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***Australasian Mycological Newsletter***

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All manuscripts for publication in the *Australasian Mycological Newsletter* should be submitted as hard copy, and where possible as electronic copy. Discs will be returned to authors after publication of their article(s).

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## DISTRIBUTION OF *CRYPTOCOCCUS NEOFORMANS* VAR. *GATTII* AMONG THE SPECIES OF *EUCALYPTUS*

*David Ellis & Tania Pfeiffer*  
*Mycology Unit, Women's and Children's Hospital, Adelaide, Australia.*

The distribution of cryptococcosis due to *Cryptococcus neoformans* var. *gattii* is geographically restricted, non-immunocompromised hosts are usually affected, large mass lesions in lung and/or brain (cryptococcomas) are characteristic and morbidity from neurological disease is high (Mitchell *et al.* 1995). Human disease is endemic in Australia (18 life threatening cases reported in 1995), Papua New Guinea, parts of Africa, India, South-East Asia, Mexico, Brazil, Paraguay and southern California (Ellis & Pfeiffer 1990; Kwon-Chung & Bennett 1984).

Environmental isolations, initially from the Barossa Valley in South Australia, have established that *C. neoformans* var. *gattii* has a specific ecological association with *Eucalyptus camaldulensis* Dehnh. (river red gum) and *Eucalyptus tereticornis* J.E. Smith (forest red gum) (Ellis & Pfeiffer 1990; Pfeiffer & Ellis 1992). Evidence for an epidemiological association between this cryptococcal habitat and human infection is circumstantial. There is correlation between the global distribution of human infection with *C. neoformans* var. *gattii* and the two species of eucalypts, and environmental searches conducted in Australia and elsewhere have so far failed to identify any other natural source. In Australia, *E. camaldulensis* is widespread, principally west of the Great Dividing Range, with endemic foci occurring around Darwin, Alice Springs, and rural areas of South Australia, New South Wales, Victoria, Queensland and Western Australia. *Eucalyptus tereticornis* shows a more restricted distribution occurring along the eastern coastal seaboard of Australia, extending to Papua New Guinea. It does not occur naturally in South Australia where our initial environmental sampling was performed. *Eucalyptus tereticornis* is easily confused with *E. camaldulensis* as they are morphologically similar, both belonging to the red gum group (*Eucalyptus* ser. *Exsertae* Blakely). These two eucalypts have been exported extensively from Australia to other regions; especially California, Mexico, Brazil, parts of Africa and South-East Asia (Ellis & Pfeiffer 1990) from where *C. neoformans* var. *gattii* infections have been reported (Kwon-Chung & Bennett 1984). Environmental isolates of the fungus have also been recovered from *E. camaldulensis* trees growing at a site near Fort Point, San Francisco, California and from *Eucalyptus* species growing in the car parks of the San Diego Zoo (Pfeiffer & Ellis 1992). To date, all *C. neoformans* var. *gattii* environmental isolates from eucalypts have been serotype B. *Cryptococcus neoformans* var. *gattii* serotype C has not yet been isolated from the environment.

Analysis of Australian isolates of clinical and eucalypt origin by random amplification of polymorphic DNA (RAPD) has revealed that all eucalypt isolates (n = 45) and 92 per cent of clinical isolates (n = 48), exhibit a single major RAPD profile, designated VG1 (Sorrell & Chen *et al.* 1996). This genetic concordance between the majority of clinical and environmental isolates in Australia is consistent with the hypothesis that human disease is acquired from exposure to host eucalypts. Fingerprints of clinical isolates were independent of underlying host disease or body site of infection and profiles of all isolates were stable over time. Analysis by PCR-fingerprinting confirmed the RAPD results (Sorrell & Chen *et al.* 1996). However, a second RAPD profile (VGII) was found to be associated with human and animal infections in the southwest of Western Australia, where the two known host eucalypts do not occur naturally (Sorrell *et al.* 1996). This finding together with other reports of human and animal infection occurring in areas where neither *E. camaldulensis* or *E. tereticornis* are found raises the possibility of additional natural hosts for *C. neoformans* var. *gattii* (Sorrell & Chen *et al.* 1996; Sorrell & Brownlee *et al.* 1996). Accordingly, we have recently investigated eucalypt trees growing near Bunbury and Nannup in the southwestern corner of Western Australia and isolated *C. neoformans* var. *gattii* from woody debris from both *Eucalyptus rudis* Endl. and *Eucalyptus gomphocephala* DC.

