

## Type Studies on Basidiomycetes V\*)

By Rolf Singer (Tucuman, Argentina).

While the former Type Studies were predominantly concerned with the species described from the Western Hemisphere, the author presents in the present series the result of some type studies carried out during and after the VIIth International Botanical Congress in Stockholm. The specimens studied as well as the plates seen are preserved at the Riksmuseet in Stockholm and the Botanical Institute at Upsala. The author is indebted to the Swedish colleagues who were kind enough to permit him to work on this valuable material, especially to Dr. Nannfeldt and Dr. Lundell of Upsala and Dr. Hultén and Dr. Haglund at Stockholm.

### 1. Type material and authentic material preserved in the Fries Herbarium at Upsala.

The small number of specimens preserved and belonging to this category made it possible to assemble a set of notes concerning some of our classical species of *Basidiomycetes* indicated in E. M. Fries own works. These species as well as the species indicated in chapter 2 are among the few that can now be considered as typified by something more than the bare description. It is thought to be of general interest to those working in the taxonomical field to know what these species are, and, aside from that, to be reasonably sure that most of the species not mentioned here, cannot be typified with specimens or plates available to us. Some of the groups with which the author is less familiar such as *Mycena*, *Cortinarius*, *Hebeloma*, *Psathyrella* etc. have been omitted but their number is relatively small.

It will be noted that most of these specimens were collected by other persons than Fries himself. Fries himself, just like many of his contemporaries, and even more recent authors such as Britzelmayer and Velenovsky, did not think much of the value of dried fungous material, and consequently did not prepare it.

If a corresponding set of type studies could be made available of the Persoon Herbarium at Leyden, then, the little Europe still

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\*) The first contributions under this title appeared in *Mycologia* 34: 64—93, 1942; II: *Mycologia* 35: 142—163, 1943; III: *Mycologia* 39: 171—189, 1947; IV: *Lilloa* 23: 147—246, 1950 (in print).

has in the way of an inheritance from the classical era *Persoon-Fries* would at least be properly indexed and fixed as to its interpretation. Since the material is comparatively very small, it will not eliminate the “sensu *Bresadola*” and “sensu *Quélet*” etc. that haunt European mycology, but it will show just how much we actually know about “sensu *Fries*” and “sensu *Persoon*”.

### *Tricholomataceae.*

*Agaricus citri* Inz. Type or authentic material sent to *Fries*. — The spores are just as those of *Armillariella mellea*, and all other characters coincide likewise. This is a form of *Armillariella mellea*.

*Collybia napipes* (Berk.) Sacc. Part of the type sent to *Fries*. — Since the spores are about  $16.5 \times 12 \mu$  and somewhat thickwalled but smooth, *Hoehnel's* opinion (see *Singer in Mycologia* 37: 439. 1945) in regard to its non-identity with *Rick's* misinterpretation of *Berkeley's* species is herewith corroborated.

*Crepidotus junquilleus* (Paul. ex *Lév.*) *Quélet*. — Since it was *Quélet* who reintroduced the epithet “*junquilleus*” into modern taxonomy, it is not without interest to note that a specimen sent to *Upsala* by *Quélet* (on *Populus tremula*, from near *Verdun*, *Meuse*, *France*, coll. *L. Quélet* October 1893) and incorporated posthumously in the *Fries Herbarium* is identical with *Phyllotopsis nidulans* (*Pers. ex Fr.*) *Sing.*

