

NOTES ON BRITISH AGARICS. II*

P. D. ORTON

THE following notes on new or critical agarics concern collections made in recent years in Scotland, material of which is now deposited in the Herbarium of the Royal Botanic Garden, Edinburgh. Material of new species has also been sent to the Herbarium of the Royal Botanic Gardens, Kew.

The species described are arranged in alphabetical order as in the New Check List of British Agarics and Boleti, parts I and II in Trans. Brit. Myc. Soc. 43: Suppl. 1-225 (1960)—hereinafter referred to as "the List".

"The List, part III" referred to in the text is in Trans. Brit. Myc. Soc. 43: 159-439 (1960).

Cantharellus friesii Quél., Champ. Jura. Vosges 1 (1892) 192, pl. 23².
Icon.: Bresadola, Ic. Myc. 472 (1929).

An attractive and unfamiliar *Cantharellus* was gathered in Glen Lyon during the 1961 meeting of the Cryptogamic Section of the Botanical Society of Edinburgh. This seems to agree reasonably well with the descriptions of Quélet and especially of Bresadola of *C. friesii*. I have been unable to find a modern description to check microscopic details. The following is a description of my material:

Cap 16-45 mm, convex soon expanded-convex then depressed or infundibuliform, often with wavy-lobed margin, *deep orange with orange-ochre or orange-yellowish* tinge at margin at first, paler orange-ochraceous when mature, yellowish tomentose at margin when young then smooth or with slight silky sheen. *Gills* arcuate-decurrent, *very pale pinkish-flesh or with pinkish-lilaceous tinge*, then with tinge of cap colour, but *always pale*, narrow, thick and fold-like, often forked or interveined, about 20-40 reaching stem. *Stem* 16-30/4-9 mm, equal or slightly thickened at base or apex, orange-ochraceous or colour of cap, then pale orange or creamy-yellowish often with persistently darker apex, silky-matt, solid, base white or whitish tomentose. *Flesh* concolorous in cap, drying paler, white or whitish in centre of cap and stem, often tinged orange or yellowish in stem cuticle. *Smell* none. *Spores* cylindric-ellipsoid, often slightly constricted, 9-12/4.5-5(5.5) μ . *Basidia* mostly 5-spored, ((4)-5-(6)-spored). Gill-edge fertile. Hyphae in cap cuticle filamentous, of $\pm$ cylindric cells 5-10 μ in diam., with orange vacuolar pigment often in many separate drops in one cell: (Note—lack of spore-print of sufficient depth prevented colour of spore-print being noted).

One large troop under birch, lower Glen Lyon, Perthshire, 30 ix 1961. Differs from *C. cibarius* not only in different colours (pale pinkish gills contrasting with orange cap) but also in narrower spores (*C. cibarius* has spores 5-6(7) μ in diam.).

*Notes on British Agarics I (1-5 Observations on the Genus *Coprinus*). Trans. Brit. Mycol. Soc. 40: 263-267 (1957).

Collybia putilla (Fr. ex Fr.) Sing. in Ann. Mycol., 41:111 (1943).

Syn.: *Agaricus putillus* Fr. ex Fr., Syst. Myc. 1: 129 (1821).

Marasmius putillus (Fr. ex Fr.) Fr., Epicr., 377 (1838).

Icon: J. Lange, Fl. Ag. Dan 2: 46H, (1936).

This addition to the British list was collected at Loch-an-Eilean, Inverness-shire by R. Watling and myself in 1960 whilst investigating the agarics of the Nature Conservancy Reserve there. I am indebted to him for the following description:

Cap 12–28 mm, convex then expanded, usually slightly umbonate, when moist date-brown with deeper reddish-bay margin, drying paler reddish-ochraceous from centre out, but often darker rust-tinged in centre, margin striate when moist and often persistently darker coloured. Gills narrowly adnate to $\pm$ free, concolorous with cap then more uniform reddish-brown, not crowded, edge often paler. Stem 27–41/3–4 mm (4–5 mm at base), slightly thickened downwards, sometimes also at apex, bay or rusty-brown with paler rusty-ochre or pale date-brown apex, apex white pruinose, basal part with dirty white or very pale ochraceous woolly coating, which may be yellowish at extreme base, often extending halfway up the stem. Smell faint, pleasant. Taste mild. Spores 5.5–7.5 3–3.75 μ ellipsoid or lanceolate-ellipsoid (fig. 1). Cap cuticle filamentous.

A few specimens attached to pine needles, Loch-an-Eilean, Inverness-shire, 5 ix 1960. Recognized by woolly foot, coloured gills and habitat. *C. tergina* (Fr.) Lundell differs in paler colours, especially of stem but also of gills, and habitat (attached to deciduous leaves) and has an even more pronounced woolly foot. The latter was also gathered on 5 ix 1960 attached to birch leaves and the two compared together.

J. Lange and Lundell both give longer spore measurements (9.5 μ and 8–10 μ). Material of Lundell now in British Museum (London) as Fungi Exsiccati Suecici No. 1156a showed spores 6–8 μ long, however, which is thus more in agreement with the above description.

Cortinarius (Phlegmacium) caledoniensis P. D. Orton, *sp. nov.*

Pileus 44–93 mm, e convexo expansus vel leviter depressus, interdum obtuse umbonatus, mellino- vel fulvo-umbrinus, interdum ad discum obscuriore coloratus et circa marginem fulvo- vel ochraceo-mellinus, ad marginem primo olivaceo-viridulo-zonatus, viscidus, jove pluvio interdum ad marginem striatus, primo e velo albidio squamulis sericeis adpressis circa marginem obtectus. *Lamellae* dente adnatae, leviter ventricosae, e pallide argillaceo-fusco colore pilei tinctis argillaceo-ferrugineae vel ochraceo-luteolobrunneae (diu fuscotinctae) postremo obscure ferrugineae, confertae, L 72–90, l 1–3, ad aciem $\pm$ integrae. *Stipes* 42–115/7–12 mm (ad basim 12–37 mm), clavato-bulbosus, vulgo sursum attenuatus, bulbo nunc manifeste nunc leviter teret-marginato, e caeruleo-violaceo vel pallide ochraceo ad apicem purpureo- vel griseo-violaceo ferrugineo-ochraceus rariore praecipue deorsum olivaceo-luteolobrunneo tinctus, ad apicem saepe primo corneo-lineatus, e senectute filbrilloso-striatus, farctus vel anguste cavus, bulbo ex albidio vel pallide violaceo, pallide argillaceo vel pallide luteolobrunneo, postremo ferrugineo-ochraceo, interdum ad marginem reliquis veli ochraceo-viridi oblecto. *Caro* pilei concolorata, jove pluvio corneo-umbrina, jove sicco albida vel pallide

ochracea; caro stipitis primo praecipue sursum caeruleo-violacea dein albida vel cornea, sub cuticula saepe ochraceo-tincta, in bulbo albida vel argillaceo-luteola rariore olivaceo-viride tincta. *Odor et sapor nulli. Sporae* ellipsoideae, 9-11(11·5)/5-6(6·5) μ , punctato-asperae (fig. 2). *Acies lamellarum* fertilis.

Inter muscos vel Callunas vel Vaccinia locis humidis in pinetis. Rothiemurchus Reserve, Inverness-shire, 21 (typus in Herb. Kew), 22, 23 viii, 1 ix 1960: Loch-an-Eilean, Inverness-shire, 5 ix 1960, 22 viii 1961: Glentanar, Aberdeenshire, 26 viii 1962. A sporis ellipsoideis coloribus pilei et lamellarum insignis. *C. scaurus* a lamellis olivaceo-luteis, pileo circa marginem obscure guttato differt.

Cap 44-93 mm convex becoming expanded-plane or sometimes slightly depressed, sometimes slightly obtusely umbonate, *deep date-honey* or *tawny-date*, sometimes darker at centre and paler tawny or ochraceous-honey towards margin, *often paler at centre when drying out*, margin with narrow *olive-greenish zone at first* which later loses its greenish tints and becomes ochraceous-honey or $\pm$ concolorous, but is usually paler than the rest, viscid, margin sometimes translucently striate when wet, at first with adpressed silky whitish remnants of veil around centre or at margin. *Gills* adnate with tooth, slightly ventricose, *pale milky-coffee with tinge of cap colour*, occasionally very faintly blue-violaceous near edge of cap when very young (cap not or just opening), *then milky-coffee, often retaining pale sepia tinge for some time*, but becoming clay-rusty or ochraceous-buff and finally $\pm$ rusty-amber, crowded, L 72-90, l 1-3, edge $\pm$ even, paler or concolorous. *Stem* 42-115/7-12 mm (12-37 mm at base), clavate-bulbous, usually attenuated upwards from rounded marginate base, bulb varying from very conspicuous to rather inconspicuous, *at first blue-violaceous or pale ochraceous with purplish-violet or grey-violaceous apex, soon discolouring rusty-ochre except for extreme apex*, less commonly tinged olive-buff more especially in lower part, often slightly horny-streaky at apex at first, later fibrillose-striate; bulb whitish or with faint violaceous tinge to pale dirty buff then pale buff or ochraceous, finally tinged rusty-ochre, sometimes with traces of olive-greenish veil on the edge at first, white or whitish tomentose on underside, tomentum sometimes puckered or almost volvate, stuffed or narrowly hollow. *Flesh concolorous in cap* (horny-date when really wet) drying whitish or pale ochraceous in centre, *blue-violaceous in stem at first*, especially at apex, then horny or whitish, cortex often tinged ochraceous, *in bulb whitish or dirty yellowish* or more rarely olive-greenish. *Smell and taste* none. *Sporae* ellipsoid, 9-11(11·5)/5-6(6·5), punctate-rough (fig. 2). *Basidia* 4-spored, 30-44/9-11 μ . Gill-edge fertile. Hyphae on cap gelatinized, 0·5-2 μ in diam., overlying others 2-8 μ in diam., which are hyaline or encrusted pigmented.

Under *Pinus sylvestris* in moss or in heather or *Vaccinium*, most frequently in damp depressions. Rothiemurchus Reserve, Inverness-shire, 21 (type Herb. Kew), 22, 23 viii, 1 ix 1960: Loch-an-Eilean, Inverness-shire, 5 ix 1960, 22 viii 1961: Glentanar, Aberdeenshire, 26 viii 1962.