*Eucalyptus rudis* (flooded gum) was deliberately targeted because it is a member of the red gum group with a very similar habitat to *E. camaldulensis* and it was endemic to the region under investigation. There are no records to indicate that *E. rudis* has been exported in any quantity to other countries. *Eucalyptus gomphocephala* (tuart) is a species, with no known close relatives, restricted to the subcoastal plains around Perth. This species has been extensively exported to California, Chile and the Mediterranean region especially Morocco, Cyprus, Algeria, Libya, Tunisia, Italy, Spain, Portugal, Greece, Malta and Israel. *Eucalyptus gomphocephala* was planted outside Australia for its quality hard wood which has tested to be stronger and tougher than oak, and earlier it was in great demand for shipbuilding and underwater uses. However, preliminary RAPD analysis of the *C. neoformans* var. *gattii* isolates recovered from these two eucalypts demonstrate the common eucalypt VG1 profile and not the expected VGII profile as seen in some clinical isolates from this area. The only environmental isolates so far recovered with a VGII profile are from plant debris collected from along the fence-line of a paddock containing sheep infected with the

same biotype in southwestern Western Australia (Sorrell & Brownlee *et al.* 1996) and from debris collected from a possible hybrid of *E. camaldulensis* growing in California, USA (Sorrell & Chen *et al.* 1996). Further investigation of the range of ecological niches of *C. neoformans* var. *gattii* is warranted and we are now examining other closely related species and/or subspecies of eucalypts as natural reservoirs for the fungus. In addition, molecular characterisation of environmental and relevant clinical isolates has proved to be a valuable epidemiological tool, enabling the identification of subpopulations of *C. neoformans* var. *gattii* that may lead to the discovery of alternative host plants.

The following notes are provided to assist investigators wishing to isolate and identify *C. neoformans* var. *gattii* from host *Eucalyptus* or other trees. By far the best material to collect is decaying woody debris found accumulated around the base of suspect trees. Woody material from any small hollows, representing a sheltered habitat, should be especially sought after and sampled. Wood has previously been reported as a natural habitat for *C. neoformans* (Swinne *et al.* 1991) and our own data, from extensive collections, indicates that decaying eucalypt wood may be the principal source of *C. neoformans* var. *gattii* in nature. Wood debris from eucalypts contains very high concentrations of lignin and polyphenols which suggests that the well documented phenol oxidase activity of *C. neoformans* may be an adaptation to its natural habitat.

Identification of the trees is also important; so far positive samples have only been collected from *Eucalyptus camaldulensis*, *E. tereticornis*, *E. rudis* and *E. gomphocephala*, but other members of the red gum group (*Eucalyptus* ser. *Exsertae*) or hybrids may be involved. The identification of eucalypts growing outside Australia is also difficult and will likely require expert botanical knowledge. It should also be noted that the presence of *C. neoformans* var. *gattii* may be seasonal and that not all trees will be positive. Extensive sampling over a period of time is likely to be required.

When collecting specimens use small sealable plastic bags and collect a good size sample (at least a large hand full), label and return to the laboratory for processing. Specimens should be processed promptly, but if this is not possible store them in a cool environment away from direct sunlight. It should also be noted that delayed processing of damp or moist samples may lead to increased contamination.

For specimens consisting mostly of soil, take a small 'teaspoon' sized sample from the bulk collection and add 20 ml sterile distilled water and shake thoroughly. For specimens consisting mostly of leaf or woody material add 20–50 ml sterile distilled water to the sample and shake thoroughly. Larger pieces of wood may have to be picked out and processed individually. Allow washings to stand for 5–10 minutes and then plate out by streaking 0.5–1.0 ml aliquots onto bird seed agar (use smaller aliquots if contamination is a problem). Incubate plates at 26°C.

In our experience the best primary isolation medium to use is Staib's recipe for bird seed agar. Many different formulations for bird seed agar or other selective agars for the isolation of *Cryptococcus neoformans* have been published, but they are not as good as that documented by Staib (1987).

