

AUSTRALIAN DISCOMYCETES ON DEAD LOGS AND BRANCHES

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These five small discomycetes are cup- or disk-shaped and range from 0.5 to 5.0 mm diam. They were collected from twig or wood debris lying on the ground of natural eucalypt forests. All are first records for Victoria.

In *Cerion coccineum* Mass. & Rod., the apothecia are immersed in the substrate and appear as deep orange disks with a blackened margin, and the single paraphyses contain orange pigment. The fungus has previously been recorded in Tasmania by Masee (1901). *Bulgariella pulla* (Fr.) Karst. produces superficial apothecia on black disks with a surrounding ring of dark brown anchoring hyphae. In *Propolis versicolor* (Fr.) Fr. the apothecia are immersed in the form of oval grey-white disks surrounded by a rim of torn host tissue. This species has been collected both in wet forests and on exposed roots among sand dunes. *Strossmayeria basitricha* (Sacc.) Dennis consists of superficial, white to light orange coloured cup-shaped apothecia associated with dematiaceous moulds. *Diplocarpa bloxamii* (Berk.) Seav. produces clusters of apothecia supported by black rhizomorph-like structures, which are not mentioned in the descriptions of the English and North American specimens.

CERION COCCINEUM Masee & Rodway, *Kew Bull.* 1901: 159 (1901). (Fig. 1)

Apothecia scattered or in groups, immersed, becoming erumpent through bark, circular or irregularly shaped; disk flat, to 2.5 mm diam, deep orange when fresh with little colour change on dried apothecia, surrounded by a black, erect, usually uneven but continuous rim; flesh a narrow indistinct layer of hyaline, interwoven hyphae with embedded amorphous masses of crystals in the basal area, becoming parallel in the marginal area where the slightly thicker tips are immersed in an opaque brown pigment; excipulum a layer of agglutinated, pigmented, thick-walled hyphae to 100 μ m thick which completely surrounds the disc and the parallel marginal hyphae. *Asci* almost cylindrical, not capitate, pore not blued by Melzer's reagent, 8-spored, 180-200

$\times 8-10 \mu$ m. *Ascospores* cylindrical or slightly tapering towards the lower end, straight or slightly curved, hyaline, aseptate, filled with small guttules, 100-110 $\times 1.5-2 \mu$ m. *Paraphyses* simple, cylindrical with clavate tips filled with reddish contents that dissolve out in lactophenol, sparsely septate, up to 40 μ m longer than the asci, 2.5 μ m diam, tips to 5 μ m.

On the bark of dead twigs and small branches from late Autumn to early Spring. Widespread throughout Victoria and once not uncommon but apparently now rather rare.

Masee described the ascospores as 'for a long time continuous then multiseptate, finally breaking up at the septa into cells about 8-10 μ m long'. Repeated examinations of collections up to twelve years old and lactophenol mounts of similar age have always revealed continuous spores with no indication of a tendency to break into part-spores.

Collections examined: On twigs, Molesworth-Caveat area, G. Crichton, May 1963; Lerderberg Gorge, R. Filson, July 1963; Royston rd, nr Rubicon, Victoria, G. Beaton, 121, Aug. 1963; Big River, Eildon-Jamieson rd, K. & G. Beaton, Eoo67, May 1974.

BULGARIELLA PULLA (Fr.) Karst., *Acta Soc. Fauna Fl. Fenn.* 2: 142 (1885). (Fig. 2)

Patellaria pulla Fr., *Syst. Mycol.* 2: 160 (1822).
Bulgaria pulla (Fr.) Fr., *Summa Veg. Scand.*, Sect. Post. 358 (1849).

Apothecia superficial, scattered or caespitose, to 3.5 mm diam; disk black, flat or slightly convex; receptacle black, finely scurfy, saucer-shaped on a broad base, with a surrounding narrow ring of black or dark brown anchoring hyphae and with a definite margin surrounding the disk; hypothecium a narrow layer of densely interwoven, lightly pigmented hyphae to 3 μ m thick; medullary excipulum of loosely interwoven hyphae to 12 μ m

