

FURTHER HYGROPHORACEAE OF VICTORIA

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Abstract

Further information on the macrocharacters of *Hygrocybe conica* var. *conicoides* is provided together with an extension of its known geographical range. The European taxon *Hygrocybe persistens* var. *persistens* is recorded for the first time for Australia from a Victorian coastal community.

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Introduction

Several recent collections of Hygrophoraceae have added to the number of known Victorian taxa and increased the extent of previously known distributions. Both species noted here are from coastal communities based on sand. Material was examined in accordance with Young (1999). If no collection number is designated by the collector, this is so shown by the abbreviation 's.n.'. Where holotypes for established European taxa do not exist the species concepts of Boertmann (1995) are used. Material not seen by the author is indicated by 'n.v.'. Victorian material considered in this paper is deposited with the National Herbarium of Victoria (MEL).

Taxonomy

Hygrocybe conica* var. *conicoides (P.D. Orton) Boertman, *Fungi of Northern Europe* 1: 162 (1995)
Hygrophorus conicoides P.D. Orton, *Trans. Brit. Mycol. Soc.* 43: 262 (1960); *Hygrocybe conicoides* (P.D. Orton) P.D. Orton & Watling, *Notes Roy. Bot. Garden Edinburgh* 29: 131 (1969). Type: England. Somerset. Bossington, 31.x.1957, P.D. Orton (holotype K, n.v.).

Illustration: Boertmann (1995), p. 163; Young (2000), p. 15.

Pileus 20–30 mm diam., orange but rapidly blackening with maturity or bruising and often completely black when fully expanded, conical expanding to broad-conical or near applanate, smooth, margins often lobed or ragged. *Lamellae* ascending, orange, blackening when bruised. *Stipe* 40–70 × 5–7 mm, pallid orange and blackening above ground with maturity or when bruised, cylindrical, hollow, splitting longitudinally, often twisted.

Basidiospores 10.5–14.5 × 5.5–7.5 µm, mean 12.2 × 6.0 µm, Q: 1.7–2.3, mean Q: 2.03, very long-ellipsoidal to cylindrical, hyaline, smooth, often showing constrictions or indented on one side. Remainder of characters in accordance with *Hygrocybe conica* var. *conica* (Schaeff. : Fr.) P. Kumm.

Habitat: gregarious amongst exotic grasses in sandy soil.

Material examined: Victoria. Pt Lonsdale, 9.vii.2000, K. Ralston (Ralston 2069) (MEL 2082595).

Remarks: *Hygrocybe conica* var. *conicoides* has very long-ellipsoidal to cylindrical basidiospores with an average Q >2.0. These basidiospores readily distinguish it from *H. conica* var. *conica* which has ellipsoidal basidiospores measuring 9–11 × 6–7.5 µm with a mean Q <2.0. This collection has provided the first good information about the macrocharacters for the taxon as it occurs in Australia and it confirms the occurrence in coastal sands as noted in Young (2000). A second collection made by Kathleen Ralston (Ralston 2070, MEL 2082596) from the Pt Lonsdale area salt marshes (outer edges) was also thought to be var. *conicoides* but examination of its basidiospores has shown that it is intermediate between var. *conica* and var. *conicoides*. The basidiospores have the correct range of values for var. *conicoides* as they measure 11.5–14.0 × 5.5–7.5 µm, mean 12.3 × 7.0 µm; however, their Q values (1.4–2.0, mean Q: 1.75) are less than 2.0 and the basidiospores are ellipsoidal rather than very long-cylindrical. Such intermediates are also known in European collections

(Boertmann 1995) and it suggests that the two accepted variants of *Hygrocybe conica* might actually be extremes of a single large range.

