1953; Dick, 1982; Gibson, 1975; Lanier, 1986; Magnani, 1965; Salerno, 1957; Wingfield, 1987
<i>Ceuthospora innumera</i> Mass. <i>Colletogloeum nubilosum</i> (see <i>Mycosphaerella cryptica</i>) <i>Coniothyrium eucalypticola</i> Sutton	Australia	<i>E. regnans</i>	Winter leaf spots	Ashton & Macauley, 1972; Swart, 1988
<i>Coniothyrium ovatum</i> Swart	Australia, S. Africa	<i>E. leptophylla</i>	Leaf spots	Sutton, 1971b
<i>Coniothyrium parvum</i> Swart	Australia	<i>E. cladocalyx</i> , <i>E. dives</i> , <i>E. lehmannii</i> , <i>E. macrorhyncha</i> , <i>E. obliqua</i> , <i>E. melliodora</i> , <i>E. regnans</i>	Leaf spots 1–6 mm in diameter	Crous, Knox-Davies & Wingfield, 1988; Swart, 1986a; Wingfield, 1987
<i>Corynespora cassiicola</i> (Berk. & Curt.) Wei. <i>Cylindrocladium braziliensis</i> (Batista & Ciferri) Peerally Synonym: <i>Cylindrocladium scoparium</i> Morgan var. <i>braziliensis</i> Batista & Ciferri	India Brazil	<i>E. grandis</i>	Water-soaked spots forming necrotic lesions Skin coloured leaf spots	Wilson & Rema Devi, 1966 Cruz & Figueiredo, 1961; Gibson, 1975; Peerally, 1974b
<i>Cylindrocladium clavatum</i> Hodges & May	Brazil, India, Mauritius	<i>E. tereticornis</i> , <i>Eucalyptus</i> spp. ^a	Leaf spots	Mohan & Sharma, 1985; Peerally, 1974c; Rattan & Chohan, 1984; Rattan, Dhanda & Randhawa, 1983
<i>Cylindrocladium crotalariae</i> (Loos) Bell & Sobers Teleomorph: <i>Calonectria crotalariae</i> (Loos) Bell & Sobers	USA	<i>Eucalyptus</i> spp. ^a	Leaf spots	Gibson, 1975; Sobers, 1969
<i>Cylindrocladium floridanum</i> Sobers & Seymour Teleomorph: <i>Calonectria floridana</i> Sobers	USA	<i>E. grandis</i> , <i>E. robusta</i> , <i>E. rudis</i> , <i>E. saligna</i> , and others (see references)	Leaf spots	Gibson, 1975; Sobers, 1969
<i>Cylindrocladium ilicicola</i> Boedijn & Reitsma Teleomorph: <i>Calonectria ilicicola</i> Boedijn & Reitsma	Brazil, India, Kenya, Malaysia	<i>E. globulus</i>	Leaf spots	Lanier, 1986; Reddy, 1974; Sharma <i>et al.</i> , 1984a