The initial or early recognition of colonies of *C. neoformans* growing on the bird seed agar is a technique which requires considerable experience and expertise. Plates must be examined daily and maintained for seven days. Look for small brown pigmented 'pin head' colonies. These usually appear after 2–3 days of incubation and are mucoid in appearance. Isolates of *C. neoformans* var. *gattii* are generally more mucoid than those of *C. neoformans* var. *neoformans*. Holding the primary isolation plates up to direct sunlight may also help to see the small brown colonies of *C. neoformans*. However, we must stress again that careful examination of the plates is required, colonies of *C. neoformans* are easily missed, especially if there are many other contaminant fungi growing on the plate.

Suspect colonies should be picked off and subcultured by streaking for purity on to bird seed agar. It is essential that all isolates are fully identified by using one of the recognised yeast identification schemes utilising sugar assimilation tests (*e.g.* reliable commercially available yeast identification kits are the API 20C, ID 32C, Uni-Yeast-Tek, MicroScan or Vitek systems).

Some contaminant fungi on initial appearance may look suspiciously like *C. neoformans*, however, once streaked for purity they show hyphal development and are clearly moulds. In addition, other yeasts are often isolated from

eucalypt material, especially strains of *Cryptococcus laurentii* which may also show a brown colour effect on bird seed agar and turn CGB media blue.

Varietal differentiation should be done using CGB agar (Kwon-Chung *et al.* 1982). This simple biotype test is based on the ability of *C. neoformans* var. *gattii* isolates to grow in the presence of L-canavanine and to assimilate glycine as a sole carbon source. *Cryptococcus neoformans* var. *gattii* isolates usually turn CGB agar blue within 3–5 days, however, some strains may take as long as 10–14 days.

### Key features for the identification of *Cryptococcus neoformans*

Microscopic morphology, physiological and biochemical tests, pigmentation on bird seed agar and reaction on Canavanine-glycine-bromthymol blue agar.

On Sabouraud's dextrose agar colonies are cream colored, smooth, mucoid and yeast-like, consisting of globose to ovoid budding yeast-like cells or blastoconidia, 3.0–7.0  $\square$  3.3–7.9  $\mu\text{m}$ . India ink preparations show the presence of distinct, wide gelatinous capsules surrounding the yeast cells.

#### Physiological Tests:

Germ tube test	Negative
Hydrolysis of urea	Positive
Growth on cycloheximide agar	Negative
Growth at 37°C	Positive (w)

Assimilation Tests:		Potassium nitrate -			
Glucose	+	Lactose	-	Ribitol	v
Galactose	+	Raffinose	+(w)	L-Sorbose	v
Maltose	+	Cellobiose	+(w)	D-Ribose	+(w)
Sucrose	+	Melibiose	-	Galactitol	+(D)
Trehalose	+	Erythritol	-	D-Mannitol	+
D-Xylose	+	Inositol	+	D-Glucitol	+
Soluble Starch	v	L-Rhamnose	+	Salicin	v
Melezitose	+	D-Arabinose	+	Citric acid	v
Glycerol	v	L-Arabinose	+(D)	DL-Lactic acid	v
Succinic acid	v				

+ Positive, - Negative, v Variable, w Weak, D Delayed.

#### Bird Seed Agar for the selective isolation of *Cryptococcus neoformans* (Staib 1987)

<i>Guizotia abyssinica</i> (niger seed)	50 g
Glucose	1 g
KH <sub>2</sub> PO <sub>4</sub> (potassium dihydrogen orthophosphate)	1 g
Creatinine	1 g
Bacto-agar (Difco)	15 g
Distilled water	1000 ml

*Additives:* to each 500 ml bottle.

Penicillin G (20 units/ml) 0.5 ml

Gentamicin (40 mg/ml) 0.5 ml

1. Grind seeds of *Guizotia abyssinica* as finely as possible with an electric mixer and add to 1000 ml distilled water in a stainless steel jug.
2. Boil for 30 minutes, pass through filter paper and adjust volume to 1000 ml.
3. Add remaining ingredients except Bacto-Agar to filtrate and dissolve.  
*If required:* Cool to room temperature and pH to 5.5.  
Dispense into 500 ml bottles.
4. Add 7.5 g Bacto-agar to each 500 ml reagent bottle.
5. Autoclave at 110°C for 20 minutes.
6. Cool to 48°C and add 0.5 ml Penicillin G and 0.5 ml Gentamicin to each 500 ml of Bird Seed Agar.
7. Mix gently and pour into 90 mm plastic petri dishes.