This rather striking agaric is the only species of *Cortinarius* subgenus *Phlegmacium* I have found in any numbers (although mostly in scattered specimens) in pure stands of native Scots pine. It does not, however, appear to be described in any of the European literature. It is perhaps closest in colours

to *C. turbinatus*, which, as interpreted at present, differs *inter alia* in pruiniform subglobose spores and habitat under beech. It resembles *C. scaurus* (also found sparingly at Rothiemurchus) in cap colour and variable stem bulb, but the latter is easily distinguished by its olive-yellowish gills and by having darker spots near the margin of the cap, and also by having rather broader and longer spores ($10-13/6-7.5\mu$), which are, however, ellipsoid as in *C. caledoniensis*. I have therefore described this as a new species, naming it after the relict Caledonian forest of which it is rather a feature. No doubt it will be found in other parts of Scotland where there are stands of native Scots pine, just as one specimen was found at Glentamar in 1962.

Cortinarius (Sericeocybe) fuliginosus P. D. Orton, *sp. nov.*

Pileus 37-82 mm, e convexo $\pm$ expansus, interdum obtuse umbonatus, fuligineo-fuscus vel fusco-olivaceus dein olivaceo- vel fusco-umbrinus, interdum ad marginem pallidiore olivaceo-luteolobrunneus, saepe circa discum rufulo-fulvo tinctus, primo toto fusco vel luteolobrunneo adpresso fibrilloso-tomentosus dein circa discum glabrescens et radialiter sericeo-nitidus, ad marginem primo e residuis luteolobrunneis veli cortinaeque obtectus. *Lamellae* adnatae interdum dente adnatae, caeruleo-violaceae mox pallidiore caeruleae vel argillaceo-violaceae, dein argillaceo-fuscae, postremo ochraceo-luteolobrunneae, subconfertae, L 44-64, l 3, interdum costatae, ad aciem $\pm$ integrae. *Stipes* 52-115/6-15 mm (ad basim 9-19 mm), diversiformis aut sursum attenuatus vel fere aequalis aut clavato-bulbosus, primo praecipue ad apicem caeruleo-violaceus dein deorsum pallide postremo fere toto olivaceo-luteolobrunneus, interdum ad apicem colore cornus notatus, primo e velo luteolobrunneo vel olivaceo-luteolobrunneo annulo-zonatus vel maculatus, dein sericeo-nitidus, ad basim primo pallide caeruleo-violaceo tomentosus dein albescens, farctus cortice firmo. *Caro* pilei e caeruleo- vel griseo-violaceo sordide cremea vel ochraceo-luteolobrunnea, siccitate albida, vulgo juxta lamellas colore cornus tincta; caro stipitis praecipue ad apicem obscuriore caeruleo-violacea dein pallescens, postremo sordido-cremea vel olivaceo-luteolobrunnea in corticem obscuriore colorata, interdum ad basim fere olivaceo-umbrina. *Odor* debilis fugax, saepe juventute saltem sectus aromaticus. *Sporae* subglobosae vel late ellipsoideae, $6.5-8.5/5.5-6.5\mu$, $\pm$ asperae (fig. 3). *Basidia* 4-sporigera, ca. $32-36/7-9\mu$. *Acies* lamellarum fertilis. *Hyphae* in cuticula pilei $3-10\mu$ crassae, interdum forte pigmentatae.

Inter muscos vel *Vaccinia* sub *Betulas* et *Pinos*, Loch-an-Eilean, Inverness-shire, 2 ix 1960 (typus in Herb. Kew): sub *Betulas* Rothiemurchus, Inverness-shire, 3 ix 1960. A coloribus fuliginosis, pileo juventute luteolobrunneo tomentoso, lamellis et apice stipitis primo caeruleo-violaceis facile distinguitur. *C. lepidopus* a pileo umbrino vel rufobrunneo albo sericeo-nitido differt. A coloribus pilei *C. myrtilino* similis, sed Fries *C. myrtilinum* sine velum descripsit.

Cap 37-82 mm, convex then expanded-convex or almost plane, sometimes obtusely umbonate, *smoky sepia* or *sepia-olive* then olive-date or sepia-date sometimes with paler olive-buff margin, often with reddish-tawny tinge around centre, at first entirely *sepia* or *buff* adpressedly fibrillose-tomentose then becoming smooth especially around centre and with marked radial silky sheen, margin with remnants of buff or olive-buff veil and cortina at

first. *Gills* adnate, sometimes with slight tooth, *blue-violaceous* soon paler bluish or clay-violaceous then *clay-sepia* or *milky-coffee*, finally ochre-buff, fairly crowded, L 44-64, l 3, sometimes veined on sides, edge concolorous $\pm$ even. *Stem* 52-115/6-15 mm (9-19 mm at base), varying from attenuated upwards or $\pm$ equal with slightly swollen base to clavate-bulbous, at first *blue-violaceous* (especially in upper part), then *pale olive-buff* below, finally $\pm$ entirely *olive-buff*, sometimes *horny-streaky* at apex, at first with *conspicuous buff* or *olive-buff* veil forming *ring-zone* and *patches*, later *silky-striate*, stuffed, with rather firm cortex. Base with *pale blue-violaceous tomentum* at first which soon turns whitish. *Flesh* in cap *blue* or *grey-violaceous* at first often with smoky line under cuticle, then *dirty cream* or *ochre-buff* drying whitish, often *horny* over gills: in stem deeper *blue-violaceous* especially at apex, fading to *horny-buff*, *dirty cream* to *olive-buff* at base, often deeper in cuticle, sometimes almost *olive-date* at base. *Smell* faint, fugacious, spicy-fruity in young specimens (often only noticeable when cut). *Spores* subglobose or broadly ellipsoid, $6.5-8.5/5.5-6.5\mu$, punctate-rough or rough (fig. 3). *Basidia* 4-spored, about $32-36/7-9\mu$. *Gill-edge* fertile. *Hyphae* on cap $3-10\mu$ in diam., sometimes heavily pigmented.

Under birch and pine in moss and *Vaccinium myrtillus*, Loch-an-Eilean, Inverness-shire, 2 ix 1960 (type in Herb. Kew); under birch, Rothiemurchus, Inverness-shire, 3 ix 1960. Readily recognized by smoky colours of young cap, which is also buff tomentose-fibrillose, combined with blue-violaceous young gills and stem apex. *C. lepidopus* differs in having the cap amber or reddish-brown and sometimes tinged blue-violaceous at margin and with a white silky sheen. The veil of *C. fuliginosus* is also a deeper yellow-brown. The cap colours suggest *C. myrtilinus*, but Fries clearly states (Epicrisis 285, 286 (1838)) that this has no veil, 'stipite albosericco azono albicante' and 'nec velum peronatum' so that it would seem to be different. This is another species of the 'Anomali' and would key out in Cortinarius II to couplet 17 on page 88, which could be amended thus:

17. Cap smoky-sepia or sepia-olive then olive- or sepia-date, sometimes with paler olive-buff margin, often with reddish-tawny tinge around centre, at first entirely sepia or buff adpressedly fibrillose-tomentose; (habit fairly robust, stem 6-15 mm in diam. (9-19 mm at base) with conspicuous buff or olive-buff veil) *fuliginosus*
17. Cap differently coloured, or if with tendency to similar colours, not sepia or buff adpressedly fibrillose-tomentose 17a

Cortinarius (Dermocybe) fervidus P. D. Orton, sp. nov.

Pileus 17-58 mm, e convexo vel conico-convexo convexo-expansus, interdum leviter acute umbonatus vel circa discum depressus, purpureo-castaneus vel purpureo-badius, ad marginem fulvus vel ferrugineo-fulvus, senectute vel siccitate pallidiore umbrinus vel badius, ad marginem ferrugineo-ochraceus, ad discum $\pm$ radialiter sericeo-fibrillosus, circa marginem minute tomentoso-squamulosus. *Lamellae* adnatae intense rubro-ferrugineo-fulvae vel obscure ferrugineo-fulvo-mellinae margine ochraceotincto, confertae, L 38-44, l 3-7, ad aciem $\pm$ integrae et primo clare olivaceo-luteae. *Stipes* 46-97/3-5(7) mm, aequalis vel deorsum leviter incrassatus, aureo-luteus mox praecipue deorsum colore pilei tinctus, ad apicem persistente aureus, sericeo-

fibrilloso-striatus, cortina lutea mox fugace, farctus dein interdum cavus, ad basim aureo-luteo-tomentosus. *Caro* pilei colore pilei concolorata; caro stipitis ferruginea vel ferrugineo-umbrina cortice aureo-lutea, ad apicem olivaceo-luteolo tincta. *Odor* nullus. Sapor raphanoideo-acris. *Sporae* ellipsoideae, $(6)6\cdot5-8/4-5\mu$, punctato-asperae (fig. 4). *Basidia* 4-sporigera, $26-32/7-8\mu$, saepe intus lutea. *Acies* lamellarum fertilis. *Cellulae* hypharum pilei $4-10\mu$ crassae, aureo-luteolae.

Gregarius sub Juniperis in pinetis, Loch-an-Eilean, Inverness-shire, 2 ix 1960 (typus in Herb. Kew). A coloribus pilei lamellarumque et sporis parvis insignis. *C. anthracinus* (sensu J. Lange) proxime accedit, sed a sporis majoribus et absentia coloribus aureoluteis differt. *C. purpureobadius* a coloribus praecipue lamellarum et sporis majoribus distinguitur.

Cap 17-58 mm, convex or conico-convex then expanded-convex, sometimes slightly acutely umbonate, sometimes becoming depressed at or around centre, *purplish-chestnut* or *purplish-bay* with *brick-tawny* or *rusty-tawny* margin, when older or dry slightly paler umber or bay with rusty-ochraceous margin, $\pm$ radially silky fibrillose at centre, minutely tomentose-scaly in outer part. *Gills* adnate, *intense reddish-rusty-brick* or deep rusty-tawny-honey with more ochraceous margin, crowded, L 38-44, l 3-7, edge even or slightly uneven, rather bright yellow-ochre at first. *Stem* $46-97/3-5(7)$ mm, equal or slightly swollen at base, golden-yellow *soon tinged colour of cap especially below, apex persistently golden*, silky-fibrillose striate, cortina yellow soon fugacious, stuffed, then sometimes hollow, base with golden-yellow tomentum (mycelium). *Flesh* concolorous in cap, with olive-yellowish-horny tinge in centre of stem apex, deep rusty or rusty-date in stem with golden-yellow cortex in upper part (appears as narrow yellow line in section). *Smell* none. *Taste* radishy-bitter. *Spores* ellipsoid, $(6)6\cdot5-8/4-5\mu$, punctate-rough (fig. 4). *Basidia* 4-spored, $26-32/7-8\mu$, often with yellow pigment inside. *Gill-edge* fertile. *Hyphae* of cap cuticle of rather short cells $4-10\mu$ in diam., constricted at the septa with golden-yellowish (? vacuolar) pigment.

