

NOTES ON BRITISH AGARICS: VII

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ABSTRACT. The correct interpretation of classical epithets used in the genus *Dermoloma* is discussed at length, especially *Agaricus cuneifolius* [Fr. ex] Fr., together with comments on other European species, followed by a key to W European species, a revised check list of British species and descriptions of four species of this genus, two of them being new. Two new species of *Cortinarius* subgenus *Telamonia* are described and discussed, as well as one new species of *Armillaria* and one of *Hygrocybe*.

These notes describe and discuss a number of new or critical agarics, material of which is deposited in the herbarium of the Royal Botanic Garden, Edinburgh. The species are arranged in alphabetical order of genera as in the New Check List of British Agarics and Boleti (*Trans. Br. mycol. Soc.* 43 suppl.:1-225, 1960) except that *Hygrocybe* is used in place of *Hyrophorus* as indicated in Orton & Watling (*Notes R.B.G. Edinb.* 29:129-138, 1969). Colours are as in the *Colour Identification Chart to the Flora of British Fungi*, HMSO, Edinburgh (1969). It is hoped to include some drawings relevant to this account in the next part of the paper.

ARMILLARIA

It has been realised in recent years that other taxa have been included in *Armillaria mellea* (Vahl. ex Fr.) Kummer and a number of these have been recognised and named, differing *inter alia* in colours, veil characters, smell and colour of spore print. The epithet *mellea* should be used for a taxon with distinct yellow veil to agree with the Friesian diagnosis, and such a taxon is readily recognisable in the field. It is not my intention to comment on the other species at the moment since I do not have sufficient personal notes to do so, but I have come across one taxon which seems clearly distinct and as yet undescribed.

Whilst collecting in Norfolk with E. A. Ellis in 1976 I came across a clump of fruit-bodies obviously belonging to *Armillaria*, which, however, looked clearly different from any taxon in this genus that we knew. Investigations showed that besides differences in macroscopic characters there was also a clear microscopic one, for the spores were distinctly shorter than those of other taxa so far investigated. Since it seemed readily distinguishable and does not appear to be in the European literature, I am describing this taxon as new, although I have made only the one collection of it. Watling (pers. comm.) however, tells me he has noted it and that it has also been collected in Warwickshire—he recognised my painting of it at first sight. It was found by the side of a path in the remnants of an oak/birch wood on boulder-clay soil and was most likely attached to buried oak or birch wood, but further field work is necessary to be more precise about its habitat. I use the generic name *Armillaria* for it since Donk (The Generic

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Names proposed for Agaricaceae, *Beih. Nova Hedwigia* 5:31, 1962) has shown conclusively that this name cannot be typified by *Agaricus luteonitens* [A. & S. ex] Fr. and that *Agaricus melleus* [Vahl. ex] Fr. is the correct choice of type species for *Armillaria*. To my mind there is no point in using *Armillariella* (Karst.) Karst. for this taxon, since *Armillaria* is not wrongly typified by *Agaricus melleus*.

***Armillaria nigrifulva* P. D. Orton, sp. nov.**

Ab *A. mellea* a coloribus pilei, odore forte et sporis minoribus differt.

Pileus 30–68 mm, ad discum avellaneus vel fuscus ad marginem luteolobrunneus vel cremeus, interdum circa discum jove pluvio fulvus vel cinnamomeus et praecipue siccitate olivaceotinctus, ad discum squamulis fuscobrunneis sed ad marginem squamulis pallidioribus obtectus. *Lamellae* albae vel albae senectute cremeo vel luteolobrunneo tinctae. *Stipes* 70–110 × 4–8 mm, infra cinnamomeus vel lateritius, ad apicem pallidior et albo-flocculosus; annulus apicalis pendulus albus dein cremeo vel argillaceo-incarnato tinctus, ad aciem laceratus. *Odor* aliquantum fortis a Ribide similis. *Sporae* subglobosae vel late ellipsoideae, 5–7.5 × 4–5.5 µm, in cumulo pallide cremeae (B–C). *Cystidia* versiformia, vulgo clavata ad apicem interdum leviter capitata vel mucronata, etiam fusiformia vel flexuoso-cylindracea, 20–40 × 4–6 µm.

Typus. Ad terram caespitosus, probabiliter ad lignum vetustum humatum adjunctus. Norfolk, Brooke Wood, 10 x 1976, Orton 4833 (holo. E).

Cap 30–68 mm, convex then expanded-convex or ± plane, *hazel or sepia in centre, buff or pale buff around this, sometimes cream (D) in outer part, sometimes fulvous or cinnamon around centre when wet, with olivaceous-buff or grey-olivaceous tinge around centre when dry, margin striate and whitish then pale buff, with numerous sepia or cigar-brown scales, denser at centre and more scattered and sometimes paler (fulvous or with pale luteous tinge) in outer part. Gills ± decurrent with tooth running down the stem, white or whitish, sometimes discolouring cream or pale buff when old, crowded and narrow, L 30–54 l 1–3, edge concolorous but sometimes becoming buff or clay-buff especially near cap margin or stem. Stem* 70–110 × 4–8 mm, ± equal, sometimes slightly compressed, *white or whitish at apex, ± cinnamon or brick in lower part, sometimes tinged fulvous below ring, apex very white floccose-punctate between the lines of the gills, hollow or pithy, base slightly woody and creamy buff tomentose; ring apical, pendulous, white then tinged cream or clay-pinkish especially near stem, fairly wide (4–8 mm), edge lacerate and eventually collapsing. Flesh white in cap and stem-centre, clay-pinkish or pale dull cinnamon in stem cortex. Smell rather strong, of cats or flowering currant. Spore print pale cream (B–C).*

Spores subglobose or broadly ellipsoid, 5–7 (–7.5) × 4–5.5 µm. Basidia 4-spored. Cystidia cylindric, fusiform or clavate, sometimes slightly capitata or mucronate, 20–40 × 4–6 µm. Scales on cap of cylindric often slightly pointed cells 60–200 × 6–20 µm, pigment vacuolar or encrusted or sometimes forming dark brown strips 3–4 µm broad.

On the ground, probably attached to buried wood; caespitose. Norfolk, Brooke Wood, 10 x 1976, Orton 4833 (holo. E); Warks., Chesterton Wood, 3 x 1976, M. Rotheroe MRG 5176.

A. nigrifolia differs from other species of *Armillaria* primarily by shorter spores, but also by relatively slender habit, cap without marked red colours but with dark scales at least in part, and smell of cats. Its spore print is pale cream, like most of our taxa, and cystidia are present. It is probably uncommon but widespread.