**CGB (L-Canavanine, glycine, bromthymol blue) agar for the differentiation of *Cryptococcus neoformans* var. *neoformans* and *Cryptococcus neoformans* var. *gattii* (Kwong-Chung *et al.* 1982).**

*Solution A*

Glycine	10 g
KH <sub>2</sub> PO <sub>4</sub>	1 g
MgSO <sub>4</sub>	1 g
Thiamine HCl	1 mg
L-canavanine sulphate	30 mg
Distilled water	100 ml

1. Dissolve ingredients in small beaker and adjust pH to 5.6.
2. Filter sterilise solution using 0.22 µm filter.
3. Store in refrigerator.

*Solution B (Aqueous Bromthymol Blue)*

Bromthymol blue	0.4 g
0.01N NaOH	64 ml
Distilled water	36 ml

1. Dissolve the Bromthymol Blue in the NaOH.
2. Add the water to this.

*To prepare medium (1L for plates)*

Distilled water	880 ml
Solution B	20 ml
Bacto agar	20 g

1. Autoclave to 121°C for 15 minutes, cool to 48°C.
2. For plates add 100 ml of the filtered solution A and mix.
3. Dispense in plates.

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**1996 COMMEMORATIVE CONFERENCE**  
**University of Melbourne, October 1996**  
**PROVISIONAL PROGRAM**  
**MYCOLOGY**

**Wednesday, 3rd October**

8.00–8.50 Registration / Set up posters

*Session 1 (Chairperson: Jack Simpson, President, Australasian Mycological Society)*

8.50 Welcome

9.00 Ethel Irene McLennan, an Australian mycological pioneer—*Sophie Ducker*9.30 Mycological studies on small Victorian fungi by Harry Swart and Gordon Beaton—*Gretna Weste*9.50 Mushroom poisonings in Australia—*F. Mary Cole*10.10 Observations on morphology and the response of hyphae to temperature by Australian and French isolates of *Lepista*—*Karen Stott, Andrew Broderick & N.G. Nair*

10.30 Morning Tea

*Session 2 (Chairperson: Cheryl Grgurinovic)*10.50 Coprophilous fungi in New Zealand with special emphasis on the genus *Podospora* (Lasiosphaeriaceae)—*Ann Bell & Daniel Mahoney*11.10 The species of *Elsinoë* on Myrtaceae in Australia—*Jack Simpson*11.30 *Lactarius* (Russulaceae) in Tasmania: with special reference to *L. subdulcis*—*Naiyana Thongjeim & Alan Mills*11.50 A study of the genus *Amanita* (Agaricales)—*Alec Wood*12.10 Preliminary observations on the systematics of the Australian Hygrophoraceae Lotsy (Fungi, Agaricales)—*Anthony Young*12.30 **Launch of *Fungi of Australia*** (Senator Hill)

12.50 Lunch

1.30 Poster Session

*Session 3 (Chairperson: Tom May)*2.20 Preliminary characterisation of New Zealand *Ganoderma* species by morphology, mating reaction and rDNA sequences—*Peter Buchanan & J. Paula Wilkie*2.40 Implications of phylogenetic studies for conservation of genetic diversity in shiitake mushrooms—*David Hibbett & Michael Donoghue*3.00 Microfungi of north Queensland wet tropics—*Kevin Hyde, Jane Fröhlich & J. Taylor*

3.20 Afternoon Tea

*Session 4 (Chairperson: Ian Pascoe)*3.40 Survival of arbuscular mycorrhizal fungi in soil—*Peter McGee & Greg Pattinson*4.00 The phenology of macrofungi in relation to autumn rainfall in the Adelaide Hills—*Adrienne Burns & John Conran*4.20 Understanding the distribution of a soil microfungus: *Fusarium nygamai*—*David Backhouse, Lester Burgess & Brett Summerell*4.40 Does *Acmena smithii* (Myrtaceae) have both endo and ectomycorrhizas?—*Candida Briggs, D. Messiqua & A.E. Ashford*5.30 **Australasian Mycological Society, Annual General Meeting**

7.00/7.30 Dinner: Private Dining Room, Melbourne University Student Union.

