

Type Studies on Agarics IV.¹⁾

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Laccaria trullisata f. *rugulospora* Morten Lange, Medd. Grøn. 147: 30, 1955.

Authentic material of the *forma* was studied and carefully compared with part of the type form of the species. The spores were found to be exactly as described by Morten Lange while the spores of the type form are actually quite smooth. This goes for all the material of the type form seen by this author including that from the east coast of North America from Maine south to Florida and the Great Lakes collections, as well as for all the material of f. *rugulospora* seen by this author, i. e. the material from Denmark, Scotland (with *Ammophila*, *Carex arenaria*, etc., K) and the Netherlands (with *Festuca rubra*, L) which seems to be identical with material from Greenland and the Baltic region (Theodorowicz as *Hygrophorus maritimus* Theod.). I have not found any significant difference in spore measurements: Scotland: 13.8—17.2 × 6.3—7.8 μ — Netherlands: (10)—15—18.5 × (7)—8—9.5 μ — Denmark: 12.7—15.8 × 7.2—9.3 μ — Sweden: 16—18 × 8—10 μ (Anderson) — Greenland: 12—15.5 × 7.5—8.5 μ (Morton Lange) — New Jersey 15—22 × 5—10 μ — Massachusetts 15.5—17 × 6.5—7 μ.

But there seem to be minor differences in macroscopical characters which, together with the sharpness of the spore ornamentation difference, and the coincidence with the respective geographic areas suggest that we are dealing with vicariant species. The European-Greenlandic species is therefore *Laccaria maritima* (Theod.) Sing.

Bertrandiella ianthina Heim, Rev. d. Mycol. 24: 187, 1959.

The type (P) from Mexico is in liquid preservation but in good condition. Through the amability of Dr. R. Heim, sections could be made which revealed the following characters:

Spores 5.7—7.2—(9.2) × 4—5.8—(7) μ, smooth, hyaline, with somewhat irregularly uneven inner wall surface, not pseudoamyloid or

¹⁾ Earlier contributions under this title have been published in *Lloydia* 5: 97—135, 1942; 9: 114—131, 1946; *Lilloa* 25: 463—514, 1952.

²⁾ The present paper was prepared as part of the work necessary to edit a second edition of my book "Agaricales in modern taxonomy" and was as such supported by the National Science Foundation, Washington, D.C. and carried out at the herbaria of the Royal Botanic Garden in Kew (K), and at the Rijks-herbarium, University of Leiden (L). Material from some other herbaria has also been received and used for the present purpose (P, W, FH, LIL).

amyloid, short ellipsoid to ellipsoid, thin to very moderately firm-walled, with or more often without a suprahilar depression, with a somewhat prominent hilar appendage; basidia $21-30 \times 7-9.2-11.5$ μ , mostly 4-spored, a minority 2-spored, cylindric (especially the 2-spored ones) to clavate, hyaline, sterigmata often remarkably straight but also often normally half sickle-shaped, rather long, up to 5μ ; laticifers $6-9 \mu$ thick, long and filamentous, often somewhat brownish inside when mounted in the Melzer reagent, some reaching the hymenial level as pseudocystidia, and then cylindric or subcylindric with rounded tips; hymenophoral trama rather dense, regular, not at all gelatinized, consisting of structural hyphae $5-17.5 \mu$ broad and connective hyphae about 2μ broad, hyaline in NH_4OH , yellowish to hyaline in iodine solutions, with the laticiferous vessels generally running parallel with the hyphae, no spherocysts; subhymenium subcellular, consisting of chains of very short multiseptate elements which are often almost isodiametric, hyaline, not gelatinized, e. gr. $7 \times 5.5 \mu$; epicuticular layer consisting of hyphal elements which are repeat and subparallel with each other, about $2-6 \mu$ in diameter, hyaline, smooth, with attenuate or cylindric hyphal ends but these always rounded at the tip; underneath this uppermost layer, there are hyphae of the same kind but reaching $5-18 \mu$ in diameter, forming a hypodermium which is little differentiated from the more irregular context of the pileus; all hyphae with very thin to up to 0.7μ thick wall which is hyaline and inamyloid, not gelatinized, with clamp connections.

These data do not tend to confirm a relationship with either the Hygrophoraceae (*Bertrandia*) or the Russulaceae (*Lactarius*) but suggest affinity with the genus *Lactocollybia*.

Armillaria omnituens (Berk.) Sacc.

The type from Darjeeling, India (K) has inamyloid spores $9-10 \times 5-6.5 \mu$; hyphae also inamyloid; veil consisting of interwoven thick-walled hyphae, no clamp connections seen. These data in combination with the drawing by Hooker (no. 46) make it quite clear that this species is congeneric with the type species of the genus *Armillariella* but specifically different.

Armillaria adelphus (Berk.) Sacc.

This has the same microscopical characters as the preceding species. The type (K) comes from Sikkim, no. 47, apparently from a higher altitude, and the carpophore seems smaller. I consider this a synonym of the preceding species *Armillariella omnituens* (Berk.) Sing.

Tricholoma ipatungaensis Batista.

The type (preserved at the Instituto de Micologia, Recife) has the same characters as those observed by me in a collection made at

João Pessôa, Paraíba, Brazil (Singer B 3341, LIL) and *Tricholoma prae grande* (Berk.) Sacc.:

Pileus whitish to "Mastic" (Maerz & Paul), at first so strongly involute that the margin touches the stipe (pseudoangiocarposus?), the marginal zone of the surface white and subvelutinous, not hygrophanous or viscid, convex, up to 250 mm. broad. — Lamellae "Malacca" (Maerz & Paul), rounded at the stipe even when young, close, not very broad; spore print white. — Stipe white, squarrose-squamose, solid with almost tough rind, concrescent at base, ventricose, up to 200 × 40 mm. — Context white, fleshy, unchanging, mild. — Spores 5.5–6.2 × 4–4.2 μ ellipsoid, smooth, appearing roughened at first glance but only with an irregularly thickened wall, hyaline, inamyloid, with or without some granular-oleaginous contents, with a slight suprahilar depression; basidia clavate, without carminophilous granulation, 4-spored, e. gr. 19 × 4.8 μ ; cystidia, none seen; hymenophoral trama of thin filamentous hyphae, regular; all hyphae inamyloid, with clamp connections.

This is undoubtedly an interesting and showy species of the open places in Eastern Brazil from Paraíba to Minas Geraes, and belongs in the section *Rigida* of *Tricholoma*. It has some affinity — as has that whole section — with the fleshy species of *Clitocybe* sect. *Disciformes* and *Collybia* sect. *Striaepedes* but differs clearly from both and seems to be most closely related to *Tricholoma mongolicum* Imai.

Agaricus cerealis Lasch, Linnaea 4: 526. 1829.

This is the authentic material and topotype distributed by Klotzsch, Herb. viv. myc. no. 1301 (L) and was collected by Lasch at Driesen, Germany. It may even be part of the original type. The spores are 6.3–8 × 4.5–5.8 μ , asperulate-verruculose, strongly amyloid, cystidia none seen; clamp connections present. This confirms that *A. cerealis* is a *Leucopaxillus*. The carpophore is in good condition and is undoubtedly identical with the European variety of what until now had been called *L. albissimus* (Peck) Sing. in the monograph by Singer & Smith, and *L. paradoxus* by some European mycologists.

Agaricus eugrammus Mont., Ann. Sc. Nqt. II. 8.: 366.1837.

