***Periconia byssoides* AEB 1266 (= PDD 111250) – see especially Mason, E.W. & Ellis, M.B. 1953. Mycol. Pap. 56: pp. 60-77 for extensive treatments of the British collections of *P. byssoides* & its close relative *P. cookei.* These species are also treated briefly in Ellis, M.B. 1971. *Dematiaceous Hyphomycetes*. Commonwealth Mycological Institute, Kew. For developmental aspects see Bunning, S.E. & Griffiths, D.A. 1984. Spore development in species of *Periconia* II. *P. byssoides* and *P. igniaria*. *Trans. Br. Mycol. Soc.* 82(3): 397-404.**

Collected: 21 January 2016 on a dead gorse twig

Collection site: Rimutaka Forest Park in a drainage ditch alongside the uphill path from the parking lot to the entrance of tracks leading to the Orongorongo Track

Collected and identified by: Dan Mahoney

Voucher materials: Dried herbarium specimen (AEB 1266) and one SMF microscope slide; in situ photos of dried conidiophores/conidia under the Zeiss dissecting scope and digital photos of microscopic detail in slide mts; Dan's brief description & comments.

Dan's brief description and comments: The conidial specimen agreed with the description provided by Mason & Ellis in their 1953 Mycological Paper #56. There were basically 2 closely related species to choose from [globose verruculose conidia (10–15 µm) produced acropetally in short chains and maturing basipetally from an apical swelling on the longish simple brown conidiophores] – *P. byssoides* and *P. cookei*. They are distinguished by the presence of a septum at the base of the apical (sporogenous) conidiophore swelling (*P. byssoides*) or its absence (*P. cookei*). Other features – sporogeny, conidium size & ornamentation, etc. – are extremely close. This feature, however, is difficult to see in an older dried collection such as this one. Conidial heads cling together in liquid mounts and I had to carefully apply enough pressure to the coverslip to knock off enough conidia from the apical swelling to see the septum there. Even then the septum was slightly above the point at which the conidiophore apex began to widen. Conidiophore lengths varied considerably but most were in the lower portion of the ranges for either species.

Mason, E.W. & Ellis, M.B. 1953. Mycol. Pap. 56

On the other hand, the name *Sporocybe* Fr. cannot be used for any genus so circumscribed as to exclude the species *Periconia byssoides*; and so cannot be used at all by us in this paper. The names current in Herb. I.M.I. for the British species accepted as *Sporocybe* in The List of Hyphomycetes recorded for Britain have, accordingly, been given on pp. 39–41 *supra*.

KEY TO THE BRITISH SPECIES OF *PERICONIA*

(based upon the macronematous conidiophores)

Conidia formed in a well-defined head at the apex of the stipe . . 1
Conidia formed along the side of the stipe or, if at the apex, not in a well-defined head 2

1. Macronematous conidiophores without concolorous branches
   - Stipe with a short apical cell cut off by a septum; sporogenous cells formed over the apex and in a ring below the septum . . *byssoides* (1)
   - Stipe without a short apical cell; sporogenous cells formed over its swollen apex . . . . . *cookei* (2)

   Macronematous conidiophores with concolorous branches at the apex
   - Conidia more than 10 μ in diameter
     - Branches very short, conidia echinulate
       - Conidiophore circinate at the apex, spines narrow . *circinata* (3)
       - Conidiophore not circinate, spines broad, 2–7 μ long *macrospinosa* (4)
     - Branches longer, conidia verrucose, with flat warts . *typhicola* (5)
   - Conidia less than 10 μ in diameter
     - Branches short, close together, usually in verticils of 4–7 . . *atra* (6)
     - Branches long, often widely spaced, irregular
       - Distal branches smooth
         - Conidia verruculose, 4–7 μ diam. . . . *minutissima* (7)
         - Conidia shortly echinulate, 7–10 μ diam. . . *paludosa* (8)
       - Distal subhyaline branches with rough projections
         - Stipe short, usually under 200 μ, conidia shortly echinulate *curta* (9)
         - Stipe longer, usually over 300 μ, conidia echinulate, spines 1 μ long . . . . . *igniaria* (10)

2. Colonies widely effused
   - On wood and bark, conidia smooth . . . *cambrensis* (11)
   - On monocotyledons, conidia verruculose . . *glyceriicola* (12)

   Colonies small, compact, never more than 3–4 mm. long
   - Superficial mycelium scanty or none, conidia borne about the middle of the stipe . . . . . *hispidula* (13)
   - Superficial mycelium abundant, conidia often borne at the end of the stipe and of its branches
     - Stipe spirally twisted . . . . . *funerea* (14)
     - Stipe straight or slightly flexuous . . . *laminella* (15)

AIDS TO IDENTIFICATION OF SPECIES IN CULTURE

(Culture media used were maize meal, oat meal, and potato-dextrose agars)

Colonies rose-madder or wine coloured in reverse, conidia 8–10 μ in diameter, echinulate, with spines 1 μ long . . . . . *igniaria*
Colonies bright yellow in reverse

