

**Client report
to the Botanic Gardens and Parks Authority**

Fungi survey - Bold Park 2009

Author: N. L. Bougher

Department of Environment and Conservation, Western Australia



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Figures 1 - 4: Examples of the new records of fungi discovered in Bold Park during 2009. Each of these species is highlighted in the discussion section of this report.



Figure 1: *Martininia panamaensis* (E9411) (Top) fruit bodies. (Bottom) sclerotia extracted from a *Macrozamia* frond.

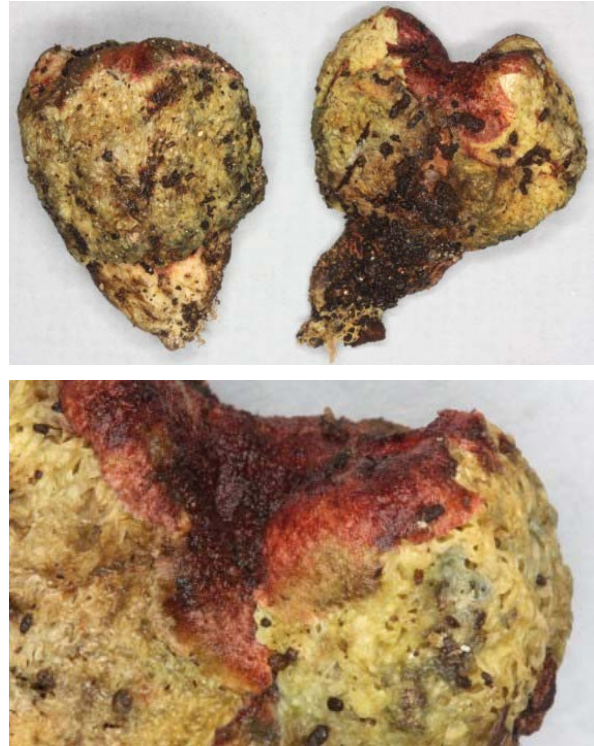


Figure 2: *Gymnogaster boletoides* (BOUGHER 528)



Figure 3: *Chondrogaster* sp. (E9397)
(Top) Mass of chewing gum mycelium.
(Bottom) Sectioned fruit body.



Figure 4: *Mycena tenerrima* (E9444)

Figures 5 - 8: Examples of the new records of fungi discovered in Bold Park during 2009. Each of these species is highlighted in the discussion section of this report.



Figure 5: *Xerula gigaspora* (E9375)



Figure 6: *Coprinellus angulatus* Top (E9470).
Bottom (E9473) sterile, albino fruit bodies (left),
and normally pigmented fruit body (right)



Figure 7: *Skeletocutis amorpha* (BOUGHER538)



Figure 8: *Hyphoderma assimile* (E9472)

Background and Objectives

Bold Park is a regionally significant bushland located in the west metropolitan area of Perth, Western Australia. The park incorporates more than 400 hectares of diverse vegetation types on Spearwood and Quindalup dune systems such as eucalypt and banksias woodlands, acacia shrublands, and coastal and limestone heath ((Keighery et al., 1990; Barrett and Tay, 2005). A large diversity of fungi occurs in Bold Park but little has been known about their identity or ecology. Many hundreds of species of microfungi, including some that benefit native orchids, occur in the park. In the first major study of fungi in the park and treatise of management issues for fungi in the park, 120 species of macrofungi were identified in the 14 vegetation types surveyed in Bold Park over a two month period in 1999 (Bougher 1999).

Subsequent annual surveys to build a baseline inventory of fungal diversity in Bold Park were carried out in 4 vegetation types in 2002, 2003, 2004 and 2005 (Bougher 2002 - 2005). These surveys were undertaken in line with performance indicator no. 8 of the Bold Park Environmental Management Plan 2000-2005 which required that "Known species richness of native fungal taxa (is) retained over five years" (Botanic Gardens & Parks Authority 2000). More recently, fungi have been included in the Bold Park Environmental Plan for 2006-2011 (Botanic Gardens & Parks Authority 2006) as part of ongoing goals to conserve and protect the local biodiversity at Bold Park. The first two annual fungi surveys for the Bold Park EMP 2006-2011 were carried out in 4 vegetation types in 2007 and 2008 (Bougher 2007, 2008).

To date (prior to 2009), about 333 fungi species have been recorded in the Park. A summary table of fungal biodiversity data for Bold Park has been posted on the Perth Urban Bushland Fungi web site at www.fungiperth.org.au. It is likely that surveys so far have captured only a fraction of the fungi likely to exist in Bold Park. Fungi produce fruit bodies intermittently and unpredictably but the mycelia of each fungus may be active for long periods of each year. It is necessary to survey fruit bodies at the same location over many years if such data is to be used as an accurate measure of fungal diversity.

The current consultancy in 2009 undertook the third annual fungi survey for the Bold Park EMP 2006-2011. The scope of this survey was expanded to encompass 14 vegetation types so it would conform with the inaugural survey 10 years previous (see vegetation types in Table 1). It addressed the following requirements for fungi relating to the current Bold Park EMP performance criteria:

1. Field survey
 - Inventory of fungi fruiting at scheduled survey (including native & exotic, rare & endangered).
 - Identity and description (key attributes) of species observed.
 - Permanent reference resource of selected specimens.
2. Report
 - Inventory and location of fungi observed during the current survey, identified to genus or species level, based on current survey: including possible designation as native and exotic, rare and endangered, beneficial, disease.
 - Known vegetation and plant associations of fungal species obtained.

Methods

Fungi were collected in Bold Park from early June to the end of July 2009. May and early June had low rainfall and few fungi fruited during that time. However sustained rainfall during the remainder of June and in July encouraged fruit body production by many fungi. 14 vegetation types in Bold Park were surveyed for macrofungi (Table 1, Map 1). The surveys within the vegetation types were measured by a person x time basis – approximately 60 person time minutes per site each survey time. The number and intensity of surveys were dictated by weather conditions and limitations imposed by the consultancy contract. During collecting, particular attention was given to many of the main fungal microhabitats including open and mossy ground, litter, woody debris and logs, bark of living trees. Specific vegetation or plant associations of fungi were noted. Fungi were identified to genus or species level by constructing morphological descriptions of the fungi collected, and examining key microscopic characteristics of specimens. Identifying fungi is often more complicated than identifying plants. There are no complete keys to the Australian fungi (such as Blackall & Grieve for the W.A. plants) to refer to. There are very few guidebooks, and they are far from complete in coverage, and in many cases quite inaccurate. A range of resources were utilized for identification: direct comparisons of macro and micro characters between Bold Park material and identified reference herbarium material (PERTH – Western Australian Herbarium), comparison with published mycological literature, and more generally by utilizing the author's own experience, knowledge and records. Identification enabled: (a) assessment of probable broad ecological roles of the fungi in community

sustainability, (b) designation of fungi as native and exotic, and (c) a database of inventory data obtained for Bold Park comparable to available data of other tuart/banksia woodland bushland areas. All of the fungi collected were photographed and preserved as air-dried, coded herbarium voucher material lodged at the Department of Environment and Conservation's Western Australian Herbarium, Kensington (PERTH).

Table 1: Vegetation and plant community types surveyed for fungi, and number of sampling events for each type.

| Vegetation code | Plant communities | Surveys EMP 2009 survey |
|---|---|-------------------------|
| Eucalypt Woodlands over Shrublands | | |
| 1a | Woodland of <i>Eucalyptus gomphocephala</i> over a variable understorey on grey sand | 3 |
| 1b | Woodland of <i>Eucalyptus gomphocephala</i> over an understorey dominated by <i>Allocasuarina humilis</i> on grey sand | 3 |
| 1d | Open woodland of <i>Eucalyptus gomphocephala</i> , with occasional <i>Banksia attenuata</i> and <i>B. menziesii</i> , over shrubs dominated by <i>Macrozamia riedlei</i> , <i>Xanthorrhoea preissii</i> , <i>Acacia rostellifera</i> , and <i>Jacksonia</i> spp. on grey sand | 1 |
| 1e | Woodland of <i>Corymbia calophylla</i> , with occasional <i>Eucalyptus gomphocephala</i> , and <i>Banksia</i> spp., over tall shrubs on grey sand | 1 |
| 1f | Woodland of <i>Eucalyptus marginata</i> and <i>Corymbia calophylla</i> over a variable, often disturbed understorey on grey sand | 1 |
| 1g | Woodland to Open Woodland of <i>Eucalyptus marginata</i> over a variable understorey on grey sand | 1 |
| 1h | Woodland of <i>Eucalyptus decipiens</i> over <i>Melaleuca acerosa</i> , <i>Hardenbergia comptoniana</i> , <i>Xanthorrhoea preissii</i> and mixed low shrubs and herbs on pale grey sand | 1 |
| Open Eucalypt Woodlands over Heath | | |
| 2a | Open Woodland of <i>Eucalyptus gomphocephala</i> over low to medium shrubs generally associated with heath communities, on grey sand | 1 |
| Woodlands dominated by Banksia | | |
| 4a | Woodland of <i>Banksia attenuata</i> and <i>Banksia menziesii</i> , with emergent <i>Eucalyptus gomphocephala</i> , over a variable understorey on grey sand | 1 |
| Shrublands | | |
| 5a | Closed shrubland of <i>Acacia rostellifera</i> over mixed shrubs and herbs on pale grey sand | 1 |
| 5b | Closed shrubland of <i>Acacia xanthina</i> over mixed shrubs and herbs on pale grey sand, often underlain with limestone | 1 |
| Wetlands and drainage lines | | |
| 9b | Woodland of <i>Eucalyptus rudis</i> on brown sandy-loam on fringes of Camel Lake | 2 |
| Modified areas | | |
| D | Disturbed ground (including Skyline site) | 1 |
| P | Pine plantation - mainly <i>Pinus pinaster</i> , some <i>Pinus radiata</i> | 2 |

Map 1: Sites surveyed for fungi at Bold Park in 2009



Results

A total of 155 species of fungi were obtained in 2009 during the period of this consultancy. The fungi represent 97 genera and 46 families (+ 11 species were unidentified and therefore genera and families unknown) (Table 2). All species are considered to be indigenous except 9 species designated as possibly exotic (introduced from outside Western Australia). An example of an exotic species is *Amphinema byssoides* an inconspicuous mycorrhizal associate of *Pinus* trees. This fungus was recorded for the first time in Bold Park during 2009. Detailed data for the fungal collections from 2009 that were vouchered for permanent reference are given in Appendix 1.

- 40% of the current survey fungi (62 species) are considered to be new records for Bold Park.
- 60% of the fungi (93 species) in the current survey are considered to be the same as the species recorded in the previous surveys (Bougher 1999, 2002-2005, 2007, 2008).
- New records for Western Australia discovered at Bold Park in 2009 are: *Ceriporia tarda*, *Coprinellus angulatus*, *Gymnogaster boletoides*, *Hyaloscypha hyalina*, *Hyphoderma assimile*, *Skeletocutis amorpha*, and *Tubulicrinis calothrix*.
- *Martininia panamaensis* is a new record for Australia.
- Saprotrophic fungi (116 species) were more diverse than mycorrhizal fungi (32) and pathogenic fungi (6) (Table 3). Fungi were present in a wide range of vegetation and microhabitat types. Dead wood with 84 species, and leaf litter with 54 species, had the greatest diversity of fungi (Table 3).

Table 2: Identity and some ecological characteristics of fungal species in Bold Park 2009 (arranged in order of genus, species). **Red-brown = new records of species for Bold Park found during 2009.**

Ecology/Life modes: S = saprotrophic; P = pathogenic; M = mycorrhizal. *Microhabitat types:* L = leaf litter, soil; DT = diseased or dying tree; DW = dead wood; B = bark of living tree; MB = moss on bark of living tree; D= on dung/faeces; MG = moss on ground; U = underground.

| Species | Family | Ecology Life Mode | Habitat | Woody Plant Association | Exotic / Native | Voucher Code | Veg. Type |
|--|--------------------|-------------------|---------|---|-----------------|---------------------|------------|
| <i>Agaricus campestris</i> (formerly listed as <i>A. cf. campestris</i>) | Agaricaceae | S | L | <i>E. gomphocephala</i> | E/N? | | 1a |
| <i>Agaricus sp.</i> woodchip garden | Agaricaceae | S | L | <i>E. gomphocephala</i> | N | | 1a |
| <i>Amanita conicobulbosa</i> | Amanitaceae | M | L | <i>E. gomphocephala</i> | N | E9431 | 1b |
| <i>Amanita sp.</i> cf. <i>griseobrunnea</i> , <i>stirps straminea</i> | Amanitaceae | M | L | <i>E. gomphocephala</i> | N | E9369 | 5a |
| <i>Amanita sp.</i> white, ochre fragile ring, ellipsoid base, sour odour | Amanitaceae | M | L | <i>E. gomphocephala</i> | N | E9468 | 1b |
| <i>Amanita sp.</i> white, pendant ring, globose/ellipsoid base | Amanitaceae | M | L | <i>E. gomphocephala</i> | N | E9432 | 1b |
| <i>Amanita xanthocephala</i> | Amanitaceae | M | L | <i>E. gomphocephala</i> | N | | 1b |
| <i>Amphinema byssoides</i> | Thelephoraceae | M | L | <i>Pinus radiata</i> | E | | P |
| <i>Bisporella citrina</i> | Helotiaceae | S | DW | <i>E. decipiens</i> , <i>E. gomphocephala</i> | N | BOUGHER 00564 E9469 | 1a, 1h |
| <i>Bolbitius vitellinus</i> | Bolbitiaceae | S | L | <i>E. gomphocephala</i> | N/E? | E6189 | 1a |
| <i>Boletus sp.</i> – red brown pileus | Boletaceae | M | L | <i>E. gomphocephala</i> | N | E6045 | 1a |
| <i>Botryosphaeria sp.</i> | Botryosphaeriaceae | S | DW | <i>Macrozamia</i> | N | E9438 | 1b |
| <i>Calocera guepininoides</i> | Dacrymycetaceae | S | DW | <i>Banksia spp.</i> , <i>Pinus</i> | N | | 1e, 1g, P |
| <i>Campanella gregaria</i> | Marasmiaceae | S | DW | <i>Banksia menziesii</i> | N | | 1a, 1g, 4a |
| <i>Ceratiomyxa fruticulosa</i> (slime mould) | Ceratiomyxaceae | S | DW | <i>E. marginata</i> | N | | 1g |
| <i>Ceriporia tarda</i> | Phanerochaetaceae | S | DW | <i>Acacia</i> | N | E9278 | 1b, 9b |
| <i>Chlorociboria sp.</i> charcoal then cream | | S | DW | <i>E. gomphocephala</i> | N | E9456 | 1a |