The authentic material of which Dennis (Kew Bull. 1953: 36.) makes reference had not been studied previously to Dennis's publication by the present author whose concept was based on material compared with this material by Berkeley and determined as *Lentinus eugrammus* by Berkeley & Curtis. This authentic Cuban material has, however, been consulted twice since then, and not only, in agreement with Dennis's findings been confirmed as identical with *Lentinus eugrammus* sensu Berk. & Curt. as well as with *Panus wrightii* Berk. & Curt. but also with the other synonyms indicated by me when the species was redescribed in Lilloa 23: 168. 1950 (publ. 1951).

The spores of the authentic material were found to be just $\frac{1}{2} \mu$ longer than in my description (here, in Montagne's material $8 \times 3.8 - 3.8 \mu$) and not like Dennis's measurements ($7-10 \times 3-3.5 \mu$ which seem to be refer to a *Pleurotus* sp.). It is true that Montagne's specimen is relatively thicker and somewhat larger than the Florida specimens distributed by me (Rel. Parl. no. 987) but I am not convinced that they are specifically different. In order to see whether *P. hygrophanus* ss. Dennis is the thinner form of this species or another species or genus, I have checked an two of his collections from Trinidad (Dennis 68 and 68 A-K) and find them indeed conspecific, i. e. quite like my own collections and with spores corresponding to my own data ($5.5-5.8 \times 3.2-3.8 \mu$). The question that comes up in connection with these findings concerns the fact whether it is possible, as Dennis proposes to distinguish between a species with thin and relatively small, often purple fibrillosriped pileus, and another closely related species of *Nothopanus* with white, thicker and somewhat larger pileus, more deeply furrowed, and with slightly larger spores. It seems to this writer that more investigations are necessary to come to a final conclusion but that in principle such a distinction is possible. If so, the genus *Nothopanus* contains two species (in addition to *N. guadelupensis* (Pat.) Sing. and *P. vinosofulvus* (Bres.) Sing.):

1. *Nothopanus eugrammus* (Mont.) Sing. Mycologia 36: 365. 1944.
2. *Nothopanus hygrophanus* (Mont.) comb. ad int.

Lentinus veraecrucis Berk. in Berk. & Curt., Journ. Linn. Soc. 10: 303. 1869.

This is again identical with the preceding, probably the small, smaller-spored form, according to the type (K).

Marasmius obliquus Berk. & Curt., type (K), seems to be again the same species, but in rather bad condition.

Panus coriaceus Berk., F. Austr., Journ. Linn. Soc., Bot. 13: 160. 1873.

The type from Gipps Land, Australia, (K), is a polypore (Aphyllorales).

Lentinus subtilis Berk.

This is a small almost elitocyboid species of *Pleurotus*, pileus whitish to brownish white, opaque, with scattered setose spinules in marginal area and extreme margin ciliate like in *Ripartites*, smooth; stipe coarsely sordid-pallid tomentose, evelate; lamellae now brownish from a necrotic pigment, close but not crowded, rather narrow, decurrent; apparently on wood; spores $6-6.2 \times 1.8-2 \mu$, cylindric, hyaline, smooth; no cystidia seen on sides of lamellae; basidia $19 \times 4 \mu$;

hymenophoral trama irregular, consisting of thick-walled hyphae; subhymenium well developed.

These data were taken from the type (K) from Brazil (Bahia).

Lentinus squarrosulus Mont.

The type has not been seen, but a phototype (K) shows that this is the same as the following species, and that, therefore, it should be called *Pleurotus squarrosulus* (Mont.) Sing.

Lentinus subnudus Berk.

This has all macro- and microscopical characters of the acystidiate species of section *Lentodiellum* (Murr.) Sing. of *Pleurotus*. It is closely related to but specifically different from *P. sajor-caju* (Fr.) Sing. and identical with *Pleurotus squarrosulus* (Mont.) Sing. I have also studied the types of *Lentinus inconspicuus* Berk. (Hook. J. Bot. 6: 494. 1847), *L. cretaceus* Berk. & Br. (J. Linn. Soc. Bot. 14: 42. 1873), *L. lobatus* Berk. & Br. (l. c. p. 44), *L. manipularis* Berk. & Br. (l. c. p. 43), *L. bavianus* Pat., (Journ. Bot. p. 15, 1890), *L. caespitosus* Curray (non Berk.) (Linn. Soc., Bot. 2nd ser. 1: 120. 1875 = *L. curreyanus* Sacc. & Cub.) but can find no macro or microscopical difference of diagnostic value between these, and believe them to be synonyms of *Pleurotus squarrosulus* (Mont.) Sing. The type of *Lentinus multififormis* Berk. & Br. (l. c. p. 42) is shorter stemmed than *P. squarrosulus* generally is, but is probably also synonymous. This species was found in a wide area of tropical Asia; material examined by me includes the following: India (Neel-Gherries); Ceylon (numerous collections!), East Java (Indonesia), Herb. Donk, Tonkin (leg. Balansa, L 910—219—608), Malay Fed. (Leg. A. Johnston 1030), Pegu (Kurz, — L) Fiji, etc.

Lentinus exilis Klotzsch ex Sieurin & Fries, *Lentini*, p. 10. 1836.

The syntype from Mauritius is obviously identical, according to all characters visible, with *Pleurotus sajor-caju* (Fr.) Sing. Our determination is based on the original description given by Fries and on material from the Weitz Herbarium (L) where this same plant is determined as *Agaricus sajor-caju* by Junghuhn. *P. sajor-caju* differs from *P. squarrosulus* macroscopically enough to distinguish dried specimens almost at a glance. It has much shorter stipe and a well delimited annulus. It comes so close to *L. dactyliophorus* Lévl. (cf. Sydowia 5: 462. 1951 where no subhymenium was found on non-authentic African material which does not refer to the type) that one wonders if the latter is not a variety of the former (*P. sajor-caju*). The specimen preserved at L. Zollinger, Planta Javanica 2573, Java, Malang prov. and identical excellent material from Tonkin (det. Patouillard, leg. Balansa, Plantes de Tonkin, Oct. 1887) has spores

5.8—7 × 1.8—3.3 μ , no cystidia, but distinct pegs in the hymenium, a well developed subhymenium, and a hymenophoral trama of mellous thickwalled hyphae which are irregularly interwoven. All this shows that the true Asiatic *L. dactyliophorus* Lév. is not a *Panus* but a species extremely close to *Pleurotus sajor-caju*. South African material seen by me is very closely related to the Asiatic material but has larger and particularly longer spores and less crowded lamellae. This material has been named *Pleurotus geesterani* by me. However, there is (e. gr. in Kenya) also material with more crowded lamellae and small (7—7.7 × 1.5—2 μ) spores in Africa (Kakamega Forest Reserve, leg. Maas Geesteranus no. 6300, L) but we have also seen large spored material from tropical Africa. This shows that the relation between *L. dactyliophorus* and *P. sajor-caju* on one hand, and the relation between *L. dactyliophorus* and *P. geesterani* should still be re-examined and made the subject of a monographic study.

Cyclopleuropus campanulatus Jungh.

The species was not validly published under the generic name *Cyclopleuropus* but the type of the species exists. It comes from Buitenzorg, Junghuhn no. 100 and was distributed under Fungi Javanici no. 14 (L). It is the same as *Lentinus dactyliophorus*, i. e. a *Pleurotus*.

Lentinus brevipes Cooke, Grevillea 14: 12. 1885.