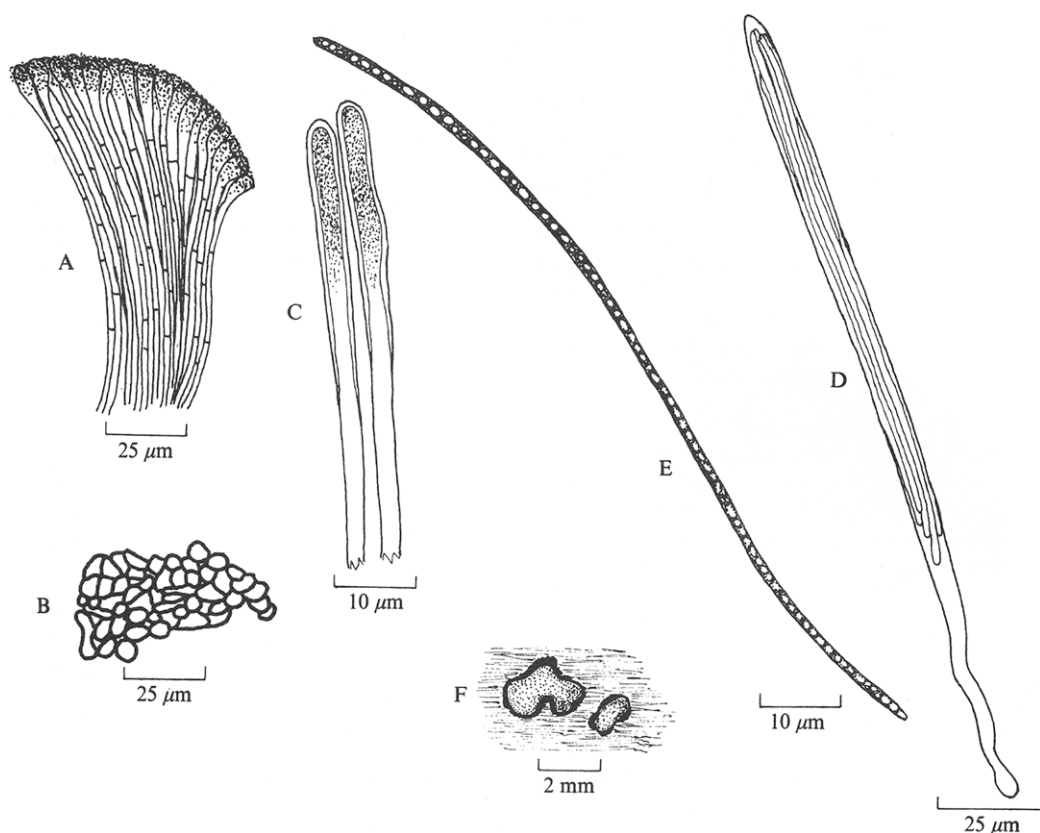


Fig. 1. *Cerion coccineum*. (A) Parallel marginal hyphae with pigmented tips; (B) pigmented thick-walled hyphae of basal area; (C) tips of paraphyses; (D) ascus; (E) ascospore; (F) apothecia.

thick embedded in a brown gelatinous matrix; ectal excipulum in the free basal area a layer, 75 μm thick, of parallel but slightly undulating hyphae with cells to $50 \times 15 \mu\text{m}$. *Asci* cylindrical with rounded tips, 8-spored, negative iodine reaction, $140\text{--}160 \times 9\text{--}10.5 \mu\text{m}$. *Ascospores* oval, dark sooty brown, uniseriate, free spores showing de Bary bubbles when mounted in lactophenol, $10\text{--}15.5 \times 5.5\text{--}9.5 \mu\text{m}$. *Paraphyses* cylindrical with obtuse tips containing coloured oil drops, a few branched from tips, 2 μm thick.

This collection differs from English material in having a broad base surrounded with anchoring hyphae, in the thicker hyphae of the medullary excipulum and in the absence of superficial cells on the receptacle 'with dark brown granular contents, their tips sometimes free' (Dennis, 1956). Because of possible variation in these differences it would be unwise to describe the Victorian fungus as new on the basis of a single collection.

Collection examined: On decorticated trunk of unidentified tree, above Snob's Falls, near Eildon, Victoria, G. Beaton, 377, Oct. 1975.

PROPOLIS VERSICOLOR (Fr.) Fr., *Summa Veg. Scand. Sect. Post.*: 372 (1849). (Fig. 3)

Apothecia scattered, immersed in substrate, when mature surrounded by a torn margin of superficial host tissue; disk elliptical or slightly irregular, flat, to about 5 mm diam, pruinose, grey-white superficially, darker beneath; subhymenium a thin layer of interwoven, hyaline hyphae to 1 μm thick. 'Marginal tissue lining and closely adhering to the upturned margin of host tissue and itself forming a vertical rim to the disk' (Dennis, 1968). *Asci* cylindrical-clavate with rounded tips, 8-spored, negative iodine reaction, walls to 1.5 μm thick, $95\text{--}115 \times 13\text{--}16 \mu\text{m}$.