Fungus	Geographic distribution	Hosts	Symptoms	References
<i>Cylindrocladium pteridis</i> Wolf Synonyms: <i>Cylindrocladium macrosporum</i> Sherb.	USA	<i>E. grandis</i> , <i>E. robusta</i> , and others (see references)	Leaf spots 0,5–5 mm in diameter	Sobers, 1967, 1968
<i>Cylindrocladium quinque-septata</i> Boedijn & Reitsma Teleomorph: <i>Calonectria quinqueseptata</i> Fig. & Nam.	Brazil, India, Indonesia, Malaysia, Mauritius	<i>E. robusta</i>	Leaf spots	Lanier, 1986; Peerally, 1974a; Sharma <i>et al.</i> , 1984a
<i>Cylindrocladium scoparium</i> Morgan	Worldwide	<i>E. grandis</i> , <i>E. nitens</i> , <i>E. robusta</i>	Light brown leaf spots, 2–15 mm in diameter	Crous (unpublished data); Barnard, 1984; Booth & Gibson, 1973; Lundquist & Baxter, 1986
<i>Davisoniella eucalypti</i> Swart	Australia	<i>E. marginata</i>	Necrotic leaf spots	Swart, 1988
<i>Dothiorella australis</i> (Cooke) Petrak & Syd.	Portugal	<i>E. globulus</i>	Leaf spots	Gibson, 1975
<i>Dothiorella eucalypti</i> (Berk. & Br.) Sacc.	Portugal	<i>E. globulus</i>	Leaf spots	Gibson, 1975
<i>Elsinoë eucalypti</i> Hansf.	Brazil	<i>Eucalyptus</i> spp., and other (see references)	Dark maroon leaf spots, more than 4 mm in diameter	Gibson, 1975; Lanier, 1986; Sinclair <i>et al.</i> , 1987
<i>Erysiphe cichoracearum</i> Dc.: Merat Synonym: <i>Erysiphe polyphaga</i> Hammarl.	Britain, California, New Zealand, USA	<i>E. creba</i> , <i>E. globulus</i> , <i>E. porosa</i> , <i>E. viridis</i> , and others (see references)	Leaf spots, malformation of leaves and shoots	Boesewinkel, 1981
<i>Fairmaniella leprosa</i> (Fairm.) Petrak & Syd. Synonyms: <i>Coniothyrium leprosum</i> Fairm., <i>Melanconium eucalypticola</i> Hansf.	Australia, Chile, Hawaii, New Zealand, S. Africa, Zambia	<i>E. citriodora</i> , <i>E. globulus</i> , <i>E. fasciculosa</i> , <i>E. robusta</i>	Lesions on leaves and shoots, circular to irregular, corky, medium brown in colour	Crous, Knox-Davies & Wingfield, 1989a&b; Hansford, 1956; Sutton, 1971b, 1980; Swart, 1988
<i>Fusicoccum aesculi</i> (see <i>Botryosphaeria ribis</i>)				
<i>Gnomoniella destruens</i> Barr & Hodges	Hawaii	<i>E. globulus</i> , <i>E. grandis</i> , <i>E. saligna</i>	Undescribed	Barr & Hodges, 1987
<i>Guignardia citricarpa</i> Kiely	Malaysia, S. Africa	<i>E. grandis</i>	Diffuse leaf necrosis	Gibson, 1975
<i>Hainesia lythri</i> (Desm.) Höhn Synonyms: <i>Dacryomyces lythri</i> Desm., <i>Hainesia lunata</i> Krantz; <i>Hainesia jabalpurensis</i> Sahni Teleomorph: <i>Pezizella oenotherae</i> Cooke & Ell.	Australia, Britain, Germany, Korea, Malawi, New Guinea, New Zealand, S. Africa, Singapore, Zambia	<i>E. cloeziana</i> , <i>E. fastigata</i> , <i>E. fraxinoides</i> , <i>E. grandis</i> , <i>E. nitens</i> , <i>E. saligna</i> , and others (see references)	Leaf spots	Lundquist & Baxter, 1985; Lundquist & Foreman, 1986; Sutton, 1980; Sutton & Gibson, 1977
<i>Haplosporella novae-hollandiae</i> Speg.	Portugal	<i>E. globulus</i>	Leaf spots	Gibson, 1975
<i>Harknessia eucalypti</i> Cooke apud Cooke & Harkness	Europe, Italy, Portugal, S. Africa, USA, Zambia	<i>E. globulus</i> , <i>E. grandis</i> , <i>E. maidenii</i> , <i>E. nitens</i> , <i>E. trabuti</i> , <i>E. viminalis</i>	Leaf and shoot necrosis	Crous, Knox-Davies & Wingfield, 1989a&b; Gibson, 1975; Sutton, 1971b
<i>Harknessia fumaginea</i> Sutton & Alcorn	Australia, Brazil	<i>E. pilulans</i> , <i>Eucalyptus</i> spp. ^a	Tip blight of young shoots	Sutton, 1975
<i>Harknessia globosa</i> Sutton	New Zealand, S. Africa	<i>E. globulus</i> , <i>E. grandis</i>	Leaf spots	Crous, Knox-Davies & Wingfield, 1989a&b; Gibson, 1975; Sutton, 1971b
<i>Harknessia hawaiiensis</i> Stev. & Young	Brazil, Hawaii, Zimbabwe	<i>E. grandis</i> , <i>E. robusta</i>	Leaf spots	Gibson, 1975; Sutton, 1971b
<i>Harknessia insueta</i> Sutton	Brazil, Mauritius	<i>E. grandis</i> , <i>E. robusta</i>	Leaf spots	Gibson, 1975; Sutton, 1971b
<i>Harknessia uromycoides</i> (Speg.) Speg. Synonyms: <i>Melanconium uromycoides</i> Speg.; <i>Harknessia molleriana</i> Wint.; <i>Harknessia longipes</i> Harkn.; <i>Sphaeropsis stictoides</i> Earle	Argentina, Australia, Portugal, S. Africa, Spain, USA	<i>E. globulus</i> , <i>E. odoratus</i> , <i>E. scarbro</i> , <i>E. viminalis</i> , and others (see references)	Leaf spots	Doidge, 1950; Doidge <i>et al.</i> , 1953; Gibson, 1975; Sutton, 1971b
<i>Hendersonia eucalyptina</i> Aniceta Santos	Portugal	<i>E. globulus</i>	Brown vinaceous spots 3 mm in diameter	Gibson, 1975; Swart & Walker, 1988
<i>Idiocercus australis</i> (Cooke) Swart Synonym: <i>Phoma australis</i> Cooke	Australia	<i>E. regnans</i> , <i>Eucalyptus</i> spp. ^a	Large necrotic leaf spots	Swart, 1988