In large troop under juniper in pine wood, Loch-an-Eilean, Inverness-shire, 2 ix 1960 (type in Herb. Kew). This seems nearest to *C. anthracinus* sensu J. Lange, which, however, lacks golden-yellow colours in the stem and is more unicolorous chestnut according to Lange's description, and also has larger spores. *C. purpureobadius* has differently coloured gills, is more distinctly hygrophaneous with a redder stem, and also has longer spores. The gills of *C. fervidus* are of an indescribably intense colour. If the cap is held upside down, they appear to be bright tawny-rusty-ochre. I have not been able to find a description fitting this very characteristically coloured agaric and have therefore described it as new. In the key to *Dermocybe* in *Cortinarius* II it would run to couplet 43, which should therefore be modified thus:

- | | | |
|-----|--|----|
| 43. | Cap and stem predominantly some shade of red, purplish-red or chestnut from the start | 44 |
| 43. | Cap and/or stem distinctly yellowish, ochraceous, golden or ochraceous, at least in part | 48 |

Couplet 48 also needs amendment thus:—

48. Spores elliptic-amygdaliform or -fusiform, $6-8/3\cdot5-4(4\cdot5)\mu$; stem

ochraceous or yellowish with tawny-ochre or red fibrils below cortical zone, base pinkish-ochraceous or pale purplish-red tomentose

48. Spores ellipsoid, 6-8(8.5)4-5 μ ; stem *either* golden-yellow at least at apex, soon tinged purplish chestnut in lower part, base golden-yellow tomentose, *or* ochraceous or olivaceous without red fibrils, base yellowish, pinkish or carmine-red tomentose . . . *phoeniceus* 48a.
- 48a. Stem golden-yellow at least at apex, soon tinged purplish-chestnut in lower part, base golden-yellow tomentose; flesh purplish-chestnut in cap, deep rusty or rusty-date in stem with golden-yellow cortex in upper part *fervidus*
- 48a. Stem ochraceous or olivaceous, without red or purplish-red tints, often with brownish or olivaceous fibrils, base yellowish, pinkish or carmine-red tomentose, flesh dirty ochraceous, buff or olivaceous, without red tints, except sometimes in stem-base; (gills more blood-red) *semisanguineus*

Deconica graminicola P. D. Orton, *sp. nov.*

Pileus 5-20 mm, e convexo expansus, interdum leviter obtuse umbonatus, fulvo-fuscus, fulvo-umbrinus vel purpureo-umbrinus, siccitate pallide ochraceus vel ochraceo-mellinus, interdum circa discum fulvo-tinctus, dum siccatur circa marginem saepe zona obscuriore bicoloratus videtur, non striatus vel jove pluvio solum ad marginem striatus, juventute residuis veli ad marginem obtectus, viscidus, pellicula separabile. *Lamellae* adnato-decurrentes leviter dente ventricosae vel fere triangulares, pallide-vel argillaceo-umbrinae dein obscuriore-vel violaceo-umbrinae, interdum leviter fulvotinctae, subdistantes vel subconfertae, L 12-24 l (1)3, ad aciem primo albedo flocculosae dein $\pm$ concoloratae integraeque. *Stipes* 18-36/1-2 mm, aequalis vel aut deorsum aut sursum incrassatus, olivaceo-mellinus vel pallide umbrinus dein vulgo ad basim obscuriore umbrinus, leviter hygrophanus, primo e velo albo vel albedo annulozonatus et infra squamulis dispersis floccosis decoratus dein glabrescens interdum leviter sericeostriatus, ad apicem albedo-pruinatus, anguste cavus. *Caro* concolorata siccitate rufo-ochracea pallide luteolobrunnea vel albida. *Odor* et sapor nulli. *Sporae* ellipsoideo-amygdaliformes leviter lentiformes poro germinativo, 6-8.5/4.5-5.5/3.75-4.5 μ (fig. 5). *Basidia* 4-sporigera, 28-32/6-8 μ . *Cystidia* aciei lamellarum $\pm$ lageniformia ad apicem aliquantum acuta, 20-40/5-9 μ ad apicem 2-3 μ (fig. 16). *Cystidia* faciei lamellarum nulla.

Gregarius. Inter graminos curtos ad marginem viarum. Mid-Yell, Shetland, 23 vii 1958; inter graminos curtos Loch-an-Eilean, Inverness-shire, 23 viii 1961 (typus in Herb. Kew). *D. bullacea* proxime accedit, sed a velo copioso pileo semiglobato, manifeste striato, habitatione ad fimum vel in stramento putrido differt.

Cap 5-20 mm, convex then expanded $\pm$ plane, sometimes slightly obtusely umbonate, *burnt sienna* or *tawny-date* to *umber* or *purplish-date*, drying pale ochraceous or ochraceous-honey from centre out and sometimes with tawny tinge especially around centre when half-dry, extreme margin often remaining dark for some time, *not striate* or *striate at margin only* (about $\frac{1}{4}$ in.) when moist, with veil traces at margin when fresh, viscid with separable pellicle.

Gills adnato-decurrent, slightly ventricose with tooth to $\pm$ triangular, *pale- or clay-umber then deeper umber or violaceous-umber* (sometimes with slightly tawny tinge), not to fairly crowded, L 12–24 l (1)3, edge white flocculose at first then $\pm$ concolorous and even. *Stem* 18–36/1–2 mm, equal or slightly thickened at base or apex, *ochraceous honey or pale date then often darker date or umber at base*, slightly hygrophanous, veil leaving white or whitish ring-zone and scattered floccose patches below this at first, then $\pm$ smooth or slightly silky striate, apex whitish pruinose, narrowly hollow. *Flesh concolorous*, drying reddish ochraceous to pale buff or whitish. *Taste and smell* none or slightly fungussy. *Spores* ellipsoid-amygdaliform slightly lentiform, with germ-pore, 6–8.5/4.5–5.5/3.75–4.5 μ (fig. 5). *Basidia* 4-spored, 28–32/6–8 μ . *Marginal cystidia* $\pm$ lageniform with rather narrow apex, 20–40/5–9 μ , apex 2–3 μ in diameter (fig. 16). *Facial cystidia* absent.

In grassy verge of road, Mid-Yell, Shetland, 23 vii 1958; in short grass, Loch-an-Eilean, Inverness-shire, 23 viii 1961 (type in Herb. Kew). Gregarious.

In the List, part III, p. 224, I gave a key to the genus *Deconica* which included "taxonomic sp. 1" based on a collection from the Shetlands. I have now collected this from Inverness-shire and am describing it as a new species. The cap edge was slightly striate in some specimens and the veil was quite evident in young specimens, but this feature disappears at maturity. It therefore differs from *D. bullacea* primarily in less semiglobate cap, which is not striate or striate at edge only, and in absence of marked appendiculate veil. The habitat appears to be different too, for *D. bullacea* is found on dung or rotten straw, whereas *D. graminicola* has so far been found in grass.

Hohenbuehelia fluxilis (Fr.) P. D. Orton, **comb. nov.**

Basionym: *Agaricus (Pleurotus) fluxilis* Fr., Syst. Myc. 1: 189 (1821).

Syn.: *Pleurotus fluxilis* (Fr.) Gillet, Hymen. Fr. 335 (1874).

Whilst exploring Aberdeenshire, D. M. Henderson handed me a willow branch with a number of small laterally attached more or less gelatinous agaric fruit bodies on it. These reminded me of a previous collection I had made in Herefordshire and a later check of microscopical characters confirmed that this was the same agaric. The 2-spored basidia, uncommon in this genus, are especially noteworthy. I am identifying this with *Agaricus fluxilis* Fr., for it seems macroscopically very similar; especially appropriate are the words "pileo gelatinoso fluxili reniforme umbrino" in the original diagnosis. The following is a combined description of the two collections:

Cap 7–18 mm, *hoof-shaped at first then $\pm$ reniform and attached laterally to the substrate*, sometimes becoming elongate shell-shaped or slightly lobed, obtusely conical or convex at first then expanded, *dark sepia-horn or slate sepia then paler grey-sepia with paler greyish or whitish margin, drying pale ochraceous or cream, at first entirely gelatinous-viscid without separable pellicle then whitish strigose at point of attachment and scurfy strigose around this, soon with $\pm$ smooth margin, the outer part of some larger specimens sometimes showing some minute scattered darker spot-like scales, margin pellucid-striate when moist*. *Gills* meeting laterally, sometimes extending onto point of attachment, *white then whitish or tinged pale horn colour near flesh of cap*, discolouring with age to pale ochraceous or cream (especially near point of attachment), fairly crowded L 5–9 l 0–17 (31), sometimes

crisped or wavy near margin of cap, edge minutely denticulate then $\pm$ even. *Stem* none, but point of attachment may form a white villose hump. *Flesh* of upper part of cap gelatinous and sepia-horn colour; below this is a normally thinner white or whitish layer. *Smell* mealy when cut. *Taste* mealy, sometimes rather strong. *Spores* cylindric-ellipsoid with oblique apiculus, (8)8.5-10/3.5-4.5 μ (fig. 6) non-amyloid. *Basidia* 2-spored, 22-30/5-6 μ . *Gill-edge* with a few deep-seated metuloids, 30-45/7-9 μ , and numerous small cells, 16-40/4-8 μ , projecting about 6-10 μ with apex often capitate (head 1-3 μ in diameter) or with short point or more rarely with two irregular branches at tips (fig. 17). *Metuloids* scattered on face of gills, 40-64/7-11 μ , usually covered with a $\pm$ conical cap, 12-16 μ in diameter (fig. 18). *Hyphae* on cap 1-4(5) μ in diameter, filamentous, clamped, branched and interwoven, $\pm$ gelatinized. The coloured part of the flesh has cells 2-6 μ in diameter with strongly refringent walls and extraneous masses of yellow-brown pigment (seen in daylight in water).