The type (K) from Perak, Malacca (K) and material from Darjeeling, India, have the irregular trama without subhymenium and oblong-subpiriform to cylindrical spores which are thin-walled, smooth, hyaline, 5—6 × 2.2—3 μ , basidia 20 × 4.5 μ , no metuloids, but numerous pegs, strictly thick-walled hyphae in the trama, with clamp-connections. It is obviously a *Panus* near *P. inquinans* (Berk.) Sing., differing from the latter by its dotted and vellereous pileus.

Lentinus inquinans Berk., Hook. J. Bot. 6: 132. 1854.

This has the microscopical characters of the preceding species, only we were unable to recover spores. The type (K) from the Himalaya larger macroscopically from the preceding species in being larger and having brown hirsute hairs like *P. rudis*, accompanied by brown spines which are surrounded by dots. — Consequently, this is a good species of *Panus*.

Lentinus praerigidus Berk., l. c., seems to be very closely related to both the preceding species, differing mainly in the absence of both spines and dots, and showing merely the hirsute hairs of *P. rudis*. Type (K) seen.

Lentinus javanicus Lév., Ann. Sc. Nat. III. 5: 118. 1846.

The type (L) is a rather small single specimen collected at Tikoya,

Java, Indonesia by Zollinger no. 1081, and is now rather poor as it is in advanced state and nearly glabrous but undoubtedly identical with better material more recently collected in Ceylon, Burma, Andamas Islands, and Philippines, all studied by me. This includes the types of *Lentinus revelatus* Berk. (Hook. London J. Bot. 6: 492 (bis) 1847) and *L. infundibuliformis* Berk. & Br., J. Linn. Soc., l. c. p. 42), both from Ceylon (K). All these specimens have the following characters in common:

Pileus infundibuliform, centrally stipitate, but often some carpophore in a fascicle lateral or at least eccentric, flocculose from a veil like that of *Pleurotus squarrosulus* (Mont.) Sing., but glabrescent in age, tending to develop a fuscous brown zone in marginal region, otherwise white, often tomentose in the ground of the funnel, in age characteristically innately radially-striate-fibrillose like some tropical polypores, but this not well visible as long as the woolly-tomentose floccons cover the surface, usually extremely thin and larger than both *P. sajor-caju* and *P. squarrosulus*, e. gr. 140 mm. across, if well developed, but also medium sized, often developed a lobed margin (like *Lentinus lobatus*, — a form of *Pleurotus squarrosulus*). Lamellae deeply decurrent, extremely crowded. Stipe more tomentose to floccose-tomentose than in *P. sajor-caju* and *P. squarrosulus*, eventually glabrescent in part and becoming longitudinally striate, usually fasciculate, and sometimes branching, characteristically elongate, e. gr. 110 × 7 mm. Spores 5 × 2.3 μ cylindric, thin-walled, hyaline, smooth; basidia 12.5–15 × 4 μ; no cystidia; hymenophoral trama very rigid-fragile, consisting of irregularly interwoven thick-walled hyphae (walls 1.7–3 μ), hyaline; subhymenium present, a relatively thin zone, not gelatinized, of very small elements, hyaline, only 5–8 μ in diameter. Material studied came from Java (type of *L. javanicus*), Ceylon (types of *L. revelatus*, *L. infundibuliformis*, both K, including an additional collection which is marked "var". and differs in being more ostreate than central-pileate but otherwise quite identical, K), Burma (K. P. Biswus no. 21, K), Andaman Isl. (S. Kurz, K), Philippines (Gabadbaran, Mindanao, 1912, Phil. Pl. distrib. by Elmer, 13686, L, and Mt. Giting-giting, Sibuyan, Magallanes, Elmer 12362, — L).

This species is close to both *P. sajor-caju* (Fr.) Sing. and *P. squarrosulus* (Mont.) Sing., particularly to the latter, and should be known as *Pleurotus javanicus* (Lév.) Sing.

Lentinus badius Berk.

The type, although not in perfect condition (K) shows clearly enough the essential characters of the species often referred to as *Lentinus velutinus* Fr., but correctly named *Panus badius* (Berk.) Sing. There are only minor differences (relative density of lamellae, thickness of pileus, the length of the velutinous hairs of the stipe and their even-

or unevenness, etc.) between this and the types of authentic specimens of the following species: *Lentinus velutinus* Fr.; *L. blepharodes* B. & C.; *L. lepreurii* Mont.; *L. fallax* Speg.; *L. tephroleucus* Lév.; *L. dichrous* Lév.; *L. zonatus* Lév.; *L. zonifer* Berk. & B.; *L. nepalensis* Berk.; *L. fuscus* Berk.; *L. egregius* Mass.; *L. fuscupurpureus* Kalchbr.; *L. fastuosus* Kalchbr. & Mc Ow.; *L. similis* B. & Br. The species often but not always forms pseudosclerotia, and often, but not always is flushed with violet when quite fresh. Thick-walled cystidia are sometimes found in the hymenium of older specimens, but not constantly so, and these are, although thick-walled, not of the type observed in *Panus rudis*.

Lentinus connatus Berk., London J. Bot. 1: 145. 1842.

There is abundant material at K, but I was unable to find the type. All the material from tropical Asia is the same as *Pleurotus javanicus* (Lév.) Sing., but the type is supposed to come from America (Surinam) and cannot possibly be the same species. This must be considered a *nomen dubium*, at least for the time being.

Hiatula boninensis Berk. & Curt.

The Kew tape has ellipsoid, amyloid spores $7-8.5 \times 4.7-5.5 \mu$ and amyloid trama. It is therefore a *Mycena*.

Pleurotellus patelloides Orton, Trans. Brit. Myc. Soc. 43: 341. 1960.

The type (K) is in good condition. The following additional observations could be made: Spores pseudoamyloid; cystidia not pseudoamyloid; "end-cells" (hairs) of the covering of the pileus of the *Crinipellis*-type, thick-walled, and strictly pseudoamyloid. Stipe rudiment not connected with substratum, small, but distinct.

This is undoubtedly a synonym of *Chaetocalathus craterellus* (Dur. & Lév.) Sing. It is the first time, this species has been found in England, and the genus is new for England.

Omphalia swanetica Sing., Beih. Bot. Centralbl. 48: Abt. II: 530. 1931.

The type (W) shows the following anatomical characters:

Spores $7-8.5 \times 3.8-5.3-(7) \mu$, most frequently about $7-7.5 \times 4-4.5 \mu$, ellipsoid, with or without a suprahilar appanation or depression, with homogenous (although, in the Melzer often seemingly heterogeneously punctate because of uneven inner wall surface and granular contents) wall distinctly amyloid in an outer layer; basidia 4-spored, very few 2-spored or 3-spored, $29-30 \times 7-7.5 \mu$, sterigmata $5-6 \mu$ long; cystidia, none, or very few on sides of lamellae and very scattered near (up to 20μ away from) the edges as cheilocystidia.

constantly filiform with obtuse tip and with strongly thickened base, hyaline, $20-70 \times 2.5-5.5 \mu$, mostly about 3.5μ in diameter, swollen base $8-16 \mu$ in diameter; hymenophoral trama regular, of filamentous hyphae; cuticular layer of pileus consisting of broad hyphae, some short (e. gr. $30 \times 22 \mu$, but rarely so), with a fuliginous pigment which in some hyphae is undissolved, in others dissolved, this layer beset with dermatocystidia which are either subsodiametric and vesiculose, pedicellate or not, or also more elongate, tapering into a conical or subfilamentous apex from a ventricose-vesiculose base, or ampullaceous, the elongated elements $36-50 \times 12-17 \mu$, apex below about 10μ broad, apex at tip about 3μ broad, acuminate to obtuse; dermatocystidia of the apex of the stipe e. gr. $48 \times 18 \mu$, ventricose-mucronate and slightly thick-walled, or with a thick-walled knob-like tip; all hyphae with clamp connections, some distinctly pseudoamyloid (in strands), hyphous-filamentous in trama of pileus and stipe, more distinctly pseudoamyloid in the cortical region of the stipe and near the cuticular layer of the pileus.