| Species | Family | Ecology Life Mode | Habitat | Woody Plant Association | Exotic / Native | Voucher Code | Veg. Type |
|---|---------------------------|-------------------|---------|---|-----------------|-----------------------------|----------------------------------|
| <i>Chondrogaster</i> sp. | unplaced (phalloid clade) | M | U | <i>E. gomphocephala</i> | N | E9397 | 4a |
| <i>Clavulina vinaceocervina</i> (formerly listed as <i>Ramaria</i> sp.2 - dull pink, dark tip) | Clavulinaceae | M | L | <i>E. marginata</i> | N | | 1g |
| <i>Clitocybe semiocculata</i> | Tricholomataceae | S | DW | <i>E. gomphocephala</i> | N | | 2a |
| <i>Clitocybe</i> sp. 1 - hygrophanous, crowded gills | Tricholomataceae | S | L | <i>E. decipiens</i> | N | | 1a, 1h |
| <i>Clitocybe</i> sp. 2 – tan pileus, attached to woody litter | Tricholomataceae | S | L | <i>Pinus pinaster</i> | N | | P |
| <i>Colleotrichum</i> sp. | anamorphic | P | DW | <i>Lupinus</i> | N | BOUGHER 00562 | D |
| <i>Coltricia cinnamomea</i> | Hymenochaetaceae | S | L | <i>E. gomphocephala</i> | N | | 1b |
| <i>Coprinellus angulatus</i> | Psathyrellaceae | S | L | <i>E. gomphocephala</i> | N | E9470 E9473 | 1b |
| <i>Coprinellus</i> sp. smooth brown cap, on soil | Psathyrellaceae | S | L | olive trees | N | | 1a |
| <i>Coprinopsis stanglianus</i> | Psathyrellaceae | S | L | <i>E. gomphocephala</i> | E/N? | | 1a, 1b |
| <i>Coprinus truncorum</i> | Psathyrellaceae | S | L | <i>Schinus terebinthifolius</i> , <i>E. gomphocephala</i> | N | | 1b |
| <i>Cortinarius ochraceofulvus</i> (formerly as <i>C.</i> sp. 2 – golden tuart <i>cortinarius</i>) | Cortinariaceae | M | L | <i>E. gomphocephala</i> , <i>Banksia menziesii</i> | N | | 1b, 4a |
| <i>Cortinarius</i> sp. 5 phlegmacium, lilac gills in button | Cortinariaceae | M | L | <i>Acacia rostellifera</i> , <i>Melaleuca systema</i> | N | | 1g |
| <i>Creopus gelatinosus</i> | Hypocreaceae | S | DW | <i>E. gomphocephala</i> | N | E9466 | 1a |
| <i>Crepidotus eucalyptorum</i> | Crepidotaceae | S | DW | <i>E. gomphocephala</i> | N | | 2a |
| <i>Crepidotus nephrodes</i> | Crepidotaceae | S | DW | <i>Dryandra sessilis</i> , <i>E. marginata</i> | N | | 1g, 5b |
| <i>Crepidotus prostratus</i> | Crepidotaceae | M | L | <i>E. gomphocephala</i> | N | BOUGHER 00533 | 5b |
| <i>Crepidotus</i> sp. tiny white fans (formerly listed as <i>Marasmiellus</i> sp. 1) | Crepidotaceae | S | L | <i>E. decipiens</i> , <i>E. gomphocephala</i> , <i>Acacia rostellifera</i> , <i>Macrozamia</i> , <i>Pinus</i> | N | BOUGHER 00531, 00532, 00539 | 1a, 1b, 1d, 1g, 2a, 4a, 5a, D, P |
| <i>Dacrymyces</i> sp. | Dacrymycetaceae | S | DW | <i>Banksia</i> | N | | 1e |
| <i>Dasyscyphus acuum</i> | Hyaloscyphaceae | S | DW | <i>Macrozamia</i> | N | E9273 | 1e |
| <i>Dasyscyphus</i> sp. | Hyaloscyphaceae | S | DW | <i>E. gomphocephala</i> | N | | 1a |
| <i>Dermocybe clelandii</i> | Cortinariaceae | M | L | <i>E. gomphocephala</i> | N | E9433 E9458 | 1b |
| <i>Endoptychum agaricoides</i> | Agaricaceae | S | D | <i>E. gomphocephala</i> | N | BOUGHER 00546 | 1a |
| <i>Exidia glandulosa</i> | Exidiaceae | S | DW | <i>E. gomphocephala</i> | N | | 1a, 1b |
| <i>Exidia</i> sp. bluish grey | Exidiaceae | S | DW | <i>E. gomphocephala</i> | N | | 1b |
| <i>Exidiopsis</i> sp. | Exidiaceae | S | DW | <i>Acacia rostellifera</i> , <i>E. gomphocephala</i> | N | E9377 | 2a, 5a |
| <i>Fomitopsis lilacinogilva</i> | Polyporaceae | S | DW | <i>Corymbia calophylla</i> , <i>Acacia rostellifera</i> , <i>E. decipiens</i> | N | | 1a, 1e, 1f, 1h, 2a, 5b |
| <i>Galerina</i> sp. golden in pine litter | Cortinariaceae | S | DW/L | <i>Pinus pinaster</i> | N | | P |
| <i>Galerina</i> sp. small, chestnut, translucent striate cap | Cortinariaceae | S | DW/L | <i>Melaleuca systema</i> | N | | 5a |
| <i>Gymnogaster boletoides</i> | Boletaceae | M | U | <i>E. gomphocephala</i> | N | BOUGHER 00528 | 1a |
| <i>Gymnopilus allantopus</i> | Cortinariaceae | S | DW | <i>Banksia</i> spp., <i>Pinus</i> | N | | 1a, 1b, 1g, P |
| <i>Gymnopilus</i> cf. <i>purpuratus</i> | Cortinariaceae | S | DW | <i>Banksia</i> | N | | 1d |

| Species | Family | Ecology Life Mode | Habitat | Woody Plant Association | Exotic / Native | Voucher Code | Veg. Type |
|--|------------------|-------------------|---------|---|-----------------|---------------------|-----------------------|
| <i>Gymnopilus sp. large on pine wood</i> | Cortinariaceae | S | DW | <i>Pinus radiata</i> | N | E9392 | P |
| <i>Gymnopus sp. bladder stem white gills</i> | Tricholomataceae | S | L | <i>E. gomphocephala</i> | N | | 1d |
| <i>Harknessia uromycoides</i> | Melanconidaceae | S | DW | <i>E. gomphocephala, Hardenbergia</i> | N | E9442 | 1a, 1b, 1e |
| <i>Hebeloma crustuliniforme</i> | Cortinariaceae | M | L | <i>Pinus radiata</i> | E | | P |
| <i>Hemimycena sp. minute, fragile, white pileus, arcuate gills, on wood (formerly listed as Mycena sp. minute, fragile, white..)</i> | Tricholomataceae | S | L | <i>Melaleuca huegeli, Acacia rostellifera, E. decipiens, E. gomphocephala, E. marginata</i> | N | BOUGHER 00547 | 1a, 1g, 4a, 5a, 5b, D |
| <i>Henningsomyces candidus</i> | Schizophyllaceae | S | DW | <i>Corymbia calophylla, Banksia menziesii, E. decipiens</i> | N | E9464 | 1a, 1f, 1g, 1h, 4a |
| <i>Hexagonia vesparia</i> | Polyporaceae | S | DW | <i>E. gomphocephala</i> | N | | 1b |
| <i>Hjorstamia crassa</i> | Stereaceae | S | DW | <i>E. gomphocephala, E. marginata</i> | N | E9372 | 1b, 1g, 2a, 4a |
| <i>Hohenbuehelia bingarra</i> | Tricholomataceae | S | DW | <i>E. gomphocephala</i> | N | BOUGHER 00529 | 1d, 2a |
| <i>Hyaloscypha hyalina</i> | Hyaloscyphaceae | S | DW | <i>Pinus radiata</i> | N | E9398 | P |
| <i>Hyaloscypha sp. minute discs on zamia fronds</i> | Hyaloscyphaceae | S | DW | <i>Macrozamia</i> | N | E9400 | 4a |
| <i>Hydnoplicata convoluta (formerly listed as Peziza whitei)</i> | Pezizaceae | M | U | <i>E. gomphocephala</i> | N | E9439 | 1b |
| <i>Hymenoscyphus sp. 1 brown funnels (formerly listed as Hymenoscyphus sp.)</i> | Helotiaceae | S | L | <i>Banksia attenuata</i> | N | E9393 | 4a |
| <i>Hymenoscyphus sp. 2 cream funnels</i> | Helotiaceae | S | L | <i>Veldt grass</i> | N | E9413 | 1g |
| <i>Hyphoderma assimile</i> | Meruliaceae | S | DW | <i>E. gomphocephala</i> | N | E9472 | 1b |
| <i>Hyphodontia sp. – odontoid</i> | Schizoporaceae | S | DW | <i>E. gomphocephala, Banksia menziesii</i> | N | E9399 | 1b, 4a |
| <i>Hypocrea ? sp. (sterile)</i> | Hypocreaceae | S | DW | <i>E. gomphocephala</i> | N | E9443 | 1b |
| <i>Hypoxylon sp. compound cushions</i> | Xylariaceae | S | DW | <i>E. gomphocephala, Melaleuca huegeli</i> | N | BOUGHER 00537 E9371 | 1a, 5a, 5b |
| <i>Hypoxylon sp. flat spreading</i> | Xylariaceae | S | DW | <i>Melaleuca huegeli</i> | N | | 5b |
| <i>Hypoxylon sp. shiny blobs</i> | Xylariaceae | S | DW | <i>E. gomphocephala</i> | N | | 1d |
| <i>Hysterangium sp.</i> | Hysterangiaceae | M | U | <i>Acacia rostellifera</i> | N | E 9370 | 5a |
| <i>Inocybe sp. pines</i> | Cortinariaceae | M | L | <i>Pinus radiata</i> | E | | P |
| <i>Junghuhnia sp.</i> | Meruliaceae | S | DW | <i>E. gomphocephala</i> | N | E9435 | 1b |
| <i>Laccaria cf. proxima</i> | Tricholomataceae | M | L | <i>E. gomphocephala</i> | N | E9428 E9467 | 1a, 1b |
| <i>Laccaria lateritia</i> | Tricholomataceae | M | L | <i>E. gomphocephala</i> | N | | 1f |
| <i>Laetiporus portentosus</i> | Coriolaceae | P | DT | <i>E. gomphocephala</i> | N | | 1b, 1d, 1e |
| <i>Lentinellus pulvinulus (formerly listed as L. hepatotrichus)</i> | Lentinellaceae | S | B | <i>E. gomphocephala</i> | N | | 1a |
| <i>Lepiota exocarpi</i> | Lepiotaceae | S | L | <i>E. gomphocephala</i> | N | | 1b |
| <i>Leucopaxillus? sp.</i> | Tricholomataceae | S | DW/L | <i>E. marginata</i> | N | E9405 | 1g |
| <i>Macrolepiota sp. scaly cap, short stem</i> | Agaricaceae | S | L | <i>E. gomphocephala</i> | N | E9434 | 1b |
| <i>Marasmiellus sp. pale grey cap on wood</i> | Marasmiaceae | S | DW | <i>E. marginata</i> | N | | 1g |
| <i>Martininia panamaensis</i> | Sclerotiniaceae | S | DW | <i>Macrozamia</i> | N | E9411 | 1g |
| <i>Mycena sp. A (on stump)</i> | Tricholomataceae | S | DW | <i>E. decipiens</i> | N | | 1h |
| <i>Mycena kuurkacea (= Mycena sanguinolenta)</i> | Tricholomataceae | S | L | <i>E. marginata</i> | N | | 1g |
| <i>Mycena sp. 2 – chlorine odor, on litter</i> | Tricholomataceae | S | DW | <i>E. marginata, Corymbia</i> | N | E9272 | 1a, 1d, 1f |

| Species | Family | Ecology Life Mode | Habitat | Woody Plant Association | Exotic / Native | Voucher Code | Veg. Type |
|---|-------------------|-------------------|---------|---|-----------------|---------------------------|-------------------|
| | | | | calophylla | | | |
| <i>Mycena sp. 1</i> - dark umbonate pileus, no odour, on wood | Tricholomataceae | S | DW | <i>Banksia menziesii</i> | N | | 4a |
| <i>Mycena sp. 4</i> – yellow cap, strigose base, on wood | Tricholomataceae | S | DW | <i>Acacia xanthina</i> , <i>Melaleuca huegeli</i> , <i>E. gomphocephala</i> | N | | 1a, 4a, 5b |
| <i>Mycena sp. 6</i> minute, white pileus, deep in litter | Tricholomataceae | S | L | <i>E. gomphocephala</i> | N | | 1a, 1b |
| <i>Mycena sp.</i> black stem on wood | Tricholomataceae | S | DW | <i>E. rudis</i> | N | E9459 | 1a, 9b |
| <i>Mycena sp.</i> brown translucent-striate cap, in litter | Tricholomataceae | S | DW | <i>E. gomphocephala</i> | N | | 1a |
| <i>Mycena sp. e 2007</i> – grey cap, chlorine odor, base not hairy, in litter | Tricholomataceae | S | L | <i>E. marginata</i> , <i>Corymbia calophylla</i> | N | | 1e |
| <i>Mycena sp.</i> fawn cap on wood | Tricholomataceae | S | DW | <i>E. gomphocephala</i> , <i>Melaleuca huegeli</i> | N | E9368 | 2a, 5b |
| <i>Mycena sp.</i> grey cap, hairy base on wood | Tricholomataceae | S | DW | <i>E. gomphocephala</i> | N | | 1b, 1d |
| <i>Mycena sp.</i> pines | Tricholomataceae | S | L | <i>Pinus pinaster</i> , <i>Pinus radiata</i> | E | | P |
| <i>Mycena sp.</i> viscid brown subconic cap, on log | Tricholomataceae | S | DW | <i>E. gomphocephala</i> | N | | 9b |
| <i>Mycena tenerima</i> | Tricholomataceae | S | DW | <i>E. gomphocephala</i> | N | E9444 | 1b |
| <i>Nodulisporium sp.</i> | anamorphic | S | DW | <i>Melaleuca huegeli</i> , <i>Melaleuca systema</i> | N | E9374 | 5a, 5b |
| <i>Omphalotus nidiformis</i> | Paxillaceae | P | DT/DW | <i>Banksia menziesii</i> , <i>E. gomphocephala</i> | N | | 1b, 4a |
| <i>Peniophora sp.</i> grey felty | Corticaceae | S | DW | <i>E. gomphocephala</i> | N | E9440 | 1a, 1b |
| <i>Peniophora sp.</i> grey paint | Corticaceae | S | DW | <i>E. gomphocephala</i> | N | E9427 | 1b |
| <i>Perenniporia sp.</i> | Polyporaceae | S | DW | <i>Acacia</i> | N | E9276 | 9b |
| <i>Phlebia rufa</i> | Meruliaceae | S | B | <i>E. gomphocephala</i> | N | | 1a |
| <i>Phlebia sp.</i> pure white | Meruliaceae | S | B | <i>Anthocercis sp.</i> , <i>E. gomphocephala</i> | N | | 1b, 2a |
| <i>Phlebia subceracea</i> (formerly <i>Mycoacia subceracea</i>) | Meruliaceae | S | DW | <i>E. rudis</i> , <i>Melaleuca huegeli</i> | N | E9271 BOUGHER 00535 | 5b, 9b |
| <i>Phyllachora amplexicaulii</i> * | Phyllacoraceae | P | DT* | <i>Hakea amplexicaulis</i> | N | | 9b |
| <i>Physarum leucophaeum</i> (slime mould) | Physariaceae | S | L | <i>E. gomphocephala</i> | N | | 2a |
| <i>Piptoporus australiensis</i> | Coriolaceae | P | DT | <i>E. gomphocephala</i> | N | | 1a |
| <i>Pisolithus albus</i> | Sclerodermataceae | M | L | <i>E. gomphocephala</i> | N | | 1d, D |
| <i>Pleuroflammula praestans</i> (formerly listed as <i>Pleuroflammula sp.</i>) | Strophariaceae | S | DW | <i>E. gomphocephala</i> | N | E9436 | 1b |
| <i>Plicaria cf. endocarpoides</i> | Pezizaceae | S | L | <i>E. marginata</i> | N | E9403 | 1g |
| <i>Pluteus paupercaulis</i> (formerly listed as <i>P. lutescens</i>) | Pluteaceae | S | DW | <i>E. gomphocephala</i> | N | | 2a |
| <i>Pluteus sp.</i> small, pale stem, in soil | Pluteaceae | S | DW | <i>E. gomphocephala</i> | N | | 2a |
| <i>Poria sp.</i> white resupinate | Polyporaceae | S | DW | <i>E. gomphocephala</i> , <i>Melaleuca huegeli</i> | N | | 1a, 1b, 5a, 5b |
| <i>Psathyrella sp. 1</i> | Psathyrellaceae | S | L | <i>Acacia rostellifera</i> | N | | 5a |
| <i>Psathyrella sp.</i> purplish immature caps | Psathyrellaceae | S | L | <i>E. decipiens</i> | N | | 1h |
| <i>Psilocybe coprophila</i> | Strophariaceae | S | D | <i>E. gomphocephala</i> | N | | 1b |
| <i>Puccinia myrsiphilli</i> ** | Pucciniaceae | P | DT** | Bridal Creeper | E | | 1a |
| <i>Pycnoporus coccineus</i> | Coriolaceae | S | DW | <i>Acacia rostellifera</i> | N | | 1h |
| <i>Ramaria cf. cristata</i> | Ramariaceae | M | L | <i>E. marginata</i> | N | E9407 | 1g |
| <i>Resupinatus</i> | Tricholomataceae | S | DW | <i>E. gomphocephala</i> | N | | 1a |