Gregarious. On birch branch, Covenhope, Herefordshire, 28 xi and 5 xii 1959; on willow branch, Loch Skene, Aberdeenshire, 25 viii 1962 (coll. D. M. Henderson). Readily distinguished from other species of *Hohenbuehelia* by 2-spored basidia, small size and dark sepia, moist cap.

***Hygrophorus* (Camarophyllus) sub violaceus** Peck, in Rep. N.Y. St. Mus. 53: 842 (1899).

In the List, part III, p. 260, I described a collection of this agaric from Devon, but was not able to state whether my finds had a viscid pellicle or not. Since then I have made several collections of this agaric from the Rannoch district and am now satisfied that my record of this species was correct. The cap does have a viscid pellicle as stated by Smith & Hesler (Lloydia 5: 12 (1942)). Furthermore in one of my collections the cuticle tasted bitterish, as these authors state, although this bitterish taste was weak and fugacious. Some of my specimens resembled very closely the illustration in "North American species of *Hygrophorus*", Smith & Hesler 63, fig. 15 (1963). Additional notes to my above-mentioned description are:

Cap 15-54 mm, convex then expanded, sometimes depressed or infundibuliform with many-lobed margin, sometimes slightly obtusely umbonate, greasy-viscid when moist with pellicle separable half to three-quarters in. *Gills* often deeply arcuate-decurrent, pale violaceous-slate, slate-grey or smoky-slate, L 20-40 l 1-3, in large specimens sometimes undulated or veined on sides. *Stem* 20-70/3-10 mm, often slightly attenuated at base, white or tinged slate-grey (especially in upper part), sometimes tinged dirty cream or pale yellowish in lower part, both inside and outside. *Spores* 6-8(10)/4.5-6 μ . *Basidia* usually 4-spored but sometimes 2-4-spored on same gill, when spores may be up to 10/6 μ .

Gregarious in grass. In field, Dall, Perthshire, 11 x 1960 and subsequently: by road, Camghouran, Perthshire, 17 x 1960: in field, Camghouran, Perthshire, 20 x 1963.

***Hygrophorus* (Hygrocybe) vitellinus** Fr., Monogr. 2: 312 (1863).

Syn.: *Hygrocybe vitellina* (Fr.) Karst., Hatsvampar 1: 233 (1879).

Hygrophorus (Hygrocybe) *citrinus* Rea, Tran. Brit. Myc. Soc. 3: 228 (1910) Pl. 11., s. Rea non J. Lange.

In the New Check List (1960) two descriptions are cited for *H. vitellinus*. One is that of Möller in "Fungi of the Faeroes" (1955) and the other is *H. citrinus* as originally described by Rea (1910). This citation was made with some doubt, for the spore details are somewhat divergent. Recent collections from England and Scotland have had spores consistently subglobose or broadly ellipsoid $(5.5)6-8(9)/(4.5)5-6.5\mu$. This is in agreement with the size and shape given by Rea for *H. citrinus*, but hardly with those given by Möller.

Lundell (Fungi Exsicc. Suec. No. 2324) has issued material under the name *H. vitellinus* with spores of yet another size $(8.5-10/4.5-6\mu)$. However, since he states that "specimens fully exposed to the sun take a more vivid colour with the pileus bright orange-red", I suspect that he had some other fungus, for there is no red whatever in our *vitellinus*, nor does Fries make any mention of red in his diagnoses of *vitellinus*.

Smith & Hesler (N. American species of Hygrophorus, 1963) have not used the name *H. vitellinus* for any North American agaric. They give a description of *H. nitidus* Berk. & Curtis (l.c., 232), which is similarly coloured to *H. vitellinus* but has narrower spores, $7-8/4-5\mu$. The gills of *H. nitidus* are said to be "pale yellow, edges often deeper yellow" which is not the case in our *vitellinus*, in which the gills are always rather deep chrome or egg-yellow. Lundell claims that his *vitellinus* is the same as *nitidus*, but this can hardly be so in view of the distinct spore difference.

Smith & Hesler (l.c., 238) also describe another similarly coloured agaric, *H. citrinopallidus* Smith & Hesler with spores " $7-9(10)/4.5-5\mu$, broadly fusoid in face view, inequilateral in side view", which seems a clear distinction. Whether our *vitellinus* or that of Möller is the Friesian *vitellinus* remains to be proved, but it seems likely that Möller's account may refer to *nitidus* or *citrinopallidus*, perhaps more likely *nitidus*. Since our *vitellinus* does agree macroscopically with Fries' diagnosis (especially "Pileus . . . glaber, viscidus, .5-1 unc. latus, citrino-vitellinus, siccitate albescens, margine plicato-striato. Lamellae longe decurrentes, subdistantes, vitellinae. Stipes . . . laevis, glaber, pallide flavus siccus albescens, admodum fragilis"), I give a description of British material under the name *H. vitellinus* with *H. citrinus* as a synonym (Note: there are other interpretations of both these names, see New Check List, part Ib).

Cap 7-25 mm, convex then expanded, soon umbilicate or slightly depressed, deep egg-yellow then chrome or paler egg-yellow, drying pale lemon-yellow, yellowish-cream or whitish in patches, entirely pale when quite dry, fragile, viscid and striate at margin when moist, finely silky shiny and opaque when dry, margin often crenate or plicate at first. Gills arcuate-decurrent, sometimes, deeply so, deep egg-yellow or chrome-yellow, sometimes slightly paler when cap is expanded, not crowded, L 16-30 l (0)-1, edge even, blunt. Stem 26-60/1-2.5 mm, equal or thickened at apex or attenuated at base, expanded into pileus at apex where it is often hollow, egg- or deep lemon-yellow, sometimes greenish-lemon in places when old, apex or upper part often paler or fading to pale yellowish, drying whitish and opaque like cap, fragile, viscid when moist, smooth, stuffed or narrowly hollow. Flesh concolorous, drying white or whitish in cap and pale yellowish in stem. No smell or taste. Spores subglobose or broadly ellipsoid (fig. 7) $(5.5)6-8.5(9)/(4.5)5-6.5\mu$,

smooth, non-amyloid, *Basidia* 4-spored, about $44-56/7-9\mu$. Gill edge fertile. *Hyphae* on cap gelatinized, $1-2\mu$ in diameter, overlying wider ones $10-30\mu$ in diameter, hyaline or encrusted pigmented.

In grass and bracken (often with stem deeply buried by side of bracken stem), Crowcombe, Somerset, 15 ix 1960: in grass and moss on bracken slope, Comrie Farm, Keltneyburn, Perthshire, 2 x 1961: also amongst short grass in heather, Balerno, Midlothian, 12 ix 1954 (coll. D. M. Henderson).

Best recognized by egg-yellow colour when fresh (which is liable to fade, however), viscid cap and stem, fragility and broad spores. In stature the fruit-bodies resemble those of *H. laetus* and more particularly *H. xanthochrous*. They are very fragile and break very easily.

Hygrophorus (Hygrocybe) xanthochrous P. D. Orton, in Trans. Brit. Myc. Soc. 43: 271 (1960).

Three further collections of this species have now been made in Scotland from similar habitats to the original and from fairly high ground.

It was collected by D. A. Reid from the Cairngorm mountains, Inverness-shire at about 2,500 ft. under *Calluna* by a path, 11 ix 1957. All traces of lilac colour had disappeared and the cap surface was not viscid when collected. The species was, however, clearly identifiable by pale colours and especially by the characteristic ellipsoid-amygdaliform spores.

D. M. Henderson collected it from Habbies' How, Pentlands, Midlothian, 9 x 1961, at about 1,100 ft. on soil under *Vaccinium myrtillus* and *Calluna*. I collected it near Bridge of Gaur, Rannoch, Perthshire, 5 xi 1961 at about 1,100 ft. on bare soil under *Calluna* by a track. In both these collections the stems were shorter than those of the type collection. My collection was gathered after frost, so that the specimens were only slightly viscid and the lilac colour was very faint and confined to the gills and stem apex. Both collections were easily recognizable by their ellipsoid-amygdaliform spores (see l.c. Fig. 289). A few 2-spored basidia were present in my collection, the spore measurements of which were $6.5-8.5(10)/3.5-4.5(5)\mu$. Amended stem dimensions are $20-60/1-2$ mm.

When gathered in faded and dried up condition the fruit-bodies resemble those of *H. vitellinus* but are easily distinguished by their very different spores (see description of *vitellinus* above).

Lactarius sphagneti (Fr.) Moser., Kleine Kryptogamenflora, band IIb, 267 (1955), sensu Neuhoff non Moser.

Syn.: *Lactarius subdulcis* (C) *sphagneti* Fr. in schedulis, Monogr. 2: 181 (1855).

Icon: Neuhoff, die Milchlinge, Pl. 15, No. 61 (1956).

Lactarius sphagneti as recently convincingly defined and illustrated by Neuhoff (l.c.) was gathered twice in *Sphagnum* in Scotland in 1960. It is not unlike *L. rufus* in colour but is completely mild and has unchanging white milk and a shiny cap. The habitat seems to be characteristic. *L. lacunarum* (= *L. sphagneti* s. Moser, 1955) has milk which changes to yellow on a handkerchief and is redder in colour and is frequently found on bare soil in swampy places. I am indebted to R. Watling for the following brief description of *L. sphagneti* from Scotland.

Cap 8-43 mm, $\pm$ campanulate then expanded with wavy edge and depressed centre, usually with a small papilla, bay with paler reddish-date margin at first, then $\pm$ unicolorous dark reddish-date or with rusty-honey margin, shiny and striate at edge when moist, later matt, margin slightly crenate. Gills slightly decurrent, creamy with rusty tinge. Stem 33-40/7-8 mm (< 10 mm at base), equal or slightly swollen towards base, bay or $\pm$ colour of *L. rufus*, often whitish hoary at apex. Flesh in cap whitish becoming pale reddish ochre below cuticle of centre of cap, in stem with reddish-date outline, not changing colour. Milk mild, white unchanging. Smell faint, pleasant. Spores ellipsoid with conspicuous warts and ridges, 8-10/6.5-7.5 μ , (fig. 8) about 'B' (Crawshay) in fresh spore print.