Ascospores elliptical, oblong-elliptical or allantoid, hyaline, smooth, aseptate, containing several oil drops, biseriate, $18\text{--}22 \times 5\text{--}7 \mu\text{m}$. *Paraphyses*

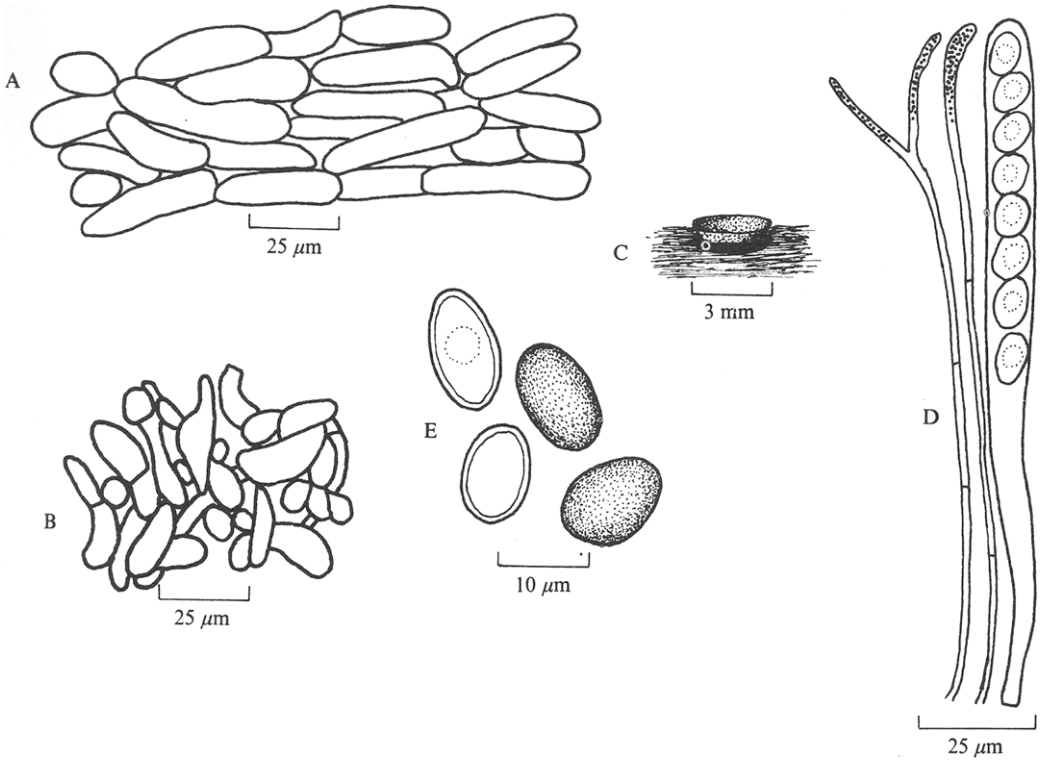


Fig. 2. *Bulgariella pulla*. (A) Ectal excipulum; (B) hyphae of medullary excipulum; (C) apothecium; (D) ascus and paraphyses; (E) ascospores, two in optical section.