Fungus	Geographic distribution	Hosts	Symptoms	References
<i>Leptomelanconium australiense</i> Sutton	Australia	<i>E. ficifolia</i>	Lesions on leaves	Sutton, 1974, 1980
<i>Microdiplodia microsporella</i> Sacc.	Mauritius	<i>E. globulus</i>	Leaf necrosis	Gibson, 1975
<i>Microsphaeropsis callista</i> (H. Syd.) Sutton Synonym: <i>Coniothyrium callistum</i> H. Syd.	Argentina, Australia	<i>E. haemastoma</i>	Circular to irregular lesions, up to 5 mm in diameter	Cabral, 1985; Sutton, 1971b
<i>Microthyrium eucalypti</i> P. Hennings	USA	<i>E. delegatensis</i> , <i>E. globulus</i> , <i>E. fastigata</i> , <i>E. polyanthemus</i> , <i>E. regnans</i> <i>Eucalyptus</i> spp. ^a	Lamina becomes paler green, or purple blotches develop	Dick, 1982; Swart, 1986b
<i>Microthyrium eucalypticola</i> Speg.	Australia	<i>Eucalyptus</i> spp. ^a	Undescribed	Swart, 1986b
<i>Mycosphaerella cryptica</i> (Cooke) Hansf. Synonym: <i>Sphaerella cryptica</i> Cooke Anamorph: <i>Colletogloeum nubilosum</i> Ganapathi & Corbin	Australia, New Zealand	<i>E. delegatensis</i> , <i>E. globulus</i> , <i>E. nitens</i> , <i>E. obliqua</i> , and others (see references)	Circular lesions on juvenile foliage, and blighting	Dick, 1982; Ganapathi & Corbin, 1979; Hansford, 1956; Marks <i>et al.</i> , 1982; Park, 1988; Park & Keane, 1982c, 1982d, 1987
<i>Mycosphaerella delegatensis</i> Park & Keane Anamorph: <i>Stagonospora delegatensis</i> Park & Keane	Australia	<i>E. delegatensis</i> , <i>E. obliqua</i>	Necrotic lesions, black to grey in colour	Park & Keane, 1984
<i>Mycosphaerella eucalypti</i> (Wakef.) Hansf. Synonym: <i>Hypospila eucalypti</i> Wakef.	Australia	<i>Eucalyptus</i> spp. ^a	Circular red-brown lesions, 4 mm in diameter	Park & Keane, 1984
<i>Mycosphaerella heimii</i> Bouriquet	Madagascar	<i>E. obliqua</i>	Leaf withering	Park & Keane, 1984
<i>Mycosphaerella martinae</i> Hansf.	Australia	<i>Eucalyptus</i> spp. ^a	Angular leaf spots	Marks, 1979; Park & Keane, 1982c
<i>Mycosphaerella molleriana</i> (Thüm.) Lindau Synonym: <i>Sphaerella molleriana</i> Thüm.	African countries, Brazil, Europe, Portugal, S. Africa, USA	<i>E. globulus</i> , <i>E. grandis</i> , <i>E. maidenii</i> , <i>E. resinifera</i> , and others (see references)	Rounded lesions, 2–3 mm in diameter	Doidge, 1950; Doidge <i>et al.</i> , 1953; Gibson, 1975; Lundquist & Baxter, 1985; Park & Keane, 1982b, 1984
<i>Mycosphaerella nubilosa</i> (Cooke) Hansf. Synonym: <i>Sphaerella nubilosa</i> Cooke	Australia, New Zealand, S. Africa, Zambia	<i>E. delegatensis</i> , <i>E. globulus</i> , <i>E. maidenii</i> , <i>E. regnans</i> , <i>E. viminalis</i> , and others (see references)	Leaf spotting and blight	Dick, 1982; Ganapathi & Corbin 1979; Gibson, 1975; Hansford, 1956; Lundquist & Baxter, 1985; Lundquist & Purnell, 1987; Park, 1988; Park & Keane, 1982c, 1987
<i>Mycosphaerella swartii</i> Park & Keane Anamorph: <i>Sonderhenia eucalyptorum</i> (Hansf.) Swart & Walker; <i>Hendersonia eucalyptorum</i> Hansf.	Australia, New Zealand	<i>E. delegatensis</i> , <i>E. dives</i> , <i>E. obliqua</i> , <i>E. radiata</i>	Necrotic leaf spots	Dick, 1982; Park & Keane, 1982a, 1984 Swart & Walker, 1988
<i>Mycosphaerella walkeri</i> Park & Keane Anamorph: <i>Sonderhenia eucalypticola</i> (Davis) Swart & Walker; <i>Hendersonia eucalypticola</i> Davis; <i>H. fraseriae</i> Hansf.	Australia, New Zealand, Tasmania	<i>E. cladocalyx</i> , <i>E. globulus</i> , <i>E. polyanthemus</i>	Leaf spots	Dick, 1982; Gibson, 1975; Fripp & Forrester, 1981; Park & Keane, 1982a, 1984; Sinclair <i>et al.</i> , 1987; Swart & Walker, 1988
<i>Monochaetia desmazierii</i> (Desm.) Sacc.	Japan, USA	<i>E. globulus</i>	Large leaf blotch	Gibson, 1975
<i>Ophiodothella longispora</i> Swart	Australia	<i>E. goniocalyx</i>	Undescribed	Swart, 1982d
<i>Pachysacca eucalypti</i> Sydow	Australia	<i>E. diversifolia</i> , <i>E. rostrata</i> , <i>E. viminalis</i>	Amphigenous leaf spots	Swart, 1982c
<i>Pachysacca pusilla</i> Swart	Australia	<i>E. regnans</i>	Leaf spots	Swart, 1982c
<i>Pachysacca samuelii</i> (Hansf.) Swart Synonym: <i>Pseudosphaeria samuelii</i> Hansford	Australia	<i>E. goniocalyx</i> ; <i>E. obliqua</i> , <i>E. odorata</i> , <i>E. radiata</i> , <i>E. rostrata</i> , <i>E. sieberi</i>	Brown, dendritic leaf spots	Park & Keane, 1982a; Swart, 1982c