This is a *Hydropus* with a partially pseudoamyloid trama. The new combination *Hydropus swaneticus* (Sing.) Sing. is here proposed.

The species was rediscovered by Vasilieva in the Western Caucasus (see Utsh. Zap. Kaz. Gos. Univ. 105; 99 (1); 51, no 482. 1939).

Collybia hymenocephala A. H. Smith, Pap. Mich. Acad. Sc. 26: 61. 1941.

Fresh authentic material (leg. Singer at Cheboygan, Mich. no. N 400, — F) compared with the type (MICH) and confirmed by A. H. Smith was studied.

Pileus "madura" (Maerz & Paul), center sometimes reaching "antique bronze", glabrous hygrophanous, sordid-cream-gray-pallid when faded, slightly and shortly transparently striate on margin, very obtusely umbonate or subumbilicate, $15-27$ mm. — Lamellae pale gray, adnate to sinuate, adnexed, about 3 mm. broad, with entire edge or somewhat wavy, intermixed with lamellulae, smaller lamellulae sometimes crisp or lamellae with lateral veins, medium close to subdistant, in age some somewhat decurrent — Stipe silvery gray, slightly sericeous-striated, hollow, equal or slightly tapering downwards, $20-35 \times 1.5-3.5$ mm. — Context white in pileus, grayish in stipe, with a sordid watery line above the lamellae, odor very slight, farinaceous, taste farinaceous. — Spores amyloid, $6.2-7 \times 5 \mu$, broadly ellipsoid, smooth farinaceous. — Spores amyloid, $6.2-7 \times 5 \mu$, broadly ellipsoid, smooth, with homogeneous wall; basidia $25-28.5 \times 7.5 \mu$, 4-spored; pleurocystidia and cheilocystidia, none seen; dermatocystidia on stipe clavate, $22-23 \times 5.3 \mu$, hyaline, scattered; epicutis a subhymeniform layer of clavate-subvesiculose broadly rounded elements

about $27-28-(60) \times 20-37 \mu$, dermatocystidia, none or poorly differentiated; hyphae with clamp connections, not strongly inflated anywhere, inamyloid to very vaguely pseudoamyloid in parts, not gelatinized anywhere. — Chemical character: Context with phenol dusky vinaceous gray. — On the ground in moist place near trees.

This redescription coincides in all essential details with the original description and shows that this species belongs in *Dermoloma*. Since Smith includes this genus in his concept of *Mycena* sensu largo he was fully justified to transfer it to *Mycena*. The new combination ***Dermoloma hymenoccephalum*** (A. H. Smith) Sing. is here proposed.

Agaricus cynopotami(a) Berk., J. Linn. Soc., Bot. 18: 389. 1881.

This was published as *Agaricus (Acetabularia)* and transferred to *Locellina* by Saccardo. It comes from the Swan River in Australia and is in good condition (K). The name, as shown on the label was intended to be "*cynopotami*", not *cynopotamia* (which is an error). The spores are $6-8 \times 4.5-6.5 \mu$, with rather thin smooth inamyloid wall which is homogenous and pale stramineous brownish. These spores are clearly of the type characteristic for the Pluteeae, and the species is undoubtedly a *Volvariella*.

Locellina californica Earle, Bull. N. Y. Bot. Gard. 3: 299. 1904.

The type (leg. Baker & Copeland March 11, 1902, no. 382 of C. F. Baker, Pacific Slope Fungi, — NY, K) is well preserved. It shows the following characters:

Macroscopically, this seems similar to *Volvariella speciosa* var. *gloiocephala* and *V. cnemidophora*, and, indeed keys out in Shaffer's monograph, with the former, differing however, in color, size of the stipe and the tomentum of the stipe. Microscopically, we have noted the following data: Spores $13.3-16.3 \times 8.5-9.5 \mu$, ellipsoid to ovoid, smooth, stramineous-flesh-color; basidia $48-52 \times 14-15 \mu$, 4-spored; cystidia vesiculose-pedicellate to clavate-ventricose (ventricosity in upper third), broadly rounded above, hyaline, both on sides and edges of the lamellae rather numerous, $55-65 \times 18-24 \mu$, with thin, smooth walls; subhymenium cellular; trama of the hymenophore inverse; epicutis of pileus of repent hyphae, a thin upper layer being somewhat gelatinous, hypodermium not gelatinous, hyaline, no pigment visible in sections of the dried material; hyphae without clamp connections. These data suggest that this species also differs from *V. speciosa* var. *gloiocephala* in the shape of the cystidia, less markedly but still clearly in the size of the spores, and in the less marked gelatinous zone of the epicutis. This species must therefore be considered a good species of *Volvariella*.

Crepidotus hibernianus Pearson & Dennis in Pearson, Trans. Brit. Myc. Soc. 32: 268. 1949.

The type from Killarney, Eire, on *Tilia europaea*, leg. Dennis & Pearson (K) has the following microscopical characters: Spores $9.5-13.3 \times 6.5-8 \mu$, without a distinct germ pore and rarely subtruncate, smooth, rusty ochraceous brown, short ellipsoid to ellipsoid, with distinctly double, very firm wall, quite smooth; basidia $22-26 \times (5)-6-6.5 \mu$, clavate to ventricose-subampullaceous, hyaline, (1)-2-spored; pleurocystidia, none; cheilosectidia hyaline or brown, $31-51 \times 5-7.7 \mu$, mostly clavate, fewer filamentous, some clavate-subcapitate; hyphae of cuticular layer bright fulvous-ochraceous-brown, incrustated by pigment, filamentous and repent, exuding everywhere a sulphur yellow soluble pigment in KOH, with clamp connections.

The aspect and the anatomical characters indicate that this species is not a *Crepidotus*, but a *Pleuroflammula*. It must be transferred to that genus. It is very closely related to *P. flammus* (Murr.) Sing. and identical with what I have once determined, from dried material, as *P. flamma*, form with bisporous basidia, from Tristan da Cunha (see Singer, Results Norweg. Scient. Exped. Tristan da Cunha 1937-1938 38: 17-18. 1955). This is an apparently Atlantic species which, in the North reaches Southern Ireland, and in the South Tristan da Cunha.

This genus (*Pleuroflammula*), well represented in North and South America, and also in the foot hills of the Himalaya (*Agaricus emeric* Berk. ined., - K!) is new for Europe.

Crepidotus subtilis Orton, Trans. Brit. Myc. Soc. 43: 221. 1960.

The type (K) has been studied by this author and found to be in very close agreement with the descriptive data given by Orton. This is one of the microspecies distinguishable in the stirps *Variabilis*, and very closely related to *C. submollis*, *C. pubescens*, *C. amygdalosporus*.

Agaricus hypnophilus Pers. ex Berk. J. E. Smith 5 (2): 15. 1836.

The type, collected by Captain Carmichael at Apton, England, (K), has hyaline to pale melleous spores, $4.5-7.8 \times 2.3-3.2 \mu$, smooth and not angular even in polar view; basidia 4-spored, $17 \times 4.7-6.3 \mu$, hyphae without clamp connections.