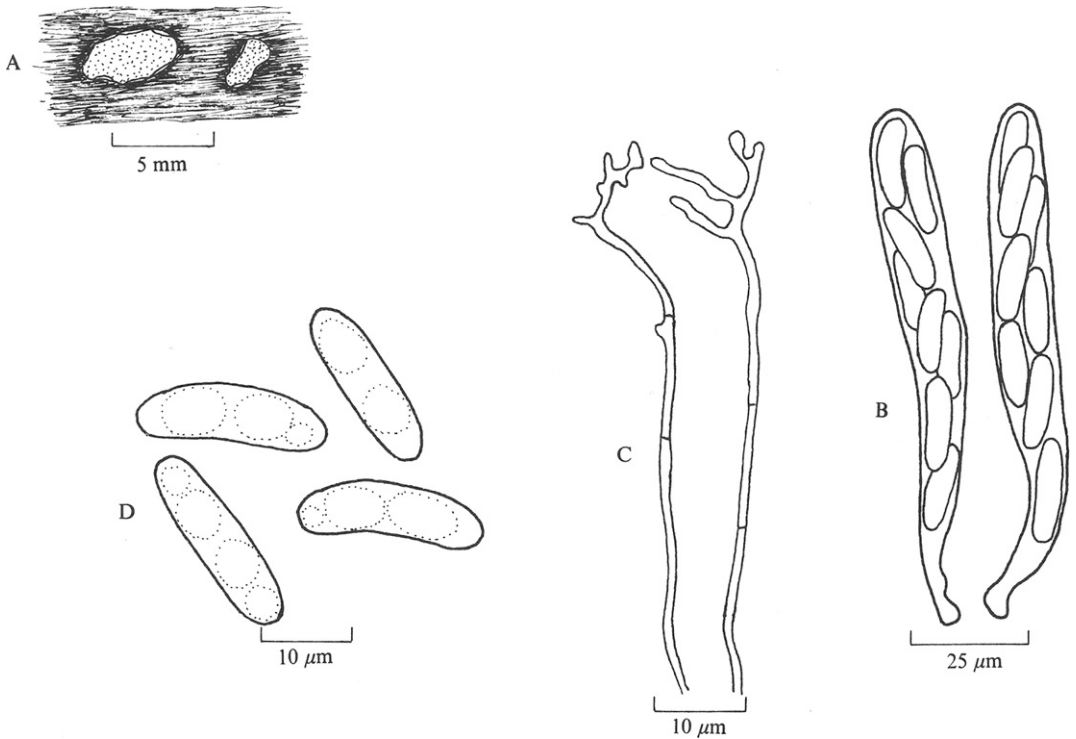


Fig. 3. *Propolis versicolor*. (A) Apothecia; (B) asci; (C) paraphyses; (D) ascospores.

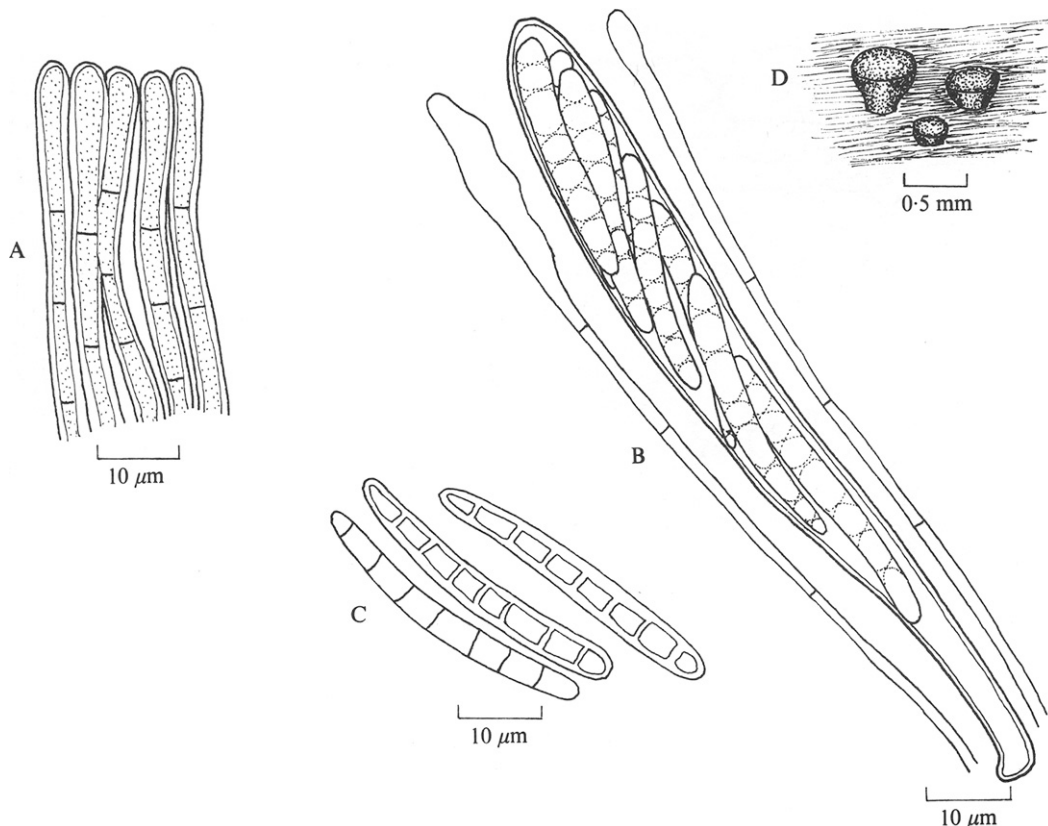


Fig. 4. *Strossmyeria basitricha*. (A) Parallel hyphae of base and margin showing lumen stained with cotton blue; (B) ascus and paraphyses; (C) ascospores, one immature; (D) apothecia.

numerous, cylindrical with much branched, contorted tips, 1 μm thick, tips to about 2 μm, to 25 μm longer than the asci.