Fungus	Geographic distribution	Hosts	Symptoms	References
<i>Pestalotiopsis disseminata</i> (Thüm.) Steyaert	India, S. Africa	<i>E. citriodora</i>	Brown leaf blight, lesions circular, 5–10 mm in diameter	Doidge, 1950; Doidge <i>et al.</i> , 1953; Lundquist & Baxter, 1985; Upadhyay & Bordoloi, 1974
<i>Pestalotiopsis funerea</i> (Desm.) Steyaert Synonym: <i>Pestalotia funerea</i> Desm.	Africa, Asia, Australasia, Europe, S. Africa, USA	<i>E. globulus</i>	Leaf spots	Mordue, 1976; Upadhyay, 1981; 1984; Upadhyay & Arora, 1980; Upadhyay & Dwivedi, 1977
<i>Pestalotia molleriana</i> Thüm.	France, Portugal, Uruguay	<i>Eucalyptus</i> spp. ^a	On twigs and leaves	Lanier, 1986
<i>Phaeoseptoria eucalypti</i> Hansf. emend. Walker	Australia, India, Malawi, New Zealand, S. Africa	<i>E. bicostata</i> , <i>E. camuldulensis</i> , <i>E. globulus</i> , <i>E. grandis</i> , <i>E. saligna</i> , <i>E. tereticornis</i> , and others (see references)	Discrete leaf spots	Chipompha, 1987; Crous <i>et al.</i> , 1988; Dick, 1982; Gibson, 1975; Hansford, 1957; Heather, 1967a, 1967b; Padaganur & Hiremath, 1973; Sharma & Mohanan, 1981; Walker, 1962
<i>Phaeoseptoria luzonensis</i> Kobayashi	Philippines	<i>Eucalyptus</i> spp. ^a	Black, powdery leaf spots	Kobayashi, 1978; Lanier, 1986
<i>Phaeothyriolum microthyrioides</i> (Wint.) Swart Synonyms: <i>Asterina microthyrioides</i> Winter; <i>Synestia microthyrioides</i> (Winter) Theiss.; <i>Microthyrium amygdalinum</i> Cooke & Mass.; <i>Phaeothyriolum eucalyptinum</i> H. Syd.; <i>Mycocomrothelia eucalyptina</i> (Syd.) Müller; <i>Arnaudiella bancroftii</i> Hansf.	Australia, USA	<i>E. amygdalina</i> , <i>E. dalrympleana</i> , <i>E. dives</i> , <i>E. ficifolia</i> , and others (see references)	Undescribed	Park & Keane, 1982a; Swart, 1986b
<i>Phomopsis eucalypti</i> Zerova	India	<i>E. grandis</i> , <i>E. tereticornis</i>	Leaf spots	Mohanan & Sharma, 1987
<i>Phyllosticta eucalypti</i> Thüm.	Algeria, Australia, Denmark, Portugal, Spain, USA, USSR	<i>E. globulus</i> , <i>Eucalyptus</i> spp. ^a	Spots vary from dark maroon to light grey	Gibson, 1975
<i>Physalospora eucalypti</i> Narendra & Rao	India, Malaysia	<i>E. globulus</i>	Leaf spots	Narendra & Rao, 1977
<i>Piggotea substellata</i> Cooke	Australia	<i>E. regnans</i>	Winter leaf spots	Ashton & Macauley, 1972; Marks <i>et al.</i> , 1982
<i>Plectosphaeria eucalypti</i> (Cooke & Mass.) Swart Synonyms: <i>Trabutia eucalypti</i> Cooke & Mass.; <i>Phyllachora maculata</i> Cooke; <i>Phyllachora eucalypti</i> (Cooke & Mass.) Theiss. & Sydow	Australia, Brazil, Ecuador, Portugal, USA	<i>E. globulus</i> , <i>E. goniocalyx</i> , <i>E. melliodora</i> , <i>E. regnans</i> , <i>E. viminalis</i> var. <i>mannifera</i>	Pin spot disease with leaf and twig die-back	Gibson, 1975; Marks <i>et al.</i> , 1982; Swart, 1981
<i>Puccinia psidii</i> Wint.	Brazil, India	<i>E. citriodora</i> , <i>E. cloeziana</i> , <i>E. grandis</i> , <i>E. pellita</i> , <i>E. saligna</i> , and others (see references)	Orange pustules on leaves and petioles	De Castro <i>et al.</i> , 1983; Dianese <i>et al.</i> , 1984; Gibson, 1975; Joffily, 1944; Upadhyay & Bordoloi, 1974
<i>Ramulia pitereka</i> Walter & Bertus	Australia	<i>E. eximia</i> , <i>E. ficifolia</i> , <i>E. maculata</i>	White mycelium appears on lesions	Gibson, 1975
<i>Rehmiodothis eucalypti</i> (Cooke & Mass.) Swart Synonym: <i>Phyllachora (Montagnella) eucalypti</i> Cooke & Mass.	Australia	<i>Eucalyptus</i> spp. ^a	Leaf spots	Swart, 1987
<i>Rehmiodothis inaequalis</i> (Cooke) Swart Synonyms: <i>Dothidella inaequalis</i> Cooke; <i>Placostroma inaequalis</i> (Cooke) Theiss. & Sydow	Australia	<i>Eucalyptus</i> spp. ^a	Tar spots	Swart, 1987
<i>Rhizoctonia solani</i> Kühn	Kerala, India (Wide distribution)	<i>E. grandis</i> , <i>E. tereticornis</i>	Web-blight	Sharma, Mohanan & Maria Florence, 1984b