| Species | Family | Ecology Life Mode | Habitat | Woody Plant Association | Exotic / Native | Voucher Code | Veg. Type |
|---|-------------------|-------------------------|---------|---|-----------------------|------------------|-------------------|
| <i>cinarescens</i> | | | | | | | |
| Resupinatus subapplicatus | Tricholomataceae | S | DW | <i>E. marginata</i> , <i>Corymbia calophylla</i> | N | | 1e, 1g |
| Rhizopogon lutescens | Rhizopogonaceae | M | U | <i>Pinus pinaster</i> | E | | P |
| Rickenella fibula | Tricholomataceae | S | MG | <i>E. marginata</i> | N | | 1g |
| Royoporus badius (formerly listed as <i>Polyporus badius</i>) | Polyporaceae | S | B | <i>E. gomphocephala</i> | N | | 1a, 1b |
| Schizophyllum commune | Schizophyllaceae | S | DW | <i>Acacia rostellifera</i> | N | | 1h |
| Schizopora sp. | Polyporaceae | S | DW | <i>E. marginata</i> , <i>E. gomphocephala</i> | N | | 1a, 1g |
| Scleroderma cepa | Sclerodermataceae | M | L | <i>E. decipiens</i> , <i>Corymbia calophylla</i> | N | | 9b |
| Sistotrema sp. 2 grey <i>paint on leaves</i> | Sistotremaceae | M | L | <i>E. decipiens</i> | N | BOUGHER 00563 | D |
| Sistotrema sp.1 <i>yellow</i> <i>flaps</i> | Sistotremaceae | M | L | <i>E. gomphocephala</i> | N | E9396 | 4a |
| Skeletocutis amorpha | Polyporaceae | S | DW | <i>Melaleuca huegliana</i> | N | BOUGHER 00538 | 5b |
| Suillus granulatus | Boletaceae | M | L | <i>Pinus radiata</i> | E | | P |
| Tomentella sp. 1 – <i>rusty on underside of</i> <i>stump</i> | Thelephoraceae | M/S | DW | <i>E. marginata</i> | N | E9410 | 1g |
| Trechispora sp. 2 <i>spiny</i> , <i>white resupinate</i> | Sistotremaceae | S | DW | <i>E. gomphocephala</i> | N | E9460 | 1a |
| Tremella mesenterica/aurantia | Tremellaceae | P | DW | <i>Acacia rostellifera</i> , <i>E. gomphocephala</i> , <i>Melaleuca sp.</i> | N | | 1b, 2a, 5a |
| Tricholoma eucalypticum | Tricholomataceae | M | L | <i>E. gomphocephala</i> | N | E9429 | 1b |
| Tricholoma sp. faint red <i>base</i> | Tricholomataceae | M | L | <i>E. gomphocephala</i> | N | BOUGHER 00530 | 1d |
| Tricholoma sp. soapy <i>odour</i> | Tricholomataceae | M | L | <i>E. gomphocephala</i> | N | | 4a |
| Tricholoma sp. yellow <i>sock & ring</i> | Tricholomataceae | M | L | <i>E. gomphocephala</i> | N | BOUGHER 00534 | 5b |
| Tubifera ferruginosa (formerly listed as <i>Dictydiaethelium</i> <i>plumbeum</i>) <i>Slime mould</i> | Lycogalaceae | S | DW | <i>E. gomphocephala</i> | N | | 1a |
| Tubulicrinis calothrix | Tubulicrinaceae | S | DW | <i>Banksia</i> | N | E9474 | 1b |
| Tubulicrinis sp. – grey <i>resupinate</i> | Tubulicrinaceae | S | DW | <i>Melaleuca huegelii</i> | N | | 5b |
| Tubulicrinis sp. – <i>white smooth</i> | Tubulicrinaceae | S | DW | <i>Banksia</i> | N | E9463 | 1a |
| Undetermined agaric (<i>tiny, adorned with</i> <i>bubbles, cream-spored,</i> <i>on wood</i>) | Unknown | S | DW | <i>Melaleuca huegelii</i> | N | BOUGHER 00540 | 5b |
| Undetermined ascomycete <i>white</i> <i>cushions</i> | Unknown | S | DW | <i>E. gomphocephala</i> | N | E9441 | 1b |
| Undetermined ascomycete. <i>tiny</i> <i>translucent discs</i> | Unknown | S | DW | <i>Macrozamia riedlei</i> | N | E9461 | 1a |
| Undetermined ascomycete. <i>very minute</i> <i>white discs</i> | Unknown | S | DW | <i>E. marginata</i> | N | E9414 | 1g |
| Undetermined black patches | Unknown | S | DW | <i>Anthocercis sp.</i> | N | E9378 | 2a |
| Undetermined polypore <i>-burgundy</i> | Unknown | S | DW | <i>Melaleuca huegelii</i> | N | BOUGHER 00536 | 5b |
| Undetermined resupinate <i>sp. a 2009</i> <i>grey thin felty</i> | Unknown | S | DW | <i>Banksia</i> , <i>Corymbia calophylla</i> , <i>E. gomphocephala</i> | N | | 1b, 1d, 1e, 1f |

| Species | Family | Ecology Life Mode | Habitat | Woody Plant Association | Exotic / Native | Voucher Code | Veg. Type |
|---|------------------|-------------------|---------|--|-----------------|--------------|-----------|
| <i>Undetermined resupinate sp. b 2009</i> whitish smooth | Unknown | S | DW | <i>Corymbia calophylla</i> , <i>Macrozamia</i> | N | E9279 | 1g, 9b |
| <i>Undetermined resupinate sp. c 2009</i> yellow, broken surface | Unknown | S | DW | <i>E. gomphocephala</i> | N | | 2a |
| <i>Undetermined resupinate sp. d 2009</i> pure white, soft-felty | Unknown | S | DW | <i>E. marginata</i> | N | E9404 | 1g |
| <i>Undetermined resupinate sp. e 2009</i> amorphous, red exudate | Unknown | S | DW | <i>E. marginata</i> | N | E9409 | 1g |
| <i>Volvariella speciosa</i> | Pluteaceae | S | L | <i>E. decipiens</i> | N/E? | | 9b |
| <i>Xerula gigaspora</i> | Tricholomataceae | S | L | <i>E. gomphocephala</i> , <i>Acacia rostelifera</i> | N | E9375 | 2a |
| <i>Xylaria sp. (asexual stage)</i> | Xylariaceae | S | L | <i>E. marginata</i> , <i>Macrozamia</i> | N | E9412 | 1g |

* *Phyllachora amplexicaulii* is a 'tar spot fungus' that occurs on the leaves of live plants of *Hakea amplexicaulis*.

** *Puccinia myrsiphilli* is a rust fungus on the leaves of bridal creeper plants. This fungus was introduced to combat the spread of the exotic weed bridal creeper in Bold Park.

Table 3: Taxonomic rank, life mode, habitat, and vegetation associations of fungi in Bold Park in 2009.

Note: some fungi may have more than one life-mode type, and modes for most have not been confirmed.

| Category | No. species | Example species |
|-------------------------------|-----------------------------|----------------------------------|
| Taxonomic ranks | | |
| Species | 155 | - |
| Genera | 98 | - |
| Families | 46 (+ 11 of unknown family) | |
| Ecology/Lifemode types | | |
| Saprotrophic | 116 | <i>Xerula gigaspora</i> |
| Pathogenic | 6 | <i>Laetiporus portentosus</i> |
| Mycorrhizal | 32 | <i>Amanita conicobulbosa</i> |
| Main habitat types | | |
| leaf litter | 54 | <i>Coprinellus angulatus</i> |
| diseased or dying tree | 5 | <i>Piptoporus australiensis</i> |
| dead wood | 84 | <i>Creopus gelatinosus</i> |
| bark of living tree | 4 | <i>Royoporus badius</i> |
| moss on ground | 1 | <i>Rickenella fibula</i> |
| underground | 5 | <i>Gymnogaster boletoides</i> |
| disturbed ground | 5 | <i>Endoptychum agaricoides</i> |
| Vegetation types | | |
| 1a | 20 exclusive / 21 shared | <i>Lentinellus pulvinulus</i> |
| 1b | 24 / 20 | <i>Hyphoderma assimile</i> |
| 1d | 4 / 6 | <i>Hohenbuehelia bingarra</i> |
| 1e | 3 / 4 | <i>Dasyscyphus acuum</i> |
| 1f | 1 / 4 | <i>Laccaria lateritia</i> |
| 1g | 16 / 8 | <i>Mycena kuurkacea</i> |
| 1h | 4 / 2 | <i>Pycnoporus coccineus</i> |
| 2a | 8 / 8 | <i>Pluteus paupercaulis</i> |
| 4a | 6 / 9 | <i>Sistotrema sp. 1</i> |
| 5a | 4 / 5 | <i>Hysterangium sp.</i> |
| 5b | 7 / 9 | <i>Skeletocutis amorphia</i> |
| 9b | 5 / 4 | <i>Phyllachora amplexicaulii</i> |
| D | 2 / 5 | <i>Sistotrema sp. 2</i> |
| P | 9 / 0 | <i>Hyaloscypha hyalina</i> |
| Origin | | |
| Native | 146 | <i>Amanita conicobulbosa</i> |
| Exotic | 9? | <i>Amphinema byssoides</i> |

Discussion

Biodiversity

Fungi have now been surveyed at Bold Park over a 10 year period since the initial assessment in 1999 (Bougher 1999, 2002-2005, 2007, 2008 - no surveys in 2000, 2001, and 2006). An estimated total of 437 species of fungi are currently recorded from Bold Park (see discussion below concerning the accuracy of this estimate in light of limited and gradual taxonomic effort). This includes 62 of the fungi in the current survey considered as new records for Bold Park – 40% of the 155 fungi recorded in 2009.

Many species of fungi which usually fruit in the early part of the season did not appear in 2009 due to absence of significant rainfall in May and the first half of June. The fruiting of fungi in Bold Park in 2009 peaked in July and was sustained in that month by good rainfall. In September, Perth had over 20 days with rain. This sustained the fruiting of some fungi, but those were mainly species that favour disturbed areas and gardens.

The identity of some of the species that were listed under other names in previous years have been determined in 2009, such as *Pluteus paupercaulis* formerly listed as *Pluteus lutescens*, *Clavulina vinaceocervina* previously listed as *Ramaria sp.2 - dull pink, dark tip*. Another example is a fungus that had been assigned the phrase name “tiny white fans”, and was listed in previous years from Bold Park as *Marasmiellus sp. 1*. Several ample collections of this fungus were obtained in 2009 and enabled a closer re-examination of its identity. Bold Park’s “tiny white fans” is a fragile, white, pleurotoid (shell-shaped) fungus. It is an abundant, though small and therefore easily overlooked fungus. It usually occurs deep down within thick litter and is rarely visible from the surface. It has a very similar appearance to *Cheimonophyllum candissimum* - a widespread species with small, pleurotoid, pure white, thin, soft fruit bodies. However *Cheimonophyllum* is eliminated because the genus has a pure white spore print, and microscopically differs from “tiny white fans” by having globose to subglobose spores, clamp connections, and filamentous cheilocystidia often with acute ends. “Tiny white fans” has a pinkish clay spore print (Methuen 6A3), ellipsoid spores, and lacks clamp connections. The spore print of “tiny white fans” is too dark for the pleurotoid genus *Pleurotellus*, although all other characters seem to fit that genus. The genus *Crepidotus* seems to be the best fit for “tiny white fans”. A clay spore print colour is common in *Crepidotus*. Within *Crepidotus*, “tiny white fans” is affiliated with Section *Crepidotus* subsection *Defibulatini* which is distinguished by lacking clamp connections. *Crepidotus sp.* “tiny white fans” has now been found in a wide range of vegetation types in Bold Park including tuart woodland, shrubland of *Acacia* & paperbark, banksia woodland, and pine plantation (veg. types 1a, 1b, 1d, 1g, 2a, 4a, 5a, D, P).

Some new and interesting fungi in 2009

1. *Martininia panamaensis* (Figure 1, see on page 2): An unusual inconspicuous ascomycete with tan brown discs up to 5 mm wide borne upon long wiry stalks up to 5 mm long. It was collected from *Eucalyptus marginata* woodland in the Rochdale Road area of Bold Park. This is the first known record of this fungus from Australia. The fruit bodies were found on the central branch of a rotting leaf frond of *Macrozamia riedelii*. Upon closer examination of the specimens and dissection of the leaf frond it became evident that the stalks were emerging from within the rotted wood and arising from black, loaf-shaped to ellipsoid or ovoid, smooth sclerotia 2 – 3 mm long embedded deep within the wood. On that basis this fungus was determined as belonging to the family Sclerotiniaceae. However it does not have the characteristics of any of the larger or better known genera of Sclerotiniaceae such as *Sclerotinia*. Instead it fits the rarely collected monotypic genus – *Martininia*. This genus is characterized by having a distinct purely fungal sclerotia and unusually pigmented small spores. The only known species, *Martininia panamaensis*, was first collected in the Panama Canal Zone in 1935, and is currently only reported from less than a dozen collections. The species may be cosmopolitan but seems to have been seldom collected, perhaps because of its inconspicuous appearance. It has been recorded from Panama, Costa Rica, Jamaica, Venezuela, Canada, an island off the east coast of Scotland, and France. The reported substrate of this fungus suggests it is saprotrophic (rather than pathogenic like many of the Sclerotiniaceae) but is varied: tropical collections are all on rotten woody material while all the temperate collections have been reported on dung (until the current collection at Bold Park).

2. *Gymnogaster boletoides* (Figure 2): This fungus is a truffle-like relative of the boletes (mushrooms with pores). It has a distinctive red upper part and its main body consists of yellow contorted chambers. *G. boletoides* had previously been reported only from Queensland (Cribb 1956). Two collections were made in 1992 on the same day in the Dorrigo National Park in New South Wales. An image of one of those collections [PERTH 07628005 (formerly CSIRO H5826)] was presented by Trappe et al. (2003), though the location or specimen reference was not given in that paper. Surprisingly, this putatively mycorrhizal fungus was discovered for the first time in Western Australia at Bold Park in 2009. Coincidentally, it was discovered at Bold Park during an on-location interview by a reporter from ABC radio.

3. *Chondrogaster* sp. (Figure 3): This fungus was dubbed by the collecting crew as the “Chewing gum truffle”. It is a truffle-like fungus which occurs well below the leaf litter. The fruit bodies are easily overlooked as remarkably they are completely embedded within soil masses aggregated by masses of white elastic mycelium. The gleba inside the fruit bodies is greenish and partially gelatinized, and the peridium is thick (2-3 mm) and reddens when cut. Unlike the genus *Gummiglobus* (which can also have abundant chewing gum mycelium surrounding the fruit bodies), *Chondrogaster* does not have a strong columella. *Chondrogaster angustisporus* is similar to the Bold Park *Chondrogaster* but has a brown gleba, less gummy mycelium, and different spores. The Bold Park *Chondrogaster* has some unique microscopic characteristics for the genus, and will be published as a new species to science.