CORTINARIUS

I have for a long time been aware of a problem in connection with some taxa of subgenus *Telamonia* of *Cortinarius* growing in alder humus and producing very small fruit-bodies with blue-violaceous tints in some parts. I have been puzzled by the fact that there appeared to be two clearly different spore sizes involved. The first taxon that came to my notice in this connection was *C. pulchellus* J. Lange, clearly defined and depicted by him in *Flora Agaricina Danica* III, 47, Pl. 101B (1938) with spores $8-9 \times 4.5-5 \mu\text{m}$ and relatively dark colours. This I first found in Surrey and subsequently in Devon, Kincardineshire and Inverness-shire. The spores were $(6.5-7.9) \times 4-5 \mu\text{m}$ and ellipsoid or ellipsoid-ovoid. However, I made other collections in alder humus with similarly shaped but broader and rather longer spores $8-10(-11) \times 5-6(-6.5) \mu\text{m}$. Some years of experience with agarics of this subgenus make me regard a clear difference in spore width such as this as a likely indication of two distinct taxa. Further collections of the larger-spored taxon enabled me to find other differences between this and the smaller-spored taxon, more especially in cap and stem colours, and I now feel justified in describing the larger-spored taxon as new since I know of no description that fits.

Kühner & Romagnesi include *C. pulchellus* in their *Flore Analytique* (1953) but give spore size $8-11 \times 4.5-6 \mu\text{m}$, and say that cap and stem become 'blond-rougeâtre' which suggests my new taxon to me rather than *C. pulchellus*. Moser in Gams *Kleine Kryptogamenflora* IIb (1967 & 1978) uses the name *C. bibulus* Quélet for a taxon with the larger spore size ($9-10 \times 5-6 \mu\text{m}$) but quotes *C. pulchellus* (and *C. americanus* Smith) as synonyms and L 101B as an illustration for his taxon. He also says the veil is white and sometimes forms zones on the stem, and that all parts are dark violet at first. This certainly does not agree with my new taxon, neither do I think that *C. pulchellus* can be given as a synonym since it has smaller spores and less prominent veil. In his original description (*Ass. Franc. Av. Sci.* 9:666, Pl. VIII¹; 1881) Quélet describes and depicts *C. bibulus* as more robust (cap 15 mm, whereas normal size for my taxon is 3-12 mm) and with the veil forming well-marked white rings on the stem. This latter feature is not true for either of my taxa in which the veil is rather slight and soon fugacious. He gives the spores as 'pruniformes $10 \mu\text{m}$ ' and says the cap is 'gris violacé, puis bistre', the gills 'violet noirâtres, puis brunes', and the stem 'cendré-lilacin'. He also says that it grows 'en fascicules', which is not true for either of my taxa, both of which appear commonly as single specimens, or in very small groups of separate specimens. Although the colours are approximately correct for my small-spored taxon, I cannot accept this name for either of them. *C. americanus* A. H. Smith (*Ann. Mycol.* 32:471, Pl. 6², 1934) may perhaps be the same as *C. bibulus* or a different species, but is too robust for either of my taxa.

The small size of the fruit-bodies of these taxa (mostly 3–12 mm) make their study rather difficult, and as they are not usually collected at any one time in large numbers, it takes time to appreciate their differences. My two taxa can be distinguished as follows:

- 1a. Spores $(6.5-7.9 \times 4.5-5 \mu\text{m})$; colours darker; cap lilac-violet or dark vinaceous-grey soon purplish-chestnut or brown-vinaceous then date-brown or umber but drying milky-coffee or clay-buff; stem $\pm$ persistently brown-vinaceous or umber at least in upper part; (cap 4–14 mm; stem 0.5–1.5 (–2) mm broad; white or whitish veil soon fugacious) *pulchellus*
- 1b. Spores $8-10(-11) \times 5-6(-6.5) \mu\text{m}$; colours paler; cap leaden-grey or pale lilac fading to fawn, clay-pink or clay-lilac and drying clay-pinkish or vinaceous-buff; gills lilac-vinaceous-grey or livid-vinaceous-grey then fawn, milky-coffee or drab; stem lilac-vinaceous-grey or clay-lilac then clay-pink or vinaceous-buff *lilacinopusillus*

Cortinarius (Telamonia) lilacinopusillus P. D. Orton, sp. nov.

Species pusilla alnetorum coloribus partim lilaceis vel violaceis; a *C. pulchello* a sporis majoribus et coloribus pallidioribus differt.

Pileus 3–12 mm, argillaceo-violaceus vel pallide lilacinus dein argillaceo-incarnatus vel pallide vinaceus, primo omnino adpresse griseo vel argillaceo-luteolobrunneo sericeo-fibrillosus. *Lamellae* lilacinae vel vinaceae mox griseo-incarnatae dein coffeatae vel griseobrunneae, distantes. *Stipes* 13–28 $\times$ 0.2–1.2 mm, a pileo $\pm$ concoloratus, argenteo sericeo-striatus, a velo albo vel albido fugace maculatus. *Sporae* 8–10(–11) $\times$ 5–6(–6.5) μm , ellipsoideae vel ovoideo- vel elongato-ellipsoideae.

Typus. Inter folia putrida alni. Perthshire, Dall, Rannoch, 7 x 1975, Orton 4781 (holo. E).

Cap 3–12 mm, conical or conico-convex then expanded often papillate or $\pm$ acutely umbonate but sometimes $\pm$ plane, *leaden-grey or pale purplish-date to pale lilac or $\pm$ livid-vinaceous* then sometimes brown-vinaceous or purplish-date but *soon fading to fawn, clay-pink or pale vinaceous*, drying clay-pinkish or vinaceous-buff, often darkest at centre, not striate, *at first entirely greyish or pale vinaceous-buff silky fibrillose, fibrils in outer part often $\pm$ radially arranged and rather long*, margin with denser whitish silky zone when fresh. *Gills* adnate, sometimes with slight tooth, *lilac-vinaceous-grey, livid-vinaceous or pale vinaceous-grey then pale or deep fawn, milky-coffee or drab*, finally purplish-date or date-brown, *distant*, L 10–16 l 0–1, edge sometimes slightly paler or retaining lilac-vinaceous-grey tinge for some time, uneven or $\pm$ even. *Stem* 13–28 $\times$ 0.2–1.2 mm, equal or slightly thickened downwards, *lilac-vinaceous-grey or clay-lilac fading or drying to clay-pink, pale vinaceous or vinaceous-buff to pale milky-coffee*, sometimes retaining clearer lilac tinge at apex, finely silvery or whitish silky-striate with soon fugacious white or whitish veil traces near apex at first, base sometimes very finely tomentose or with greyish fibrils as on cap, stuffed-solid. *Flesh* very thin except at cap centre, concolorous drying very pale lilac or clay-pinkish. *Smell* none.