*Panus hirtus* *Fr.*, type. — The trama is irregular and the subhymenium is well developed; metuloids none or perhaps a very few scattered indistinct ones (?); basidia  $29 \times 3.7 \mu$ , 4-spored; spores  $6.7-8 \times 3.7-4 \mu$ , hyaline, smooth, cylindric, non-amyloid; hyphae all non-amyloid, with clamp connections. It is amazing how well preserved this specimen is after all these years, inasmuch as it was collected in tropical climate. Macroscopically, it is in agreement with the description given by *Murrill*. Consequently *Murrill's* interpretation of *Fries' species* is correct. As I have shown before, *Agaricus calyx* *Spegazzini* is the same species, which is extremely common in the South American and Central American tropics. I have seen material from *Cuba* (coll. *W. L. White* 580, *FH*), *Paraguay* (coll. *Balansa*), *Chile* (as *Panus Campoii* *Speg.*). Aside from that, I have studied authentic material of *Panus infundibulum* *Berk.* from *Nicaragua* which is likewise the same, and the type of *Agaricus caespitosus* *Berk.* from *Cuba* which is identical with the above collections.

*Panus hirtus* is not actually a *Panus* but rather a *Pleurotus* as pointed out by me at various occasions. The new combination *Pleurotus hirtus* (*Fr.*) *Sing.* is therefore proposed.

*Lentinus nigripes* Fr. in litt. ad Klotzsch Authentic material. — This is Oersted material from Costa Rica and determined by Fries. It is said to be the same as *A. Berterii* on a label written by Bresadola. This is correct, see below.

*Agaricus Berterii* Fr., type. — The type of this species in the Herbarium Fries is typical *Panus crinitus* (L. ex Fr.) Sing.

*Lentinus crinitus* (L. ex Fr.) Fr. Authentic material. — Since Fries' interpretation of this important species is nomenclatorially more important than Linné's, we note here that among the four specimens seen in the Herbarium Fries, all determined by Fries, or authenticated by him, three are undoubtedly what is called *Lentinus crinitus* by all modern specialists including Murrill, Lloyd, Pilát; only one (Beyrich, August, Brazil with an alternative determination on the label, by whom, I do not know) may be *Panus Schnyderi* (Speg.) Sing., a species extremely closely related to *Panus crinitus* (L. ex Fr.) Sing. = *Lentinus crinitus* (L. ex Fr.) Fr.

*Lentinus villosus* Klotzsch, type. — The type of this species is identical with *Panus crinitus* (L. ex Fr.) Sing. (see above).

*Lentinus stupens* Klotzsch, type. — This species, later always spelled *Lentinus stuppeus*, is also identical with *Panus crinitus* (L. ex Fr.) Sing.

*Lentinus velutinus* (Fr.) Fr., type. — Beyrich's specimen is easily recognizable as the species generally accepted as *Lentinus velutinus*. However, since *Lentinus velutinus* has no well developed subhymenium and irregular trama, it belongs in *Panus*, and there is another species, *Panus velutinus* Fr. which was described by Fries in the same year as *Agaricus (Omphalia) velutina* Fr. likewise from Brazil and later transferred to *Panus*. The type of this latter species does not exist as far as I can see, but authentic material see below. Hence, the specific epithet *velutinus* cannot be transferred from *Lentinus* to *Panus* and one of the synonyms has to be used.

*Panus velutinus* (Fr. ut *Agaricus*) Fr., authentic. — Type material could not be located; authentic material from Guadeloupe consists of two collections, one of which I cannot determine, the other being *Panus rudis* var. *strigellus* (Berk.) Sing. Murrill (Mycologia 3: 34. 1911) quotes *Panus velutinus* Fr. Epicr. p. 398. 1838 as a synonym of *Lentinus velutinus* Fr. If this is not a mistake due to confusion, it may mean that he thinks the original Brazilian collection of *Agaricus velutinus* identical with *Lentinus velutinus* Fr., but I wonder if he had an occasion to see the type of either species.

*Paxillus chrysophyllus* Trog, type. — The type, or part of the type as preserved in the Fries Herbarium was collected

and determined by Trog, „auf *Pyrus malus* bei Schwerzlingen, 28. November 1844“. The spores are  $12-13.5 \times 3.8 \mu$ , cylindric, hyaline, thin-walled, non-amyloid; basidia  $45-50 \times 7.5-8 \mu$ , 4-spored, few 2-spored; metuloids none; trama irregular; subhymenium well developed. This is undoubtedly a *Pleurotus*. Considering all data, it must be *Pleurotus ostreatus* (Jacqu. ex Fr.) Quél. with yellow lamellae as often seen when drying, or rotting.