4. *Mycena tenerrima* (Figure 4): This is a second species of *Mycena* section *Sacchariferae* (the “sugar caps”) discovered in Bold Park. This species has a very similar appearance to *Mycena judithiana* which was discovered in Bold Park in 2008 and recently published as a new species to science (Bougher 2009a). *Mycena tenerrima* and *M. judithiana* are diminutive fungi with fragile, white fruit bodies with caps no greater than 3mm across. The two species can fruit in extremely close proximity. Although macroscopically similar, these species can be distinguished in the field by using a hand lens to observe the plump cystidia on the stem of *M. judithiana* that are distinguishable from the hair-like cystidia of *M. tenerrima*. They have significant microscopic differences such as spore and cystidia morphology. *M. tenerrima* has not been confirmed in eastern Australia but is now known to occur throughout the south west of WA (numerous recently identified collections are held at the WA Herbarium). *M. tenerrima* is also often incorrectly referred to as *Mycena adscendens*. However *Mycena adscendens* Maas Geest. 1981 is a recombination of an illegitimate name first proposed in 1829 by Lasch - *Agaricus adscendens*. This name was never sanctioned by Fries or accepted by Fries in any of his publications. Therefore the Geesteranus (1981) name *Mycena adscendens* is also not legitimate. The name *Agaricus tenerrimus* was published by Berkeley in 1836. Fries first mentioned this name in his publication *Sum. Veg. Scand.* (1849: 283), and accepted it in *Hymenomyc. Europ.* (1874: 151). *Mycena tenerrima* (Berk.) Quél. 1872 is the correct current name.

5. *Xerula gigaspora* (Figure 5, see on page 3): a second species of *Xerula* for Bold Park. *X. gigaspora* is macroscopically similar to the only other species known so far from Bold Park - *X. mundroola*. However microscopically *X. gigaspora* differs as it has quadrisporic basidia and no clamp connections. It is readily distinguishable from *X. mundroola* which has bisporic basidia and clamp connections. *X. gigaspora* is known to occur throughout many parts of southern Australia (Petersen 2008).

6. *Coprinellus angulatus* (Figure 6): The stem and cap of this attractive species densely covered with short glistening hairs (long cystidia). This species was not previously recorded in Western Australia. Records of occurrences elsewhere indicates that *C. angulatus* favours recently burnt areas. At Bold Park it was found in several locations within a 20 square meter area of tuart woodland burnt about 8 years ago. Most of the specimens had typically tan coloured fruit bodies but one collection (E9470) had mainly sterile, non-pigmented pale fruit bodies.

7. *Skeletocutis amorphia* (Figure 7): This fungus was dubbed by the collecting crew as the “Caramel-pored skin fungus”. It is a caramel-salmon coloured resupinate fungus with darker bruised areas, a distinctive effuso-reflexed (upturning) white margin, and a gelatinous pale subiculum (under-layer on the fruit bodies). At Bold Park it was found only on rotting wood of *Melaleuca huegiana* in shrubland of acacia & paperbark (vegetation type 5b). *S. amorphia* occurs in many other parts of the world and can form bracket-like or fully resupinate fruit bodies. This species had not been recorded previously in Western Australia.

8. *Hyphoderma assimile* (Figure 8): This is one of the many superficially similar resupinate fungi species found on fallen wood at Bold Park. Like many *Hyphoderma* species, *H. assimile* has large cystidia rendering the fruit bodies felty when viewed under a hand lens. This species was originally described from New Zealand (Cunningham, 1965) as *Corticium patricium* but is now more widely known, though not previously recorded in Western Australia.

Species numbers and species accumulation 1999 to 2009

Prior to the first year of survey (1999), only 19 species of macrofungi had been recorded for Bold Park in the databases of the Western Australian Herbarium and the Mycology Herbarium at CSIRO, Perth (Bougher, 1999). Surveys undertaken over successive years since 1999 to 2009 (no surveys in 2000, 2001, and 2006) have continued to reveal a large proportion of fungi previously unrecorded for Bold Park (Table 4). Significantly, 20% or more of the species recorded each year have been new for Bold Park, including 40% of the 155 fungi recorded in the most recent survey in 2009. It is clear that the accumulation curve for discovery of fungi species at Bold Park has not reached a plateau (Figure 9). Such data emphasizes the need to survey fungi over many years in the same locations to build up an adequate assessment of fungal diversity, and that further surveys at Bold Park are likely to yield further records of new species for the Park.

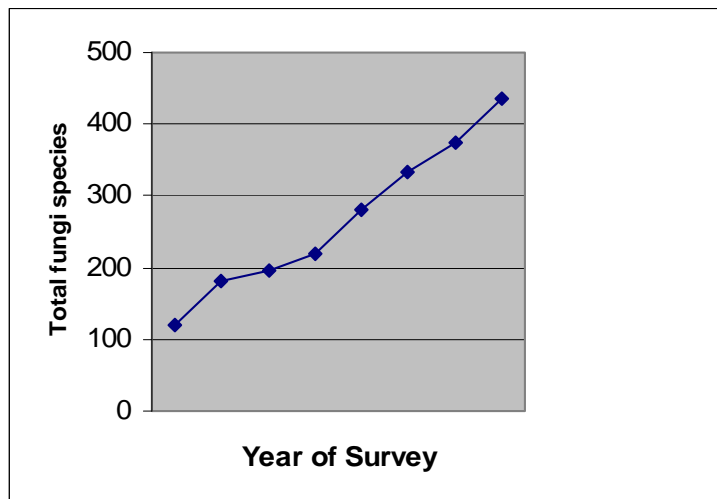
Table 4: Fungi at Bold Park – data for all survey years 1999 to 2009.

* see discussion below about the accuracy of total species number (under the section 'Limited & gradual taxonomic effort')

| Survey Year | Fungi Species discovered in survey year | Genera/Families | % New Records | Nominal total species after year * |
|-------------|---|-----------------|---------------|------------------------------------|
| 1999 | 101 | 69/36 | 85% | 120 |
| 2002 | 102 | 63/40 | 57% | 180 |
| 2003 | 62 | 45/25 | 24% | 195 |
| 2004 | 84 | 70/36 | 40% | 220 |
| 2005 | 123 | 85/38 | 49% | 280 |
| 2007 | 109 | 62/29 | 20% | 333 |
| 2008 | 123 | 88/48 | 36% | 375 |
| 2009 | 155 | 98/46 | 40% | 437 |

Figure 9: Species accumulation for discovery of fungi at Bold Park years of survey from 1999 to 2009

See discussion below about the accuracy of numbers of new records (under the section 'Limited & gradual taxonomic effort')



Some factors contributing to sustained accumulation of records of new fungi

1. Unpredictable and intermittent fruiting patterns of fungi: Some fungi fruit annually whereas some others may need to consolidate their mycelial growth perhaps over many years between years of higher rainfall. Weather patterns leading up to and during each fruiting season may induce fruiting of a different array of fungi each year. Factors such as diurnal temperature extremes and the timing and amount of rainfall are likely to have large effects on the activity of fungal mycelia and on the fruiting of fungi at Bold Park. Most of the native fungi at Bold Park will be predisposed to fruit during about the same short period of time within each year and will not fruit outside that time even if temperature and rainfall conditions become favourable.

For example, some fungi will fruit only early in the season at Bold Park, such as certain species of boletes, whereas some others fruit only later in the season. If there have not been suitable conditions by the 'designated' time of fruiting for a particular species, that species is unlikely to fruit at all that year. The pattern of fruiting exhibited by native fungi contrasts with the behaviour of many saprotrophic and putatively exotic fungi which colonise rich organic disturbed areas and garden beds. They may often fruit at any time of the year in response to suitable temperature and moisture conditions.

2. Limited survey effort: Fungi surveys at Bold Park have covered only a portion of the park area. Fourteen vegetation types have been surveyed only in 1999 and 2009, with the intervening surveys restricted to only four vegetation types. Survey visits to each site have generally been restricted to less than 3 per year, and the person x time effort has been constrained by personnel and time restrictions. It is likely that many fungi fruiting in Bold Park at the time of survey visits each year have not been observed and recorded.

3. Skills level in the field: The number and skills of participants in field surveys at Bold Park (the collecting crew) has been variable over the 1999 to 2009 period. In the initial years surveys were mainly focussed on the larger, more conspicuous fungi. During subsequent years, participants have been trained to observe and recognize much smaller and less conspicuous fungi.

4. Limited and gradual taxonomic effort: The nominal tally of fungi species recorded at Bold Park so far is not precise (Table 4). Similarly the figures quoted as new records for each year of survey cannot be considered as precise (Figure 9). The lack of precision is because many of the fungi have not been identified to species level. The scope of the consultancies to survey fungi each year at Bold Park has not included financial support targeted specifically for significant amounts of taxonomic research on the fungi specimens. In some cases collections labelled as species "a, b, c" of the same genus may prove to be identical upon critical examination of their microscopic characters. In other cases, some collections considered to be identical may prove to be separate species. As with the previous surveys of fungi in Bold Park (Bougher 1999, 2002-2005, 2007, 2008), many specimens from the 2009 survey could not be identified with certainty, and require detailed taxonomic investigations beyond the scope of this consultancy, e.g. direct comparison of micro characters with Type material - much of which is lodged in herbaria outside WA or outside Australia. Preliminary studies of taxonomically significant characters suggest that at least some of the unidentified collections at Bold Park represent species new-to-science, or could be new records for WA or Australia. An example found at Bold Park for the first time in 2009 is a new species of *Chondrogaster* (see above). Resolution of the identity of fungi at Bold Park will continue to be a developmental process, with the identity of more species gradually resolved each year.

Conclusion and recommendations

An estimated 437 species of fungi have been recorded over the 1999 to 2009 survey period at Bold Park, and a sustained accumulation of new records over that period indicates that many more species are likely to occur in the Park. It is recommended that surveys of fungi continue to be undertaken annually in Bold Park, including with support from staff and volunteers. Further training of volunteers and staff is recommended in order to recognize a greater array of fungi. The support of DEC's Western Australian Herbarium will be critical to help facilitate taxonomic studies needed to resolve the identity of more of the records of fungi from Bold Park. This will help provide a more accurate assessment of the numbers of fungi species present at Bold Park. Resolution of the identity of fungi at Bold Park would be accelerated if financial support targeted for taxonomic studies became available.

Ongoing protection and improvement of knowledge about Flora, Fauna and Fungi is an integral part of future management of Bold Park (Botanic Gardens & Parks Authority 2006). Continuing annual surveys of fungi at Bold Park will enable the goals as set out in the 2006-2011 management plan to be met. Surveys will also supplement the Perth Urban Bushland Project (PUBF) established in 2004 (see www.fungiperth.org.au) – a broader-based initiative which aims to raise awareness about fungal biodiversity, and to document the fungi of Perth's urban bushlands. Some of the fungi recorded so far in Bold Park are depicted in the on-line field book for fungi of the Perth region (Bougher 2009b). However it is recommended that an account of the fungi in Bold Park be produced, such as a colourful field book and/or pamphlets and posters. In 2009 fungi surveys akin to those held at Bold Park since 1999 began in Kings Park, and it will be of interest to compare successive years of data from there with the fungal biodiversity at Bold Park.

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Correction: In the 2008 report (Bougher 2008), vegetation type 1e should read 1a.

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Appendix 1

The subset of fungi that were processed, described, & lodged as herbarium vouchers from Bold Park 2009:
Western Australian Herbarium (PERTH), Kensington