Spores 8-10(-11) $\times$ 5-6(-6.5) μm , ellipsoid or ellipsoid-ovoid, longer ones sometimes cylindric-ellipsoid, faintly punctate-rough sometimes appearing smooth. *Basidia* 4-spored, 30-35 $\times$ 8-10 μm . *Gill-edge* fertile. *Hyphae on cap* loosely interwoven 5-20 μm broad with hyaline or pigmented walls, often with some cells vesiculose or sausage-shaped and end-cells $\pm$ clavate or dumb-bell shaped, over broader ones up to 36 μm broad.

Amongst damp alder leaves. Devon, Hawkswood, Northleigh, 28 viii 1976, *Orton* (no material kept); Surrey, Elstead, 9 x 1954, *Orton* (no material kept); Inverness-shire, Tomich, 31 viii 1971, *Orton* 4296; Perthshire, Dall, Rannoch, 11 ix 1974, *Orton* 4700, 7 x 1975, *Orton* 4781 (holo. E).

Readily recognised by lilac or livid-vinaceous fresh colours of very small fruit-bodies and spore size. The lilac colours soon fade when the fruit-bodies are gathered unless they are kept damp. *C. pulchellus*, which I have collected in Surrey, Devon, Kincardineshire and Inverness-shire, differs in having shorter, narrower spores (6.5-)7-9 $\times$ 4-5 μm and deeper brown-vinaceous or purplish-chestnut colours when young, with cap and stem remaining dark coloured, and slightly more robust stem. Sometimes both taxa occur together, sometimes not; in recent years *C. lilacinopusillus* has come my way much more frequently but this is probably just the luck of the draw. Both taxa will probably occur anywhere where there is a sufficient quantity of damp alder leaf humus. *C. helvelloides* is another species with rather small fruit-bodies from this habitat with blue-violaceous young gills, but is immediately distinguishable by its conspicuous yellow veil and thicker stem. Although there are other species of *Cortinarius* subgenus *Telamonia* producing very small fruit-bodies, *C. lilacinopusillus* in my experience consistently produces the smallest of all.

In the Highlands of Scotland I have regularly come across a number of taxa of subgenus *Telamonia* producing small to medium fruit-bodies growing in association with birch, of which only a few have been described by Fries or later authors. Amongst them is one very characteristic and seemingly undescribed taxon easily recognised by its dark colour, strong mouldy-rank smell and spore size and shape. This I have since found to be widespread and common in England also and since it is so common and characteristic I am describing it now as a new species.

***Cortinarius (Telamonia) umbrinolens* P. D. Orton, sp. nov.**

A coloribus obscuris velo conspicuo odore sporis et habitatione in betuletis maxime insignis.

Pileus 11-50(-60) mm, jove pluvio umbrinus, badius, purpureobrunneus vel fuscobrunneus, siccitate $\pm$ cinnamomeus, primo albido vel pallide luteolobrunneo sericeo-fibrillosus dein glabrescens, ad marginem a velo primo albo dein albido vel pallide luteolobrunneo sericeo-zonatus. *Lamellae* umbrino-fulvae vel fuscobrunneae dein ferrugineo-umbrinae. *Stipes* 38-90 $\times$ 2-5(-8) mm, a pileo concoloratus sed ad apicem vulgo pallidior, a velo albo dein albido vel luteolobrunneo annulato maculatus. *Odor* praecipue ab inclusione fortis peculiaris. *Sporae* 8-10 $\times$ 4.5-5.5 μm , ellipsoideo-amygdaliformes. Acies lamellarum fertilis, cystidia nulla.

Typus. In betuletis. Perthshire, Dall, Rannoch, 5 x 1970, *Orton* 4102 (holo. E).

Cap 11–50(–60) mm, convex or conico-convex then expanded usually acutely or obtusely umbonate and sometimes depressed around centre, *chestnut, umber, bay, purplish-date, brown-vinaceous, date-brown or cigar-brown*, often with paler margin and centre almost black when fresh and wet, *drying cinnamon or brick* often with paler cinnamon-buff margin, sometimes striate at margin when wet, at first entirely adpressedly whitish or pale buff finely silky-fibrillose, then often $\pm$ smooth or with silky atomate sheen around centre, margin often exceeding gills slightly and becoming torn and slightly reflexed, with white then whitish or pale buff silky marginal zone from veil when fresh. *Gills* adnate $\pm$ emarginate with slight tooth, *pale then deep milky-coffee or snuff-brown then fulvous, often with umber tinge especially near flesh of cap, finally rusty-fulvous or rusty-cinnamon*, fairly crowded, L (14–)20–30(–36) l (1–)3(–7), edge slightly paler or concolorous, $\pm$ even. *Stem* 38–90 $\times$ 2–5(–8) mm, $\pm$ equal, sometimes slightly attenuated or thickened at base, often flexuose, *pale umber or bay to purplish-chestnut, date-brown or cigar-brown*, apex often paler or with slight purplish tinge at first, drying $\pm$ cinnamon, apex whitish or silvery silky striate when fresh, remainder $\pm$ fibrillose-striate, veil forming well-marked white then whitish or pale buff ring or ring-zone and patches which may disappear with age, hollow, base white tomentose. *Flesh* concolorous, drying buff or creamy-buff in cap and stem centre, pale cinnamon elsewhere when really dry. *Smell* often faint in the field (unless really wet) but *strong, peculiar, mouldy-rank after being kept in a box or tin*.

Spores 8–10 $\times$ 4.5–5.5 μ m, $\pm$ ellipsoid-amygdaliform in side-view, ellipsoid or ellipsoid-ovoid in face-view usually rather pale s.m., faintly to clearly punctate-rough. *Basidia* 4-spored, 30–38 $\times$ 7–9 μ m. *Gill-edge* fertile, cystidia absent. *Hyphae on cap* 3–14 μ m broad, hyaline or encrusted pigmented, over shorter-celled broader hyphae up to 40 μ m broad. *Hyphae of veil* 4–9(–12) μ m broad.

With birch. Widespread and common in England and Scotland (no doubt also in Wales and Ireland) wherever birch occurs in sufficient quantity. Norfolk, Mousewood Farm Wood, Honingham, 8 x 1958, *Orton* 1916; Somerset, Allerford Wood, 22 xi 1958, *Orton* 1919; Somerset, Hawkridge, 24 x 1958, *Orton* 1917; Surrey, Witley Common, 18 x 1970, *Orton* 4104; Yorks., Ingleton Wood, 23 ix 1957, *Orton* 1446; Yorks., Kirkham Abbey, 25 ix 1971, *Orton* 4351; Yorks., Tarn House Plantation, Malham, 9 ix 1961, *Orton* 2481; Inverness-shire, Lochan Mhor, Rothiemurchus, 15 ix 1957, *Orton* 1445; Inverness-shire, Tomich, 4 ix 1965, *Orton* 2769/70; Perthshire, Dall, Rannoch, 16 x 1966, *Orton* 2885, 5 x 1970, *Orton* 4102 (holo. E), and on many other occasions, Perthshire, Stormont Loch, 4 x 1956, *Orton* 1093.