Fungus	Geographic distribution	Hosts	Symptoms	References
<i>Rhytisma eucalypti</i> P. Henn.	Australia	<i>E. diversifolia</i> , <i>Eucalyptus</i> spp.*	Dull brown rounded leaf spots	Gibson, 1975
<i>Seimatosporium brevilatum</i> Swart & Griffiths	Australia	<i>E. globulus</i> , <i>E. nitens</i> , <i>E. regnans</i> , and others (see references)	Angular leaf spots	Marks <i>et al.</i> , 1982; Swart & Griffiths, 1974
<i>Seimatosporium cylindrosporium</i> Swart	Australia	<i>E. behriana</i> , <i>E. diversifolia</i> .	Angular leaf spots	Swart, 1982b
<i>Seimatosporium eucalypti</i> (McAlp.) Swart Synonym: <i>Cylindrosporium eucalypti</i> McAlpine	Australia, S. Africa	<i>E. maculata</i> , <i>E. maidenii</i> , <i>Eucalyptus</i> spp.*	Angular leaf spots	Crous (unpublished data); Swart, 1982b
<i>Seimatosporium falcatum</i> (Sutton) Shoemaker Synonym: <i>Cryptostictis falcatum</i> Sutton	Australia	<i>E. delegatensis</i> , <i>E. dives</i> , <i>E. radiata</i> , <i>E. regnans</i> , and others (see references)	Angular leaf spots	Marks <i>et al.</i> , 1982; Swart, 1982b
<i>Seimatosporium fusisporum</i> Swart & Griffiths	Australia	<i>E. nitens</i> , <i>E. polyanthemus</i> , <i>E. regnans</i> , and others (see references)	Angular leaf spots	Marks <i>et al.</i> , 1982; Swart, 1982b; Swart & Griffiths, 1974
<i>Seimatosporium lichenicola</i> (Corda) Shoem. & Müll. Synonym: <i>Hendersonia eucalypti</i> (Cooke & Hark.)	USA	<i>E. globulus</i>	Leaf spots	Gibson, 1975; Swart & Walker, 1988
<i>Seimatosporium samuelii</i> (Hansf.) Walker & Swart Synonym: <i>Cylindrosporium samuelii</i> Hansf.	Australia	<i>Eucalyptus</i> sp.*	Leaf spots	Hansford, 1956; Swart, 1988
<i>Septoria mortolensis</i> Penz. & Sacc.	USA	<i>Eucalyptus</i> spp.*	Leaf necrosis	Gadgil & Dick, 1983; Gibson, 1975
<i>Septoria normae</i> Heather	Australia	<i>E. dalrympleana</i> , <i>E. viminalis</i>	Leaf lesions	Burdon & Chilvers, 1974; Dick, 1982
<i>Sonderhenia eucalypticola</i> (Davis) Swart & Walker (see <i>Mycosphaerella walkeri</i>)				
<i>Sonderhenia eucalyptorum</i> (Hansf.) Swart & Walker (see <i>Mycosphaerella swartii</i>)				
<i>Sphaerotheca aphanis</i> (Wallr.) Braun Synonyms: <i>S. alchemillae</i> (Grev.) Junell; <i>S. macularis</i> (Wallr. & Fr.) Lind; <i>Oidium fragariae</i> Harz.	New Zealand, West Germany	<i>E. albens</i> , <i>E. cinerea</i> , <i>E. crebra</i> , <i>E. diversicolor</i> , and others (see references)	Leaf spots, malformation of leaves and shoots	Boesewinkel, 1981; Gorter, 1988
<i>Sphaerotheca pannosa</i> (Wallr.: Fr.) Lév. Synonyms: <i>Aephitomorpha pannosa</i> Wallr.; <i>Erysiphe pannosa</i> (Wallr.) Fr.; <i>Oidium leucoconium</i> Desm.; <i>Oidium eucalypti</i> Rostr.	Argentina, Australia, Brazil, Britain, Denmark, Italy, New Zealand, Poland, Portugal, South Africa, S. America	<i>E. albens</i> , <i>E. camaldulensis</i> , <i>E. globulus</i> , <i>E. gunii</i> , <i>E. maidenii</i> , and others (see references)	Leaf spots, malformation of leaves and shoots	Boesewinkel, 1981; Glasscock & Rosser, 1957; Gorter, 1988; Pady, 1972; Yarwood, 1957; Yarwood & Gardner, 1974
<i>Stagonospora delegatensis</i> (see <i>Mycosphaerella delegatensis</i>)				
<i>Stagonospora pulcherrima</i> (Gadgil & Dick) Swart Synonym: <i>Septoria pulcherrima</i> Gadgil & Dick	New Zealand	<i>E. cephalocapa</i> , <i>E. dalrympleana</i> , <i>E. globulus</i> , <i>E. ovata</i> , <i>E. nitens</i> , and others (see references)	Pale yellow leaf spots that turn brown and necrotic	Dick, 1982; Gadgil & Dick, 1983; Swart, 1988
<i>Staninwardia breviuscula</i> Sutton	Mauritius	<i>Eucalyptus</i> spp.*	Circular lesions, up to 10 mm long and 5 mm in diameter	Sutton, 1971a
<i>Stigmia eucalypti</i> Alcorn	Australia	<i>E. tessellaris</i>	Leaf spots	Alcorn, 1973
<i>Thyrinula eucalypti</i> (see <i>Aulographina eucalypti</i>)				
<i>Thyriopsis sphaerospora</i> Marasas	S. Africa	<i>E. camaldulensis</i>	Leaf spots	Marasas, 1966
<i>Trimmatostroma bifarium</i> Gadgil & Dick	New Zealand	<i>E. delegatensis</i> , <i>E. regnans</i> , <i>E. fastigata</i> , <i>E. sieberi</i>	Leaf spots 2–18 mm in diameter	Dick, 1982; Gadgil & Dick, 1983
<i>Trimmatostroma excentricum</i> Sutton & Ganapathi	Fiji, New Zealand	<i>E. delegatensis</i> , <i>E. regnans</i> , <i>E. sieberi</i> , <i>E. globulus</i>	Lesions up to 5 mm in diameter	Dick, 1982; Park & Keane, 1982a; Sutton & Ganapathi, 1978

Fungus	Geographic distribution	Hosts ^a	Symptoms	References
<i>Tubakia dryina</i> (Sacc.) Sutton	USA	<i>E. globulus</i>	Small brown spots	Gibson, 1975
<i>Vermisporium acutum</i> Swart & Williamson	Australia	<i>Eucalyptus</i> spp. ^a	Necrotic leaf spots	Sutton & Hodges, 1975b
<i>Vermisporium biseptatum</i> Swart & Williamson	Australia	<i>E. baxteri</i> , <i>E. melliodora</i> , <i>E. regnans</i> , <i>E. viminalis</i> , and others (see references)	Necrotic leaf spots	Swart & Williamson, 1983
<i>Vermisporium brevicentrum</i> Swart & Williamson	Australia	<i>E. dumosa</i> , <i>E. ovata</i> , <i>E. viminalis</i>	Necrotic leaf spots	Swart & Williamson, 1983
<i>Vermisporium obtusum</i> Swart & Williamson	Australia	<i>E. baxteri</i> , <i>E. delegatensis</i> , <i>E. radiata</i> , <i>E. regnans</i> , and others (see references)	Necrotic leaf spots	Swart & Williamson, 1983
<i>Vermisporium orbiculara</i> (Cooke) Swart & Williamson Synonym: <i>Stagonospora orbicularis</i> Cooke	Australia	<i>E. macrorhyncha</i> , <i>E. obliqua</i>	Necrotic leaf spots	Swart & Williamson, 1983
<i>Vermisporium walkeri</i> Swart & Williamson	Australia	<i>E. macrorhyncha</i> , <i>E. obliqua</i> , <i>E. pauciflora</i>	Necrotic leaf spots	Swart & Williamson, 1983

^a = Not specified

TABLE 2: Fungi occurring as saprophytes or in some cases weak pathogens on *Eucalyptus* spp.