On vegetable debris and on dead, exposed roots on road cuttings and sand dunes in the spring. Once was not uncommon but during the past 10 years has apparently become rather rare in Victoria. The Victorian collections differ from European material in the smaller size of the ascospores and asci, but agree well in other respects and can be considered conspecific with European collections.

Collections examined: On *Eucalyptus* twig, Mait's Rest, nr Apollo Bay, Victoria, G. Beaton, Sept. 1962; between dunes and road on exposed roots, West of Anglesea, Victoria, G. Beaton, July 1964.

*STROSSMAYERIA BASITRICH*A (Sacc.) Dennis, *British Cup fungi and their allies*: 73 (1960). (Fig. 4)

Belonium basitrichum (Sacc.) Seaver *North American Cup-Fungi (Inoperculates)*: 170 (1951).

Belonidium basitrichum Sacc., *Atti Soc. Venet.-Trent. Sci. Nat. Padova* 4:135 (1875).

Apothecia superficial, scattered, sessile or substipitate, white when fresh, drying light orange, 0.5 mm diam × 0.5 mm high; receptacle smooth, composed of parallel hyaline hyphae, thin-walled in the basal area becoming thicker-walled and slightly refractive towards the margin, to 4 μm diam. *Asci* clavate, 8-spored, pore not bluing in Melzer's reagent, 90–110 × 10–12 μm. *Ascospores* fusiform, hyaline, 2–3 seriate, mostly 7-septate, when fully mature 30–40 × 4–5.5 μm. *Paraphyses* cylindrical with clavate tips, simple, septate, hyaline, same length as asci, 1.5 μm diam, tips to 5.5 μm.

Known in Victoria from only one scanty collection which does not seem to differ in any significant way from published descriptions of the species. Associated with dematiaceous moulds that could not be determined with certainty.

Collection examined: On decorticated *Eucalyptus* branch, Snob's Creek Fish Hatchery Reserve, near Eildon, K. & G. Beaton, 362, May 1974.