**POSTERS***Mycena* in Australia—*Cheryl Grgurinovic*

- A systematic study of *Collybia* (Fr.) Staude (Agaricales: Tricholomataceae)—*Gavin Smith*  
 The genus *Phaeocollybia* (Cortinariaceae) in south-east Australia—*Bettye Rees & Alec Wood*  
 Ordinal placement of the genus *Densospora*: Glomales or Endogonales?—*Murray Henwood & Peter McGee*  
 Towards a monograph of the Australian Phyllachoraceae (Ascomycetes)—*Ceridwen Pearce & Kevin Hyde*  
 Variability in *Fusarium compactum* from Australian soils—*Jelena Levic, David Backhouse, Lester Burgess & Brett Summerell*  
*Phomopsis viticola* pathogenicity, sexual reproduction and genetic variation—*Reiny Scheper, Eileen Scott & Dara Whisson*  
 Genetic variation among isolates of *Uncinula necator*, the grapevine powdery mildew fungus—*Belinda Stummer, Kathy Evans, Eileen Scott & Dara Whisson*  
*Alternaria*, a common fungus that causes asthma—*Peter McGee*  
 A review of the psychoactive fungi found in Australia and New Zealand—*Michael Bock*  
 The psychoactive ergot alkaloids and their occurrence in the microfungi—*Michael Bock & Doug Parbery*  
 Temperature and moisture effects on competitive colonization of roots by *Fusarium* species—*H. Saremi, David Backhouse & Lester Burgess*  
*Phytophthora cinnamomi*: structure, life cycle and biology—*David Cahill, Adrienne Hardham & Gretna Weste*  
 Use of a vital stain to detect viable infective units of arbuscular mycorrhizal fungi in a cultivated soil—*Greg Pattinson & Peter McGee*  
 Repeated sampling for macrofungi in eucalypt forest in south-eastern Australia—*Sapphire McMullan & Tom May*  
 Surveys for macrofungi at Wattle Park, an urban bushland—*Noel Schleiger & John Julian*  
 The macrofungal community of wet forests in Tasmania—*Tom May & Jill Packham*  
 Use of small mammals to determine the presence of sporocarpic Zygomycetous fungi in native vegetation—*Peter McGee, Greg Pattinson & E. Sutherland*  
 Identification of fungal spores in the diet of Australian mammals—*Michael Tory & Tom May*  
 Australian ectomycorrhizal fungi: biodiversity, biogeography and conservation—*Neale Bougher, I. Tommerup, N. Malajczuk, T. Grove & K. Old*  
 Conservation status of macrofungi in Victoria—*John Avram & Tom May*  
 FUNGIMAP: the Australian Fungi Mapping Scheme—*John Julian & Tom May*

## BEYOND THE FLORAS

This conference runs from 4–6 October. Among various sessions the following is of particular relevance to mycologists.

### Thursday, 4th October

*Orphan groups (fungi)* (Chair: *Peter Buchanan*)

- 1.50 Orphans in 'botanical' diversity—*David Hawksworth*
- 2.30 Who will look after the orphans?—*Kevin Hyde*
- 2.50 Waiting for the mycofloras: making the most of existing information on fungal taxonomy—*Tom May*
- 3.10 Doing the Fungi: how to write a 'Flora' treatment for the *Fungi of Australia*—*Ian Pascoe*

## FURTHER INFORMATION

The Mycology conference is being held as part of the 1996 Commemorative Conference, which marks the 100th anniversary of the death of Baron Ferdinand von Mueller, and the 150th anniversary of the founding of the Royal Botanic Gardens, Melbourne. Other conferences include The Scientific Savant, Proteaceae and Beyond the Floras. A full program is available at <http://www.science.unimelb.edu.au/botany/www.confand/conference.html>. Please direct any enquiries to Dr Tom May, National Herbarium of Victoria, Birdwood Ave., South Yarra, Victoria 3141. PH: (03) 9252-2319, FAX (03) 9252-2350, email: [may@popa.melbpc.org.au](mailto:may@popa.melbpc.org.au).