Britain and the Channel Islands, dead herbaceous stems, i.e. the type substratum, have proved by far the greatest source of our collections, and of these those from nettle clumps the most prolific. On standing stems this fungus usually grows on the dry upper parts of the plant, where the surrounding air is sufficiently moist. In marshes proper it is rare, and its place is taken by other species of *Periconia*, but in marsh surrounds it is quite common. It is found occasionally on woody plants; colonies have been found on dead twigs of *Salix* and on prematurely killed buds of *Aesculus hippocastanum*, in both cases attached to the tree and more than six feet from the ground. It also grows on leaf spots caused by other fungi. Our species does not contain any isolations from the soil. Specimens and cultures have been received from West Africa, the Anglo-Egyptian Sudan, Malaya, Australia, New Zealand, U.S.A., and the West Indies, as well as from Europe; increasing numbers of collections are being received from the tropics. Two isolations from the air have been sent in, one from a banana plantation in Australia and the other from New Zealand. One hundred and fifty-one collections have been examined on 74 different host species.

The colonies are black, hairy, 1–3 cm. by 0·5–1 cm., the individual conidiophores looking like round-headed pins when examined in side view through a lens (Fig. 9 I). The substratum is often blackened. The mycelium (Fig. 9 K), which is embedded in the substratum, is composed of hyaline to pale brown, smooth walled, branched, septate hyphae 1–6 μ in diameter, with cells 8–20 μ long. The stromata (Fig. 9 K) are partly embedded in the stems; they are flattened and often the shape of an inverted saucer, dark brown, 60–80 μ in diameter, 20–30 μ high, and made up of cells 4–13 μ wide with cell walls 1–3·5 μ thick. The macronematous conidiophores (Fig. 9 J) arise from the stromata either singly or in small groups. The stipe is straight or flexuous, 2–10 septate, black and shining by reflected light, pale brown above the middle and dark brown below by transmitted light, 200–1400 μ or, occasionally, up to 2 mm. long, 12–23 μ in diameter at the base and 9–18 μ immediately below the head. There is a short, subhyaline, sometimes swollen, apical cell, 12–26 μ long and 11–28 μ wide, cut off by a septum, and the part of the stipe below the septum usually swells slightly to form a collar 11–28 μ wide (Fig. 9 A–H). The other stipe cells average 100–240 μ in length. There is no true branching although the sporogenous cells in the collar region are often slightly elongated (Fig. 9 F–H) and one or two branches may arise behind the apex when a head sustains injury. The stipe frequently grows on through the old head and forms a new head at a higher level. The heads of conidia (Fig. 9 J) are globose to ovoid, burnt sienna to dark brown by reflected light, brown by transmitted light, 44–120 μ in diameter. With age the heads usually drop off; when they remain on the conidiophores they are frequently attacked by hyperparasites. Over nearly the whole surface of the apical cell of the conidiophore primary sporogenous cells are formed (Fig. 9 A, B); these bear either single conidia or short chains of conidia (Fig. 9 C, D, H). Primary sporogenous cells are also formed in the collar region and here they either swell and remain globose (Fig. 9 C, D) or become elongated and often irregular in shape (Fig. 9 F, G). From each primary sporogenous cell in the collar region arise numerous secondary sporogenous cells (Fig. 9 C, D, H) and each of these, in its turn, bears a short chain of 2–4 conidia (Fig. 10 F). The conidia (Fig. 9 L) are spherical, brown, verrucose at first and later unevenly thickened, 10–17 μ in diameter,

Mason, E.W. & Ellis, M.B. 1953. Mycol. Pap. 56

with the wall up to 2 μ thick. The sporogenous cells are hyaline and smooth walled at first, later they often become brown and rough walled; those borne over the surface of the apical cell are usually rather small, 7–8 μ in diameter,