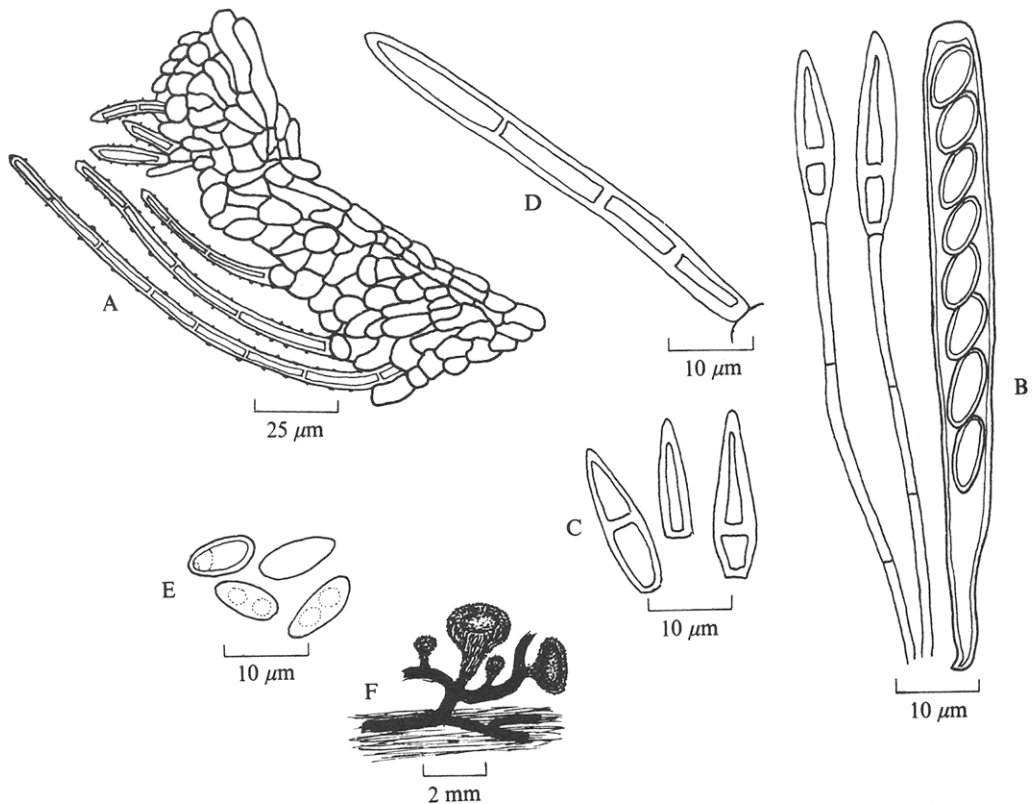


Fig. 5. *Diplocarpha bloxamii*. (A) Cells of excipulum and hairs; (B) ascus and paraphyses; (C) tips of paraphyses (detached); (D) detail of hair; (E) ascospores; (F) apothecia and 'rhizomorphs'.

DIPLOCARPA BLOXAMII (Berk.) Seaver (as '*bloxamii*'), *Mycologia* 29:177 (1937)

Dasyscypha diplocarpa (Currey) Boud., *Hist. & Classif. Discom. d'Europe* 121 (1907).

Peziza diplocarpa Currey, *Trans. Linn. Soc. Lond.* 24:153 (1864).

Lachnella diplocarpa (Currey) Phill., *Brit. Discom.* 232 (1887).

Encoelia bloxamii (Berk.) Phill., *Brit. Discom.* 338 (1887).

Cenangium bloxamii (Berk.) Sacc., *Syll. fung.* 8:568 (1889).

Diplocarpha curreyana Mass., *Brit. Fung.-Flora* 4:307 (1895).

Apothecia in groups supported on black much-branched and contorted, partly superficial, partly erect rhizomorph-like threads composed of lightly pigmented subparallel and interwoven hyphae in a dense brown matrix, with cells to $50 \times 6 \mu\text{m}$ (complete structure not clearly seen); disk to 2 mm diam, dark grey-green, depressed; receptacle at first globose becoming clavate then cup-

shaped at maturity, short-stalked or almost sessile on the 'rhizomorphs', densely covered except at the base of the stalk with a grey-green tomentum, lighter than the disk; excipulum a brown pigmented *textura angularis* with cells to $15 \mu\text{m}$ diam; basal hairs stiff, cylindrical, lightly pigmented, thick-walled, septate, with acute tips smooth or covered with scattered hyaline granules, to $120 \times 5 \mu\text{m}$, marginal hairs of similar structure but much shorter, releasing a green pigment into $2\frac{1}{2}\%$ KOH. *Asci* cylindrical-clavate narrowed to a short stalk, 8-spored, negative iodine reaction, $70\text{--}90 \times 6\text{--}8 \mu\text{m}$. *Ascospores* broadly elliptical, uniseriate, hyaline, $7\text{--}9.5 \times 3\text{--}3.5 \mu\text{m}$. *Paraphyses* cylindrical with tips expanded into a septate, fusiform body, detachable and sometimes breaking apart at the septa, $1.5 \mu\text{m}$ diam, tips to $30 \times 5 \mu\text{m}$.

Victorian specimens of *D. bloxamii* differ in several respects from English and North American collections. Dennis (1968) gives the receptacle as 'dark olive-brown sometimes with a reddish-brown margin' and Seaver (1937) gives it as dark brown. This contrasts with Victorian collections

which remain grey-green when dried. The hairs of the Victorian fungus also differ in being thick-walled and in some having scattered granules on the surface. The habitat of the English and North American species is given as 'on dead wood' (Dennis) and 'on wood' (Seaver). No mention is made of the rhizomorph-like structure supporting the apothecia which has been observed on Victorian collections and thus show some resemblance to *Cordierites* Mont. Dennis, after examination of a Victorian collection (Beaton, 346) (pers. comm.), remarked: 'I take *Diplocarpa bloxamii* (Berk.) Seav. to vary considerably in the distribution of the green and brown pigments and would not object to placing this collection there'. In view of this and in the statement by Korf (1973) in his keys to the Discomycetes and Tuberales that '*Diplocarpa bloxamii* is the only species', it would seem to be necessary to confirm the above differences by the examination of several more Victorian collections before separating the Victorian fungus from *D. bloxamii*.

Collections examined: On bark of dead branch, near Laver's Hill, Victoria, G. Beaton, 52, Dec. 1962; on

bark of dead *Nothofagus* branch, Melba Gully, Otway Range, Victoria, G. Beaton, 346, Dec. 1966.

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