In *Sphagnum* in pine woods, often gregarious. Loch-an-Eilean, Inverness-shire, 2 ix 1960: Rothiemurchus, Inverness-shire, 7 ix 1960: Black Wood, Rannoch, Perthshire, 24 ix 1960. Probably not uncommon in relict Caledonian forest, possibly also elsewhere in suitable habitats.

***Leptonia xanthochroa* P. D. Orton, sp. nov.**

Pileus 20-39 mm, e convexo expansus vel umbilicatus, luteolo-fuscus vel ochraceo-luteolo-fuscus, ad discum obscuriore fuscus ad marginem diu luteolo-tinctus, siccitate pallide sordide luteolo-fuscus, jove pluvio ad marginem vel usque ad discum striatus, siccitate ad marginem saepe radialiter plicatus vel fissuratus, omnino vel ad discum $\pm$ obscuriore squamulosus. Lamellae adnatae vel dente parvo decurrentes vel liberae, e pallide luteolo- vel ochraceo-fusco incarnato-tinctae, subconfertae, L 18-32, l 3-7, ad aciem vulgo conspicue obscuriore fusco-brunneae. Stipes 30-60/1-2 mm (3-5 mm ubi compressus), aequalis vel ad basim leviter incrassatus, pallide luteolo-fuscus vel pallide ochraceus interdum praecipue sursum clariore flavo-tinctus, glaber, interdum leviter sericeo-striatus, cartilagineus, farctus vel cavus, ad basim albo-tomentosus. Caro siccitate albicans. Odor nullus. Sporae ellipsoideo-angulatae, (11.5)12-14/6.5-7.5 μ (fig. 9). Basidia 4-sporigera. Actes lamellarum steriles, cellulis cylindricis vel clavatis vulgo luteolo-vacuolatis, 38-82/8-26 μ (fig. 19). Hyphae cuticulae pilei filamentosae, cellulis 5-10 μ latis, saepe brunneo- vel luteolo-granulato-pigmentatis.

Inter graminos Loch-an-Eilean, et inter graminos muscosos Lochan Mhor, Inverness-shire, 27 viii 1961: inter graminos muscosos, Rothiemurchus, Inverness-shire, 28 viii 1961 (typus in Herb. Kew). A *L. fulva* et *L. sarcitula* coloribus sporis majoribus aciei lamellarum sterile differt. *L. whiteae* (Murrill) Murrill sensu Romagn. & Favre idem est, sed *L. whiteae* sensu Murrill a coloribus sporis minoribus aciei lamellarum fertile differt (typum vidi). *L. formosa* a coloribus clare flavis, aciei lamellarum fertile distinguitur.

Cap 20-39 mm, convex then expanded $\pm$ plane or umbilicate, yellowish-buff or ochraceous-buff with centre tinged darker sepia, margin often retaining yellowish tinge for some time, drying pale dirty buff or 'wood' colour, striate at margin or to centre when moist, often radially wrinkled or split at margin when dry, with scattered concolorous or slightly darker brownish $\pm$ concentric scales on whole cap or at least at centre. Gills adnate or with tooth (sometimes narrowly so) to $\pm$ free, pale yellowish-buff or ochraceous-buff or pale wood colour, then tinged pinkish, fairly crowded, L 18-32, l 3-7, ventricose or not, edge darker sepia-buff flocculose (often conspicuously so).

Stem 30–60/1–2 mm (3–5 mm when compressed or channelled), equal or slightly swollen at base, *pale yellowish-buff or pale dirty ochraceous sometimes with brighter yellow-ochraceous tinge when fresh* (especially in upper part), smooth, matt or slightly silky striate, cartilaginous, stuffed or hollow, base white tomentose. *Flesh* concolorous, drying white or whitish in centre of cap and stem. *Smell* none or faint, pleasant. *Spores* ellipsoid-angular, (11·5)12–14/6·5–7·5 μ (fig. 9). *Basidia* 4-spored. *Gill-edge sterile*, with cylindric or clavate cells, 38–82/8–26 μ (fig. 19), often with yellowish contents sub micr. (daylight in water). *Hyphae* on cap 5–10 μ in diam., often with yellowish or dark-brown granular pigment masses inside the cells.

In grass, Loch-an-Eilean, Inverness-shire, 27 viii 1961: in mossy grass, Lochan Mhor, Inverness-shire, 27 viii 1961: in mossy grass, Rothiemurchus Reserve, 28 viii 1961 (type in Herb. Kew): in grass, Tomich, Inverness-shire, 23 viii 1963. It is most like *L. fulva*, from which it differs in larger spores, constantly darker and sterile gill-edge, and yellowish-ochraceous cap and stem which lack tawny tints.

In part II of the List (p. 224), *L. whiteae* sensu Romagnesi & Favre (Rev. Mycol. 68 (3): Pl. 2 (1, 2), 1938) is stated to be "not yet found in Britain". I had collected an agaric corresponding to this in 1950 near Capel Curig in N. Wales but could not list it or describe it because I had kept no material. In 1961 I made three separate collections of this agaric in two days in the Rothiemurchus area, so it can now be added to the list. Since, however, type material of *L. whiteae* kindly sent by Dr. Clark T. Rogerson, New York Botanical Garden, shows smaller spores, 10–12·5/6·5–8 μ (fig. 10), and gill-edge without sterile cells, I prefer to describe my agaric as a new species. The original *L. whiteae* would seem to be near *L. sarcitula*, judging by spore size and colours as shown on a painting which accompanies the type material.

In Flore Analytique 203 (1953), Kühner & Romagnesi synonymize *L. whiteae* with *L. formosa* (Fr.) Gillet. Since Fries states that the cap of *L. formosa* is "cerineo, squamulis minutis fusciscentibus" and that the stem is "luteo" (Syst. Myc. I 208 (1821)), this hardly seems appropriate. I have gathered a much yellower *Leptonia* at Stormont Loch, Blairgowrie, Perthshire, 2 ix 1953, which I believe to be Fries' *formosa*. This has large spores of similar size to those of *xanthochroa*, but the gill-edge is fertile and not darker in colour. It occurred in *Vaccinium* under *Pinus sylvestris*, the exact habitat given by Fries for *formosa*.

***Mycena urania* (Fr.) Quél.** Champ. Jura et Vosges, 1: 224 (1872).

Syn.: *Agaricus (Mycena) uranius* Fr. Syst. Myc. I: 144 (1821).

Icon: Kühner, Le Genre *Mycena* 310 (1938).

Smith, A. H., N. American Species of *Mycena* 270, pl. 49A, Fig. 32 (5–6) (1947).

Whilst collecting agarics in the Rothiemurchus Reserve in 1960, four scattered specimens of an unfamiliar and rather beautiful blue-violaceous *Mycena* were found. These have since been identified as *M. urania* (sensu Kühner) and this name can therefore be reinstated in the List. The specimens also agreed well with A. H. Smith's description. Here is a brief description of this material:

Cap 6–10 mm, convex then slightly expanded, *dark blue-violaceous in*

centre with *paler lilaceous-blue margin*, then fading to grey-bluish or grey-clay when old and dry, when moist with dark blue-violaceous striae, smooth, not viscid, margin crenate. *Gills* adnate or $\pm$ uncinatate, *blue-violaceous with paler lilaceous edge*, blue tints fading with age, fairly crowded. *Stem* 30–50/0.75–1 mm, equal, *amethyst-blue to grey violaceous*, smooth, apex not pruinose, base $\pm$ strigose with white mycelial strands. *Flesh* pale lilaceous-grey, darker in centre of cap. *Spores* ellipsoid-cylindric often with oblique apiculus, 7–9.5/3.5–4.5 μ , amyloid. *Basidia* 4-spored. *Gill-edge* with $\pm$ clavate cells about 10 μ in diam., with numerous peg-like points (en brosse).

On leaf debris amongst *Hylocomium splendens* in deep tufts of *Vaccinium myrtillus* under *Pinus sylvestris* and *Betula*, Loch-an-Eilean, Inverness-shire, 5 ix 1960. Easily recognized by blue-violaceous colours, gill-edge with cystidia 'en brosse' and medium-sized spores. It may well occur elsewhere in relict Caledonian forest but is often well buried under *Vaccinium*, when patient searching is necessary to find it.

Pluteus plautus (Weinm.) Gillet, Hym. France, 394 (1874).

Syn.: *Agaricus plautus* Weinm., Hym. Rossiae, 136 (1836).

Icon: Konrad & Maublanc tab. 25 (2), (1927).

J. Lange, Fl. Ag. Danica 2: 85 pl. 71H (1936).

Metrod, Rev. Mycol. 8 (3–4): 15 (1943).

In the List part III, p. 362, *Pluteus plautus* was excluded because there was no authentic record from Britain of *P. plautus* sensu Konrad & Maublanc, J. Lange, Metrod, which was regarded as the original *Agaricus plautus* of Weinmann. These authors described it as growing on coniferous wood and Metrod gave details of facial cystidia and cap cuticle and described the latter as consisting of $\pm$ erect but elongate end-cells at first. I was fortunate to discover a fine group of fruit-bodies growing amongst pine chips at Dall sawmill at Rannoch, Perthshire, in 1962, which on microscopic investigation showed a cap cuticle just as Metrod had described and because of this and other characters clearly belonged to this taxon. *P. plautus* can therefore be reinstated in the British List. Pearson's record of *P. plautus* (Trans. Brit. Myc. Soc. 35: 108 (1952)), refers to a different agaric from deciduous woods, described as *P. pearsonii* in the List, III, 361.