*Agaricus languidus* Lasch, type. — The specimen in the Fries Herbarium needs more careful study than the superficial one I was able to carry out. The specimen is in rather good condition, and looks now somewhat like *Hygrocybe cantharellus* but actually belongs to the Rameales-group of *Marasmiellus* or a section near it; the spores I saw are elongate and approximately  $10.5 \times 5 \mu$ .

*Marasmius tageticolor* Berk., part of type. — This species is very close to *M. haematocephalus* Mont. but characterized by the striped pileus. I have studied identical material from Cuba, collected by W. L. White (FH) and from St. Vincent, W. I., comm. M a s s e e (NY, FAS). The spores are as large as those of *M. haematocephalus* and the context is amyloid. It belongs in the group with broomcells of the section *Globulares*.

*Agaricus stipitarius* Fr., authentic. — This is an exsiccatum of F u c k e l's (no. 1038) and was originally named *Marasmius calopus* Fr. It was collected at Oestrich, Germany, on grass roots, in fall. The determination is corrected in Fries' own hand writing. The correction reads "Non. *Agaricus stipitarius* Fr." The specimen has all characters of the fungus now known as *Crinipellis stipitaria* (Fr.) Pat. and described by me as *Crinipellis stipitaria* var. *graminealis* Lasch \*) in Lilloa 3: 475—479. 1942.

*Marasmius scabellus* Quél. in herb. (*Marasmius caulinalis* var. *scabellus* (A. & S. ex) Quél., authentic. — Since Quélet was the first to unearth the pre-Friesian name *Agaricus scabellus*, later accepted by Morgan and Bataille for what is now known as *Crinipellis stipitaria* (see above), it is not without interest to indicate the existence of this authentic material at the Fries Herbarium collected by Quélet himself at Hérimoncourt, Jura, France. It is identical with Fries' species.

*Paxillus pinguis* Hook., fil. apud Berk., part of the type. — It was suggested in my paper The *Boletineae* of Florida, Farlowia 2: 280. 1945, and 2: 544. 1946 that this species is one of the subspecies of *Phylloporus rhodoxanthus* (Schw.) Bres. In fact, the spores are of the *Phylloporus*-type, and so is the trama. Spores  $8.2-10 \times 3-3.7 \mu$ ; cystidia ventricose with broadly rounded tip, some of them with the

\*) According to the new rules of nomenclature voted in Stockholm 1950 the correct name of the type variety of this species should be *Crinipellis stipitaria* var. *stipitaria*.

projecting portion granular,  $39-78 \times 9-13.5 \mu$ . These data seem to bear out the statement made by me on the basis of H o o k e r's original picture preserved at the F a r l o w Herbarium.

*Paxillus sulphureus* Berk., part of the type. — It was suggested in my paper quoted above that this species is another species of the genus *Phylloporus*, not identical with *P. rhodoxanthus* or any of its subspecies. The material preserved at the F r i e s Herbarium, collected by H o o k e r in Sikkim, India has elongate spores of the *Phylloporus*-type, fusoid with suprahilar depression, smooth,  $9-12 \times 3-3.7 \mu$ ; the trama and the cystidia were difficult to distinguish in the mount made, but clamps were undoubtedly absent. These data seem to corroborate our anterior statement, and consequently the new combination *Phylloporus sulphureus* (Berk.) Sing. is proposed.