Since Persoon's (*Agaricus*) *Hypnophilus* Pers., *Mycol. Eur.* 3: 28. 1828, pl. 24, fig. 5 is not represented by a determinable type (L), and had been published as a provisorium with uncertain status ("Duo hi fungilli Agarico *variabili* colore et habitu conveniunt exceptis lamellis, quae non in maturitate decolorantur, an forte a causa quadam exteriore? Hinc eos nondum ut species proprias distinguere volumerim . . .") we take Berkeley's species as the first validly published

one, and consider his specimens on which he based his description, as the holotype of the species.

The data given above show that this was correctly interpreted by Fayod. The correct name of the species is therefore *Pleurotellus hypnophilus* (Pers. ex Berk.) Fayod, and *P. herbarum* (Peck) Sing. becomes a synonym of it. If Berkeley's reference to Persoon were interpreted to mean that Persoon's description (respectively specimen) were the holotype of the species, *A. hypnophilus* would become a nomen dubium and *P. herbarum* would have to be re-instated.

Index of the species analysed in „Type Studies on Agarics I-IV“.

- abundans*, Collybia A I, Lloydia 5, p. 126
abundans, Fayodia A I, Lloydia 5, p. 126
acerbum, Tricholoma A I, Lloydia 5, p. 115
aculeatus, Gymnopilus A III, Lilloa 25, p. 505
adelphus, Armillaria A IV, Sydowia 15, p. 134
alachuana, Armillaria A II, Lloydia 9, p. 128
alachuana, Clitocybe A I, Lloydia 5, p. 103
alachuana *Naucoria* A II, Lloydia 9, p. 129
alachuana, Psilocybe A II, Lloydia 9, p. 129
alliaceus, Gymnopus A II, Lloydia 9, p. 124
amara, Agrocybe A I, Lloydia 5, p. 134
amara, *Naucoria* A I, Lloydia 5, p. 134
androsaceus, *Marasmius* var. *ushuvalensis* A III, Lilloa 25, p. 484
angustifolia, *Melanoleuca* A I, Lloydia 5, p. 114
antarteticus, *Marasmius* A III, Lilloa 25, p. 484
apertus, *Agaricus* (*Clitocybe*) A I, Lloydia 5, p. 126
apiahyana, *Pholiota* A III, Lilloa 25, p. 495
arenicola, *Armillaria* A I, Lloydia 5, p. 113
arenicola, *Melanoleuca* A I, Lloydia 5, p. 115
argentina, *Inocybe* A III, Lilloa 25, p. 499
argentinensis, *Marasmius* A III, Lilloa 25, p. 484, 487
argentinus, *Clitopilus* A III, Lilloa 25, p. 513
arvensis, *Agaricus* (*Naucoria*) A I, Lloydia 5, p. 133
atrialba, *Clitocybe* A I, Lloydia 5, p. 127
atrialba, *Fayodia* A I, Lloydia 5, p. 127
atriceps, *Hydropus* A II, Lloydia 9, p. 118
atrocinereum, *Tricholoma* A I, Lloydia 5, p. 117
avellanea, *Clitocybe* A I, Lloydia 5, p. 104
avellanea, *Melanoleuca* A I, Lloydia 5, p. 104
avellaneialba, *Clitocybe* A I, Lloydia 5, p. 103

badius, *Lentinus* A IV, Sydowia 15, p. 139
bahamensis, *Marasmius* A III, Lilloa 25, p. 484
balansae, *Marasmius* A III, Lilloa 25, p. 485
bambusinus, *Crepidotus* A II, Lloydia 9, p. 130
bavianus, *Lentinus* A IV, Sydowia 15, p. 137
berberidicola, *Pleurotus* A III, Lilloa 25, p. 471
bicolor, *Hygrophorus* A I, Lloydia 5, p. 99
blepharodes, *Lentinus* A IV, Sydowia 15, p. 140

- bonaerensis, Lentinus A III, Lilloa 25, p. 476
 bonaerensis, Marasmius A III, Lilloa 25, p. 483
 boninensis, Hiattula A IV, Sydowia 15, p. 140
 boryana, Armillaria A II, Lloydia 9, p. 124
 boryanus, Agaricus (Collybia) A II, Lloydia 9, p. 115
 brachypus, Marasmius A III, Lilloa 25, p. 485
 brasiliensis, Pleurotus A III, Lilloa 25, p. 471
 brevipes, Lentinus A IV, Sydowia 15, p. 138
 broadwayi, Clitocybe A I, Lloydia 5, p. 108
 broadwayi, Rhodopaxillus A I, Lloydia 5, p. 108
 bruchianus, Marasmius A III, Lilloa 25, p. 485

 cacaophyllus, Agaricus A II, Lloydia 9, p. 130
 caespitosella, Inocybe A III, Lilloa 25, p. 499
 caespitosus, Lentinus A IV, Sydowia 15, p. 137
 caffrorum, Rhodopaxillus A I, Lloydia 5, p. 109
 californica, Locellina A IV, Sydowia 15, p. 142
 californica, Melanoleuca A I, Lloydia 5, p. 114
 campanulatus, Cyclopleuropus A IV, Sydowia 15, p. 138
 campoi, Panus A III, Lilloa 25, p. 473
 cantharelloides, Panus A II, Lloydia 9, p. 121
 cerealis, Agaricus, Leucopaxillus A IV, Sydowia 15, p. 135
 chacoensis, Pholiota A III, Lilloa 25, p. 495
 chrysenoides, Agaricus (Tricholoma) A I, Lloydia 5, p. 112
 cisnerosana, Tubaria A III, Lilloa 25, p. 511
 collina, Collybia A I, Lloydia 5, p. 126
 collinus, Marasmius A I, Lloydia 5, p. 126
 collybiiformis, Collybia A I, Lloydia 5, p. 124
 collybiiformis, Melanoleuca A I, Lloydia 5, p. 123
 compressipes, Armillariella A I, Lloydia 5, p. 103
 compressipes, Clitocybe A I, Lloydia 5, p. 102
 conratus, Lentinus A IV, Sydowia 15, p. 140
 coprophilus, Marasmius A III, Lilloa 25, p. 485
 cordubensis, Lentinus A III, Lilloa 25, p. 477
 coriaceus, Panus A IV, Sydowia 15, p. 136
 crassivela, Pholiota A III, Lilloa 25, p. 495
 craterellus, Chaetocalathus A IV, Sydowia 15, p. 140
 crenatolobatus, Panus A III, Lilloa 25, p. 474
 cretaceus, Lentinus A IV, Sydowia 15, p. 137
 cubensis, Lentinus A I, Lloydia 5, p. 130
 curreyanus, Lentinus A IV, Sydowia 15, p. 137
 cyperinus, Marasmius A III, Lilloa 25, p. 485
 cynopotami, Agaricus A IV, Sydowia 15, p. 142

 dactyliophorus, Lentinus A IV, Sydowia 15, p. 137
 dasypus, Marasmius A III, Lilloa 25, p. 486
 dehiscens, Agaricus (Collybia) A I, Lloydia 5, p. 122
 dehiscens, Melanoleuca A I, Lloydia 5, p. 122
 detonsa, Lentinula A II, Lloydia 9, p. 124
 dichromapus, Marasmius A III, Lilloa 25, p. 486
 dichrous, Lentinus A IV, Sydowia 15, p. 140
 domicola, Panus A III, Lilloa 25, p. 474
 dryophila, Melanoleuca A I, Lloydia 5, p. 114

 earleae, Melanoleuca A I, Lloydia 5, p. 114
 earlei, Clitocybe A I, Lloydia 5, p. 121