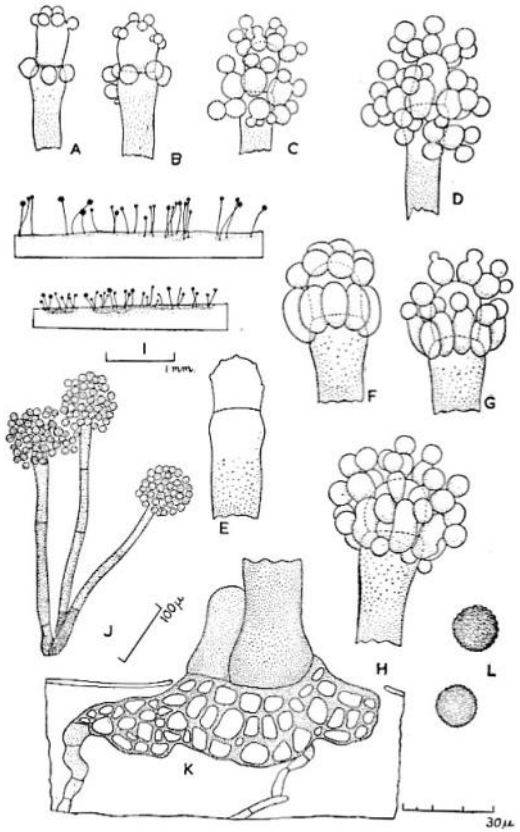
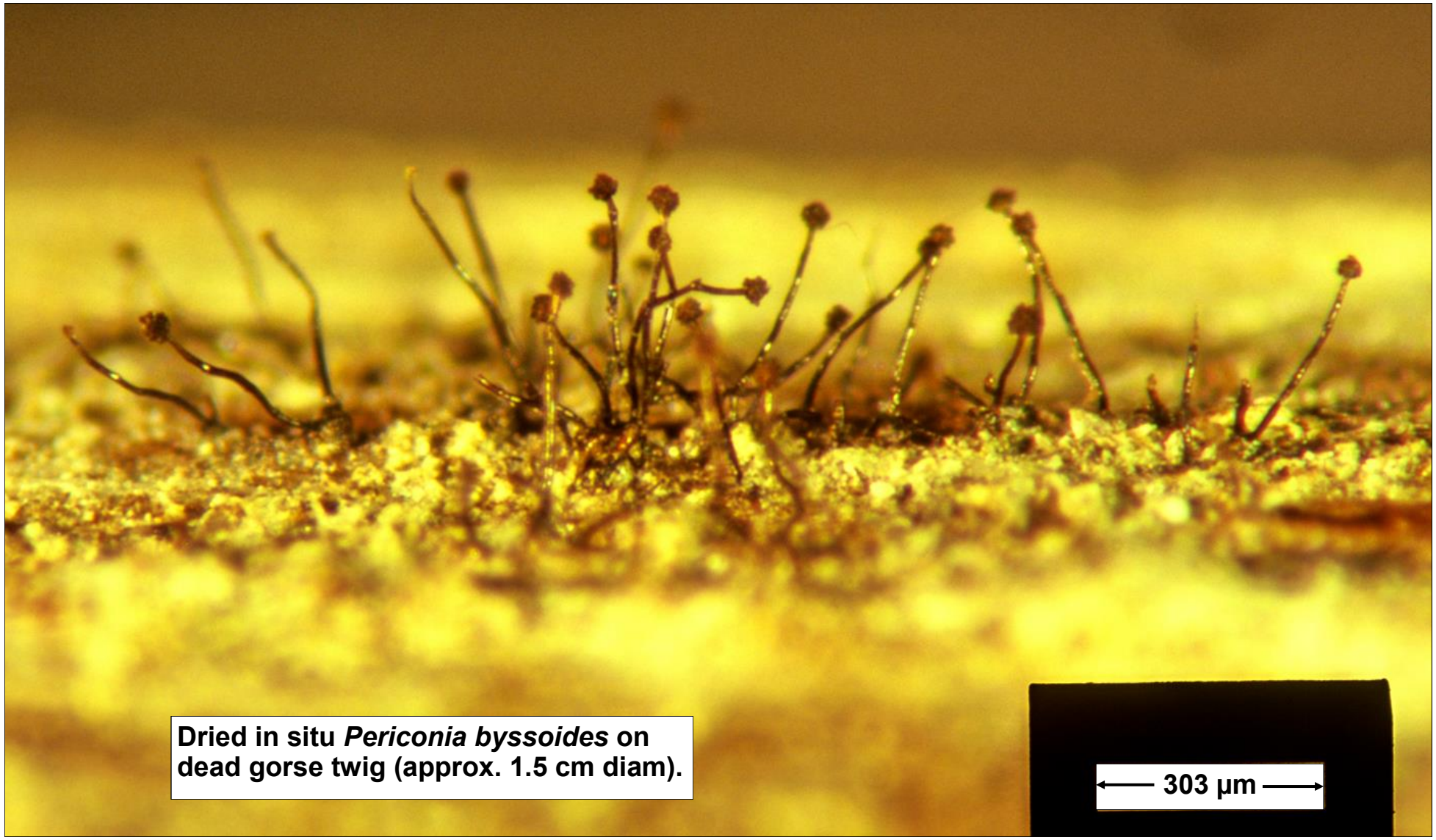


FIG. 9. *Periconia byssoides*. **A–H,** development of conidia on macronematous conidiophores; **I,** macronematous conidiophores as seen through a hand lens; **J,** macronematous conidiophores; **K,** vertical section through a stroma, with mycelium and the bases of two macronematous conidiophores; **L,** free conidia (16170); ×500, except where otherwise indicated by the scales.

those in the collar region are 10–16 μ by 6–10 μ. Sporogenous cells can usually be seen still attached to old heads when all the conidia have been dispersed. Table 1 shows the variation in size in ten collections on different substrata.


Dried in situ *Periconia byssoides* on dead gorse twig (approx. 1.5 cm diam).
303 µm

Periconia byssoides. **Both photos SMF mounts, X40 objective, bright-field microscopy. Left: intact conidial head at the conidiophore apex. Right: conidial head broken apart showing the globose verruculose conidia (the largest conidium shown is 15 µm.)**