Here is a description of *P. plautus* from Scottish material:

Cap 24–60 mm, convex or conico-convex then expanded $\pm$ plane, sometimes obtusely umbonate, *deep sepia-horn or sepia-vandyke* (almost like *P. cervinus* but perhaps slightly duller), *usually with paler margin* (sometimes whitish), sometimes with slight olive tinge, especially at or around centre, drying out pale sepia-buff around centre often with conspicuously paler margin, *when moist sometimes pellucid-striate* one fifth to one third in, *at first almost entirely velvety-pruinose, then often smoother with rather minutely velvety- or punctate-scaly centre*, cuticle sometimes cracking and showing white flesh in outer part, more rarely the scales may be denser in places giving the impression of veins, extreme margin wrinkled-striate when old. *Gills* free, often remote, ventricose, white or whitish then tinged sepia-horn or pinkish-horn, finally deeper pinkish, edge white or whitish sometimes almost atomate flocculose-denticulate, except sometimes near margin of cap or in outer half where it may be sepia-horn colour, rarely entirely brown edged. *Stem* 30–52/

5–12 mm (13 mm when compressed, equal or slightly thickened at base, compressed or not, white then whitish above, base thickly sepia or sepia-vandyke punctate-scaly for about 7–15(20) mm up, above this more scattered and more minutely punctate-scaly (often right to apex, where the scales may be white or whitish), stuffed or hollow, firm at first. *Flesh* concolorous or sepia-horn in moist cap, drying paler but usually marked off by darker line from white, whitish or horny stem flesh, cortex of lower part of stem sometimes also sepia-horn. *Smell* rather strong when cut, winey-pungent or almost like *Lepiota cristata*. *Spores* subglobose or broadly ellipsoid, $6.5-8.5(9)/(5.5)6-7\mu$ (seemingly slightly larger than in many British *Plutei*). *Basidia* 4-spored, $34-44/8-10\mu$. *Marginal cystidia* very varied in shape, from clavate to vesiculose or lageniform, $28-70/12-38\mu$. *Facial cystidia* lageniform (fig. 20), occasionally with a short point up to $3-4\mu$ long (usually in mature specimens) (fig. 21), $62-118/14-33(36)\mu$, apex $10-15\mu$ in diam., usually with one or more brownish vacuoles. *End-cells* of hyphae forming scales of cap, cylindric or clavate (fig. 23) $\pm$ erect, thus forming a palisade but when seen from above the cells appear frequently not to be touching as in species with a cellular cuticle (fig. 22), $45-130+/10-22(35)\mu$ with brownish contents. Cells of scales at stem-base similar to those on cap, vesiculose-clavate to elongate-clavate, $40-150+/10-34\mu$ often with brownish content; in a few places strips of darker pigment can occasionally be seen.

Singly or in groups of 2 to 8 amongst pine chips or on old pine sawdust, Dall Sawmill, Rannoch, Perthshire, 16, 17, 21 x 1962, 20 x 1963. Best recognized by habitat, cap cuticle characters and large facial cystidia. In the List part III, p. 345 in the second part of couplet 16 of the Key to *Pluteus*, line 2, dimensions of end-cells should read " $45-130+/10-22(35)\mu$ "; line 3 should read "facial cystidia lageniform, occasionally with short point at apex $3-4\mu$ long, usually with brown vacuole(s), $62-118/14-33(36)\mu$ apex $10-15\mu$ "; and in line 5 stem dimensions should read " $/3-12$ mm diam".

***Psathyrella sphaerocystis* P. D. Orton, sp. nov.**

Pileus 4–10 mm, e conico-convexo vel convexo haud expansus, pallide dein obscuriore sordide luteolo- vel argillaceo-ochraceus, totus granulosofarinosus vel furfuraceus, velo evanido opacus atomatusque, margine primo velo pallide ochraceo ad stipitem conjuncto. *Lamellae* aliquanto late dente adnatae, albiae vel pallide-argillaceae dein argillaceo-umbrinae vel olivaceo-tinctae, subconfertae, L 14–18, l 3(7), ad aciem primo flocculoso-denticulatae. *Stipes* 15–24/0.5–1.5 mm, aequalis vel ad basim leviter incrassatus, pallide cremeo-luteolus vel deorsum olivaceus, sursum saepe hyalinus, primo a velo ochraceo-luteolo furfuraceus vel floccoso-squamulosus dein squamulis dispersis adpressis decoratus, apice juventute albo-pruinoso, cavus. *Caro* pilei ochracea siccitate pallens: caro stipitis albedo-cremea vel pallide luteola interdum deorsum obscuriore colorata. *Sporae* ellipsoideae vel leviter amygdaliformes poro germinativo truncato apiculoque parvissimo, 8–9(10)/4.5–5.5 μ (fig. 11), sub microscopio obscure rufo-brunneae, in cumulo obscure violaceo-brunneae vel fere nigrae. *Basidia* 4-sporigera. *Acies* lamellarum fertilis sed cystidiis dispersis lageniformibus interdum leviter capitatis, 22–40/7–12 μ ad apicem 3–6(7) μ (fig. 24). *Cystidia* faciei lamellarum similia, dispersa, circa 30–50/8–12 μ (fig. 25). *Cellulae* pruinae ad apicem stipitis pyriformes vel clavatae vel lageniformes, 18–34/8–12 μ (ad apicem 3–6 μ diam.). *Cellulae* veli

pilei stipitisque plerumque globosae subinde pedunculatae, 16–52 μ diam (fig. 27), interdum late ellipsoideae, aliquanto crasso tunicatae, rariore sparse crystallinae: cellulae veli ad marginem pilei et ad basim stipitis etiam subcylindricae seriatas, 14–45/4–8(11) μ (fig. 26).

Ad fimum equinum vetustum gregarius, Dall Wood, Rannoch, Perthshire, 24 ix 1960 (typus in Herb. Kew). Cellulis veli globosis et habitatione maxime insignis.

Cap 4–10 mm, conico-convex or convex, seemingly not expanding, *pale ochraceous-buff* or clay-ochraceous then darkening to clay-buff, entirely granular mealy-scaly or furfuraceous, becoming matt and atomate when veil is washed off, edge of cap joined to stem by pale buff or ochraceous cortinate veil when young. *Gills* rather broadly adnate with tooth, whitish or pale clay then pale clay-umber or with slight olivaceous-clay tinge, finally clay-umber, fairly crowded, L 14–18, l 3(7), edge minutely white denticulate at first. *Stem* 15–24/0.5–1.5 mm, equal or slightly swollen at base, pale creamy yellowish or tinged ochraceous below, often hyaline at apex or in upper part, sometimes becoming deeper ochraceous-cream with age, at first *pale ochraceous-buff furfuraceous* or *floccose-scaly* from veil, later more scattered adpressed fibrillose-scaly, apex white pruinose when fresh, hollow. *Flesh ochraceous* in cap drying paler, creamy-whitish or pale yellowish in stem, sometimes darker at base. *Spores* ellipsoid with truncate germ-pore and very small apiculus, slightly amygdaliform in some views, 8–9(10)/4.5–5.5 μ (fig. 11), dark red-brown sub micr., dark violaceous brown to almost black in mass. *Basidia* 4-spored. *Gill-edge* fertile but with scattered lageniform sometimes slightly capitate cystidia, 22–40/7–12 μ apex 3–6(7) μ in diam (fig. 24). *Facial cystidia* similar, scattered, about 30–50/8–12 μ (fig. 25). Pruina at stem-apex of pyriform, clavate or lageniform cells, 18–34/8–12 μ (apex 3–6 μ when lageniform). *Cells of veil on cap and stem sphaerocysts* with or without stalks, 16–52 μ in diam (fig. 27), a few only broadly ellipsoid, with fairly thick walls, occasionally with a few scattered crystals outside. Also in veil of lower part of stem and edge of cap are shortly cylindric or sausage-shaped cells, 14–45/4–8(11) μ , in chains or bundles, slightly constricted at septa, sometimes clamped, rarely branched (fig. 26), as well as sphaerocysts.

On old horse dung, Dall Wood, Rannoch, Perthshire, 24 ix 1960 (type in Herb. Kew). Very easily recognized by veil characters, and, as yet, the only British species of *Psathyrella* possessing sphaerocysts in the veil. As this was growing in company with a species of *Conocybe* (which also turned out to be new and is to be described elsewhere by R. Watling), I at first took this to be a *Conocybe*. I was very surprised to find the gills darkening and a violet-brown spore print and even more surprised to find sphaerocysts on the cap. However, when Singer's revised "Agaricales in Modern Taxonomy" appeared in 1962 I found a new section, *Cystopsathyra* in *Psathyrella* created for *Galera kellermanni* Peck (J. Myc. 2: 49, 1906) which was listed as a *Psathyrella* with sphaerocysts in the cap. *P. sphaerocystis* could also be included in this section providing the diagnosis is amended to include species with cystidia of different shape from those of *P. kellermanni*, which are stated to be "vesiculose-elongate or ventricose". The latter also differs quite clearly in habitat (on the ground in a greenhouse), in larger spores (8–12/6–7 μ), larger cap (20–30 mm) expanding when mature, watery brown and striate when moist and greyish-brown when dry.

***Stropharia fimetaria* P. D. Orton, sp. nov.**

Pileus 5–36 mm, e conico-convexo vel convexo plano-convexus, saepe leviter obtuse vel acute umbonatus, ex umbrino vel melleo-umbrino ochraceo-melleus interdum circa marginem olivaceo-tinctus, a disco marginem versus exsiccans, siccitate ochraceo-luteolus interdum ad discum fulvo-tinctus, jove pluvio glutinoso-viscidus, pellicula separabile, circa marginem primo squamulis albis sericeo-fibrillosis decoratus dein glabrescens et striatus, ad aciem senectute saepe crenatus vel albo-lineatus. *Lamellae* adnatae, $\pm$ ventricosae, interdum dente adnatae ex albido- vel luteolo-argillaceo olivaceo-luteolae vel -umbrinae postremo purpureo-umbrinae, haud confertae, L 12–24, l 1–3, ad aciem juventute albo-floccosae vel denticulatae. *Stipes* 18–90/0.5–4 mm, aequalis saepe ad basim incrassatus, albus dein praecipue deorsum pallide- vel melleo-fuscus, rariore passim leviter griseo-viridescens, primo totus albosericco-fibrillosus et e velo albo annuloso-zonatus et infra maculis adpressis ornatus dein glabrescens, ad apicem albo-pruinosis et saepe a lamellis striatus, fartus dein cavus, ad basim albo-tomentosus. *Caro* pilei pallide ochraceo-luteola vel albida, juxta lamellas colore cornus tincta vel olivaceo-mellea: caro stipitis intus alba vel albida mox deorsum umbrina. *Odor* et sapor farinacei. *Sporae* ellipsoideae poro germinativo, 11–14/6.5–7.5 μ (fig. 12). *Basidia* 4-sporigera, 28–34/8–10 μ . *Cystidia* aciei lamellarum lageniformia, 18–32/4–8 μ , ad apicem acuta 1–2 μ . diam. (fig. 28) *cystidia* faciei lamellarum nulla.