*Boletus sistotremoides* Fr., authentic. — This species is very important taxonomically since it is the type species of the genus *Gyrodon* Opat. As has been pointed out by me (Farlowia 2: 243, 1945) several authors are inclined to let this species pass as a form of *Gyrodon lividus* (Bull. ex Fr.) Sacc. whereas others e. gr. Kallenbach considered it as a rare deformation of some species with other affinities. If it could have been proved that *B. sistotremoides* Fr. is not a *Gyrodon*, the genus *Gyrodon* as accepted now would have to be replaced by *Uloporus* Quéf. However, unexpectedly, the material preserved in Sweden proves beyond doubt that *Boletus sistotremoides* Fr. is a *Gyrodon*, identical with *Gyrodon lividus*, an that *G. lividus* itself is, according to an authentic plate at the Riksmuseet, exactly what modern authors describe as such, e. gr. Kallenbach, Pilze Mitteleuropas 1: 109, and Singer, Rev. de Mycol. 3: 172, 1938.

The specimen in the Fries Herbarium was sent from France by Quélet and was determined by Fries himself as *Boletus (Gyrodon) sistotremoides* Fr. It has the characteristic small and short spores of *Gyrodon lividus*, viz.  $5.5-6 \times 3.7-4.5 \mu$ ; clamp connections are present.

*Boletinus cavipes* (Opat.) Kalchbr. — The specimen at the Fries Herbarium is not authentic since it is a collection from the Tatra Mountains sent to Fries by Kalchbrenner who is not the original author of the species but the author of the transfer to *Boletinus* and the author of the genus *Boletinus* which he proposed in 1876. Nevertheless, this material, fully identical with what is now called *Boletinus cavipes* by all authors, is of some interest as it shows that it was this collection or one identical with it from the same locality on which the genus *Boletinus* was based.

*Russula consobrina* (Fr. ex Fr.) Fr. — There was or is (but was not found by me) some material of this species in the

Fries Herbarium since it is indexed there; this entry is concerned with material sent to Fries by Karsten as had been suggested by me (*Mycologia* **34**: 81, 1942) and, consequently, the Finnish specimens described by me (l. c.) may be considered topo-types in the larger sense of the word.

## 2. Plates of fungi made under E. M. Fries' direction.

There is an extensive collection of original plates — some of them excellent paintings, others according to the paints and the technique of the artists, not so good or now partly blackened — preserved at the Botaniska Avdelningen of the Riksmuseet in Stockholm. Since only those plates which have been incorporated in the *Icones Selectae* have ever been published, and the originals cannot be sent out, it may be useful for other taxonomists to attempt an enumeration and evaluation of the plates existing. As a first step, I shall give a list of plates which I personally studied and which are of taxonomic interest. A large number of plates which I could not redetermine, or which belong to genera which are worked on by European specialists, have been omitted at present.

*Agaricus (Amanita) virosus* Fr. — This is the globose-spored form with the floccose stipe, rather common in the woods of Northern Europe, and well represented in many modern iconographies.

*Agaricus (Armillaria) constrictus* Fr. — This is a species studied by me in the neighborhood of Leningrad, and now referred to the genus *Calocybe* Kühner because of its granulose basidia in acetocarmine mounts.

*Agaricus (Armillaria) denigratus* Fr. — This is undoubtedly a form of the *Agrocybe erebia* complex.

*Agaricus (Armillaria) melleus* Vahl ex Fr. — = *Armillariella mellea* (DC ex Fr.) Karst. as generally interpreted today.

*Agaricus (Armillaria) mucidus* Schrad. ex Fr. — = *Oudemansiella mucida* (Schrad. ex Fr.) Höhn. as generally interpreted today.

*Agaricus (Armillaria) verrucipes* Fr. in QuéL. — This is obviously the type of this species, as it was collected and determined by v. Post at Upsala in spring. This is the same species that I transferred to *Melanoleuca* because of its verrucose amyloid spores.

*Agaricus (Crepidotus) applanatus* Pers. ex Fr. — Most probably this species in the sense of Jossier and Singer, Pilát.

*Agaricus (Crepidotus) calolepis* Fr., type picture. — Most certainly this species in the sense of Singer, Lilloa **13**: 66. 1947.