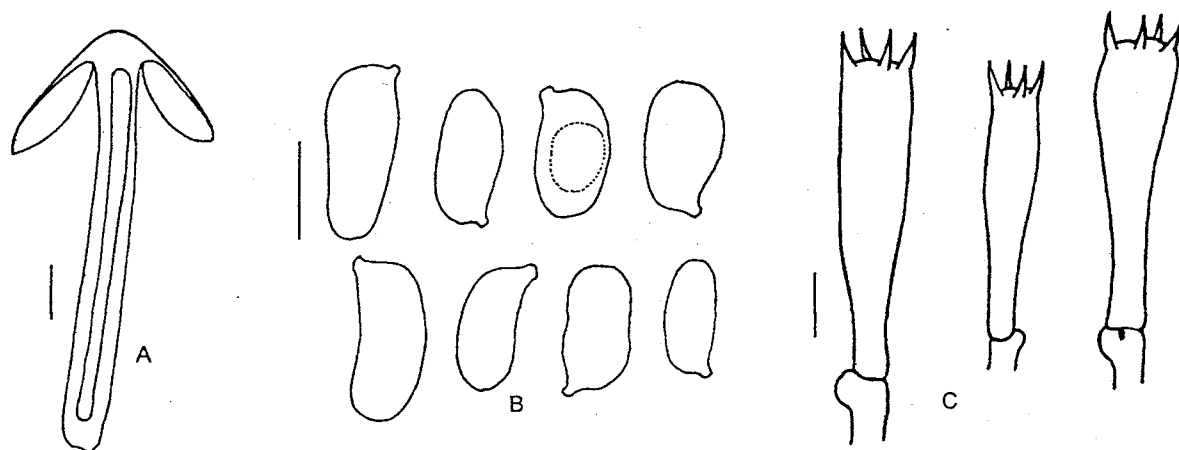


Figure 1. *Hygrocybe persistens* var. *persistens*. A. Longitudinal diagram, B. basidiospores, C. basidia. Habit sketch bar = 10 mm; basidiospores and basidia bars = 10 μ m.

Hygrocybe persistens (Britzelm.) Singer, *Rev. Mycol. (Paris)* 5: 8 (1940)

Hygrophorus conicus var. *persistens* Britzelm. in *Ber. Naturwiss. Vereins Schwaben Augsburg* 30: 200 (1890).
Type: none designated.

Illustration: Boertmann (1995), p. 155, top photograph from English sand dunes; Fuhrer (1985), p. 47 as *Hygrocybe* sp.

Pileus 30–65 mm diam., yellow-orange to dark orange with age, conical becoming expanded-conical, smooth, slightly viscid or sticky, margin even or a little lobed. *Lamellae* ascending-adnexed, orange, margins even and concolorous or a little paler. *Stipe* 40–90 \times 8–12 mm, white below the sand but yellow to bright yellow above the sand, cylindrical, smooth, dry. Fig. 1.

Basidiospores 11.5–16.5 \times 5.5–8 μ m, mean 13.8 \times 6.4 μ m, Q: 1.8–2.6, mean Q: 2.16, long-ellipsoidal to cylindrical often with a constriction or one side depressed, smooth, hyaline, occasionally with large, transparent inclusions. *Basidia* 43–62 \times 9–14.5 μ m, mean 51.1 \times 10.7 μ m, Q: 4.2–5.4, mean Q: 4.77, 4-spored, clamped. *Cystidia* absent. *Hymenophoral trama* regular and consisting of tubular, aseptate, hyaline, thin-walled elements 2000–3000 \times 8–14.5 μ m, tapered at their ends and sometimes protruding into the lamellae margins to form pseudo-cheilocystidia. *Pileipellis* an ixocutis of repent, thin-walled, hyaline, septate hyphae 3–18 μ m diameter, clamps present, surface hyphae usually with tapered ends and some internal pigmentation at the apex. *Stipitipellis* a cutis of repent, thin-walled, hyaline, septate hyphae 2–8 μ m diam., clamps present.

Habitat: gregarious amongst calcareous, moving sand.

Material examined: Victoria. Pt Lonsdale, vii.2000, K. Ralston (Ralston 2075) (MEL 2082597).

Remarks: *Hygrocybe persistens* var. *persistens* is very widespread in Europe, and Boertmann (1995) reports that in Denmark it is found in small groups in grasslands on calcareous soils, fixed dunes, lawns, etc. The Australian material is more closely related to the English subvariety which is found on sand dunes and which has bright orange lamellae rather than the light yellow lamellae of the European material. Macroscopically, the English subvariety is indistinguishable from the Australian material. The basidiospores of the English subvariety measure (11–) 12–14.5 (–15.5) \times (5–) 5.5–6.5 μ m, Q: 2.0–2.7, mean Q: 2.3, which compares very well with the Australian material. *Hygrocybe persistens* var. *persistens* is easily distinguished from *Hygrocybe persistens* var. *konradii* as the latter has very broadly ellipsoidal to globose basidiospores measuring (9.5–) 10–13 (–14) \times 7–9.5 (–10.5) μ m (Young 2000).

With the confirmation of *Hygrocybe persistens* var. *konradii* (R. Haller Aar) Boertm. from Sydney where it appears in 'buffalo grass' lawns (Young 2000), it seems that the European *Hygrocybe persistens* with its complex of varieties has been introduced to Australia and is now well established in selected communities which agree almost perfectly with the known European habitats.

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