## MYCOLOGY POST-CONFERENCE FORAY, 5–8 OCTOBER 1996

The post-conference foray will be based at Marysville, close to Melbourne and to a variety of habitats—including cool temperate rainforest, tall wet sclerophyll forest, dry sclerophyll forest, subalpine communities and pine plantations. Ferdinand von Mueller described the Mountain Ash as a 'gigant' among trees, and we will see some impressive specimens in the tall trees reserve at Cambarville. Other sites to be visited include Lady Talbot Drive, The Beeches Reserve, Lake Mountain, and the Acheron Way.

October is not always the best time of year for macrofungi, but this winter has been reasonably wet, and there should still be some macrofungi present, especially in the wetter mountain gullies. Cool temperate rainforest occurs in scattered pockets in Victoria, and is a mycological paradise in season. The drier eucalypt forest may not yield many macrofungi during our visit, but an interesting array of leaf-inhabiting and other microfungi can be found.

Arrangements are informal, and participants may join in the foray for all or part of the time. Details of the sites visited may be altered according to weather and where the fungi are, but we can arrange meeting spots if people wish to catch up with the foray for a day.

Accommodation has been booked in self-contained twin-share cabins in Marysville, about an hour and a half drive from the centre of Melbourne. The exact cost depends on numbers, but will be between \$35 and \$50 per person per night for accommodation and self-cater breakfast and lunch (make own arrangements for evening meals). Some people have already arranged transport, and it is likely that a few places will be available for those without cars (donation of \$30 towards costs).

If you would like to attend the foray and have not already received a booking form, please contact Tom May immediately at the Royal Botanic Gardens, Melbourne, Birdwood Ave, South Yarra, Vic. 3141. Ph.: 03 9252 2319. Fax: 03 9252 2350. Email: may@papa.melbpc.org.au

### NEW SOUTH WALES BIODIVERSITY STRATEGY

The *Threatened Species Conservation Act 1995*, which came into effect on 1 January 1996, requires the Director General of the New South Wales National Parks and Wildlife Service to prepare a New South Wales Biodiversity Strategy and to establish a Biological Diversity Advisory Council (BDAC) comprising representatives of science, industry, conservation, Aboriginal Land Councils and local government. A draft version of the Strategy is to be released later this year. The NSW National Parks and Wildlife Service and the BDAC would welcome submissions from the Australasian Mycological Society on the draft NSW Biodiversity Strategy. The address is NSW National Parks and Wildlife Service, P.O. Box 1967, Hurstville 2220. Our Society has requested a copy of the draft Strategy.

J.A. Simpson

### NEW BOOKS

*Fungi of Australia*, Volume 1A. 1996. (Will be available at the CSIRO Publications display and sales stand at the Conference in Melbourne. See the enclosed flier for further information about this and other volumes in this series.)

de Hoog, G.S. & Guarro, J. (eds). *Atlas of Clinical Fungi*. Centraalbureau voor Schimmelcultures, Baarn, The Netherlands, and Faculty of Medicine, University Rovira I Virgili, Reus, Spain.

The *Atlas* contains 720 pages. It gives descriptions of 135 pathogenic and 190 opportunistic fungi, most of these being common environmental fungi. This book contains some excellent keys. Cost: Hfl. 130 (excl. postage and handling).

The book is available from:  
Centraalbureau voor Schimmelcultures  
PO Box 273, 3740 AG Baarn  
The Netherlands

DA Information Services  
648 Whitehorse Road  
Mitcham, Vic. 3132  
Email: service@dadirect.com.au

### SECOND BLACKLEG (*LEPTOSPHERIA MACULANS*) WORKSHOP

Friday 18 October 1996

Wagga Wagga, NSW

Contact: Barbara Howlett, School of Botany, University of Melbourne, Parkville, Vic. 3052