Fungus	Geographic distribution	Hosts ^a	References	Notes
<i>Alternaria alternata</i> (Fr.) Keissler Synonyms: <i>Alternaria tenuis</i> Nees; <i>Torula alternata</i> Fr.; <i>Alternaria tomato</i> (Cooke) (Brink); <i>Macrosporium tomato</i> (Cooke)	Wide distribution	<i>Eucalyptus</i> spp., and others (see references)	Gibson, 1975; Mittal & Sharma, 1983; Rattan & Chohan, 1984	Usually saprophytic on leaves, also associated with leaf spots
<i>Alternaria tenuissima</i> (Kunze: Pers.) Wilt. Synonyms: <i>Helminthosporium tenuissimum</i> Kunze et Pers.; <i>Macrosporium tenuissimum</i> (Kunze: Pers.) Fr.; <i>Alternaria humicola</i> Oudem.	Wide distribution	<i>Eucalyptus</i> spp. and others (see references)	Gibson, 1975; Magnani, 1968	Usually saprophytic on leaves, also associated with leaf spots
<i>Anungitea globosa</i> Sutton & Hodges	Hawaii, New Zealand	<i>E. globulus</i> , <i>E. saligna</i> , <i>Eucalyptus</i> spp. ^a	Sutton & Hodges, 1978	On leaf litter
<i>Ascocoma eucalypti</i> var. <i>didymospora</i> (see <i>Coma circularis</i>)				
<i>Belaina asclepiadis</i> Bat. & Peres	Brazil, USA	<i>E. citriodora</i>	Sutton, 1980	On leaves
<i>Chaetendophragmiopsis pulchra</i> Sutton & Hodges	Brazil	<i>E. citriodora</i>	Sutton & Hodges, 1978	On leaves
<i>Chaetomella circinoseta</i> Stolk	Brazil	<i>Eucalyptus</i> spp. ^a	Sutton, 1980	On leaf litter
<i>Chaetopsina fulva</i> Rambelli Synonyms: <i>Chaetopsina romantica</i> Rambelli & Lunghini; <i>Chaetopsis romantica</i> (Rambelli & Lunghini) Di Cosmo, Berch & Kendrick Teleomorph: <i>Nectria chaetopsinae</i> Samuels	Hawaii	<i>E. saligna</i>	Kirk & Sutton, 1985	On leaves
<i>Chaetopsina splendida</i> Kirk & Sutton	Australia, Brazil	<i>Eucalyptus</i> spp. ^a	Kirk & Sutton, 1985	On leaves
<i>Civisubramaniana eucalypti</i> Vittal & Dorai	India	<i>E. tereticornis</i>	Vittal & Dorai, 1986	On leaves

Fungus	Geographic distribution	Hosts ^a	References	Notes
<i>Cladosporium inaequiseptatum</i> Matsushima	Britain	<i>E. coccifera</i>	Kirk, 1981	On leaves
<i>Cladosporium cladosporioides</i> (Fres.) de Vries Synonyms: <i>Penicillium cladosporioides</i> Fres.; <i>Hormodendrum cladosporioides</i> (Fres.) Sacc.; <i>Cladosporium hypophyllum</i> Fuckel	Argentina	<i>E. viminalis</i>	Cabral, 1985	On leaf litter
<i>Clypeophysalora latitans</i> (Sacc.) Swart Synonyms: <i>Physalospora latitans</i> Sacc.; <i>Amerostege latitans</i> (Sacc.) Theiss.; <i>Laestadia eucalypti</i> Speg.; <i>Physosporella eucalypti</i> (Speg.) v. Höhn; <i>Phyllachora eucalypti</i> (Speg.) Petrak; <i>Laestadia eucalypti</i> Rolland; <i>Laestadia rollandi</i> Sacc. & Syd.; <i>Physalospora eucalypti</i> (Roll.) Schrantz	Australia, Equador, Italy	<i>E. globulus</i>	Swart, 1981	On leaves
<i>Coccomyces martiniae</i> Hansf.	Argentina	<i>E. viminalis</i>	Cabral, 1985	On leaves
<i>Codinaea maharashtrensis</i> Pirozynski & Patil	Brazil	<i>E. torelliana</i> , <i>Eucalyptus</i> spp ^a	Sutton & Hodges, 1975a	On leaves
<i>Codinea eucalypti</i> Sutton & Hodges	Brazil	<i>E. saligna</i> , <i>E. citriodora</i> , <i>E. pasiculata</i>	Sutton & Hodges, 1975a	On leaf litter
<i>Codinea septata</i> Sutton & Hodges	Brazil	<i>Eucalyptus</i> spp ^a	Sutton & Hodges, 1975a	On leaves
<i>Codinea simplex</i> Sutton & Hodges	Brazil	<i>Eucalyptus</i> spp. ^a	Sutton & Hodges, 1975a	On leaves
<i>Coma circularis</i> (Cooke & Mass.) Nag Raj & Kendrick Synonyms: <i>Pestalozziella circularis</i> Cooke & Mass. <i>Gloeosporiella eucalypti</i> Hansford Teleomorph: <i>Ascocoma eucalypti</i> var. <i>didymospora</i> (Hansf.) Swart	Australia	<i>E. pauciflora</i>	Sutton, 1980; Sutton, 1974; Swart, 1986c	On leaves
<i>Coniella australiensis</i> Petrak	Britain, France, India, Israel, Netherlands	<i>E. deglupta</i>	Sutton, 1980	On leaves
<i>Coniella castaneicola</i> (Ell. & Ev.) Sutton Synonyms: <i>Gloeosporium castaneicola</i> Ell. & Ev.; <i>Pilidiella castaneicola</i> (Ell. & Ev.) Arx.; <i>Sphaeropsis quercicola</i> Oud.; <i>Pilidiella quercicola</i> (Oud.) Petrak; <i>Dendrophoma corticalis</i> Woron.; <i>Selenophoma kamatti</i> Kalani; <i>Embolidium eucalypti</i> Bat. & Peres apud Bat., Peres & Bezerra; <i>Coniella eucalypticola</i> Nag Raj; <i>C. citri</i> Agarwal & Sharma	Australia, Brazil, Cuba, India, USA	<i>E. citriodora</i> , <i>E. grandis</i> , <i>E. saligna</i> , <i>E. tereticornis</i> , <i>E. viminalis</i> , and others (see references)	Sutton, 1980	On leaves
<i>Coniella minima</i> Sutton & Thaug apud Sutton	Burma	<i>E. camaldulensis</i>	Sutton, 1975	Usually saprophytic, also associated with leaf lesions
<i>Coniothyrium ahmadii</i> Sutton	Pakistan	<i>Eucalyptus</i> spp ^a	Sutton, 1974, 1980	Branches (and leaves?)
<i>Coniothyrium kollangurense</i> Sutton & Alcorn	Australia	<i>E. microcorydis</i>	Sutton, 1975	On leaves
<i>Dichomera eucalypti</i> (Wint.) Sutton Synonyms: <i>Camarosporium eucalypti</i> Wint.; <i>Camarosporellum eucalypti</i> (Wint.) Tassi; <i>Coryneum viminale</i> Cooke & Mass.	Australia	<i>E. rubida</i> , <i>E. viminalis</i> , <i>Eucalyptus</i> spp. ^a	Sutton, 1980	On leaves