- earlei, *Melanoleuca* A I, *Lloydia* 5, p. 121
eburneus, *Marasmius* var. *chilensis* A III, *Lilloa* 25, p. 483
ectypoides, *Cantharellula* A I, *Lloydia* 5, p. 120
ectypoides, *Clitocybe* A I, *Lloydia* 5, p. 120
eduriformis, *Melanoleuca* A I, *Lloydia* 5, p. 125
egregius, *Lentinus* A IV, *Sydowia* 15, p. 140
elegantissimus, *Pleurotus* A III, *Lilloa* 25, p. 471
elephantina, *Clitocybe* A I, *Lloydia* 5, p. 118
emerici, *Agaricus* A IV, *Sydowia* 15, p. 143
eripoda, *Mycenella* A III, *Lilloa* 25, p. 480
eripopus, *Marasmius* A III, *Lilloa* 25, p. 486
eugrammus, *Agaricus*, *Nothopanus* A IV, *Sydowia* 15, p. 136
exilis, *Lentinus* A IV, *Sydowia* 15, 137
eximius, *Lentinus* A III, *Lilloa* 25, p. 477
expallens, *Clitocybe* A I, *Lloydia* 5, p. 107
- fallax, *Agaricus* (*Tricholoma*) A I, *Lloydia* 5, p. 119
fallax, *Calocybe* A I, *Lloydia* 5, p. 119
fallax, *Lentinus* A III, *Lilloa* 25, p. 477
fallax, *Lentinus* A IV, *Sydowia* 15, p. 140
familia, *Collybia* A I, *Lloydia* 5, p. 127
farinacea, *Clitocybe* A I, *Lloydia* 5, p. 123
farinacea, *Melanoleuca* A I, *Lloydia* 5, p. 112
fastuosus *Kalchbr.* A IV, *Sydowia* 15, p. 140
fimicola, *Collybia* A I, *Lloydia* 5, p. 125
fimiseda, *Tubaria* A III, *Lilloa* 25, p. 511
flammeus, *Pleuroflammea* A IV, *Sydowia* 15, p. 143
flavescens, *Agaricus* (*Tricholoma*) A I, *Lloydia* 5, p. 118
flavolivens, *Agaricus* A II, *Lloydia* 9, p. 129
flavolivens, *Melanotus* A II, *Lloydia* 9, p. 130
flavipunctata, *Pholiota* A III, *Lilloa* 25, p. 495
floridanum, *Lentodium* A II, *Lloydia* 9, p. 128
formosa, *Pholiota* A III, *Lilloa* 25, p. 495
fuegiana, *Inocybe* A III, *Lilloa* 25, p. 500
fuligineum, *Lyophyllum* A I, *Lloydia* 5, p. 119
fuligineum, *Tricholoma* A I, *Lloydia* 5, p. 119
fumosella, *Melanoleuca* A I, *Lloydia* 5, p. 116
fumosifolia, *Inocybe* A III, *Lilloa* 25, p. 500
fuscoferrugineus, *Lentinus* A III, *Lilloa* 25, p. 477
fuscopurpureus, *Lentinus* A III, *Lilloa* 25, p. 477
fuscopurpureus, *Lentinus* A IV, *Sydowia* 15, p. 140
fuscus, *Lentinus* A IV, *Sydowia* 15, p. 140
- gausapatum, *Tricholoma* A I, *Lloydia* 5, p. 113
geesterani, *Pleurotus* A IV, *Sydowia* 15, p. 138
georgii, *Agaricus* (*Tricholoma*) A I, *Lloydia* 5, p. 108, 111
grammicola, *Marasmius* A III, *Lilloa* 25, p. 486
grisea, *Hohenbuehelia* A III, *Lilloa* 25, p. 469
griseifolia, *Clitocybe* A I, *Lloydia* 5, p. 104
griseopallida, *Clitocybe* A I, *Lloydia* 5, p. 108
griseopallidus, *Agaricus* A I, *Lloydia* 5, p. 108
guaraniticus, *Panus* A III, *Lilloa* 25, p. 474
guaraniticus, *Pleurotus* A III, *Lilloa* 25, p. 471
guarapiensis, *Lentinus* A III, *Lilloa* 25, p. 477
guarapiensis, *Pleurotus* A III, *Lilloa* 25, p. 472

- haematites*, *Agaricus* A II, *Lloydia* 9, p. 129
haematites, *Melanotus* A II, *Lloydia* 9, p. 130
harperi, *Clitocybe* A I, *Lloydia* 5, p. 104
harperi, *Melanoleuca* A I, *Lloydia* 5, p. 108
helvoliceps, *Agaricus* (*Flammula*) A I, *Lloydia* 5, p. 133
helvoliceps, *Galerina* A III, *Lilloa* 25, p. 508
herbarum, *Pleurotellus* A IV, *Sydowia* 15, p. 144
heteropus, *Pleurotus* A III, *Lilloa* 25, p. 472
hibernianus, *Crepidotus* A IV, *Sydowia* 15, p. 143
hirneola, *Clitocybe* A I, *Lloydia* 5, 100, 110
hirneolus, *Pleurotus* A III, *Lilloa* 25, p. 472
hirneolus, *Rhodophyllus* A I, *Lloydia* 5, p. 101
hirtipes, *Marasmius* A III, *Lilloa* 25, p. 486
hygrophanus, *Nothopanus* A IV, *Sydowia* 15, p. 136
hymenirhizus, *Panus* A III, *Lilloa* 25, p. 474
hymenocephala, *Collybia* A IV, *Sydowia* 15, p. 141
hypnophilus, *Agaricus*, *Pleurotellus* A IV, *Sydowia* 15, p. 143

ianthina, *Bertrandiella* A IV, *Sydowia* 15, p. 133
imperialis, *Pholiota* A III, *Lilloa* 25, p. 495
impudica, *Pholiota*, A III, *Lilloa* 25, p. 495
inconspicuus, *Lentinus* A IV, *Sydowia* 15, p. 137
infundibuliformis, *Lentinus* A IV, *Sydowia* 15, p. 139
inornatus, *Pleurotus* A III, *Lilloa* 25, p. 472
inquinans, *Lentinus* A IV, *Sydowia* 15, p. 138
iocephala, *Collybia* A II, *Lloydia* 9, p. 116
iocephalus, *Agaricus* (*Mycena*) A II, *Lloydia* 9, p. 115
ipatungaensis, *Tricholoma* A IV, *Sydowia* 15, p. 134
irrorata, *Collybia* A II, *Lloydia* 9, p. 117
irrorata, *Pseudohiatula* A II, *Lloydia* 9, p. 118

jalapensis, *Clitocybe* A I, *Lloydia* 5, p. 107
jalapensis, *Omphalia* A I, *Lloydia* 5, p. 107
javanicus, *Lentinus* A IV, *Sydowia* 15, p. 138

kalchbrenneri, *Omphalia* A I, *Lloydia* 5, p. 122
kalchbrenneri, *Xeromphalina* A I, *Lloydia* 5, p. 123

laciniatocrenatus, *Panus* A III, *Lilloa* 25, p. 474
laciniatocrenatus, *Pleurotus* A III, *Lilloa* 25, p. 472
langei, *Clitocybe* A I, *Lloydia* 5, p. 107
lata, *Clitocybe* A I, *Lloydia* 5, p. 104
latum, *Tricholoma* A I, *Lloydia* 5, p. 104
lutescens, *Rhodopaxillus* A II, *Lloydia* 9, p. 114
lutescens, *Tricholoma* A II, *Lloydia* 9, p. 114
lepidocephala, *Inocybe* A III, *Lilloa* 25, p. 501
leprieurii, *Lentinus* A IV, *Sydowia* 15, p. 140
leptopoda, *Pholiota* A III, *Lilloa* 25, p. 495
leucocephaloides, *Collybia* A I, *Lloydia* 5, p. 124
leucocephaloides, *Tricholoma* A I, *Lloydia* 5, p. 124
levis, *Pannus* A I, *Lloydia* 5, p. 131
lichenicola, *Pleurotus* A III, *Lilloa* 25, p. 472
lilacifolia, *Clitocybe* A I, *Lloydia* 5, p. 105
lilacifolia, *Omphalia* A I, *Lloydia* 5, p. 105
lobatus, *Lentinus* A IV, *Sydowia* 15, p. 137