| Genus | Species | Code | Descriptive Notes | Plants | Date |
|-----------------------|--|------------------|---|---------------------------------|------------|
| <i>Amanita</i> | <i>sp. "small white, bulbous base"</i> | BOUGHER 00544 | Characteristic Features: (i) round, circumsessile bulb at base of stem; (ii) no odour (iii) small size; (iv) persistent white flanging/pendant ring high up on the stem; (v) small cream warts on sand-covered cap. This species fruits in abundance, but they usually mature rapidly and then soon become watery and collapse. This is <i>Amanita</i> sp. "small warty wart" on page J - 62 of "Fungi of the Perth Region and Beyond". Pileus: 20 - 35 mm diam.; flat-convex, then applanate and shallowly concave when older; margin thin, briefly appendiculate, non-translucent-striate, eventually very thin and peeling back, not becoming split radially; surface dry, white to pale cream, usually with much adhering (but easily removed) sand, adorned with small mealy, cream, warts that become concentrated around the pileus centre and more conspicuous with age. Lamellae: adnexed, to 7 mm deep, slightly ventricose; edge and face white then cream-ivory, edge minutely fringed; closely spaced; lamellules abundant L + 56 l + 32. Stipe: 30 - 60 x 5 - 9 mm; cylindrical with globose solid circumsessile bulb up to 20 mm broad; developing a central cavity, surface smooth, white entirely, with superior, white, flanging or pendant membranous non-striate annulus persisting at maturity. | <i>Eucalyptus gomphocephala</i> | 9/07/2009 |
| <i>Amanita</i> | <i>sp. stirps straminea</i> | E9369 | Perhaps the same species as E506 and Orson K. Miller Jr's A. griseobrunnea? Cap: 5.5 cm diam, dry, covered in sand, convex shape, margin curved under and very slightly appendiculate, white Gills: adnexed, 12 mm deep, close, ivory/white. Margin smooth, entire. Lamellulae short/long present. Stem: tapering, ventricose, length 9 cm. Solid and dry, covered in sand (grey). Smooth, with ring, flesh white with pinkish colour in entire from tip to near base. | <i>Eucalyptus gomphocephala</i> | 2/07/2009 |
| <i>Amanita</i> | <i>sp.</i> | E9432 | Cap: 2.5 - 6 cm diam. Young specimens white becoming grey with age. Shape plane when young and slightly umbonate, becoming up turned at edges with maturity. Sticky damp surface, margin smooth becoming ragged with age. Gills: Close, white becoming cream with age. Adnexed margin, edge minutely fimbriate, 3 cm deep in young specimens up to 5 cm deep in mature specimens. Stem: 5.5 - 8 cm long, white, straight with misshapen bulbous base, solid internally when young, hollow with age. Outer veil on young specimens, 6 cm across to 14 cm in mature specimens. | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Amanita</i> | <i>conicobulbosa</i> | E9431 | Three fruit bodies found. Cap: Covered in soil, roughly circular, 75 x 70 mm high and 25 mm deep, convex with slightly inrolled margin. No veil, fragments on margin of mature specimen. Numerous raised scaly patches of individual raised warts on the surface. Colour - white/cream 2B (Royal Bot. Gdn. Edinb), scales tending whiter. Cap flex white. Gills: close, unevenly spaced, fimbriate and either broadly adnexed or free, slightly darker than 2B (Royal Bot. Gdn. Edinb.) Stipe: Whiter than cap. Up to 120 mm. Bulbous base (32 x 27 mm at widest point). | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Amanita</i> | <i>sp. "ochre ring, smelly"</i> | BOUGHER 00545 | Characteristic Features: (i) sour odour; (ii) ochre, brown ring at stems apex; (iii) ellipsoid swollen stem base, with some easily lost membranous fragments at rim of base; (iv) flat inconspicuous ochre and cream veil remnants on cap. Pileus 45 - 55 mm diam., flat-convex or developing a shallow concavity; margin not translucent-striate, thin, not splitting radially, surface dry, smooth, cream uniformly, with flat, membranous dull ochre or cream veil remnants scattered and inconspicuous. Lamellae: broadly adnexed, becoming adnexed, to 9 mm deep, slightly ventricose, closely spaced; edge and face cream unchanging, edge minutely undulating but not fringed; lamellules abundant in 3 tiers. Stipe 60-80 x 8-10 mm; cylindrical or broadening towards an ellipsoid solid base swollen to 25 mm broad, rim of bulb not differentiated from the stem but also with limbate broken membranous pieces loosely adhering (easily lost or removed). Annulus ochre, membranous but fragile and usually fragmented, always at or near the stipe apex. | <i>Eucalyptus gomphocephala</i> | 9/06/2009 |
| <i>Amanita</i> | <i>sp.</i> | E9468 | Two specimens about 10 m apart, one older than the other. Gills very slightly pinkish, the remainder white. Cap: Up to 70 mm diam. A few flat scales on cap, very slightly darker overall white to very pale cream. Broadly convex, plane. Some ragged veil remnants at edge. Moist. Slightly striate near edges where top eaten off Gills: Adnexed, close, slightly pinkish. Edge fimbriate (irregularly). Up to 7 mm depth. Irregular, occasional lamellules in no particular pattern, varying in length. Stems: Up to 80 mm long. Ring present, cylindrical, volva present. Closed (bulbous). Hollow, very pale cream colour. Very fine fibrils. Slightly yellowish towards base (Fungimap 129). Persistent, pendulous ring, yellowish (Fungimap 118). Flesh white. | <i>Eucalyptus gomphocephala</i> | 30/07/2009 |
| <i>Bisporella</i> | <i>citrina</i> | BOUGHER 00564 | Characteristic Features: (i) small discs up to 1 mm diam, densely grouped and scattered singly; rim without any hairs, uniformly bright golden yellow (between 2A8 and 3A8). | <i>Eucalyptus decipiens</i> | 27/07/2009 |
| <i>Bisporella</i> | <i>citrina</i> | E9469 | Translucent "greenish yellow" (57 British Fungi Chart), flat discs. Up to 1 mm wide, smooth surface. Stipe: short and stout. | <i>Allocasuarina humilis</i> | 30/07/2009 |
| <i>Botryosphaeria</i> | <i>sp.</i> | E9438 | Numerous small black pustules on dead <i>Macrozamia</i> fronds. In groups, some joined end to end and along sides forming conjoined mass in places. Raised black pustules, split down centre (longitudinally aligned with frond fibres). Some not split. Surrounding tissue, presumably of <i>Macrozamia</i> . Paler in colour (No 48, 49 FDU) on air dried frond. Microscopic Characteristics: A bitunicate ascomycete. Asci 8-spored, mostly immature, tubular, spores (few seen and immature) ellipsoid. More spores seen on 13/8/09 after incubating: they are ellipsoid to fusoid, non-septate, smooth with 1 oil globule. Size approx 18-23 x 6 - 8.5 µ. | <i>Macrozamia riedlei</i> | 21/07/2009 |
| <i>Ceriporia</i> | <i>tarda</i> | E9278 | Characteristic Features: (i) Smooth surfaced resupinate with fine pores of irregular size and shape. (ii) White with pinky-brown patchy discolouration. (iii) KOH turns hymenium bright red rapidly (macro spot test). The strong red reaction of KOH on the hymenium, and general appearance is suggestive of <i>Ceriporiopsis gilvescens</i> . But that genus/species is discounted because it has clamps. The monomitic system, absence of clamps, absence of cystidia, resupinate cream fruit body with reddish areas, and small hyaline non-dextrinoid or amyloid spores suggest genus <i>Ceriporia</i> . Because of the spore shape and size and because <i>C. tarda</i> is said to have a rose-pink, grayish-pink to vinaceous red fresh pore surface E9278 seems closest to <i>C. tarda</i> . This same species was also recorded (but not collected) as Red 14 at Kings Park on 9/06/09 (see photo). Microscopic Features: Hyphal walls stain in Trypan Blue. Clamps are absent on the septa including those at base of basidia. Monomitic. Basidia clavate, 4-spored, e.g. 15 x 4 microns. No cystidia. Spores in spore print made on a slide: ellipsoid (none allantoid), 4.2-4.5 x 2.3-2.8 microns, hyaline in KOH, yellowish in Melzers (see photos). Note in mounts of fruit body tissue there are sparse allantoid small spores 3.8-4.5-1.3-1.5 microns (and no spores of the type in the spore print!). | <i>Eucalyptus rudis</i> | 11/06/2009 |
| <i>Chlorociboria</i> | <i>sp. "charcoal then cream"</i> | E9456 | No staining of the wood is apparent. Discs, undulating, attached at back, up to 1.5mm diam. White edge, feltly to hairy (slightly). Underside - charcoal, possibly finely hairy. Surface smooth (not shiny? Feltly). Colour 29 - 48 (FM) in different areas. Smooth edge (incurved in some specimens). The young fruit bodies are cupulate, entirely charcoal in colour, with a strongly inrolled thick rounded margin. Soon the margin becomes pale and wavy- | <i>Eucalyptus gomphocephala</i> | 28/07/2009 |

| Genus | Species | Code | Descriptive Notes | Plants | Date |
|----------------------|------------------------|------------------|--|--|------------|
| <i>Chondrogaster</i> | sp. | E9397 | undulating. The outside surface is very minutely felty-crystalline. The hymenium is grey at first then cream but often retains charcoal colour near perimeter. Hymenium later develops a yellow-tan colour, and the outside of the disc remains charcoal (see photos). Microscopic Characteristics: A context/outer surface of greenish dark, thick walled, polygonal cells and clavate smooth end-cells up to 9 µ wide forming a palisade/epithelial-like surface. Spores cylindrical (face) subballantoid (side views), hyaline, smooth, non-septate, 9 - 11.5 x 2.5 - 3.2 µ. Paraphyses cylindrical, apices unswollen, eq. 1.9 µ wide, not or barely protruding, septate. Asci 8-spored, cylindrical eq. 72 x 6.5 µ. Main Characteristics (i) fruitbodies embedded within soil masses aggregated by whitish elastic mycelium; (ii) solid dull green gleba interspersed by conspicuous white trama, (iii) peridium thick (2 - 3 mm), becoming dull red after cut, surface encrusted with soil and roots. Hence some mesophelliaceae-oid characteristics are evident. This fungus has elastic mycelium surrounding the fruit bodies like <i>Gummiglobus</i> but doesn't have a strong columella development like <i>Gummiglobus</i> species (see Trappe et al. 1996). It is probably a new species of <i>Chondrogaster</i> . Microscopic Characteristics: Spores hyaline, fusoid to cylindro-ellipsoid, with a truncate base, smooth while developing but at maturity most spores have a conspicuously wrinkled perisporium, size e.g. 10.9 - 12.0 x 4.1 - 5.2 µ. | <i>Eucalyptus gomphocephala</i> | 8/07/2009 |
| <i>Clitocybe</i> | sp. | E9430 | Cap: flat, margin inrolled, 20 mm diam. Colour clay-pink with darker smudges. Gills: crowded, straight and adnate. Edge not noticeably cystidiate, smooth. Stem: cylindrical, 25 mm long and 7 mm wide, whitish pink. Lower stem slightly sculptured. Inside stem is smooth and white. | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Clitocybe</i> | sp. | E9437 | Paper like, fragile. Cap: white, 12 - 25 mm diam, concave, felty. Gills: white, sparsely spaced full length gills. Decurrent, wavy and irregular. Stem: 10 - 15 mm long, solid, tapering stem narrowing towards base. | <i>Zamia palm</i> | 21/07/2009 |
| <i>Colleotrichum</i> | sp. | BOUGHER 00562 | Microscopic characteristics: immature - doubtful that it is <i>C. semioculta</i> . Characteristic Features: (i) small but abundant variably-shaped but usually elongated black patches barely raised. Not easily removed, and without any apparent cracks or fissures or erupting plant tissue. Microscopic Features: small cylindrical spores (conidia) arising from a palisade of simple hypha, conidiophores lining above polygonal dark cellular tissue. (see photos). No sexual structure seen. See Gadgil, (2005) Fungi on trees in NZ book p 128 about <i>Colleotrichum lupini</i> on West Australian lupin (<i>L. cosentinii</i>). Also a range of other fungi listed on lupin species. Also see Nirenberg et al 2002 Mycologia & Williams 1993 Lupin blight NZ Forest Service Forest Path in NZ no. 22 | <i>lupins</i> | 27/07/2009 |
| <i>Coprinellus</i> | <i>angulatus</i> | E9473 | This appears to be the same species as E9470 (see description of that collection), but is notable by its albino specimens - very pale caps and gills (although one specimen is developing grey gills). Microscopic Characteristics: It seems some of the specimens (the pale ones) lack basidia. The gills have a well-formed "pavement" structure but are sterile. Cheilocystidia are present. The pileipellis is a celluloderm with lageniform pileocystidia (see photo). | <i>Eucalyptus gomphocephala</i> | 30/07/2009 |
| <i>Coprinellus</i> | <i>angulatus</i> | E9470 | Main Characteristics: (i) non-deliquescing deeply furrowed behispherical caps; (ii) cream gills reluctantly and irregularly turning grey late in development, (iii) stem and cap (young) densely covered with short glistening hairs (see under lens). Pileus: Up to 25 mm diam at maturity; ovoid in button then campanulate-hemispherical at maturity (never fully expanding); rich warm tan brown (near 14 British Chart) and nearly black at apex in button, paler at margin then rapidly hygrophanous becoming paler from centre outwards, remaining pale until greyish-greenish (hazel 27 in British Chart); surface dry, smooth to eye but in button densely clothed with short glistening setules (easily removed), mature surface deeply radially furrowed almost to the still tan coloured centre. Lamellae: adnexed, to 4 mm deep, not ventricose, closely spaced, cream in button, remaining pale until reluctantly and irregularly grey then dark grey, not deliquescing; edge minutely but densely cystidiate; lamellules abundant. Stipe: up to 50 x 3 mm; cylindrical with unswollen base (& without any volva-like area), dry, densely covered with short stiff hairs persisting at maturity, dull whitish entirely and at all stages. Microscopic Characteristics: Pileocystidia and cheilocystidia similar - lageniform with globose (when young) swollen base. Pileipellis a celluloderm. Clamps at base at cystidia and on hyphae. Caulocystidia also similar. Basidia bimorphic, 4-spored, clamped. Spores ovoid to angular (6-sided) form with prominent and wide germ-pore (central), smooth, 8.4 - 9.7 x 6.1 - 7.5 µ. Spores hexagonal in end view. No veil on pellis seen. | <i>Eucalyptus gomphocephala</i> | 30/07/2009 |
| <i>Coprinopsis</i> | <i>aff. stangliana</i> | E9457 | Cap: mouse grey (35), bottom of cap smoke grey (34 - Colour Chart). Top & middle of cap with specks of clay bluff (32 - Colour Chart). Shape parabolic, 70 - 80 mm high and 70 - 90 diam. Gills: crowded, free, 12 mm deep, margins ragged. Colour black (38 - Colour Chart), deliquescence (auto digestion) . Stem: hollow, equal with a bulbous base with rhizomorphs attached to base. | <i>Eucalyptus gomphocephala</i> | 28/07/2009 |
| <i>Cortinarius</i> | sp | E9394 | Medium to large mushrooms. Young button: cortina, caps 15 - 20 mm. Moist, brownish with darker streaks. Base colour - FM 37. Flesh of cap creamy yellow (FM 129). Mature Cap: up to 75 mm diam. Broadly campanulate. Darker in centre (orange-brown outer half - FM37). Edge relatively plane, slightly wavy and irregular. Fairly smooth. Gills: Brownish (FM 37), slightly orange. Adnexed, up to 9 mm depth. Grey in buttons (FM 73). Grey/brown mature spores (FBF milky coffee 28), slightly irregular edge. Gill spacing medium, 1/2 to 1/3 length lamellules between all full length gills. Stipe: creamy, streaked with brown, orange (faintly). Slightly wavy and irregular. Fairly smooth. | <i>Eucalyptus gomphocephala</i> | 8/07/2009 |
| <i>Cortinarius</i> | <i>ochraceofulvus</i> | E9395 | Young caps: up to 30 mm diam. Cortina present. Orange/cream (FM116). Darker in centre. Mature caps: Broadly convex, inrolled edges. Relatively smooth, up to 80 mm diam. Orange brown in centre (FBF 12) to near orange outer areas (FM 106) to yellowish orange near edges (FM 117). Gills: In older caps adnexed, creamy brown (FM47). Up to 6 mm in depth, finely irregular edges. Stipe: yellowish cream (FM 129), with darker streaks. Not hollow in younger stipes, some hollowing in older specimens. Flesh same colour as outside. Longitudinal elements in flesh. | <i>Tuart/Banksia</i> | 8/07/2009 |
| <i>Creopus</i> | <i>gelatinosus</i> | E9466 | Fungal bodies irregular but almost circular with numerous pale coloured dots on the surface. Colour yellow (110 FDU). Various sizes between 1 and 2 mm diam. | <i>Banksia attenuata</i> | 28/07/2009 |
| <i>Crepidotus</i> | sp. "tiny-white fans" | BOUGHER 00539 | Characteristic Features: (i) young fruitbodies with a minutely hairy cap and a very well-formed smooth dull whitish central or barely eccentric stem; (ii) old fruitbodies fan-shaped, up to 12 mm diam., with an inconspicuous tiny stem (it hasn't grown since very young stage) enveloped in a caudate way by the now large cap; (iii) surface of mature cap apparently minutely hairy, very thin; (iv) gills white, frequently anastomosing. This is a good collection of the same species "Tiny white fans" as collected/described/vouchered previously this year and previous years from Bold Park (and Kings Park). It has a dull pinkish spore print very close to Methuen SAS "Pale Orange". The previous collection (BOUGHER532) also had a pinkish spore print. Micro: Spores 7-9.5 x 4.5-5 microns, hyaline in KOH, wall staining in Trypan Blue, apparently smooth but in KOH the granular appearance of the contents make it difficult to discern the wall. In profile in some spores the wall does appear to be uneven/rugulose (need to confirm this under SEM). Basidia 4-spored, not clamped, clavate, e.g. 24 x 8 microns. Cheilocystidia?: interspersed with basidia (which are spaeeropedunculate when young), cylindrical or more usually sinuous/contorted, sometimes with several short, stubby branches, smooth-walled, hyaline in KOH, size eq. 23 x 3.3-4.6 microns (see photos in Congo/KOH). Subhymenium of hyaline non-clamped hyphae up to 4 microns wide. Hymenial trama of | <i>Acacia xanthina</i> , <i>Melaleuca huegliana</i> | 25/06/2009 |