Also the following (no material kept): Devon, Hawkswood, Northleigh, 27 x 1975; Herts., Bricket Wood, 22 x 1977, and Ashridge, 23 x 1977; Somerset, Worthal Wood, Wambrook, 27 x 1977; Warks., Earlswood, 5 x 1974.

Readily recognised by dark colours, well-marked veil, strong smell after being kept in a box or tin, ellipsoid-amygdaliform spores 8–10 $\times$ 4.5–5.5 μ m and habitat with birch.

It is surprising that this taxon has not been recognised before, unless it is only to be found in Britain, and one wonders into which Friesian taxon it was fitted in the old days! Fries only described a very few of the many taxa of this subgenus associated with oak, birch, *Salix* spp., or alder, but seems to have concentrated on those with beech or conifers. This may have been because these were the only habitats he had time to study from this point of view or perhaps because habitats such as we have in Britain are not found in Scandinavia. Favre has dealt very thoroughly with species associated with alpine willows, and other authors (especially Kühner and Moser) have described many new species, mostly I suspect from habitats different from those in Britain, since many have never been encountered in my twenty-five years of fairly intensive study of these agarics in Britain. This is why it is at present only too frequently impossible to identify more than a few collections of taxa in this subgenus made in Britain at any one time with available literature, for many of them are not yet in that literature.

I find that with the exception of species centred around *C. obtusus* and those with a smell of *Pelargonium* (*C. rigidus* etc.), most of the species of this subgenus producing small to medium fruit-bodies seem to be attached specifically to a single tree species or to a particular genus of trees. It is now only very occasionally that I find a taxon new to me attached to birch, willow or alder, though I am still finding fresh taxa with oak and have yet to work the southern beech woods more thoroughly before being able to make a start in giving an account of this subgenus in Britain. The more I study these agarics the more convinced I become that habitat is a most important diagnostic character, although there are unfortunately the inevitable exceptions to prove the rule!

DERMOLOMA

I have for a long time had trouble identifying taxa of this genus, partly because there are two schools of thought about the interpretation of *Agaricus cuneifolius* [Fr. ex] Fr., and partly because, as is so often the case in agarics, there are more taxa in the field than there are names in the books. Modern French authors have followed Jossierand (*Bull. Soc. mycol. Fr.* 59:14, 1943) and used the epithet *cuneifolium* for a taxon with amyloid spores, whereas Moser (in Gams *Kleine Kryptogamenflora* band II b/2:99, 1967) has used it for one with non-amyloid spores. The New Check List (1960) followed the French lead, but after perusal of the validating description of Fries (*Systema Mycologicum* I:116, 1821) I now think this is an error and that we should adopt the interpretation of Moser.

Critical features stressed by Fries for *A. cuneifolius* are: stem 'cavo deorsum attenuato apice pruinato', gills 'latissimae fragiles truncatae subdecurrentes', cap 'fuligineo-livido demum rimoso' and 'color fusco, livido, etc., varius'. These features fit the non-amyloid spored '*cuneifolius*' much better than the amyloid spored one, which has predominantly yellow-brownish cap and this kind of colour is also found in the stem and less markedly in the gills, and the stem is tough rather than fragile. I do not think these features agree with Fries's diagnosis. I do not believe breadth of gill, from which the epithet is derived, to be critical in this genus, for

ventricose gills of varying degrees of breadth can be found in most collections of taxa of this genus, though perhaps most noticeably so in the non-amyloid spored '*cuneifolius*'.

After studying a number of collections of the non-amyloid spored taxon, which in my experience is the most commonly found representative of the genus in Britain, I find the cap colour rather variable according to age and weather conditions. In young specimens the cap is smoke-grey, drab or even darker grey especially at the centre, but it soon changes to fawn, milky-coffee or hazel often with paler vinaceous-buff or clay-buff margin and often finally buff or fulvous-buff, and the cap often becomes $\pm$ concentrically rimose or radially split. These colours seem to me to agree with 'fusco, livido, etc., varius' better than the predominantly yellow-brownish colours of the amyloid spored taxon (see descriptions below). The gills of the non-amyloid spored taxon are frequently but not always broadly ventricose and, as in all the taxa of this genus that I have studied, it has a strong mealy smell, but I do not think these characters are critical for these species. In view of these facts I think we should use the epithet *cuneifolium* for this taxon and not for the one with amyloid spores for which *D. pseudocuneifolium* Herink is available, although this is a nomen nudum (no latin diagnosis), validation of which must await discovery of suitable dried material.

This non-amyloid spored taxon was included in the New Check List in *D. atrocinerum*, and this raises the problem of the exact identity of *Agaricus atrocinerus* (Pers. ex) Pers. The validating description of this (*Synopsis Fungorum* 348, 1828) reads 'pileo carnosio obtuse umbonato cinereo, umbone nigrescente, glabro; lamellis aquoso albidis, emarginato adnexus; stipite solido glabro' and 'Stipes 1½ unc. longus, 1 lin. crassus, substantio fibrosus. Pileus color murinus disco nigrescens, latitudine unciali, odore et sapore non ingratus'. The main differences here from *A. cuneifolius* are the darker grey or blackish cap and the smooth solid stem. In his description of *A. atrocinerus* Fries (*Epicrisis Systematis Mycologici* 37, 1838) used much the same words, but stressed the differences from *A. cuneifolius* as follows (italics as in Fries): '*A. cuneifolius fragillimus, pileo mox diffracto, stipite deorsum attenuato, lamellis tenuibus antice latissimis*'. This means that the epithet *atrocinerus* should be used for a taxon with grey or blackish-grey cap, not so fragile fruit-bodies, and a smooth $\pm$ equal stem. I think I have seen such a taxon some time ago but I have no detailed personal notes on it. Cke 91(52)A and Bres 87 seem likely to be correct and probably also Jossierand's description of *Tricholoma atrocinerum* (Bull. Soc. mycol. Fr. 59:13, 1943), though this may include the non-amyloid '*cuneifolius*' in part. It is sketched by Moser (in Gams *Kleine Kryptogamenflora*, band 11b/2: figs. 56 and 57, 1967) and he gives slightly broader spores than those of *D. cuneifolium*, as also does Jossierand, and I noted them to be $5.5-7 \times 3.5-5 \mu\text{m}$ (as opposed to *D. cuneifolium* in which they are $4.5-6 \times 3-4 \mu\text{m}$ and, incidentally, sometimes weakly dextrinoid). This suggests to me that *D. cuneifolium* and *D. atrocinerum* should be retained in the British List as two separate species (see key below). It should be noted that the macroscopic characters of *D. coryleti* Singer & Cléménçon (Schweiz. Z. Pilzk. 49:120, 1971) agree with those of *A. atrocinerus* quite well, but the former was described from Switzerland with longer spores, $7.2-9.7 \times$

3.2–3.7 μm , and is said to be without smell, which suggests a different species seemingly not yet recorded from Britain.