- longinquus, Panellus A III, Lilloa 25, p. 470
 luteoolivaceus, Agaricus A II, Lloydia 9, p. 116
 luteoolivaceum, Callistosporium A II, Lloydia 9, p. 117
- magellanicus, Marasmius A III, Lilloa 25, p. 486
 magnivellaris, Agaricus A I, Lloydia 5, p. 113
 magnivellaris, Amanita A II, Lloydia 9, p. 125
 manipularis, Lentinus A IV, Sydowia 15, p. 137
 maritimus, Hygrophorus, Laccaria A IV, Sydowia 15, p. 133.
 memmingeri, Melanoleuca A I, Lloydia 5, p. 125
 mexicana, Clitocybe A I, Lloydia 5, p. 103
 microcephala, Galerina A III, Lilloa 25, p. 510
 microcephala, Inocybe A III, Lilloa 25, p. 501
 microscopicus, Marasmiellus A III, Lilloa 25, p. 482
 microscopicus, Pleurotus A III, Lilloa 25, p. 472
 microspermus, Panus A III, Lilloa 25, p. 474
 microspermus, Pleurotus A III, Lilloa 25, p. 472
 microspora, Lepiota A I, Lloydia 5, p. 132
 microsporus, Agaricus (Tricholoma) A I, Lloydia 5, p. 132
 minusculus, Pleurotus A III, Lilloa 25, p. 472
 mirabile, Tricholoma A I, Lloydia 5, p. 121
 mirabilis, Melanoleuca A I, Lloydia 5, p. 121
 molinoana, Crinipellis A III, Lilloa 25, p. 494
 molinoanus, Marasmius A III, Lilloa 25, p. 486
 montevidensis, Pholiota A III, Lilloa 25, p. 496
 multiformis, Lentinus A IV, Sydowia 15, p. 137
 murinifolia, Clitocybe A I, Lloydia 5, p. 107
 murraii, Entoloma A I, Lloydia 5, p. 101
 murrillianum, Tricholoma A I, Lloydia 5, p. 113
 musaecola, Agaricus A II, Lloydia 9, p. 130
 musaecola, Melanotus A II, Lloydia 9, p. 130
- nambi, Pleurotus A III, Lilloa 25, p. 472
 nepalensis, Lentinus A IV, Sydowia 15, p. 140
 nidulans, Phyllostopsis A III, Lilloa 25, p. 470
 nigripes, Marasmiellus A III, Lilloa 25, p. 481
 niveicolor, Camarophyllus A I, Lloydia 5, p. 99
 niveicolor, Clitocybe A I, Lloydia 5, p. 99
 niveipes, Tricholoma A I, Lloydia 5, p. 115
 nuciolens, Melanoleuca A I, Lloydia 5, p. 110
- obliquus, Marasmius A IV, Sydowia 15, p. 136
 oculata, Clitocybe A I, Lloydia 5, p. 129
 oculatus, Hydropus A I, Lloydia 5, p. 129
 odorum, Tricholoma A I, Lloydia 5, p. 113
 ohiensis, Agaricus A I, Lloydia 5, p. 102
 olesonii, Melanoleuca A I, Lloydia 5, p. 110
 oligocinsulae, Marasmiellus A III, Lilloa 25, p. 000
 oliveum, Tricholoma A I, Lloydia 5, p. 112
 omnituens, Armillaria A IV, Sydowia 15, p. 134
 onychinum, Tricholoma A I, Lloydia 5, p. 119
 oreades, Clitocybe A I, Lloydia 5, p. 104
 oregonensis, Cantharellula A I, Lloydia 5, p. 120
 oregonensis, Clitocybe A I, Lloydia 5, p. 119
 overholtsii, Clitocybe A I, Lloydia 5, p. 104

- pallipes*, *Marasmius* A III, *Lilloa* 25, p. 486
pampicola, *Collybia* A III, *Lilloa* 25, p. 464
pampicola *Marasmius* A III, *Lilloa* 25, p. 491
paradoxus, *Lentinellus* A IV, *Sydowia* 15, p. 135
paraguayensis, *Hohenbuehelia* A III, *Lilloa* 25, p. 467
paraguayensis, *Lentinus* A III, *Lilloa* 25, p. 473, 478
paraguayensis, *Pleurotus* A III, *Lilloa* 25, p. 472
patelloides, *Pleurotellus* A IV, *Sydowia* 15, p. 140
peckii, *Clitocybe* A I, *Lloydia* 5, p. 105
peliolepis, *Gymnopilus* A III, *Lilloa* 25, p. 504
peliolepis, *Pholiota* A III, *Lilloa* 25, p. 596.
pernivea, *Omphalopsis* A II, *Lloydia* 9, p. 118
perpusillus, *Crinipellis* A III, *Lilloa* 25, p. 494
perpusillus, *Lentinus* A III, *Lilloa* 25, p. 478
perpusillus, *Pleurotus* A III, *Lilloa* 25, p. 472
perstrictifolius, *Lentinellus* A III, *Lilloa* 25, p. 465
perstrictifolius, *Pleurotus* A III, *Lilloa* 25, p. 472
petaloides, *Hohenbuehelia* var. *victoriensis* A III, *Lilloa* 25, p. 470
petaloides, *Pleurotus* var. *victoriensis* A III, *Lilloa* 25, p. 472
pinetorum, *Collybia* A I, *Lloydia* 5, p. 124
pinicola, *Collybia* A I, *Lloydia* 5, p. 124
pinicola, *Melanoleuca* A I, *Lloydia* 5, p. 124
platensis, *Collybia* A III, *Lilloa* 25, p. 464
platensis, *Inocybe* A III, *Lilloa* 25, p. 501
platensis, *Lentinus* A III, *Lilloa* 25, p. 479
platensis, *Marasmius* A III, *Lilloa* 25, p. 487
platensis, *Pholiota* A III, *Lilloa* 25, p. 496
platensis, *Tubaria* A III, *Lilloa* 25, p. 512
platyphylla, *Melanoleuca* A I, *Lloydia* 5, p. 113
portegnus, *Pleurotus* A III, *Lilloa* 25, p. 472
portegnus, *Pleurotus* var. *microsporus* A III, *Lilloa* 25, p. 472
portolensis, *Melanoleuca* A I, *Lloydia* 5, p. 121
praecox, *Melanoleuca* A I, *Lloydia* 5, p. 121
praegrande, *Tricholoma* A IV, *Sydowia* 15, p. 135
praemagna, *Melanoleuca* A I, *Lloydia* 5, p. 109
praerigidus, *Lentinus* A IV, *Sydowia* 15, p. 138
privigna, *Tubaria* A III, *Lilloa* 25, p. 512
proximus, *Lentinus* A I, *Lloydia* 5, p. 130
proteus, *Agaricus* A II, *Lloydia* 9, p. 130
proteus, *Melanotus* A II, *Lloydia* 9, p. 130
pseudoblattaria, *Pholiota* A III, *Lilloa* 25, p. 496
pseudofascicularis, *Pholiota* A III, *Lilloa* 25, p. 496
pseudoperonatus, *Marasmius* A III, *Lilloa* 25, p. 488
psychotriae, *Crepidotus* A II, *Lloydia* 9, p. 130
psychotriae, *Melanotus* A II, *Lloydia* 9, p. 130
puiggarii, *Lentinus* A III, *Lilloa* 25, p. 478
puiggarii, *Pholiota* A III, *Lilloa* 25, p. 497
puiggarii, *Pleurotus* A III, *Lilloa* 25, p. 472
purpurascens, *Marasmius* A II, *Lloydia* 9, p. 121
pusillimus, *Pleurotus* A III, *Lilloa* 25, p. 472
pusillus, *Pleurotus* A III, *Lilloa* 25, p. 472