Ad fimum equinum vetustum solitarius vel 2–3-caespitosus, Dall Wood, Rannoch, Perthshire, 8 et 11 x 1960 (typus in Herb. Kew). A *S. squamosa* habitatione, sapore et odore farinaceis, stipite sine annulo membranaceo distinguitur. *S. merdaria* a velo praecipue appendiculato, absentia sapore farinaceo, sporis leviter angulatis et stipite albo-floccoso differt.

Cap 5–36 mm, conico-convex or convex then expanded-convex often slightly obtusely or acutely umbonate, date, honey-date or sepia-date then ochraceous-honey, sometimes clay-olive, olive-honey or olive-yellowish in outer part, drying ochraceous-buff or -yellowish from centre out, when half-dry with darker marginal belt and slightly darker sometimes tawny-ochraceous central spot, glutinous-viscid when moist with rather tough separable pellicle, at first with conspicuous adpressed often V-shaped white silky fibrillose scales on outer two thirds, these later vanishing and margin becoming striate, edge often crenate when expanded or with narrow white edging. *Gills* adnate usually $\pm$ ventricose, sometimes adnate with slight tooth, clay-whitish or pale clay-buff, then olivaceous-buff or -umber, finally purplish-umber, not crowded, L 12–24, l 1–3, edge white flocculose or denticulate when fresh. Stem 18–90/0.5–4 mm, equal, often with slightly swollen base, white, then discoloured pale sepia or sepia-honey especially in lower part, sometimes (not always) with grey-blue-greenish tinge at base in places, at first entirely white silky-fibrillose striate with white veil forming cortinate ring-zone and scattered adpressed patches below this, then $\pm$ smooth in places with age (or when handled), apex white flocculose-pruinose, often slightly striate from gills, base white tomentose, stuffed with white pith, then hollow. *Flesh* pale ochraceous-buff or whitish in cap, horny or olive-honey over gills, white or whitish in centre of stem, soon date or dark vandyke in lower part of stem, this colour spreading upwards with age. *Smell* (especially when cut) and

taste mealy. Spores ellipsoid with germ-pore, $11-14/6.5-7.5\ \mu$ (fig. 12). Basidia 4-spored, $28-34/8-10\ \mu$ with stout sterigmata $2-3\ \mu$ wide at base. Marginal cystidia pointed lageniform or almost Urtica-hair shape, $18-32/4-8\ \mu$ apex $1-2\ \mu$ in diam. (fig. 28). Facial cystidia absent. Hyphae on cap narrow ($1-2\ \mu$ in diam.), gelatinised, overlying filamentous clamped branched hyphae ($2/4-14\ \mu$ in diam.).

Singly or in twos or threes on horse-dung, Dall Wood, Rannoch, Perthshire, 8 and 11 x 1960 (type in Herb. Kew). Obviously akin to *S. squamosa* this rather characteristic agaric can be distinguished by its habitat, mealy smell and taste and stem without distinct membranous ring. *S. merdaria* differs in lack of mealy taste, slightly limoniform or angled spores, white floccose stem and paler cap with veil fragment mostly at edge only. *S. thrausta* is described with distinct membranous ring, brighter colours and a different habitat.

In accordance with generic conceptions in the List, this species is described as a *Stropharia* since it possesses a viscid pellicle and a veil. For those who prefer to restrict *Stropharia* to species with facial chrysocystidia, this agaric would have to be transferred to *Psilocybe*.

TRICHOLOMA FOCALIS and T. ROBUSTUM

In the List these two names are cited as follows: *T. focale* is taken *sensu* Ricken, and J. Lange (as *Armillaria focalis*), and *T. robustum* is taken *sensu* Ricken and Bresadola and also Boudier (as *A. robusta*). Up to 1960 I had only collected *T. focale*. In 1961, however, I came across a large clump of an unfamiliar agaric by the road which runs beside the Black Wood at Rannoch, which I believe corresponds to *T. robustum* as cited in the List. However, *A. robusta sensu* J. Lange is stated in the List, part II, 211 to be the same as our *T. focale*. This I now think is an error and I believe that J. Lange's *A. robusta* is in fact our *T. robustum*, a verdict which is more particularly borne out by Lange's spore details.

As thus listed *T. focale* is distinguished by its mealy smell and taste, bright coloured tawny-tinged cap and scales on stem, and, above all, rather small ovoid or shortly ellipsoid spores. *T. robustum*, on the other hand, smells more of cucumber or is only slightly mealy, has the cap a deeper brownish-red and longer ellipsoid spores. Additional characters which may serve to distinguish these two, are the solitary or less caespitose habit of *T. focale*, and, in particular, the fact that the flocci at the top of the stem of *T. robustum* turn sepia-brownish at maturity, as, indeed, the gills sometimes do also. No such feature has been noted for *T. focale*. Another point is that the *T. focale* is distinctly innately fibrillose with dark fibrils, whereas in *T. robustum* the cap is minutely tomentose-scaly and not innately fibrillose or slightly so at margin only. However, the spore distinction is the most clear-cut and useful means of distinguishing them.

It remains to be seen whether these are in fact the correct names for these agarics. The original description of *Agaricus robustus* by Fries (Syst. Myc. I, 26 (1821)) was not made from fresh material but could just possibly refer to the agaric described below as *T. robustum* for cap colour is correct ("badioruber"). But it is described as being short-stemmed and "pileo glaber . . . margine albicante" and "margine fibrilloso". Later descriptions seem more

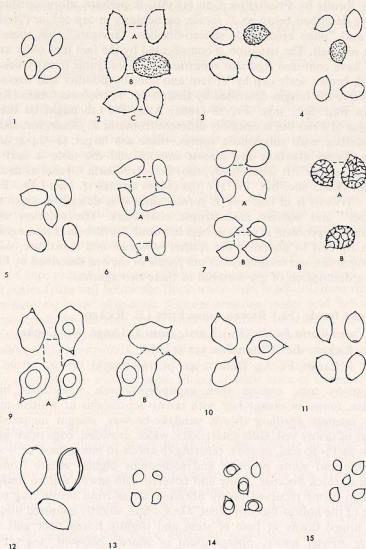


FIG. 1: *Collybia putilla*, Loch-an-Eilean, 5 ix 1960. FIG. 2: *Cortinarius caledoniensis*: a, Rothiemurchus, 21 viii 1960; b, Rothiemurchus 22 viii 1960; c, Loch-an-Eilean, 5 ix 1960. FIG. 3: *Cortinarius fuliginosus*; Loch-an-Eilean, 2 ix 1960. FIG. 4: *Cortinarius fervidus*; Loch-an-Eilean, 2 ix 1960. FIG. 5: *Deconica graminicola*, Loch-an Eilean, 2 ix 1960. FIG. 6: *Hohenbuehelia fluxilis*: a, Covenhope, 28 xi 1959; b, Loch Skene, 25 viii 1962. FIG. 7: *Hygrophorus vitellinus*: a, Crowcombe, 15 ix 1960; b, Keltneyburn 2 x 1961. FIG. 8: *Lactarius sphagnetii*: a, Loch-an-Eilean, 2 ix 1960; b, Rannoch, 24 ix 1960. FIG. 9: *Leptonia xanthochroa*: Loch-an-Eilean, 27 viii 1961 (a and b two separate collections). FIG. 10: *Leptonia whiteae*, type material, Maine, U.S.A., 12 viii 1901. FIG. 11: *Psathyrella sphaerocystis*, Rannoch, 24 ix 1960. FIG. 12: *Stropharia fimetaria*, Rannoch, 8 x 1960. FIG. 13: *Tricholoma focale*, Glen Affric, 3 ix 1957. FIG. 14: *T. robustum*, Rannoch, 15 x 1961. FIG. 15: *T. onychinum*, Rannoch, 22 x 1961 (all x 1000).

divergent, especially that in Fries' Monographia. The original description of *Agaricus focalis* by Fries (Epicr. 20 (1838)), is perhaps more satisfactorily the agaric described below as *T. focale*, particularly in cap colour ("testaceo-fulvo") and "pileo epidermide sericeo-fibrillosa laevigata", but there is no mention of smell. The situation is complicated by the fact that older authors seem to have confused *Agaricus robustus* and *A. caligatus* (clearly described with dark brown scaly cap by Viviani and later by Boudier and Bresadola). Furthermore the fungus described by Essette as "*Tricholoma focalis* (Ricken) Fries" in Bull. Soc. myc. Fr. 78 (1962) Atlas Pl. 130 might be the later *A. robustus* of Fries but is certainly different from our *T. focale*, for, although it is described with subglobose spores, these are larger ($4\frac{1}{2}$ – $4\frac{5}{8}$ μ), the cap is a deeper chestnut and almost smooth and the taste is said to be "fortement amère". It seems likely, too, that *Armillaria robusta* as described by Quélet (Bull. Soc. bot. Fr. 23: 350 (1876) and as *A. rufa* (Ass. Fr. Ar. Sci., p. 1 (1880)) is in fact our *T. focale*, since it is described with "spores spheriques" and similar macroscopic characters. The solution of this nomenclatural problem is perhaps best left until *Tricholoma* is monographed. It might be best to abandon the epithet *robustum* and substitute *caussetta* for our *robustum* and rename either our *focale* or the one described by Essette. Here is a description of my material of these two agarics.

Tricholoma focale (Fr.) Ricken *sensu* Fries (?), Ricken

Syn.: *Armillaria focalis* (Fr.) Karst. *sensu* J. Lange non Cooke

Icon: Ricken, die Blätterpilze 332 (1915).