Fungus	Geographic distribution	Hosts ^a	References	Notes
<i>Doliomyces mysorensis</i> Nag Rai & Kendrick	India	<i>Eucalyptus</i> spp. ^a	Sutton, 1980	On leaves
<i>Cryptocline nigricans</i> (Cooke & Mass.) Sutton Synonyms: <i>Gloeosporium nigricans</i> Cooke & Mass.; <i>Fairmaniella nigricans</i> (Cooke & Mass.) Arx.	Australia	<i>E. pauciflora</i>	Sutton, 1971b	On leaves
<i>Eriomycopsis aristata</i> Sutton & Hodges	Brazil	<i>Eucalyptus</i> spp. ^a	Sutton & Hodges, 1978	On leaf litter
<i>Gamphonema exile</i> (Tassi) Nag Raj Synonyms: <i>Pestalotia exilis</i> Tassi; <i>Hyalotia exilis</i> (Tassi) Guba	Brazil, Hawaii, India	<i>E. paniculata</i> , <i>E. robusta</i> , <i>Eucalyptus</i> spp. ^a	Sutton, 1980	On leaf litter
<i>Harknessia ventricosa</i> Sutton & Hodges	Hawaii, S. Africa	<i>E. globulus</i>	Crous (unpublished data); Sutton, 1980	On living leaves and leaf litter
<i>Henicospora coronata</i> Sutton & Kirk	Australia, Hawaii, Trinidad	<i>E. grandis</i> , <i>Eucalyptus</i> spp.	Sutton, 1980	On leaves
<i>Hyalotiella transvalensis</i> Papendorf	India, S. Africa	<i>E. citriodora</i>	Sutton, 1980	On leaf litter
<i>Kionochaeta spissa</i> Kirk & Sutton	Australia, Hawaii, Kenya	<i>E. robusta</i> , <i>E. torreliana</i>	Kirk & Sutton, 1985	On leaves
<i>Macrohilum eucalypti</i> Swart	Australia	<i>E. polyanthemos</i>	Swart, 1988	On leaves
<i>Macrophoma similacina</i> (Berk.) Berlese & Vogl.	Argentina	<i>E. viminalis</i>	Cabral, 1985	On leaves
<i>Microdochium cylindricum</i> Sutton & Hodges	Brazil	<i>Eucalyptus</i> spp. ^a	Sutton & Hodges, 1976a	On leaves
<i>Microdochium falcatum</i> Sutton & Hodges	Brazil	<i>E. robusta</i> , <i>E. tereticornis</i>	Sutton & Hodges, 1976a	On leaf litter
<i>Microdochium griseum</i> Sutton, Pirozynski & Deighton	Brazil, Tanzania	<i>Eucalyptus</i> spp. ^a	Sutton & Hodges, 1976a	On leaf litter
<i>Microsphaeropsis conielloides</i> Sutton	Australia, India	<i>E. pauciflora</i>	Sutton, 1974, 1980	On leaves
<i>Microsphaeropsis eucalypti</i> (G. Frag.) Sutton Synonym: <i>Coniothyrium olivaceum</i> var. <i>eucalypti</i> G. Fragoso	Portugal	<i>E. globulus</i>	Sutton, 1971b	On leaves
<i>Microsphaeropsis globulosa</i> (Camara) Sutton Synonyms: <i>Coniothyrium globulosum</i> Camara; <i>C. olivaceum</i> var. <i>eucalypti</i> G. Frag.; <i>Microsphaeropsis eucalypti</i> (G. Frag.) Sutton; <i>Coniothyrium eucalypti</i> G. Frag.	Portugal	<i>E. globulus</i>	Sutton, 1974, 1980	On leaves
<i>Microsphaeropsis olivacea</i> (Bonord.: Höhn) Sutton Synonym: <i>Coniothyrium olivaceum</i> Bonord. apud Fuckel	Australia, India, USA	<i>E. ficifolia</i>	Sinclair <i>et al.</i> , 1987; Sutton, 1980	On leaves
<i>Mycocleptodiscus brasiliensis</i> Sutton & Hodges	Brazil	<i>E. saligna</i> , <i>Eucalyptus</i> spp. ^a	Sutton & Hodges, 1976c	On leaf litter
<i>Mycocleptodiscus indicus</i> (Sahni) Sutton Synonyms: <i>Amerodiscosiella indica</i> Sahni; <i>Pucciniopsis guaranitica</i> Speg.	Brazil, Brunei, Cuba, Fiji, India, New Zealand, Nigeria, Venezuela	<i>E. citriodora</i> , <i>Eucalyptus</i> spp. ^a	Sutton, 1973; Sutton & Hodges, 1976c	On leaves
<i>Mycosphaerella parva</i> Park & Keane	Australia	<i>E. globulus</i>	Park & Keane, 1982d, 1984	On leaves
<i>Mycotribulus mirabilis</i> Nag Raj & Kendrick	Brazil, India	<i>E. grandis</i>	Sutton, 1980	On leaf litter
<i>Nectria chaetopsinae</i> (see <i>Chaetopsina fulva</i>)				
<i>Pappimyces hastatus</i> Sutton & Hodges	Brazil	<i>E. paniculata</i>	Sutton & Hodges, 1975b	On leaf litter
<i>Phaeoisaria infraferilis</i> Sutton & Hodges	Brazil	<i>Eucalyptus</i> spp. ^a	Sutton & Hodges, 1976a	On leaves