However, this is not the end of the problems in the non-amyloid spored section, for I have twice collected a taxon with spores much the same as those of *D. cuneifolium* but with a dark brown (date-brown or cigar-brown) cap, stem flocculose-pruinose and rather firm at first but becoming hollow and more fragile, and gills tinged vinaceous-buff or clay-buff. This can hardly be called *D. atrocinereum*, however, since it is not grey but brown and does not have a smooth stem. It is therefore described below as *D. fuscobrunneum* sp. nov. Dennis has described a similarly coloured taxon from Trinidad, *D. atrobrunneum* Dennis (*Trans. Br. mycol. Soc.* 34:476, Pl. 23⁶, 1951) but this has subglobose non-amyloid spores, c. $5.5 \times 4 \mu\text{m}$, the stem streaked with longitudinal dark brown fibrils and is flavourless—it was collected on the ground under bamboos and therefore seems a different species.

In the amyloid spored section *D. cuneifolium* sensu Jossierand, Kühner & Romagnesi, Dennis, Orton & Hora has been renamed *D. pseudocuneifolius* Herink (*Sb. severoceska Mus. Hist. nat.* 1:62, 1958) and can be included in the British List as such, but as a nomen nudum for the time being. I have found it occasionally in chalk grassland in Surrey and suspect it may be more calcicole than *D. cuneifolium*. In Devon, however, I have for a long time known another taxon belonging to this section with much darker fruit-bodies and spores clearly smaller than those of *D. pseudocuneifolium*. This is described below as *D. phaeopodium* sp. nov. Finally there is also in this section the relatively pale *D. josserandii* Dennis & P. D. Orton briefly described in *Trans. Br. mycol. Soc.* 43:226 (1960).

The following key to the European species, a restatement of names, icones, etc., as in the New Check List, and descriptions of British material of four of the taxa may be found helpful. I am unable to give a personal description of *D. atrocinereum* at the moment. Although *D. coryleti* was described from under hazel, *D. josserandii* was found under beech and birch and one of my collections of *D. fuscobrunneum* was found at the foot of a tree in a mixed deciduous woodland of recent origin, the species of this genus are predominantly grassland species, perhaps found most abundantly in basic grassland. Further field work is necessary to show whether a woodland habitat has any significance in this genus. It is noteworthy that T. J. Wallace (pers. comm.) reports that he has never found any representatives of this genus in his extensive collecting in sand-dunes in SW England and elsewhere.

KEY TO EUROPEAN SPECIES OF DERMOLOMA

(Species in brackets not yet recorded for Britain)

- | | |
|---|---|
| 1a. Spores non-amyloid (sometimes weakly dextrinoid in <i>cuneifolium</i>) | 2 |
| 1b. Spores amyloid | 6 |
| 2a. Spores more than 7 μm long, elongate- or cylindric-ellipsoid | 3 |
| 2b. Spores less than 7 μm long, subglobose or broadly ellipsoid to ellipsoid | 4 |

- 3a. Spores $7.2-9.7 \times 3.2-3.7 \mu\text{m}$; cap blackish-grey with black umbo; stem white, smooth; smell none; under hazel, Switzerland
(*D. coryleti* Singer & Cléménçon; *Schweiz. Z. Pilzk.* 49:120, 1971)
- 3b. Spores $9-12 \times 5-6 \mu\text{m}$; cap 'nigrofuscus'; stem 'subcandidus, subtiliter sericeo-fibrillosus, nudus'; smell and taste stong, mealy; in moss in woods, Czechoslovakia
(*D. emilii-dlouhyi* Svrček, *Česká Mycol.* 20:147, 1966)
- 4a. Cap snuff-brown, date-brown or cigar-brown often with darker umbo and paler margin; (stem whitish or tinged vinaceous-buff, $\pm$ equal, finely white pruinose when fresh; spores $4.5-6 \times 3.4 \mu\text{m}$) *fuscobrunneum**
- 4b. Cap grey or blackish-grey or grey then fawn, hazel or milky-coffee often with clay-buff or vinaceous-buff margin 5
- 5a. Cap often grey at first (mouse-grey, drab or blackish-grey) then (usually soon) fawn, hazel or milky-coffee often with clay-buff or vinaceous-buff margin; stem usually attenuated downwards or at base, white flocculose-pruinose at least at apex; fruit-body soon fragile; spores $4-6 \times 3-4 \mu\text{m}$, sometimes weakly dextrinoid *cuneifolium*
- 5b. Cap persistently mouse-grey with blackish umbo; stem $\pm$ equal, smooth; fruit-bodies less fragile; spores $4.5-6(-7) \times 3.5-5 \mu\text{m}$ *atrocinereum*
- 6a. Spores $3.5-4.5 \mu\text{m}$ broad; colours relatively dark; cap date-brown or umber when wet, stem at least in part date-brown, snuff-brown or fawn at least when wet *phaeopodium*
- 6b. Spores $4-5$ or $4.5-5.5 \mu\text{m}$ broad; colours relatively pale; cap and stem whitish, greyish or fawn drying $\pm$ buff, or entirely whitish 7
- 7a. Cap and stem fawn or fulvous-buff, drying buff or creamy-buff; gills pale grey then often darker grey or tinged creamy-buff, emarginate-adnate to adnexed; spores $7-8.5 \times 4-5 \mu\text{m}$; in grassland, especially when basic *pseudocuneifolium*
- 7b. Cap pale greyish; stem whitish; gills whitish, adnato-decurrent; spores $6-8 \times 4.5-5.5 \mu\text{m}$; under beech and birch *josserandii*†

* *Hygrocybe schulzeri* (Bres.) Josserand might key out here; it has a hymeniform cuticle of elongate-clavate cells appearing cellular from above, and similar colours, but has smaller subglobose spores $3-5 \times 2.5-4 \mu\text{m}$, $\pm$ decurrent gills, stem clay-buff to snuff-brown, and does not smell or taste mealy.