| Genus | Species | Code | Descriptive Notes | Plants | Date |
|--------------------|------------------------------|------------------|--|---------------------------------------|------------|
| <i>Crepidotus</i> | <i>prostratus</i> | BOUGHER 00533 | parallel to undulating, hyaline, smooth-walled, non-clamped hyphae 3-6 microns wide. Characteristic Features: (i) In-rolled thick cap margin; (ii) dull greyish-tan closely spaced gills; (iii) warm brown smooth cap; (iv) white, unchanging flesh. | <i>Eucalyptus gomphocephala</i> | 25/06/2009 |
| <i>Crepidotus</i> | <i>sp. "tiny white fans"</i> | E9401 | A widely collected species in sw WA. Main Characteristics: Fan shaped initially with a small stipe. Fragile and translucent, white. Gills sparse and irregular, wavy, some forking. (see more detailed descriptions of other collections). See more detailed descriptions of other collections, e.g. BOUGHER539. | <i>Eucalyptus gomphocephala</i> | 8/07/2009 |
| <i>Crepidotus</i> | <i>sp. "tiny white fans"</i> | BOUGHER 00532 | Characteristic Features: (i) same as BOU531; minute fragile pure white, thin, semi-translucent fan-shaped fruitbodies attached to rotting wood, leaves etc deep under the litter. A common species in Perth region. See BOUGHER539 for more descriptive details of this species. | <i>Eucalyptus gomphocephala</i> | 18/06/2009 |
| <i>Crepidotus</i> | <i>sp. "tiny white fans"</i> | BOUGHER 00531 | Characteristic Features: (i) same as BOU532; minute fragile pure white, thin, semi-translucent fan-shaped fruitbodies attached to rotting wood, leaves etc deep under the litter. This seems to be a common species in Perth region. See other descriptions. | <i>Eucalyptus gomphocephala</i> | 18/06/2009 |
| <i>Dasyscyphus</i> | <i>acuum</i> | E9273 | This collection matches close to <i>D. acuum</i> (e.g. spore shape, hairs & paraphyses are close to this). Minutely white to pale grey discs gregarious on the fronds. Upper surface flat (not sunken) or barely concave, smooth, semi-translucent. Rim and undersurface with short white hairs. Shape in side view: obconical inconsistently with a very short dark grey or paler, minutely hirsute cylindrical stem inserted into the substrate. Microscopic Features: Spores 9 - 10 x 4-5 µ, small, smooth, no septa, cylindrical to cigar-shaped (broader at one end), hyaline. Spores lying obliquely in the clavate asci. Hairs at rim cylindrical/minutely rough without a swollen apex or constricted apex, with septa. | <i>Corymbia calophylla</i> | 11/06/2009 |
| <i>Dermocybe</i> | <i>clelandii</i> | E9458 | Cap: convex when young, becoming appanate with age. Sand and soil adhering to cap, stem and particularly the base of the stem. Cap shiny & silky to touch. Colour brown - orange (36 FDU). 1 - 4 cm in diam. Margin incurved. Gills: adnate, closed, margins slightly fluffy. Colour brown - yellow (10 - Colour Chart), lamellulae various lengths. Stem: brown - yellow (30 FDU) colour, slightly ridged, basically equal but slightly broader at base, 2.5 - 4 cm long. | <i>Eucalyptus gomphocephala</i> | 28/07/2009 |
| <i>Dermocybe</i> | <i>clelandii</i> | E9433 | Cap: flattened, undulate, 30 - 40 mm diam. Colour snuff brown (Flora of British Fungi). Gills: close, various lengths, free. Mustard yellow Stem: buff colour, cylindrical. Base bulbous. 50 - 60 mm long, 8 - 15 mm wide. Chambered inside/fibrous. Slight cortinoid veil evident. | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Endoptychum</i> | <i>agaricoides</i> | BOUGHER 00546 | Characteristic Features: (i) irregular turbinate shape - distinct stem up to 40 mm tall and head up to 80 x 70 mm; (ii) white, slightly dulling but not yellowing solid flesh; (iii) dark chocolate brown powdery gleba enclosed by a thick peridium (2 mm) in a narrow singly chamber either side of the percurrent stipe - columella; (iv) surface with abundant reddish-brown mainly appressed fibrillose-agglutinated scales; top of fruit body becomes quite brown but the surface (under the scales) of the parts of the fruit body embedded in the grass/soil is whitish; Some have a pale greenish-cream gleba but otherwise look well developed (see photos). This appears to be an albino fruit body as far as they have hyaline spores (in KOH). Microscopic Features: Spores brown, smooth, thick-walled, broad ellipsoid-ovoid, with germ-pore, 14.6 - 12.2 (19) x 10- 12 µ, highly variable in shape and size. See photo in KOH. Basidia markedly clavate, no clamps, developing dark contents (yellow or brown in KOH), e.g. 40 x 18 µ, becoming thick-walled, sterigmata clavate to capitate and terminal (i.e. not on the sides of the basidia like some other gasteros), 4 - spored. | grass | 9/07/2009 |
| <i>Exidia</i> | <i>sp.</i> | E9280 | Bluish grey low amorphous gelatinised bodies. | <i>Acacia saligna</i> | 11/06/2009 |
| <i>Exidiopsis</i> | <i>sp.</i> | E9376 | Fully resupinate bluish-grey, slimy, smooth patches without a distinctive margin. Microscopic Characteristics: Spores smooth, thin to thick walled, hyaline (in KOH), cylindrical in face view, ellipsoid to slightly allantoid in sideview, size approx 8.7 - 11.0 x 5.7 - 6.7 µ (see photo in KOH). Phragmobasidia, with clamps embedded in subgelatinosed tissue amid abundant dendritic fine hyaline sterile structures (see photos). Probasidia ovoid. Sterigmata variable in size and shape. Gloeocystidia are present (see photo). | <i>Acacia rostellifera</i> | 2/07/2009 |
| <i>Exidiopsis</i> | <i>sp.</i> | E9377 | Same species as E9376. But maybe just dried out a bit and therefore appears more grey than bluish-grey. | <i>Acacia rostellifera</i> | 2/07/2009 |
| <i>Galerina</i> | <i>sp.</i> | E9373 | Cap: ranging from 0.5 cm - 1 cm. Brown orange (36 - Colour Chart), smooth, slightly umbonate when young, becoming flat/plane, margin striated. Gills: slightly lighter brown than cap, close, margin smooth, entire, attachment to stem sinuate, up to 4 cm. Stem: ranging from 1.5 3.2 cm, light brown at tip, darkening towards base, some hairs/fibres where attached to litter, centre hollow, equal shape | <i>Melaleuca, Acacia rostellifera</i> | 2/07/2009 |
| <i>Galerina</i> | <i>sp.</i> | E9471 | Cap: Orange-brown (5D7 to 4A5) with age. Dehydrating to light ochre centrally. Conico-campanulate, flat centre with or without umbo Gills: pale yellow-ochre 4B6 - 5B6 (mature 5B7), crowded with short to medium intermediates. Sinuate. Stipe: Up to 30 mm, cylindrical with ring on remains, fibrous vertically (fibrils). Veil clearly attached when young. Hollow when mature. | <i>Macrozamia riedlei</i> | 30/07/2009 |
| <i>Gymnogaster</i> | <i>boletoides</i> | BOUGHER 00528 | Characteristic Features: Fruitbodies: 35 - 40 mm tall, turbinate, with undulating "cap" 25 - 30 mm broad, swollen hymenium 30 - 35 mm broad, and tapering stipe 10 - 15 mm tall x 10 - 15 mm wide at apex narrowing to 5 - 10 mm at base. Pileus: crimson red (near 10E7), smooth, probably dry in sunny weather but in wet weather (such as today) has small appressed gelatinous patches; thin and reduced to a small undulating central area. Not bruising. Hymenium: greenish yellow (near 2B4), with faint and inconsistent dull greenish-blue bruising and some dull reddish bruising when cut; forming a broad mass (up to 12 mm wide) of convoluted plates with empty 'locules' in between. Stipe columella: solid, extending to apex of fruitbody; upper part dull greenish-blue entirely when cut, lower part dull yellowish with red bruising when cut; surface dry, smooth to very minutely matted (see under lens), yellow (near 3A3 to 3A4) with some red flushes. Base of stipe with some yellow rhizomorphs (or mycorrhizal roots?). Microscopic Features: spores dull yellowish-brown in KOH and in Melzers (see photos), ellipsoid, some with slightly attenuated apex, thick and smooth-walled, 10.5 - 13.0 (13.3) x (6.3) 6.9 - 8.4 µ (n = 30). Basidia 4-spored, e.g. 36 x 10 microns, clavate. Clamps absent. Occasional oily cystidioid elements present. BOUGHER 528 compares well macroscopically and microscopically with collections from eastern Australia such as H5826 (PERTH 07628005) from Dorrigo N.P. NSW. The spores of that collection overlap in size but tend to be slightly larger than those of BOU528: (10.4) 10.9 - 15 x 7.1 - 8.6 (8.7) µ (n = 30). See photos of spores of both collections. | <i>Eucalyptus gomphocephala</i> | 18/06/2009 |
| <i>Gymnopilus</i> | <i>sp.</i> | E9392 | A robust species with domed caps with irregular shape, rusty crowded gills, paler rusty, edges upturned with older specimens. Stipe: hollowing with age | <i>Pinus pinaster</i> | 8/07/2009 |
| <i>Harknessia</i> | <i>uromycoides</i> | E9442 | Minute pustules, less than a 0.5 mm diam, circular or elongated lense-shaped. Causing a fissure in the substrate surface, and associated with a brown discoloration of the substrate. Erupted perimeter brown on outside, white on inside. Interior at first entirely white and granular, then developing a cluster of numerous shiny, black seed-like spores? In the centre (see photos). Microscopic Characteristics: dark, smooth, cylindrical to ellipsoid to suballantoid spores with long hyaline, tail-like appendage (up to 60 x 2 µ); 22 - 25 x 8 - 10 µ. Obscure central septum in some spores (see photo in KOH). Some papillate at other end. The spores are produced on their | <i>Hardenbergia comptoniana</i> | 21/07/2009 |

| Genus | Species | Code | Descriptive Notes | Plants | Date |
|-----------------------|---|------------------|--|---------------------------------|------------|
| <i>Hemimycena</i> | <i>sp. "minute fragile, white pileus, arcuate gills, on wood"</i> | BOUGHER 00547 | "tails" attached to dark tissue of tightly packed irregular and polygonal cells up to (10 µ wide see photo in KOH). Spores: fusoid with large blunt hilar appendix, smooth-walled, hyaline in KOH, not amyloid, approx 7 - 8.3 µ. (See photo in Congo Red and in Melzers). | <i>Eucalyptus gomphocephala</i> | 8/07/2009 |
| <i>Henningsomyces</i> | <i>candidus</i> | E9464 | In colonies on bark of dead wood. White tubular with pore at top. Minute in size, 1 mm in width & height. | <i>Banksia menziesii</i> | 28/07/2009 |
| <i>Hjorstamia</i> | <i>crassa</i> | E9372 | Lilac colour, paler at edges, minutely furry. | <i>Eucalyptus gomphocephala</i> | 2/07/2009 |
| <i>Hohenbuehelia</i> | <i>bingarra</i> | BOUGHER 00529 | Characteristic Features: (i) shell-shaped fruitbodies with grey gelatinised pileus; (ii) white gills without a cystidiate edge. | <i>Eucalyptus gomphocephala</i> | 18/06/2009 |
| <i>Hyaloscypha</i> | <i>sp.</i> | E9400 | Main Characteristics: Minute pale discs, flattened with a shallow dish, resupinate. Colour 6B1 centrally with pale edging. Microscopic Characteristics: Note presence of 'curly' hyphae on (lower part) of fruitbodies (see photo in KOH). This is not the same species as E9398, which has large asci and lanceolate hairs. But the spores of both are similar. Also the fruit bodies are smaller (E9400) and are more cushion-like and the rim hairs are less dense and more disorganised than in E9398 (see and compare photos). | <i>Macrozamia riedlei</i> | 8/07/2009 |
| <i>Hyaloscypha</i> | <i>hyalina</i> | E9398 | This has the lanceolate hairs and filiform paraphyses and gregarious habit of <i>H. hyalina</i> . It could equally be said to be <i>H. leuconica</i> as that occurs on conifer wood, but may be synonymous. This is a larger "disc" fungus than E9400. Main Characteristics: minute discs, circular, very flat but shallow dish, resupinate. Colour 6B1, centrally, paling considerably at edges. Rim adorned with dense, short, bristles (see photos). Note in some ascocarps the hairs attain a rusty brown colour with age (see photos). Microscopic Characteristics: Spores hyaline, smooth fusoid (one end broader), non-septate spores, small e.g. 4.8 - 9.5 x 1.8 - 2.4 µ (see photos in KOH). Paraphyses filiform, very narrow (eg. 1 µ wide), hyaline, smooth, tip unbranched and unswollen with a few septa, not projecting beyond asci. Asci 8 - spored, cylindrical - fusoid, e.g. 47 x 5 µ. Hairs on rim of ascocarp abundant, hyaline, lanceolate, thin and smooth-walled, eg. 30 x 5 µ or 36 x 4 µ or 46 x 4 µ, very densely arranged, bases embedded in a partially gelatinised layer? Often wavy-contorted in shape (see photos). | <i>Pinus pinaster</i> | 8/07/2009 |
| <i>Hydnoplicata</i> | <i>convoluta</i> | E9439 | Fruit bodies up to 17 mm, smallest 5 mm. Roughly pointed elliptical grooved lengthwise (above), below with root-like 'tail'. Outer surface finely criss-crossed raised 'ribs', cavities smooth. Brittle to touch, translucent, gelatinous off white. Colour white (British Fungi Flora). | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Hymenochaete</i> | <i>sp.</i> | E9402 | Main Characteristics: (i) vast resupinate sheets; (ii) cream coloured pores (iii) rusty orange areas near margin. Microscopic Characteristics: spores broadly ovoid, smooth hyaline in KOH, staining in trypan blue (see photo), 5.4 - 6 x 3.5 - 4 µ | <i>Banksia menziesii</i> | 8/07/2009 |
| <i>Hymenoscyphus</i> | <i>sp. "cream funnels"</i> | E9413 | Fruit body +/- 2 mm across cap, dished, flask-like. Stipe: tapering to base as in diag. from cap. Colour: off white/cream. Translucent and firm, smooth texture. Microscopic Characteristics: Subfusoid flattened on one side, hyaline, smooth spores; paraphyses with swollen apices (see photo). | <i>velt grass</i> | 14/07/2009 |
| <i>Hymenoscyphus</i> | <i>sp. "brown funnels"</i> | E9393 | Fruit body to 3 mm. Form: Tack-shaped with dished head, smooth surfaces, flexible and rubbery. Colour: dark tan/brown - 6E8 | <i>Banksia attenuata</i> | 8/07/2009 |
| <i>Hymenoscyphus</i> | <i>sp.</i> | E9275 | Initially bright orange-tan drumstick-shaped structure with dark brown stem. Then champagne glass shape with the 'cap' expanding and depressed at centre but the stem not elongating further. Finally dull tan with appanate to undulating 'cap' up to 3.5 mm diam; 'cap' now large in proportion to the stem which is now obscured by the 'cap'. (see photos) Microscopic Features: Spores 9 - 10 x 4 - 5 µ, ellipsoid. | <i>Corymbia calophylla</i> | 11/06/2009 |
| <i>Hyphoderma</i> | <i>assimile</i> | E9472 | Seems close to <i>H. praetermissum</i> in macro appearance and micro except the cystidia have an obtuse apex rather than capitate and gloecystidia are absent within. Perhaps closest to <i>H. obtusiforme</i> ? <i>Hyphoderma roseocremum</i> group (see Erikson & Ryvarden Vol 3 page 447). Probably under <i>Peniophora</i> or <i>Corticium</i> in Cunninghamham? Yes it is as <i>Corticium patricium</i> . Main Characteristics: Microscopic Characteristics: Spores cylindrical, smooth, hyaline, thin-walled, oily contents, 10 - 16 x 4.5 - 5.5 µ. Hyphae with clamps. Abundant oily cystidia present, clamped, multi-septate (see photo in KOH) and Congo Red. Basidia large eg. 36 x 6 µ. 4-spored, clamped. Some cystidia large, cylindrical, protruding but not abundant, eg. 120 x 11 µ. Basidia with oily contents when young? (see photo). Some of those seem multi-septate? Some cystidia with differentiated contents at tip (see photo). | <i>Eucalyptus gomphocephala</i> | 30/07/2009 |
| <i>Hyphodontia</i> | <i>sp.</i> | E9399 | Main Characteristics: (i) fully resupinate; (ii) cream entirely except for rusty discoloration in parts; (iii) odontoid (round-topped pegs) or tapering and irregular-shaped pegs. Microscopic Characteristics: spores hyaline, smooth, ellipsoid to subballantoid, 4.2 - 5.2 x 1.7 - 2.8 µ. | <i>Banksia menziesii</i> | 8/07/2009 |
| <i>Hypocrea</i> | <i>sp.</i> | E9443 | Main Characteristics: Flat cushion-like fawn fruit bodies up to 3 mm diam. Surface of some with dark dots (ostioles) embedded. Stalk absent. Not mature 22/7/09. Seems to be the same species as E7260 from minesite project collections about year 2002. Is that collection fertile? (need to check). | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Hypoxyylon</i> | <i>sp.</i> | E9371 | Same species as collected from another part of Bold Park last week. This collection also has the pinkish anamorph (probably <i>Nodulisporium</i>). | <i>Acacia rostellifera</i> | 2/07/2009 |
| <i>Hypoxyylon</i> | <i>sp.</i> | E9462 | Sheets of fruit bodies in irregular streaky groupings along branch (up to 110 x 15 mm) with a hundred individual fruit bodies. Clumped cushion-like fruit bodies. Black, shiny granules in appearance with elevated ostide. Diam 0.5 - 1 mm each individual. Very hard, about 0.5 mm high. | <i>Eucalyptus gomphocephala</i> | 28/07/2009 |
| <i>Hypoxyylon</i> | <i>sp.</i> | E9374 | Rusty pinkish felt to powdery surface resupinate on the wood, in contiguous sheets/patches or in discrete cushion-like colonies. There are no black sexual fruitbodies of <i>Hypoxyylon</i> present on this bit of wood. However on nearby bits of wood the teleomorphs are present with a pinkish powdery anamorph emerging on top of them (see E9371 and others coll). So E9374 is likely to match this anamorph. | <i>Melaleuca systina</i> | 2/07/2009 |
| <i>Hysterangium</i> | <i>sp.</i> | E9370 | Fruitbodies up to 10 mm diam., ellipsoid, seated in a white mycelial "mat" 10 x 10 cm. Peridium: distinctly pale pink in the field before handling. Then dulls on handling mainly due to the thin nature of the peridium revealing the gleba below. In section very thin, 1 - layered. Surface minutely matted fibrillose, dry. Gleba: dark, dull, greyish - green, loculate with gel-filled locules, no radial pattern, trama not distinct by colour, all gelatinised. Basal mycelium: abundant, rhizomorphic, white. Micro: Spores hyaline, fusoid, with loosening perisporium, size e.g. 10.3-10.7 x 3.8-4.0 microns (see photos in KOH). Basidia 6-spored (some 4-spored?). | <i>Acacia rostellifera</i> | 2/07/2009 |
| <i>Inocybe</i> | <i>sp.</i> | BOUGHER 00541 | Characteristic Features: (i) dark brown inconspicuously radially fibrillose pileus; (ii) dull greyish gills with cystidiate margin; (iii) squat dull stem without annular zone at maturity, but with sparse, evanescent, white, continoid, partial veil. May be a <i>Pinus</i> associate and probably the same species as the one which fruited in abundance in 2008 under the pines near the Ecology Centre at Bold Park. BOUGHER 541 specimens are quite water-soaked due to heavy rains. | <i>Pinus radiata, Banksia</i> | 29/06/2009 |