Ph.: 03 93445062

Fax: 03 9347 1071

Email: howlett@botany.unimelb.edu.au

## NEW MEMBERS

### Full members:

Ms Fiona Benyon, Institute of Respiratory Medicine, Sydney, NSW

Dr Louise Cole, UNSW, Sydney, NSW

Ms Wendy Hull, New England Pathology, Tamworth, NSW

## CONFERENCES AND WORKSHOPS

30 September–1 October 1996	Melbourne, Vic.	The 1996 Commemorative Conference, The Scientific Savant in Nineteenth Century Australia	Dr T.J. Entwisle 1996 Commemorative Conference Committee Royal Botanic Gardens Birdwood Avenue South Yarra, Vic. 3141 Australia
2 October 1996 (See notice below)	Melbourne, Vic.	Mycology before the Floras & 1st Australasian Mycological Conference	Dr T.J. Entwisle 1996 Commemorative Conference Committee Royal Botanic Gardens Birdwood Avenue South Yarra, Vic. 3141 Australia
3–5 October 1996 (session on orphan groups (fungi) is on 3 October)	Royal Botanic Gardens, Melbourne, Vic.	The 1996 Commemorative Conference, Beyond the Floras	Dr T.J. Entwisle 1996 Commemorative Conference Committee Royal Botanic Gardens Birdwood Avenue South Yarra, Vic. 3141 Australia
11–13 October 1996	University of Arizona, USA	The Phylogeny of Life and the Accomplishments of Phylogenetic Biology	Marty Wojciechowski or Anne Gerber, Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, Arizona, USA 85721 Email: <rtg@ccit.arizona.edu> Updates posted to RTG web site: < <a href="http://biodiv.arizona.edu/rtg.html">http://biodiv.arizona.edu/rtg.html</a> >

21–25 October 1996	IMI, Egham, UK	Mycotoxins—occurrence, significance and analysis	Stephanie Groundwater, International Mycological Institute, Bakeham Lane, Egham, Surrey, TW20 9TY, UK Ph.: 01784 470111 Fax: 01784 470909 Email: s.groundwater@cabi.org (please give your postal address)
29–31 October 1996	Beltsville, MD, USA	The first International <i>Fusarium</i> Biocontrol Workshop	Robert D. Lumsden, Research Leader, Biocontrol of Plant Diseases Laboratory, Plant Sciences Institute, Bldg 011A, Room 275, BARC-West, 10300 Baltimore Avenue, Beltsville, MD 20705, USA
18–22 November 1996	IMI, Egham, UK	Isolation and Identification of Fungi from Natural Habitats	Stephanie Groundwater, International Mycological Institute, Bakeham Lane, Egham, Surrey, TW20 9TY, UK Ph.: 01784 470111 Fax: 01784 470909 Email: s.groundwater@cabi.org (please give your postal address)
18–23 March 1997	Asilomar, CA, USA	The 18th Fungal Genetics Meeting	Dr N. Louise Glass, Biotechnology Laboratory, University of British Columbia, Vancouver, BC V6T 1W5, Canada Fax: 604 822 6097 Email: glass@unixg.ubc.ca
1998	IMI, Egham, UK	<i>Fusarium</i> workshop	Kathy Gott Department of Crop Sciences University of Sydney NSW 2006 Australia
9–16 August 1998	Edinburgh, Scotland	7th International Congress of Plant Pathology	ICPP98 Congress Secretariat, c/o Meeting Makers 50 George Street, Glasgow G1 1QE, Scotland, UK
23–28 August 1998	Jerusalem, Israel	6th International Mycological Congress	Secretariat 6th International Mycological Congress PO Box 50006, Tel Aviv 61500, Israel
1–7 August 1999	St Louis, MO, USA	International Botanical Congress	Contact Don Pfister or Meredith Blackwell with any ideas of topics that will be of interest to the botanical community as a whole, as well as to mycology. Although the meeting is not until 1999, we must offer suggestions now if they are to be considered.

If you know of any other conferences, symposia, workshops, *etc.* that may be of interest to members, please send us the details so the information can be included in the next *Newsletter*.

C. Grgurinovic

**MYCOSURFING ON THE WORLD WIDE WEB**

The British Society for Plant Pathology has an electronic journal *Molecular Plant Pathology On-Line*. For additional information see <<http://www.bspp.org.uk/mppol>>

The first issue of the *Rhizoctonia Newsletter* was published in June. If you wish to receive subsequent issues of this *Newsletter* send your email address to: <[mkulik@asrr.arsusda.gov](mailto:mkulik@asrr.arsusda.gov)> (Martin Kulik, editor *Rhizoctonia Newsletter*.)

The New York Botanical Garden's macrofungal catalogue is available at the NYBG web site: <<http://www.nybg.org/bsci/hcol/fung/fung.html>>.