† *Tricholoma hygrophorus* Josserand may be different; cap ivory-white or slightly greyish; spores $6-6.5(-7) \times 4.5-5 \mu\text{m}$.

Check list of British species of *Dermoloma*

Dermoloma (J. Lange) Singer

D. atrocinereum (Pers. ex Pers.) P. D. Orton, 1960.

Syn.: *Tricholoma atrocinereum* (Pers. ex Pers., 1828) Quél., 1872 non sensu Dennis, Orton & Hora.

lc.: Cke 91 (52)A; Bres 87; Bull. Soc. mycol. Fr. 59:13, 1943, Pl. 1¹.

D. cuneifolium (Fr. ex Fr.) Sing., 1956 (see below).

Syn.: *Tricholoma cuneifolium* (Fr. ex Fr., 1821) Kummer, 1871 sensu Fries, Moser non Jossierand, Konrad & Maublanc, Kühner & Romagnesi, Dennis, Orton & Hora.

Ic.: Cke 92(53), var. *cinereorimosum* Batsch.

D. fuscobrunneum P. D. Orton, 1980 (see p. 326).

D. jossierandii Dennis & P. D. Orton, 1960.

Syn.: ?*Tricholoma hygrophorus* Jossierand, 1970.

Ic.: Trans. Br. mycol. Soc. 43:226, 1960, figs 379, 514; ?Bull. Soc. mycol. Fr. 74:486, 1958, figs 1-4, *hygrophorus*, nom. nud.: Bull. mens. Soc. linn. Lyon 39:6, 1970, *id.*, (latin diagnosis).

D. phaeopodium P. D. Orton, 1980 (see p. 327).

[**D. pseudocuneifolium** Herink, Sb. severoceska Mus. Hist. nat. 1:62, 1958—nom. nud.] (see p. 328).

Misident.: *Tricholoma cuneifolium* (Fr. ex Fr.) Kummer sensu Jossierand, Konrad & Maublanc, Kühner & Romagnesi, Dennis, Orton & Hora non Fries, Moser.

Ic.: Bull. Soc. mycol. Fr. 59:14, 1943, Pl. 1², *cuneifolium*: KM 246² *id.*

Dermoloma cuneifolium (Fr. ex Fr.) Sing., sensu Fries, Moser non Jossierand et al.

Cap 14-40 mm, convex soon expanded $\pm$ plane, sometimes wavy-lobed or with upturned margin when old, at first mouse-grey or drab sometimes with darker centre, soon hazel, milky-coffee or fawn often with paler clay-pinkish, clay-buff or vinaceous-buff margin, sometimes more markedly buff or fulvous-buff when old and dry, matt, often radially rugulose in places or cracking areolately or concentrically around centre, margin thin, sometimes whitish in places or cracking radially, fragile. Gills narrowly adnate to $\pm$ free, often with tooth, $\pm$ ventricose, sometimes deeply emarginately so, whitish then greyish, pale vinaceous-buff or pale clay-buff especially near flesh of cap, fairly crowded, L 20-36 l 1-3, often rather thick and veined on sides or interveined, sometimes anastomosed, edge concolorous $\pm$ even but sometimes becoming crisped especially near the stem. Stem 12-50 $\times$ 2-6 mm, usually attenuated downwards or at base, sometimes compressed and channelled (and then gills more numerous), white or whitish soon pale or very pale vinaceous-buff or clay-buff in lower part, apex or upper part white silky flocculose when fresh, silky striate in lower part, fairly tough at first but soon fragile and splitting easily longitudinally, $\pm$ hollow. Flesh usually thin, whitish or pale vinaceous-buff in cap, grey-horny over gills and in stem apex, whitish in stem. Smell strong, mealy.

Spores subglobose or broadly ellipsoid to ellipsoid, 4.5-6 $\times$ 3-4 μ m, non-amyloid sometimes (? always) weakly dextrinoid. Basidia 4-spored, 24-28 $\times$ 5-6 μ m. Gill-edge fertile. Cells of cap cuticle (seen from above) globose to ellipsoid, 15-40 μ m broad.

In grass, more especially on basic soils. Devon, Membury, 26 x 1975, *Orton* 4734; Herts., Rothamsted Manor, Harpenden, 22 x 1977, *Orton* (no material kept).

Best distinguished by non-amyloid or weakly dextrinoid spores 3–4 μm broad, stem attenuated at least at base, cap with varying colours, and general fragility when mature. *D. fuscobrunneum* has similar spores but a dark brown cap. *D. atrocinereum* has a grey or blackish-grey cap, smooth stem and broader spores (4–5 μm). *D. pseudocuneifolium* has amyloid broader spores (4–5 μm), colours more yellowish-brown and is less fragile.

Not all collections have been noted as having weakly dextrinoid spores and further field work is necessary to clarify this point, and also to check whether this character is true for any other species in the non-amyloid spored section of the genus. I have not always noted them as dextrinoid myself, but I may have missed this reaction since I was not particularly looking for it.

In the New Check List (1960) KM 246² was quoted as an illustration for this taxon (under the name *D. atrocinereum*), but it was made from material supplied by Jossierand and most likely represents *D. pseudocuneifolium*. Cke 92(53) var. *cinereorimosum* is thus the only plate I am prepared to quote at the moment, though I think Ri 93³ is probably correct, but because it was done before the discovery of the Melzer reaction there is no mention of 'amyloid' or 'non-amyloid' in the description of the spores. Another doubtful plate is that of *Tricholoma cuneifolium* sensu J. Lange (L 31 B) which looks very much like *D. pseudocuneifolium*, but the accompanying description seems to be of *D. cuneifolium* as above described. Neither is it possible to say whether *T. cuneifolium* sensu Métrod (*Revue mycol.* 4:111, 1939, fig. 7) is the same but this seems unlikely because he describes the cap as having a separable gelatinous pellicle, which is incorrect for this genus. For comments on Cke 91(52)B *cuneifolium* see observations on *D. phaeopodium* below.

***Dermoloma fuscobrunneum* P. D. Orton, sp. nov.**

A sociis sporis non-amyloideis, a pileo fuscobrunneo vel nigrofusco et stipite $\pm$ aequale juventute albo floccoso-pruinoso differt.

Pileus 21–40 mm, interdum obtuse umbonatus. *Lamellae* angustae adnatae vel fere liberae ex albogriseis pallide argillaceo luteolobrunneae. *Stipes* 20–40 $\times$ 2–8 mm, albidus vel ad basim pallide argillaceo luteolobrunneo. *Sporae* 4.5–6 $\times$ 3–4 μm .