J. Lange, Fl. Ag. Dan. 1: 41, pl. 16B (1935).

Cap 56–65 mm, convex then expanded-convex, sometimes broadly umbonate, tawny or orange-buff with tawny-ochraceous or whitish margin, strongly innately fibrillose (fibrils vandyke-brown), margin incurved with remnants of tawny veil. Gills emarginate, white, crowded, edge often uneven. Stem 48–70/17–20 mm, at apex, tapering to about 10 mm at base or $\pm$ equal, apex white and white pruinose and sometimes slightly striate from gills, ring apical, thick floccose, white and covered with tawny veil on underside, which also forms recurved tawny fibrillose scales from below ring to near the base of the hollow but firm stem. Flesh white, slightly coloured under cap cuticle, tinged tawny at base of stem and slightly horny over gills. Smell and taste strong, mealy. Spores ovoid or shortly ellipsoid, $3\frac{1}{2}$ – $4\frac{1}{2}$ – $2\frac{1}{2}$ – $3\frac{1}{2}$ μ (fig. 13). Basidia 4-spored 24–28/5–6 μ . No cystidia seen.

Solitary amongst heather and *Vaccinium* under scattered pines, Glen Affric, Inverness-shire, 15 ix 1956 and 3 ix 1957.

Additional data from Ricken: cap 60–90 mm, stem 60–80/10–15 mm, taste mealy, but not bitter. Further field work is needed to prepare a good description of this agaric before deciding on the correct name.

Tricholoma robustum (Alb. & Schw. ex Fr.) Ricken, die Blätterpilze 332 (1915).

Syn.: *Armillaria robusta* (Alb. & Schw. ex Fr.) Kummer.

Agaricus caussetta Barla, Champ. Nice, 1–10, 16, Pl. 9 (1859) (poor).

Armillaria caussetta (Barla) Barla. Bull. Soc. Myc. Fr. 3: 140 (1887).

Icon: Bresadola, Ic. Myc. 44 (very good, especially spores and discolouring of stem-apex and gills), (1927).

J. Lange Fl. Ag. Dan. I: 41, pl. 16C (1935) (sub. nom. gen. *Armillaria*).

Barla, Champ. Alpes Maritimes 34, pl. 17(5-7), (1889) (good) as *A. causssetta*.

Cap 74-156 mm, convex soon expanded-convex then plane or slightly depressed with broad, shallow, obtuse umbo and sometimes with slightly upturned margin, rather bright rusty-tawny with pale ochraceous or yellowish-buff margin, then $\pm$ entirely reddish-date to almost chestnut at centre rather viscid when moist, minutely tomentose-scaly at least around centre, then all over except that the margin may be slightly innately fibrillose, often with remnants of tawny orange or reddish-brick veil visible as adpressed scales near margin. Gills emarginato-free to slightly adnate, white then whitish often bruising dull red-brownish especially near the edge, crowded, L ca. 150-160, 13, edge $\pm$ uneven becoming sepia in places, often finally entirely so. Stem 110-140/18-30 mm at apex, usually attenuated downwards or at least thinner at base, apex dull ochraceous or whitish buff, then tinged with colour of cap, remainder white with tawny-orange or orange-brick $\pm$ concentric scales from veil below the thick white then brick-coloured ring, apex with minute sepia or olive-sepia floccose-pruinose scales and below these fibrillose-striate to the ring, base white or whitish tomentose, solid. Flesh white, slightly tawny-brick under cap cuticle and in centre of base of stem, when old entirely tawny-brick. Smell of cucumber or slightly mealy; taste slight to $\pm$ mealy. Spores ellipsoid with large guttule, $4.5-5.5(6)/3-3.5\mu$ (fig. 14). Basidia 4-spored. No cystidia seen. Flocci at stem apex of cylindric-clavate cells in tufts, ca. $12-24/(4)6-12(14)\mu$, often septate (fig. 29), sometimes with brownish vacuolar contents.

In heather under pine by road, Black Wood, Rannoch, Perthshire, 15 x 1961. Besides the distinct spore difference, this appears to differ from *T. focale* in more robust habit and change of colour in flesh and gill-edge, but more observations on *T. focale* are necessary to confirm this. There seems no doubt to me that *Armillaria causssetta* (Barla) Barla is the same. Another taxon which I considered was *Agaricus cyclopeus* Lasch (Linnaea 4: 519, 1829), which, however, is described with cap '2-6unc. latus, fibrillis innatis virgatus vel glabriusculus, saepe diffractis-squamosus aut rimosus; etiam badius, subfulvus vel rufescens', with gills reddening, 'dentibus decurrentes' and habitat 'pinetis arenosis'. However it is said to have white flesh and to be 'Ag. bulbigeri affinis', which does not seem quite the same as the above-described collection. I would need to examine more fresh material of agarics of this group before making a decision about *A. cyclopeus*. I suspect that there may in fact be three agarics masquerading under two names *focale* and *robustum*, namely, the two described above together with that described by Essette as *T. focale* (Bull. Soc. myc. Fr. 78 (1962) Atlas Pl. 130), which differs from my *T. robustum* in globose spores and bitter taste and from my *T. focale* in darker smoother cap and bitter taste. In addition to these there is *T. caligatum* (Viv.) differing in darker chestnut adpressed scaly cap, larger subglobose spores (about $6/5\mu$), and fruity smell and bitter-sweet taste. All are species found in coniferous woods. In the List, Cooke

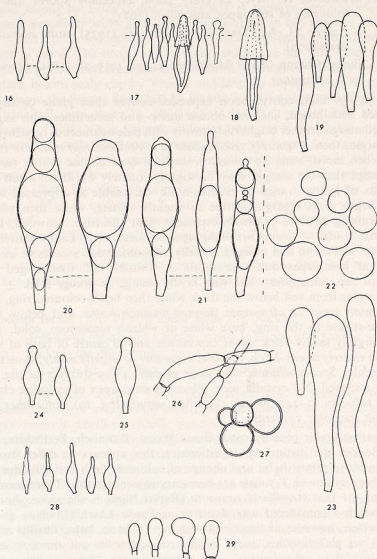


FIG. 16: *Deconica graminicola*, Loch-an-Eilean, 23 viii 1961, marginal cystidia. FIG. 17: *Hohenbuehelia fluxilis*, Covenhope, 28 xi 1959, marginal cystidia. FIG. 18: *ibid.*, facial cystidia showing conical cap. FIG. 19: *Leptonia xanthochroa*, Loch-an-Eilean, 27 viii 1961, sterile cells on gill-edge. FIG. 20: *Pluteus plautus*, Rannoch, 16 x 1962, facial cystidia, most frequent type showing brownish vacuoles. FIG. 21: *ibid.*, facial cystidia, less frequent type with apical point. FIG. 22: *ibid.*, cap cuticle seen from above. FIG. 23: *ibid.*, cells of cap cuticle in vertical section. FIG. 24: *Psathyrella sphaerocystis*, Rannoch, 24 ix 1960, marginal cystidia. FIG. 25: *ibid.*, facial cystidia. FIG. 26: *ibid.*, cells of veil on edge of cap. FIG. 27: *ibid.*, spherical cells of veil on cap. FIG. 28: *Stropharia fimetaria*, Rannoch, 11 x 1960, marginal cystidia. FIG. 29: *Tricholoma robustum*, Rannoch, 15 x 1961, cells of flocci at stem apex (all x 500).

Ill. Brit. Fungi, 51 (33) *Agaricus aurantius* is cited for *T. robustum*, but this doubtful plate should be deleted—it is perhaps more likely to be *T. caligatum*.

***Tricholoma onychinum* (Fr.) Gillet, Hym. Fr. (1874).**

Syn.: *Agaricus (Tricholoma) onychinus* Fr., Epicr. 41 (1838).

Calocybe onychina (Fr.) Kühn. in Bull. Soc. Linn. Lyon, 7: 211 (1938).

Lyophyllum onychinum (Fr.) Kühn. Romagn., Fl. Anal. 162 (1953).

Icon. et descr.: Kühner in Bull. Soc. Linn. Lyon, 4: 50 (1935).

Bresadola, Ic. Myc., 101 (1928).

This rather characteristic agaric was collected at Rannoch in 1960, firstly on the foray of the Cryptogamic Section of the Botanical Society of Edinburgh and later by myself from the same place. In the List part II, 204, *T. onychinum* was rejected as 'not authentically British', but it can now be reinstated. Although resembling faded *Tricholomopsis rutilans* superficially, it is readily distinguished microscopically by spores, lack of cystidia and cap cuticle characters. The habitat and cap colours are really rather different too. It may be a feature of relict Caledonian forest. Here is a description of Scottish collections:

Cap 27–67 mm, convex or conico-convex then expanded-convex, sometimes slightly broadly umbonate, deep reddish-date, reddish-umber or purplish chestnut, sometimes ochraceous-date, honey or ochraceous-yellowish at margin or in other places, matt, minutely atomate sub lente when young especially near margin, rarely slightly rugulose around centre, cuticle sometimes cracking near margin and looking as if stippled. Gills adnate with tooth, sometimes emarginate or subdecurrent in expanded specimens, golden-yellow or olive-golden then paler olive-golden or olive-buff, $\pm$ crowded, L. 48–60, l 3–7, rarely forked near base, edge even or slightly uneven. Stem 26–48/5–10 mm (<15 mm when compressed), equal or slightly attenuated or swollen at base, pale buff, olive-buff or dirty yellowish-sepia, sometimes tinged reddish-brown, purplish-chestnut or vandyke especially in middle or lower part, apex pale golden at first and finely yellow floccose-pruinose, remainder fibrillose-tomentose or almost reticulate above, fibrillose-striate below, stuffed, base white tomentose. Flesh dirty cream or whitish to yellowish, tinged olive-sepia or vandyke in places (especially in stem cortex), often olive-horny over gills. Smell rather strong, pleasant mushroomy, or near *Boletus variegatus* but less pungent. Spores ovoid or broadly ellipsoid, 3–4/2–3·25 μ (fig. 15), non-amyloid. Basidia 4-spored, 20–26/5–6 μ , containing carminophile granules. Gill-edge fertile. Hyphae on cap forming a palisade and appearing cellular in a scalp, cells 7–30 μ in diam, ellipsoid, clavate or pyriform, rarely vesiculose, with yellowish or reddish-brown vacuolar pigment.

By roadside in pine litter, Black Wood, Rannoch, Perthshire, 1 x 1961 (coll. P. Collier) and 22 x 1961. Readily distinguished by small spores, cap cuticle characters, colours and habitat. It is placed in the genus *Calocybe* (a genus we may have to adopt in Britain in future) by some modern authors because of the carminophile basidia and tricholomoid habit. Kühner was, I believe, the first to describe the cap cuticle in detail; it was pleasing to find that my material agreed quite well with his discoveries.