| Genus | Species | Code | Descriptive Notes | Plants | Date |
|--------------------------|----------------------------------|-------|---|---|------------|
| <i>Junghuhnia</i> | sp. | E9435 | Fruit body widely spread across a dead limb, firmly attached, thinly-layered with a smooth to bumpy surface. Although firmly attached, it can be peeled off. Indeterminant growth. Colour - light orangy brown (118 Grey & Grey) with some darker patches (104 Grey & Grey). Darker bruising. Surface dryish, with bumpy/irregular spreading pattern, pale cream at edges. Pores small and closely spaced, continuing the same to edges. Colour maintained throughout skin depth. Margin areas white. Margin irregular according to growth pattern across wood. Resupinate form. Thin base layer, long tubes, subiculum not distinct. Microscopic Characteristics: spores very small, ellipsoid, smooth, hyaline (see photo in KOH), amyloid wall in Melzers? (see photo). Subiculum (basal tissue adjacent to the wood) of thick walled, smooth skeletal hyphae. Tubes with generative hyphae, smooth with clamps. Skeletal hyphae dominate the tubes as well. Dimittic. | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Laccaria</i> | sp. | E9467 | Cap: Up to 10 mm diam. Variable in shade, roughly circular, mostly a little indented, finely hirsute but smooth around margins which show some pleating giving a wavy edge. Gills: Intermediately spaced and wavy laterally and horizontally, free. Stems: smooth, silky-fibrous. | <i>Eucalyptus gomphocephala</i> | 28/07/2009 |
| <i>Laccaria</i> | sp. | E9428 | Cap: parabolic with an entire margin, flat margin, 25 x 23 diam, colour fulvous (Flora of British Fungi). Smooth near the edges with very small scales (scurfy) especially near cap centre. Gills: attached, adnaxed to stem, close and waxy in texture. Stipe: hollow with white mycelium running up the centre, 1 - 1.5 mm thick, smooth, up to 50 mm high. Veil absent. | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Leucopaxillus cf.</i> | | E9405 | Caps 1 - 5 cm diam. Fawn (29 Funqi Chart), slightly depressed, edge slightly wavy. Gills: clay pink - sinuate to stipe, close, lengths variable and widths variable along length (ventricose). Stipe: tapering downwards from 4 mm to 2 mm., arachnoid cortina - distinctive mycelium at base, slightly hollow towards apex. See drawings on field sheet for E9405. This is neither <i>Leucopaxillus</i> (usually large, with different cystidia, and spore plage) or <i>Marasmius</i> (usually clamped, but with often barbed cystidia). So further investigation is needed. Microscopic Characteristics: spores ovoid, minutely verrucose (some coarsely so), strongly amyloid, suprahilar flatening but no plage evident, 4.5 - 6 x 3.5 - 4.5 µ. Calmp connections conspicuous and abundant e.g. in trama and in stipe. Pleurocystidia scattered mostly singly, fusoid-lanceolate, size e.g. 42-48 x 8-9 microns. Basidia 4-spored, cylindro-clavate, size e.g. 28-33 x 4.5-6 microns. Hairs on the stipe comprised of agglutinated bundles of smooth, clamped hyphae 2-2.5 wide, with undifferentiated end cells. Oeliferous elements present in gills and stipe. | <i>Eucalyptus marginata</i> | 14/07/2009 |
| <i>Macrolepiota</i> | sp. | E9434 | A large fungus - this collection was of a single, unfortunately quite over-mature specimen. Cap: 125 mm diam, scaly towards the edge. Scales amalgamated as a skin towards centre, edges smooth - basically flat, but slightly umbonate in centre. Sand on cap. Gills: crowded, blotched colours - cigar brown to buff - adnate gills, edges slightly irregular and slightly hairy. Microscopic Characteristics: spores strongly dextrinoid. | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Martininia</i> | <i>panamaensis</i> | E9411 | Main Characteristics: (i) long narrow, wiry, brown stipe; (ii) disc centrally tan brown when young, paler brownish to olivaceous grey when older; (iii) underside of disc whitish, minutely felty; (iv) pigmented, small spores. Comments on identity: <i>Martininia</i> fits well as the genus for E9411: it has small, pigmented, biguttulate spores, true sclerotia with gelatinised material in the medulla, variably arranged ascospores in the asci, and absence of an anamorph. Apothecium stipitate. Disc 1 - 5 mm diam., shallow concave, smooth, centrally tan brown when young, paler brownish to olivaceous grey when older; flanks (underside) of receptacle whitish, minutely felty. Stipe up to 5 mm long, not smooth but surface with abundant brown, scurfy with loose, coarse fibrils (see ultra close up photos). The stalks emerge from deep within the rotted wood arising from embedded black, loaf-shaped to ellipsoid or ovoid, smooth sclerotia 2 - 3 mm long (see photos). The sclerotia are solid, with a grey and smooth medulla and a thin black rind. The medulla is white in air-dried sclerotia. | <i>Macrozamia riedlei</i> with overstorey of <i>Eucalyptus marginata</i> and <i>Corymbia calophylla</i> | 14/07/2009 |
| <i>Mycena</i> | sp. "yellow, hairy base on wood" | E9368 | Caps: up to 11 mm, roughly circular grooved along 9 - 10 gill lines, slightly indented. Max height 200 mm. Bases hairy and white. Gills: white, decurrent. Stipe: thin, initially uniform in width then widening at top and at base, marginally. | <i>Eucalyptus gomphocephala</i> | 6/07/2009 |
| <i>Mycena</i> | sp. "chlorine odour on litter" | E9272 | Main Features: Cap: size 1cm diam, conic flattening with age. Colour dark brown getting lighter towards edges (page 6, F4A Kornerup). Surface smooth, striated towards edge. Gills: grey, adnate, margin smooth, spacing distant, lamellulalae abundant (alternate?). Stem: light brown, 5 cm long, light brown and silky smooth, shape equal base. Veil: Not evident | | 11/06/2009 |
| <i>Mycena</i> | sp. yellow capped | E9465 | A small creamy (FDF B2) species that seems to be quite common in sw WA. Becomes yellowish in older specimens (FDF D4). Cap: 5 - 9 mm diam. Darker in centre, convex to flatter in older specimens. Dry to touch, not shiny, fairly smooth, slightly radially fibrillose. Fairly, smooth edge, plane. Gills: Sub-decurrent, Margins fairly smooth. Spacing, quarter lamelule between each full gill. Gills up to 1 mm in depth. Stem: Up to 20 mm long. Even in diam. Darker at base in older specimens - cream elsewhere. Solid, longitudinally fibrillose. | <i>Eucalyptus gomphocephala</i> | 28/07/2009 |
| <i>Mycena</i> | <i>tenerrima</i> | E9444 | Main Characteristics: (i) small size, e.g. stipe 2 mm tall x 0.5 mm wide, cap 1 - 2 mm diam; (ii) pileus covered with globose granules (see under lens), semi-translucent pale greenish-cream; (iii) stipe sparsely covered with sharp-pointed, soft, short, yellow hairs especially below about half-way down; (iv) lamellae white-cream, edge minutely cystidiate (not densely so). (v) buttons completely covered with granules (see photos). Microscopic Characteristics: spores 8 - 10 x 5 - 6.1 µ hyaline, smooth ellipsoid to more usually ovoid with flattened apex, walls stain in Trypan blue. Hairs at base of stem: lanceolate, and a palisade of cylindrical elements is present too (eg 4.5 µ wide). Stem cystidia: lanceolate, some with branched ends (see photo in KOH). No acanthocysts at base. Pileipellis: Acanthocysts airising in palisade. Mostly globose or ellipsoid but some lageniform or mucronate (see photos). Cheilocystidia: lageniform with long narrow apex, hyaline, base ornamented (see photos). | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Mycena</i> | sp. "black stem on wood" | E9459 | Cap: Rounded, conical/parabolic to a blunt point. Opening flat. Very finely hirsute and pleating towards edges in older specimens. Colour dark vinaceous grey (80 FDU). Smooth. Gills: Off white, pale white (T8), free and crowded with numerous intermediates. Stems: Smooth & firm. Colour lighter shade of umber (18 FDU). Darker at top down to almost white at base. Evidence of fluffy base on a few with radiating mycelium. | <i>Macrozamia riedlei</i> | 28/07/2009 |
| <i>Mycena</i> | sp. "chlorine grey-cap on soil" | E9277 | Characteristic Features: (i) Conical cap on fine stem with slightest taper upwards; (ii) Cap: 5 - 8 mm diam, colour light grey/brown mithuen P7E4, lighter on margins; (iii) Gills: decurrent, widely spaced with intermediate gills; (iv) Stem: 20 - 30 mm x 1 mm. No ring. | <i>Corymbia calophylla</i> | 11/06/2009 |
| <i>Peniophora</i> | sp. "grey felty" | E9440 | Same species as E9427. Fully resupinate, dusky grey, smooth (minutely felty), indeterminant growths. Microscopic Characteristics: Spores hyaline, smooth, cylindric-allantoid, approx 8 - 11 µ (see photo in KOH). Basidia long, narrow, 4-spored, clamped? Projecting encrusted cystidia and probable sulcocystidia (thin-walled, smooth). Metuloids size eg. 48 x 10 µ. Basidia eg 27 x 5 µ. Sulcocystidia projecting about one quarter of their lengths; similarly the metuloids are either buried or barely projecting. Sulcocystidia e.g. 82 x 7.5 µ, with brown amorphous contents esp. near base (see photo in KOH). Clamps not confirmed on hyphae! | | 21/07/2009 |
| <i>Peniophora</i> | sp. | E9427 | Same species as E9440. Fruitbody grey, smooth, colour 180 FDU. Total thickness less than 0.1 m (very thin). Microscopic Characteristics: abundant crystal-encased emerging cystidia. Spores hyaline, smooth, cylindric (face view), allantoid (side view), approx 7 - 8 x 2.5- 4.2 µ (see photo in KOH). | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |

| Genus | Species | Code | Descriptive Notes | Plants | Date |
|-----------------------|----------------------------|------------------|---|---|------------|
| <i>Perenniporia</i> | sp. | E9276 | Characteristic Features: (i) resupinate form but about up to 2 mm thick (ii) dull rusty brown colouration. Microscopic Features: Spores boletoid, approx 9 - 11 x 3.5 - 4.5 µ. Truncation or germ pore not seen. | <i>Acacia saligna</i> | 11/06/2009 |
| <i>Phlebia</i> | <i>subceracea</i> | BOUGHER 00535 | Characteristic Features: (i) golden yellow resupinate with blunt teeth. | <i>Melaleuca huegiana</i> | 25/06/2009 |
| <i>Phlebia</i> | <i>subceracea</i> | E9271 | A continuous sheet of 6 x 20 cm. covering branch. Bright yellow, methuen P4 A8. Entire surface covered with teeth with rounded tips. Texture continuous right to margin. | <i>Eucalyptus rudis</i> | 11/06/2009 |
| <i>Physarum</i> | <i>leucophaeum</i> | E9475 | Black stalks with whitish globose cap. | <i>Eucalyptus gomphocephala</i> | 2/07/2009 |
| <i>Pleuroflammula</i> | <i>praestans</i> | E9436 | Cap: Red-orange/yellow (107 - 109 FDU) to 6 mm, very inrolled, crusty/scaly. Edges ragged with remnants of veil at first and remaining hairy. Texture of cut cap is pale/translucent as is the short stipe. Gills: free?, many intermediaries. Stipe: Red-orange/yellow (109 FDU). Microscopic Characteristics: spores brown in KOH, smooth-walled, ellipsoid, asymmetric in side view, no germ pore or plage; approx 7 - 8 µ (see photo in KOH). | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Plicaria</i> | cf. <i>endocarpoides</i> | E9403 | Fits genus <i>Plicaria</i> - e.g. dark ascocarps, globose spores, amyloid asci. <i>P. endocarpoides</i> close - however its spores are larger? (8.5-11.8), paraphyses tips not encrusted?, and records in Australia are mainly from burnt ground. Fruit bodies: 14 mm and small, discs smooth; edges slightly wavy. Stipes: short and attached to a ball of sand. Colour: sepia above, slightly lighter and matt below - hazel. Microscopic characters: Spores globose, hyaline, smooth-walled, with one or more usually multiple small guttules, 7-8.5 microns diam. Paraphyses amyloid near apex, cylindrical, not pedicellate, sparsely septate, with clavate to capitate apex up to 7 microns wide and with conspicuous (and persistent in KOH) encrusting golden brown (in KOH) pigment which does not extend far below the apex area, hyaline elsewhere, with enlarged usually bifurcate base, 8-spored, uniseriate, size e.g. 204 x 9-11 microns. Medullary exipiculum of small tightly arranged cells up to 6 microns diam., partially gelatinised especially in subhymenium. Ectal exipiculum of larger cells up to 25 microns wide forming a palisade of pigmented pyriform and clavate end-cells at the surface. | <i>Eucalyptus marginata</i> , <i>Banksia menziesii</i> | 14/07/2009 |
| <i>Poria s.l.</i> | sp. | E9426 | Main Characteristics: Fruitbody resupinate, Sharply defined flat patches on bark and wood, flat patches tightly adhering, indefinite shapes, browning with age. Hymenium: (cream) brown-yellow (29 FDU). Large irregular pores. Subiculum: present, approx 1 mm layered, red brown, basal translucent gelatinous section. (see sketch on original field sheet). Microscopic Characteristics: spores large (11- 14 x 5- 7µ), narrowly ellipsoid, hyaline, smooth-walled (see photo in KOH). Dimitic (see photo of skeletal hyphae). Generative hyphae with clamps. Basidia 47 x 10 microns, 4-spored. Occasional gnarled, smooth gloeocystidia? (see photos) | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| <i>Ramaria</i> | sp. | E9408 | Fruitbody up to 39 mm tall, 15 mm wide. Branches clay pink 30. Tips 76 stem paler before branching. Base stem 8 x 4 mm cylindrical and hollow. Primary branches 2 mm broad, round with split tips, 2 or 3 branches. Small white branchlets at base of main branches (forms). Microscopic Characteristics: spores sub globose 8 - 9 µ long, smooth (see photos in Trypan blue) | <i>Allocasuarina fraseriana</i> , <i>Eucalyptus marginata</i> | 14/07/2009 |
| <i>Ramaria</i> | <i>cristata</i> | E9407 | Fruitbodies palest "salmon", almost white, 18 x 1.5 mm largest coraloid. Slender, not branching well to the apex, tiny secondary branches at each tip. Younger specimens both slender up to single point or wide with filamentous spikes as in diag. (see field sheet) & white, fragile, caespitose. Basal mycelium white. | <i>Eucalyptus marginata</i> | 14/07/2009 |
| <i>Sistotrema</i> | sp. "yellow flaps" | E9396 | Main Characteristics (i) soft yellow growths deep in litter: (ii) some parts have a tuberculate-knobby surface (see photos). Microscopic Characteristics: Spores very small (3 - 3.5 x 2.4 - 2.8 µ), ellipsoid, smooth or minutely rugulose? Staining in Trypan blue (see photos). | <i>Banksia attenuata</i> , <i>Eucalyptus gomphocephala</i> | 8/07/2009 |
| <i>Sistotrema</i> | sp. "grey paint on leaves" | BOUGHER 00563 | Characteristic Features: (i) very thin, easily removed (not in contiguous sheets though), uniformly grey (near 7B1), minutely farinose under lens (with minute gaps abundant in hymenium surface) but smooth to the naked eye. This species "grey paint on leaves" seems to be quite widespread in the Perth region, usually on leaves deep under litter. This is a species of <i>Sistotrema</i> , similar to <i>S. coroniferum</i> perhaps which differs by having white fruit bodies (not grey). Until we see mature spores of the "grey paint fungus on leaves" represented by BOUGHER 563, it is not possible to ID it further for now. Need other collections with mature spores. Microscopic Features: Hyphae hyaline smooth 2.5 - 5 µ wide, thin-walled, with large clamps on all septa. Septa not constricted. Basidia ellipsoid when young then obpyriform. Hyphal branching mainly at right-angles. Many hyphae with oily contents. Gloeocystidial elements with dense (oily?) cytoplasm scattered in hymenium, eg. 30 x 4 µ (see photo). With clamp and narrow long base, cylindrical to clavate; some with long narrow apex (see photo) eg. 60 x 4 µ (apex 2 microns wide). Basidia: uniform when mature, 8-spored, eg. 10 - 19 x 3 - 5 µ, sterigmata curved forming a rosette. (see photo). Basidia with domed-expanded apex when mature and wide rounded base, clamp at base. Also some setae-like cystidia, acuminate, eg. 22 x 2 µ (at base), apparently not thick-walled but with oily contents: smooth, no-crystals seen. (see photo in Congo Red). Setae not abundant and seem confined to small part. Arising intercalary at right angles on a hypha. Spores not seen mature. Immature spores on basidia are globose to ellipsoid, smooth. Basidia do seem to be borne in clusters on the end of simple clamped hyphae (see photo). | <i>Eucalyptus decipiens</i> | 27/07/2009 |
| <i>Skeletocutis</i> | <i>amorpha</i> | BOUGHER 00538 | Characteristic Features: (i) resupinate with effuso-reflexed white margin; (ii) dull caramel non-angular pores (near 5B4), bruising darker orange-ish; (iii) with a sub-gelatinous subiculum paler than the tubes; (iv) fruitbodies 1 mm thick in total. This collection appears to fit <i>Skeletocutis amorpha</i> quite well: e.g. caramel ("salmon" colour bruising darker, small allantoid spores, gelatinised tissues present, clamps, cystidia and skeletal hypha present. Apparently this species can be pileate or less often resupinate with reflexed margin. Microscopic features: Spores minute, e.g. 3 - 4 x 0.5 microns, strongly allantoid, smooth-walled, hyaline (in KOH) (see photos). Basidia clavate, hyaline without any oily contents, 4-spored, with narrow sterigmata, size e.g. 15 x 3-4 microns (see photo). Clamps present on hyphae (see photos). Skeletal hyphae present, yellowish in KOH, with thick walls. Hymenial trama sometimes gelatinized. Hymenium with scattered cystidia. Cystidia hyaline, smooth but loose crystals hanging around in lower parts, variable in shape e.g. lageniform with long apex 34 x 4 (1.7 apical part) microns (see photos in KOH). | <i>Melaleuca huegiana</i> | 25/06/2009 |
| <i>Tomentella</i> | sp. | E9410 | Brown, ochre, yellow, hyphal-rhizomorphic. Microscopic Characteristics: Basidia 4-spored; no clamps. Immature, spores were not observed in this (but try another bit later). | <i>Banksia menziesii</i> | 14/07/2009 |
| <i>Trechispora</i> | sp. | E9460 | Fully resupinate. Soft white tapering spines with single unbranched tips densely arranged on a thin subiculum of appressed white matted hyphae. Microscopic Characteristics: Spores broadly ovoid, hyaline in KOH, amyloid?, verrucose with flat-topped? Pegs densely arranged, eg., 3.4 x 2.0 µ. Hyphae with clamps. Basidia clamped, cylindrical, 4-spored. Tips of spines sterile with simple with non-cystidiate terminals (see photo in Congo-KOH). No cystidia seen. | <i>Banksia attenuata</i> | 28/07/2009 |
| <i>Tricholoma</i> | <i>eucalypticum</i> | E9429 | Cap: Flat, 65 mm diam. Cinnamon colour (10 Flora of British Fungi), quite dirt-encrusted. Gills: close, clay colour, irregular dege Stem: cylindrical, web like ring 17 mm, fibrous when cut. Stem bent (slightly distorted). | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |

| Genus | Species | Code | Descriptive Notes | Plants | Date |
|--------------------------------|-------------------------------|------------------|---|---|------------|
| <i>Tricholoma</i> | sp. "Faint red base" | BOUGHER 00530 | Characteristic Features: (i) grey minutely felty-scaly cap; (ii) white flesh with only some pink-orange bruising at extreme base of stipe. Pileus: up to 45 mm diam, bluntly conic at first with dry grey, minutely felty-scaly surface, later flat to undulating with darkest grey at centre. Lamellae: adnexed (without a notch), to 5 mm deep, crowded to closely spaced, pale grey then ivory, edge concolorous and entire, lamellules abundant in at least 3 tiers. Stipe: up to 80 x 20 mm (at apex), cylindrical or tapering towards base, solid but longitudinally fibrous/fissuring, surface with dense, appressed, fine silky longitudinal fibrils. No evidence of a partial veil. Surface not bruising, and no rusty discoloration present. Flesh: white except pinkish-orange bruising at extreme base of stipe immediately after being cut. | <i>Eucalyptus gomphocephala</i> | 18/06/2009 |
| <i>Tricholoma</i> | sp. "yellow sock and ring" | BOUGHER 00534 | Characteristic Features: (i) rusty yellow ragged appressed belts below a membranous narrow annulus, smooth and cream above annulus; (ii) dull pinkish beige gills (near 5A3); (iii) cream, unchanging (or slowly slightly dulling) flesh; (iv) absence of any soapy or 'ant' odour, or any rusty spots on gills or elsewhere. | <i>Eucalyptus gomphocephala</i> | 25/06/2009 |
| <i>Tubulicrinis</i> | sp. "white smooth" | E9463 | Fully resupinate, soft (easily rubbed off), thin, white but with a uniformly pale greyish tint; surface continuous (no gaps), smooth; margin with silky appressed hyphae. Microscopic Characteristics: Minute fusoid asymmetric smooth spores 3.7 x 2.6 µ (see photo in Trypan blue & KOH). Hyphal ends clamped and cystidioid (see photo). Some ends adorned with crystals. End elements are thin-walled, to thick up to 2 µ when crystalline. Basidia small, eg. 11 x 4 µ, 4-spored. Crystalline cystidia, not abundant. | <i>Eucalyptus gomphocephala</i> | 28/07/2009 |
| <i>Tubulicrinis</i> | sp. | E9274 | Characteristic Features: (i) Light grey resupinate with smooth surface. Methuen 22B1. (ii) Low bumps. Microscopic Features: Cylindrical metuloid cystidia with capitate apical crystals. | <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> | 11/06/2009 |
| <i>Tubulicrinis</i> | <i>calothrix</i> | E9474 | Fully resupinate, white to pale grey, smooth thin growth covering the wood. Under high power the surface appears covered by abundant glistening stalked capitate cystidia. (see photo). Microscopic Characteristics: Amyloid lycocystidia with thick wall abruptly narrowed at the apex. This species has not been recorded in Australia before (Aust. Catalogue, & Census WA). Microscopic Characteristics: Abundant lycocystidia projecting high above the hymenium: Cystidia cylindrical, thick-walled, hyaline in water, strongly amyloid, encrusted with crystals at the slightly inflated (sometimes only) apex, smooth elsewhere. The crystals appear to be confined to the swollen apical area and do not form a collar (as depicted by Cunningham page 144 for <i>T. cincta</i>). The apex is thin-walled, unlike the remainder of the cystidium. Size eg. 82 x 5 µ, with apex 7.5 µ wide; 65 x 5.7 (6.6); 76 x 5 (9.5). Apex wall often asymmetrical. Walls up to 3 µ thick, lumen less than 0.5 µ. Apex not swollen in most of the cystidia but some are clearly inflated, eg. up to 9.5 µ wide x 16 µ long in an ellipsoid spoon-shaped form. Base of cystidia unswollen, not stalked, thick-walled to the base. Hyphae with conspicuous clamps. Hyphae hyaline, thin and smooth-walled, 1.5 - 3 µ wide. Spores: hyaline, smooth thin-walled, narrow cylindrical asymmetric in side view, slightly concave on adaxial side but not allantoid, 5.3 - 6.5 x 1.3 - 2.2 µ. | <i>Banksia attenuata</i> | 30/07/2009 |
| Undetermined agaric | | BOUGHER 00540 | Characteristic Features: (i) diminutive cap up to only 3mm diam, pale whitish with minute, fine, dense hairs and water droplets adhering, margin entire and incurved, (ii) lamellae adnate arcuate (coming down the stipe briefly), white at first then mature colour pale yellowish-brown, quite thick and well-spaced, with lamellules present. Cap surface not translucent-striate (even when moist), cream but grading to very pale yellow-brown at centre when mature. Minute dots (hairs?) (white), evident as dense covering on mature pileus (iii) stipe central to eccentric, cylindrical, up to 5 x 0.5 mm : whitish semi-translucent, adorned along entire length with short fine densely arranged whitish hairs (similar to those on the pileus) and also with abundant water droplets adhering. | <i>Melaleuca huegiana</i> | 25/06/2009 |
| Undetermined Ascomycete | | E9441 | Entirely white, cushion-shaped, stalkless, covered by white fibrils. Less than 0.5 mm diam. Soft texture (easily broken and removed) Microscopic Characteristics: Spores hyaline, fusoid-bent, multi-guttule, smooth approx 17 - 25 x 3.5 - 4.5 µ (see photo in KOH). Non-septate. Paraphyses: abundant, gnarled, narrow (up to 1.5 µ), hyaline, smooth, unswollen apices, not or barely emerging beyond the asci, septate. Sometimes in dense fascicles (see photo). Asci: 8-spored, size eg. 90 x 12 µ, base unswollen. | <i>Eucalyptus gomphocephala</i> | 21/07/2009 |
| Undetermined black patches | | E9378 | Flat or barely raised black ellipsoid to lens-shaped patches abundant on the wood. Apparently smooth. | <i>Acacia rostellifera</i> | 2/07/2009 |
| Undetermined discs | sp "tiny translucent discs" | E9461 | Same species as collected earlier this season on Zamia fronds. Main Characteristics: Diam < 0.5 mm. Slightly irregular discs, moist, translucent, colourless. Attached at back, maybe short stalk. Undulating, wavy and relatively thick. Note: when I came to examine the Zamia frond in lab the next day, all I saw on the bit retained was a few Dasyscyphus discs (see photo!) Where are the others? | <i>Macrozamia riedlei</i> | 28/07/2009 |
| Undetermined discs | sp. "very minute white discs" | E9414 | Main Characteristics: very minute discs, whitish. No hairs on discs. Microscopic Characteristics: immature mainly, but some elongate, fusoid, smooth spores (see photo). | <i>Eucalyptus marginata</i> | 14/07/2009 |
| Undetermined polypore | sp. "burgundy cushions" | BOUGHER 00536 | Characteristic Features: (i) burgundy colour (near 12F8); (ii) tough fibrous similar colour context, forming a cushion-shaped fruitbody up to 1 cm thick; (iii) angular large pores. | <i>Melaleuca huegiana</i> | 25/06/2009 |
| Undetermined resupinate | | E9404 | Pure white, fully resupinate, densely felty-matted surface, undifferentiated margin. Microscopic Characteristics: spores small broadly ovoid, smooth hyaline 2.5 - 3.5 x 2 - 2.4 µ (see photos in Trypan blue). Hyphae with oxalate-like crystals on them. Basidia 4-5 spored with curved sterigmata. No clamps. No cystidia. (see photos in Trypan blue). | <i>Eucalyptus marginata</i> | 14/07/2009 |
| Undetermined resupinate | | E9279 | Fruit body: covering small area in patch-like form, ei. Irregular shape approximately 1cm thick, tough, when rubbed the colour intensifies. Firmly attached. Hymenium: creamy colour, refer N5 A2, A4 when rubbed (A. Korneup), dry, smooth. Margin: edges display gradually thinning into threads, white. | | 11/06/2009 |
| Undetermined resupinate | | E9406 | Main Characteristics: (i) red exudates abundant; (ii) indeterminate growth form - enveloping all organic components of the litter; (iii) general colour dull red-brown with areas of silky whitish-grey. Microscopic Characteristics: clamps present. Not mature (no spores seen)? | <i>Xanthorrhoea</i> , <i>Eucalyptus marginata</i> | 14/07/2009 |
| Undetermined resupinate | | E9409 | Main Characteristics: (i) dusty whitish, thin-matted indeterminate growths; (ii) substantial yellowish-cream rhizomorphs on the surface and extending into the litter. Microscopic Characteristics: asexual, with large spherical structures. Rhizomorphs of septate non-clamped hyphae. | <i>Eucalyptus marginata</i> | 14/07/2009 |
| <i>Xerula</i> | <i>gigaspora</i> | E9375 | Cap: dark sepia (5F8), rounded slightly serrated edges and discontinued. Gills: white, low decurrent ridges extending well down the stem. Stem: white. The base of the stem is missing in this single specimen. | <i>Eucalyptus gomphocephala</i> , <i>Acacia rostellifera</i> | 2/07/2009 |
| <i>Xylaria</i> (asexual stage) | sp. | E9412 | Base 15 x 5 x 3 mm, oval shape. Branches pure white, vary in length 20 to 35 mm. Branches round at base varying 1 to 3 mm and flatten out at top to 3.5 mm. Branches collapsing as drying out. Microscopic Characteristics: small, simple asexual spores continued (see photo) | <i>Xanthorrhoea preisii</i> | 14/07/2009 |