Typus. In locis graminosis vel in sylvis. Somerset, Bickham Wood, Crawley, 24 x 1975, *Orton* 4735 (holo. E).

Cap 21–40 mm, convex then expanded $\pm$ plane, sometimes obtusely umbonate or with slightly wavy-lobed margin, date-brown or cigar-brown, sometimes paler or snuff-brown at margin and almost black at centre, matt or atomate, sometimes radially rugulose or cracking concentrically at or around centre, margin sometimes with narrow pale zone and cracking radially. *Gills* narrowly adnate to $\pm$ free, $\pm$ ventricose, sometimes broadly emarginately or irregularly so, greyish-white then pale vinaceous-buff or clay-buff, sometimes deeper clay-buff near flesh of cap, fairly crowded, L 22–36 l 1–3, thick, sometimes interveined or even labyrinthiform in places, edge whitish or concolorous, blunt at first then $\pm$ even. *Stem* 20–40 $\times$ 2–8

mm, equal or slightly thickened or attenuated at base or apex, whitish or tinged vinaceous-buff especially in lower part, finely white floccose-pruinose when fresh, rather firm at first but becoming fragile, stuffed then hollow, base white or whitish tomentose. *Flesh* concolorous in cap drying very pale vinaceous-buff in centre, persistently dark under the cuticle, horny over gills, whitish to pale vinaceous-buff in stem. *Smell* stongly mealy, especially when cut.

Spores subglobose or broadly ellipsoid to ellipsoid, $4.5-6 \times 3-4 \mu\text{m}$, non-amyloid. *Basidia* 4-spored, $30-34 \times 6-7 \mu\text{m}$. *Gill-edge* fertile. *Cells of cap cuticle* (seen from above) globose to vesiculose, $12-30 \mu\text{m}$ broad.

In mixed deciduous wood of recent origin, Somerset, Bickham Wood, Crawley, 24 x 1975, *Orton* 4735 (holo. E); in grass, Surrey, Epsom Downs, 3 xi 1954, *Orton* (no material kept).

Distinguished by dark brown cap, pruinose stem, and non-amyloid spores $4.5-6 \times 3-4 \mu\text{m}$. *D. phaeopodium* is also dark brown, but has amyloid spores and darker gills and stem. *D. atrocinerum* and *D. coryleti* both have grey or blackish-grey cap and broader or longer spores. *D. cuneifolium* has similar spores but is differently coloured and paler, and perhaps more fragile. Further field work is necessary to assess the importance of habitat for this species.

***Dermoloma phaeopodium* P. D. Orton, sp. nov.**

A sociis sporis amyloideis, a pileo jove pluvio fuscobrunneo vel umbrino, stipite argillaceo-vel fusco-brunneo et sporis $5-7 \times 3.5-4.5 \mu\text{m}$ differt.

Pileus 9-42 mm, jove pluvio ad marginem striatus, jove sicco cremeus vel luteolobrunneus ad marginem persistentiore obscuriore coloratus. *Lamellae* ex argillaceo-luteolobrunneis coffeatae vel praecipue juxta carnem fusco-brunneae. *Stipes* 20-55 $\times$ 1-3(-5) mm, juventute ad apicem floccoso-pruinosus, fibroso-fragilis.

Typus. Inter graminos, Devon, Membury, 28 x 1977, *Orton* 4905 (holo. E).

Cap 9-42 mm, convex then expanded, sometimes broadly umbonate or depressed with upturned margin when old, date-brown or umber, sometimes $\pm$ snuff-brown towards margin or cinnamon with rusty-tawny centre, drying buff, saffron or creamy-buff from centre outwards, often retaining darker marginal belt for some time, striate in outer part when wet, matt when dry, cuticle often cracking $\pm$ concentrically around centre or appearing stippled or minutely punctate, becoming fragile. *Gills* adnate with tooth, sometimes narrowly so, to subdecurrent, $\pm$ ventricose sometimes broadly so near stem, vinaceous-buff or pale clay-buff then deeper clay-buff, milky-coffee or fawn, sometimes snuff-brown or date-brown near flesh of cap, fairly crowded, L20-28 l(1-3)(-7), edge concolorous, even or slightly uneven. *Stem* 20-55 $\times$ 1-3 mm (-5 when compressed), equal or slightly thickened at apex, often flexuose, sometimes compressed and channelled, snuff-brown or fawn then milky-coffee or clay-buff, often paler in upper part, apex conspicuously and rather coarsely floccose-pruinose when fresh, remainder interrupted silky-striate, hollow, fibrous-fragile, sometimes twisted fibrous, base white tomentose. *Flesh* concolorous drying whitish in cap, milky-coffee in stem, sometimes deeper milky-coffee or fawn in stem-base. *Smell* strong, mealy.

Spores ellipsoid or cylindric-ellipsoid, $5-7 \times 3.5-4.5 \mu\text{m}$, amyloid. Basidia 4-spored, $24-32 \times 6-7.5 \mu\text{m}$. Gill-edge fertile. Cells of cap cuticle sphaeropendunculate, pyriform or broadly clavate, appearing $\pm$ globose from above, $8-40(-50) \mu\text{m}$ broad, hyaline, or, more especially the narrower ones $8-20 \mu\text{m}$ broad, encrusted pigmented.

In grass. Devon, Membury, 1 xi 1957, Orton 1165; *ibid.*, 3 xi 1957, Orton 1166; *ibid.*, 28 x 1977, Orton 4905 (holo. E).

Readily distinguished by dark colours and relatively narrow amyloid spores. *Hygrocybe schulzeri* (Bres.) Jossierand is superficially similarly coloured, but has non-amyloid $\pm$ subglobose spores $3-5 \times 2.5-4 \mu\text{m}$ and rather more distinctly decurrent gills and is without smell. Curiously enough I have collected the latter species from the same grass field as *D. phaeopodium* and was therefore able to compare them when fresh. In both 1957 and 1977 *D. phaeopodium* was collected from several sites in the type locality, but in spite of regular searches neither T. J. Wallace (near whose home the locality is situated) nor I ever saw it in the intervening years. It will be interesting to see if it is recorded from any other localities in the future (hopefully before 1997!), for I have only found it in this one particular area.

It is just possible that Cke 91(52)B could refer to this taxon, though *Hygrocybe schulzeri* (Bres.) Jossierand is also possible; without investigation of the material from which the painting was made (if this exists), this is, however, pure speculation.

Dermoloma pseudocuneifolium* Henrink, *nom. nud.