radicata, *Tricholomopsis* A I, *Lloydia* 5, p. 118
radicatum, *Tricholoma* A I, *Lloydia* 5, p. 117
raphanica, *Armillaria* A II, *Lloydia* 9, p. 124

- regularis*, Clitocybe A I, Lloydia 5, p. 106
revelatus, Lentinus A IV, Sydowia 15, p. 139
rheicolor, Agaricus (Collybia) A I, Lloydia 5, p. 127
robinsoniae, Clitocybe A I, Lloydia 5, p. 106
rudericola, Melanoleuca A I, Lloydia 5, p. 108
rupicola, Collybia A I, Lloydia 5, p. 129
rupicola, Panellus A I, Lloydia 5, p. 129
- sabalis*, Hydropus A II, Lloydia 9, p. 119
sajor-caju, Pleurotus A IV, Sydowia 15, p. 137
salmoneus, Rhodophyllus A I, Lloydia 5, p. 102
schnyderi, Lentinus A III, Lilloa 25, p. 480
scyphoides, Lentinus A II, Lloydia 9, p. 121
secedifolia, Melanoleuca A I, Lloydia 5, p. 118
sedula, Collybia A I, Lloydia 5, p. 122
semiglobata, Galerula A II, Lloydia 9, p. 129
semiustus, Marasmius A II, Lloydia 9, p. 120
semivestitum, Tricholoma A I, Lloydia 5, p. 129
semivestitus, Lentinellus A I, Lloydia 5, p. 130
septicoides, Clitopilus A III, Lilloa 25, p. 513
setulosus, Marasmius A III, Lilloa 25, p. 488
similis, Lentinus A IV, Sydowia 15, p. 140
singularis, Aeruginospora A II, Lloydia 9, p. 114
spegazzinii, Lentinus A III, Lilloa 25, p. 480
spegazzinii, Marasmius A III, Lilloa 25, p. 489
sphaerodermus, Marasmius A III, Lilloa 25, p. 490
squamosidisca, Ripartitella A II, Lloydia 9, p. 128
squamosidiscus, Marasmiellus A II, Lloydia 9, p. 127
squarrosulus, Lentinus A IV, Sydowia 15, p. 137
stipticoides, Panus A III, Lilloa 25, p. 476
striatella, Melanoleuca A I, Lloydia 5, p. 117
strigosus, Panus A I, Lloydia 5, p. 131
subacutum, Tricholoma A I, Lloydia 5, p. 116
subargillacea, Melanoleuca A I, Lloydia 5, p. 111
subbulbipes, Clitocybe A I, Lloydia 5, p. 104
subcinereiformis, Melanoleuca A I, Lloydia 5, p. 122
subconnexa, Clitocybe A I, Lloydia 5, p. 106
subflammans, Pholiota A III, Lilloa 25, p. 497
subfuliginea, Melanoleuca A I, Lloydia 5, p. 107
sublurida, Melanoleuca A I, Lloydia 5, p. 111
submitis, Pleurotus A III, Lilloa 25, p. 472
submulticeps, Melanoleuca A I, Lloydia 5, p. 119
submutabilis, Venenarius A II, Lloydia 9, p. 127
submutilus, Pleurotus A III, Lilloa 25, p. 473
subnudus, Lentinus A IV, Sydowia 15, p. 137
subpessundata, Limacella A I, Lloydia 5, p. 132
subpessundata, Melanoleuca A I, Lloydia 5, p. 132
subscyphoides, Lentinus A II, Lloydia 9, p. 121
subsejunctum, Tricholoma A I, Lloydia 5, p. 115
subtilis, Lentinus, Crepidotus A IV, Sydowia 15, p. 136
subtomentosa, Crinipellis A III, Lilloa 25, p. 492
subtransmutans, Melanoleuca A I, Lloydia 5, p. 116
subvelata, Melanoleuca A I, Lloydia 5, p. 132
swanetica, Omphalia A IV, Sydowia 15, p. 140

- tarnensis, *Cantharellula* A III, *Lilloa* 25, p. 464
tarnensis, *Pleurotus* A III, *Lilloa* 25, p. 473
telmatiaea, *Agaricus* (*Omphalia*) A I, *Lloydia* 5, p. 108
tenebriosa, *Clitocybe* A I, *Lloydia* 5, p. 118
tenuipes, *Melanoleuca* A I, *Lloydia* 5, p. 116
tephroleucus, *Lentinus* A IV, *Sydowia* 15, p. 140
terraeolens, *Tricholoma* A I, *Lloydia* 5, p. 99
testaceoflava, *Clitocybe* A I, *Lloydia* 5, p. 100
testaceoflavus, *Rhodophyllus* A I, *Lloydia* 5, p. 100
tottenii, *Melanoleuca* A I, *Lloydia* 5, p. 111
translucens, *Hydropus* A II, *Lloydia* 9, p. 118
transmutans, *Agaricus* (*Tricholoma*) A I, *Lloydia* 5, p. 115
trichorhizus, *Marasmius* A III, *Lilloa* 25, p. 490
tropicalis, *Mariasmellus* A III, *Lilloa* 25, p. 481
tropicalis, *Pleurotus* A III, *Lilloa* 25, p. 473
trullisata, *Clitocybe* A I, *Lloydia* 5, p. 102
trullisata f. *rugulospora*, *Laccaria* A IV, *Sydowia* 15, p. 133.
tuberosa, *Naucoria* A I, *Lloydia* 5, p. 133
- unakensis, *Melanoleuca* A I, *Lloydia* 5, p. 124
- variabilima, *Inocybe* A III, *Lilloa* 25, p. 503
valiabilis, *Clitocybe* A I, *Lloydia* 5, p. 106
velutinus, *Lentinus* A IV, *Sydowia* 15, p. 139
vinosus, *Marasmius* A III, *Lilloa* 25, p. 451
violaceifolia, *Clitocybe* A I, *Lloydia* 5, p. 105
viriditinctus, *Agaricus* A I, *Lloydia* 5, p. 112
volkertii, *Melanoleuca* A I, *Lloydia* 5, p. 111
- washingtoniensis, *Clitocybe* A I, *Lloydia* 5, p. 106
whetstoneae, *Clitocybe* A I, *Lloydia* 5, p. 133
wrightii, *Panus* A IV, *Sydowia* 15, p. 135
- xanthophylla, *Clitocybe* A I, *Lloydia* 5, p. 105
- yatesii, *Melanoleuca* A I, *Lloydia* 5, p. 114
- zonatus, *Lentinus* A IV, *Sydowia* 15, p. 140
zonifer, *Lentinus* A IV, *Sydowia* 15, p. 140

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