The U.S. National Fungus Collection has completed the computerisation of its Ascomycete specimen data (154 000 specimens). In addition to this group, computerised data is available for the following groups of fungi: Uredinales (168 000), Ustilaginales (30 000), Polypores (104 000), Deuteromycetes (114 000) and the C.G. Lloyd Herbarium (54 000). This information is available at <<http://nt.ars-grin.gov>>

Zoosporic Fungi on Line is available at <<http://zoosporic-fungi.dmc.maine.edu>>

*Index Nominum Genericorum* is available at <<http://www.nmnh.si.edu/ing/>>

The Internet Guide to Myxomycetes is available at <<http://www.wvonline.com/myxo>>

There is a new entry in Tree of Life at <<http://phylogeny.arizona.edu/tree/eukaryotes/fungi/fungi.html>>

*CORTBASE: A nomenclatural database of corticioid fungi*. Version 1. Erast Parmasto, Institute of Zoology and Botany, 181 Riia St., EE 2400 Tartu, Estonia. Email: [erast@park.tartu.ee](mailto:erast@park.tartu.ee). 4 page user guide, 3 1/2" x 9 cm or 5 1/2" x 13.3 cm HD disc, ISBN 9985-9081-0-4, freeware (exc. for postage and handling). Requirements: DOS systems, 520K RAM, 6.3 MB hard disc space. The program is easy to use. Options are: check a name; data on a species; list of all species in a genus; species accepted in a genus; quit. Output can be saved to a file for editing or printed direct. There is information for 7350 species names, including 3905 basionyms, 1740 accepted species, 1285 facultative synonymms, and 880 names of uncertain application.

**CUMULATIVE INDEX FOR VOLUMES 1-14**

J.A. Simpson

Between 1990 and 1995 the *Australian Mycological Newsletter* was edited by Ian Parbery (volume **1**), John Walker (**2-8**) and Jack Simpson & Cheryl Grgurinovic (**9-14**). Volumes **1-13** were each a single issue whereas volume **14** comprised four issues. With volume **14** (3) the title of the *Newsletter* became the *Australasian Mycological Newsletter*. Technical material published in Newsletters **1-14**(3) inclusive was confidential and could not be used for any purpose without the consent of the contributing author and the editor. Many issues of substance were addressed in the *Newsletter* and we think it is important to have an index to the articles published in the first 14 volumes.

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### EXECUTIVE POSITIONS

Nominations for the following positions have been received. You will note that there is only one nomination per position and thus, according to the rules of the Society, the persons nominated are taken as being elected.

President	Jack Simpson
Vice-President	Cheryl Grgurinovic
Secretary	Tom May
Treasurer	Heino Lepp
Councillor	David Ellis
Councillor	Peter Buchanan

Tom May

**AUSTRALASIAN MYCOLOGICAL SOCIETY INCORPORATED****Incorporated in the Australian Capital Territory****Balance sheet at 30 June 1996****MEMBERS FUNDS**Surplus for the year \$2,842**REPRESENTED BY:****CURRENT ASSETS**

Cash at bank \$2,822

Subscription on hand \$20**TOTAL ASSETS** **\$2,842****INCOME AND EXPENDITURE ACCOUNT**

for the period 4 October 1995 to 30 June 1996

**INCOME**

Funds from Former Society \$2,065

Subscriptions \$1,310

Interest Received \$43**\$3,418****EXPENDITURE**

Stationary \$103

Newsletters \$437

Logo \$35

Bank Fees \$1 \$576**SURPLUS** **\$2,842**

Notes to and forming part of the accounts for the year ended 30 June 1996.

1. Summary of Accounting Policies

The significant accounting policies which have been adopted in the preparation of the financial statements are:

- a) Accrual accounting has been applied and the accounts have been prepared on the basis of historical costs and do not take into account changing money values nor, except where stated, current valuations of non-current assets.

**CALL FOR CONTRIBUTIONS TO THE NEWSLETTER**

The editors would like to thank all those who contributed to this issue of the *Newsletter*. We would greatly appreciate continued support and would particularly like to receive contributions from members who have not previously written articles for the *Newsletter*. We would appreciate it if authors would adhere to the *Newsletter*'s style, especially with regard to references where we would like the journal and book titles in full.

C. Grgurinovic & J. Simpson

**DEADLINE FOR NEXT ISSUE**

Articles for the next *Newsletter* are due by Friday 6 December 1996. If articles are more than half a page long, the editors would appreciate a copy on disc. The disc will be returned after publication of the *Newsletter*.

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