Cap 8-20 mm, conico-convex or convex $\pm$ umbonate becoming expanded umbonate, plane or depressed, fawn, milky-coffee or fulvous-buff drying buff or creamy-buff, margin striate when moist, drying opaque and matt. Gills emarginato-adnate or adnexed, fairly to very ventricose, often broadly so, greyish-white then darker greyish and often tinged creamy-buff, fairly crowded, L 20-28 l 3, edge even but thick. Stem 24-40 $\times$ 1.5-3 mm, equal or slightly attenuated at base, often flexuose, pale creamy-buff, vinaceous-buff or clay-buff, $\pm$ fibrostriate, apex white pruinose, very fibrous and rather tough when fresh, base white tomentose. Flesh pale vinaceous-buff or creamy-whitish, sometimes darker grey or horny over the gills and in stem-apex and greyish in stem. Smell strong, mealy.

Spores ellipsoid, $7-8.5 \times 4-5 \mu\text{m}$, amyloid. Gill-edge fertile. Cap-cuticle cellular.

In grass. Surrey, Hackhurst Downs, Gomshall, 15 xi 1953, Orton (no material kept).

The above is the only personal description I have of this taxon and it may need modification when further material is found and the epithet *pseudocuneifolium* can be validated. Jossierand (*Bull. Soc. mycol. Fr.* 59:14, 1943) also gives small size for the cap (7-17 mm) and its colour as 'alutacé-bistre'. He describes the gills as 'grises puis gris-cendrés-foncés parfois gris-brun sur les sujets agés' but they are shown pale in the plate. The spores he gives as $7.2-8.4 \times 4.6-5 \mu\text{m}$, cylindric-ellipsoid, and the cells of the cap cuticle $10-26 \mu\text{m}$ broad with membranal pigment. I feel sure this is the same taxon in spite of slight differences.

This taxon differs from *D. phaeopodium*, also with amyloid spores, in the larger spores and paler colours. It seems to be smaller and tougher than any of the non-amyloid section of the genus. I suspect it is more strongly calcicole.

Perusal of the above four descriptions suggests that cap shape, gill shape, and cracking of cap cuticle are of no significance taxonomically within the genus, but that cap colour, gill colour, stem colour and perhaps shape and pruinosity, and spore characters are the critical characters.

HYGROCYPE

Hygrocybe ochraceopallida P. D. Orton, sp. nov.

Species *H. berkleyi* affinis sed a sporis et coloribus pilei striati differt. A *H. nivea* a pileo magis colorato, stipite firmiore et sporis leviter longioribus differt. *H. subradiata* a pileo obscuriore colorato et sporis latioribus (4.5–6 μ m) distinguitur.

Pileus 18–50 mm, albidus vel pallide cremeus dein argillaceo-luteolobrunneus vel luteolobrunneus, siccitate fere totus albonitidus, jove pluvio striatus. *Lamellae* $\pm$ arcuato-decurrentes, ex albidis pallide cremeae. *Stipes* 36–62 $\times$ 2.5–5 mm, vulgo ad basim attenuatus, albus vel senectute pallide cremeus, juventute ad apicem albo-flocculosus, primo firmus. *Sporae* (7–)8–10 $\times$ 4–5 μ m, ellipsoideae vel cylindraceo-ellipsoideae.

Typus. Inter graminos. Devon, Braunton Burrows, 22 xi 1969, Orton 3611 (holo. E).

Cap 18–50 mm, convex becoming plane or depressed, margin remaining incurved for some time but plane or slightly upturned or wavy-lobed in old large specimens, whitish to pale cream (C) then buff, creamy-buff (D + buff) or clay-buff, drying at least in part opaque and shiny white, pale cream (C) or whitish in centre with creamy-buff margin when half-dry, but sometimes drying whitish from margin inwards, striate to centre when wet, matt or slightly radially silky-shiny when dry. *Gills* uncinatate or arcuate-decurrent, whitish then pale cream (B or C), sometimes appearing deeper cream (D) when viewed from above, not crowded, L 20–24 l 1–3, veined at base or interveined in larger specimens, edge concolorous, even. *Stem* 36–62 $\times$ 2.5–5 mm, usually attenuated at base or thickened at apex, white, sometimes becoming cream (B or C) with age especially in lower part, base usually slightly coloured, apex white silky-flocculose when fresh, remainder silky striate, stuffed often becoming hollow in places, firm and tough at first. *Flesh* white, sometimes very pale cream when older especially in stem-base. *Smell* none.

Spores (7–)8–10 $\times$ 4–5 μ m, ellipsoid or cylindric-ellipsoid. *Basidia* 4-spored, 40–50 $\times$ 6–8 μ m. *Gill-edge* fertile. *Hyphae on cap* filamentous, 2–7 μ m broad, hyaline or with slightly refringent or coloured walls (in water in daylight). *Flocci on stem* of cylindric-clavate basidiiform cells 20–40 $\times$ 4–6 μ m occasionally with some fertile (1–2-)4-spored basidia.

In grass in fields or on sand-dunes. On sand-dunes, Cornwall, Rock, 2 xii 1969, Orton 3612; on sand-dunes, Devon, Braunton Burrows, 22 xi 1969, Orton 3610; *ibid.*, Orton 3611 (holo. E); in fields, Devon, Membury, 28 x 1977, Orton 4914; *ibid.*, 31 x 1978, Orton 4965.

Readily distinguished by pale coloured striate moist cap, slightly coloured gills, toughness and rather elongate spores. *H. pratensis* is much deeper coloured and *H. berkleyi* though similarly coloured has shorter broader spores and is not clearly striate when wet.

I first came across this taxon when collecting in sand-dunes in SW England with T. J. Wallace who drew my attention to it. It differed from *H. nivea* in more distinctly coloured cap, at least when moist, and slightly longer spores. When further collections had been made not only from sand-dunes but also in fields inland it seemed to me also to be tougher than *H. nivea* and not to agree with any species in European or N American literature. After making extensive collections of it in the autumn of 1978 I felt it could no longer be passed over as a form of another species and I am therefore describing it as new.

In my key to *Hygrophorus* subgenus *Camarophyllus* in *Trans. Br. mycol. Soc.* 43:247 (1960) it could be inserted in couplet 4 with *H. berkeleyi*, from which it differs in longer narrower spores and deeper coloured more clearly striate cap when moist. I have so far only collected it in Devon and Cornwall, but it is probably much more widespread, at least in England. In October and early November 1978 when the weather was phenomenally dry in Devon, with no rain at all in October and only mists and dews to moisten the ground, it was the only species of *Hygrocybe* to be seen abundantly, for at the type locality and nearby there were hundreds of fruit-bodies, whereas *H. nivea* was absent and only very few fruit-bodies of other species of *Hygrocybe* were seen. Perhaps it flourishes best under such conditions, aided, possibly, by its tough fruit-bodies.