Fungus	Geographic distribution	Hosts ^a	References	Notes
<i>Phoma fimeti</i> Brun.	Australia, Britain, Burma, India, Netherlands, New Zealand, Zambia	<i>E. pauciflora</i>	Sutton, 1980	On leaves
<i>Pilidium acerinum</i> Kunze apud Kunze & Schmidt	Brazil, Britain, Italy, Spain, USA	<i>E. globulus</i> , <i>E. saligna</i> , <i>Eucalyptus</i> spp. ^a	Sutton, 1980	On leaves
<i>Pseudotracylla dentata</i> Sutton & Hodges	Brazil	<i>E. citriodora</i>	Sutton & Hodges, 1976c	On leaf litter
<i>Polyscytalum hareae</i> (Sutton) Kirk Synonym: <i>Subulispora hareae</i> Sutton	Britain	<i>E. coccifera</i> , <i>E. gunnii</i> , <i>E. perriniana</i>	Kirk, 1981	On leaves
<i>Polyscytalum truncatum</i> Sutton & Hodges	Brazil, India, New Zealand	<i>E. citriodora</i> , <i>E. grandis</i> , <i>E. paniculata</i> , <i>E. robusta</i> , <i>E. saligna</i> , <i>E. urophylla</i> , <i>E. viminalis</i>	Sutton & Hodges, 1976b	One leaf litter
<i>Readeriella mirabilis</i> Syd.	Australia, S. Africa	<i>E. capitellata</i> , <i>E. macrorhyncha</i> , <i>E. regnans</i> , <i>E. robusta</i> , and others (see references)	Gibson, 1975; Macauley & Thrower, 1965; Sutton, 1971b	Weakly competitive saprophyte, also associated with leaf spots
<i>Satchmopsis brasiliensis</i> Sutton & Hodges apud Sutton	USA, Venezuela	<i>E. paniculata</i> , <i>E. camaldulensis</i> , <i>E. grandis</i> , <i>E. robusta</i> , <i>E. saligna</i> , <i>E. tereticornis</i> , <i>E. viminalis</i> , <i>Eucalyptus</i> spp.*	Sutton, 1975; 1980	On leaf litter
<i>Selenosporella aciculans</i> Sutton & Hodges	Brazil	<i>E. citriodora</i>	Sutton & Hodges, 1976b	On leaf litter
<i>Selenosporella verticillata</i> Sutton & Hodges	Hawaii	<i>Eucalyptus</i> spp. ^a	Sutton & Hodges, 1978	On leaves
<i>Semifissispora elongata</i> Swart	Australia	<i>Eucalyptus</i> spp. ^a	Swart, 1982a	On leaves
<i>Semifissispora fusiformis</i> Swart	Australia	<i>E. behriana</i>	Swart, 1982a	On leaves
<i>Semifissispora rotundata</i> Swart	Australia	<i>E. camaldulensis</i>	Swart, 1982a	On leaves
<i>Septoria ceuthosporoides</i> (Cooke) Sacc. Synonyms: <i>Cryptosporium ceuthosporoides</i> Cooke et Harkn.	Portugal	<i>E. globulus</i> , <i>Eucalyptus</i> spp. ^a	Gadgil & Dick, 1983; Gibson, 1975	On leaf litter
<i>Spadicoides curvalarioides</i> Sutton & Hodges	Brazil	<i>E. grandis</i>	Sutton & Hodges, 1978	On leaves
<i>Subulispora hareae</i> Sutton	Britain	<i>E. peniniana</i>	Sutton, 1978	On leaves
<i>Umbellidion radulans</i> Sutton & Hodges	Brazil	<i>E. grandis</i> , <i>E. paniculata</i>	Sutton & Hodges, 1975a	On leaf litter
<i>Zancluspora austroamericana</i> Sutton & Hodges	Brazil	<i>E. propinqua</i>	Sutton & Hodges, 1975a	On leaves
<i>Zoellneria eucalypti</i> Berk. & Dennis	Argentina	<i>E. viminalis</i>	Cabral, 1985	On leaves
<i>Zopheromyces fasciatus</i> Sutton & Hodges	Brazil	<i>E. robusta</i> , <i>E. saligna</i>	Sutton & Hodges, 1976b	On leaf litter

DISCUSSION

Very little is known about the pathogenicity of fungi occurring on eucalypt leaves. Many fungi thought to be saprophytes might later be shown to be pathogenic under certain conditions. Increasingly intensive nursery practices, including close spacing and mist-spraying will cause foliage pathogens of eucalypts to become more important in the future. Growing reliance on clonal propagation, with the resulting uniform genetic base, is another cause for concern.

Some leaf-infecting fungi appear to be new pathogens of eucalypts. In South America, for instance, *Puccinia psidii* Winter (the guava rust fungus) is common on wild *Eugenia jambos* L. and has caused extensive losses on a South African provenance of *E. grandis* (Dianese, Moraes and Silva, 1984). In India, Upad-

hyay and Bordoloi (1974) reported a leaf rust on *E. citriodora* Hook., caused by a *Melampsora* sp. Neither of these rusts has been recorded on *Eucalyptus* spp. in Australia or Papua New Guinea, the centre of origin of *Eucalyptus*. Similarly, the rose powdery mildew fungus *Sphaerotheca pannosa* (Wallr. : Fr.) Lev. (= *Oidium eucalypti* Rostr.) has adapted to infect *Eucalyptus* spp. in New Zealand (Boesewinkel, 1981), and in South Africa. Other pathogens not occurring on eucalypts in their centre of origin might therefore be expected to appear on this host in future.

There might still be other, as yet unrecorded pathogens of *Eucalyptus* spp. in South Africa. Intensive surveys of *Eucalyptus* plantations in representative parts of the country are therefore required to evaluate the status of leaf pathogens. Attention will also have to be given to aspects of their biology and pathogenicity.

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