*Agaricus (Crepidotus) mollis* Schaeffer ex Fr. — Probably the species called so by me, l. c. p. 74, and by nearly all modern authors (not Ricken!).

*Agaricus (Crepidotus) proboscideus* Fr. — Looks like *C. mollis*, but cannot be determined without microscopic details.

*Agaricus (Flammula) alnicola* Fr. — This looks much like *Pholiota lucifera*.

*Agaricus (Flammula) alnicola* var. *salicicola* Fr. — This is in my opinion specifically different from *A. alnicola*. I collected it in Europe as well as in the La Plata region (on *Salix Humboldtiana*) where Spegazzini collected it also, giving it a new specific name (not realizing that it was Fries' variety), viz. *Pholiota pseudofascicularis* Speg., the name I believe valid unless some older European name can be proved to be this.

*Agaricus (Flammula) hybridus* Fr. — This appears to be identical with the species keyed out by me in the key to the species of *Fulvidula* Romagnesi, Rev. de Mycol. 2: 239. 1937. Its correct name would be *Gymnopilus hybridus* unless Romagnesi's genus is conserved.

*Agaricus (Flammula) sapineus* Fr. — This appears to be identical with the species keyed out by me in the key l. c. Its correct name would be *Gymnopilus sapineus*.

*Agaricus (Flammula) Tammii* Fr. — This species was often named as a synonym of *Phylloporus rhodoxanthus* (Schw.) Bres. Actually, the painting proves that it cannot belong to that species. It is obviously a *Cortinarius (Dermocybe)* sp. No transfer to *Cortinarius* is made, however, since the specialists of that genus will have to decide whether it is a valid species in that genus, or rather a synonym, or a nomen dubium.

*Agaricus (Galera) ravidus* Fr. — This is hardly a *Conocybe* or *Galerina* at all, but a misdetermined *Cortinarius*.

*Agaricus (Lepiota) carcharias* Pers. ex Secr. — Presently called *Cystoderma carcharias* (Pers. ex Secr.) Fayod, and described in Smith & Singer, A Monograph on the Genus *Cystoderma*, Pap. Mich. Acad. Sc., Arts and Letters **31**: 401. 1944 (1945).

*Agaricus (Lepiota) amianthinus* Scop. ex Fr. — Presently called *Cystoderma amianthinum* (Scop. ex Fr.) Fayod var. *typicum* f. *typicum* and described l. c. p. 407.

*Agaricus (Lepiota) excoriatus* Schaeffer ex Fr. — This is the species generally known under this name in Europe, and transferred to the genus *Leucoagaricus* by the author.

*Agaricus (Lepiota) naucinus* Fr. — This is a form of the *Naucina*-complex, now transferred to *Leucoagaricus*; it shows medium size, white lamellae, white pileus with ocher punctation on the umbo, with smooth margin, with white and smooth stipe, and seemingly attached annulus.

*Agaricus (Naucoria) scolecinus* Fr. — There are two plates, one could be what Romagnesi calls *Alnicola scolecina*, the other resembles more *A. melinoides*.

*Agaricus (Naucoria) Wieslandri* Fr. — This is a very good picture of what the author described as *Naucoria Wieslandri* in *Revue de Mycologie* 2: 241. 1937. This species is, however, better placed in the genus *Phaeomarasmius*.

*Agaricus (Panaeolus) fimiputris* Bull. ex Fr. — At least the majority of the figures represent a fungus which belongs in *Psathyrella* rather than *Panaeolus*.

*Agaricus (Panaeolus) phalaenarum* Fr. — This species exists exactly as described by Fries and represented on this plate. It is very common in the pastures around Buenos Aires. Nevertheless, there is doubt in my mind whether or not it can be considered conspecific with *Panaeolus papilionaceus* since the degree of viscosity of the pileus is rather variable. The interpretation of both *P. phalaenarum* and *P. papilionaceus* given by Bresadola is incorrect.

*Agaricus (Panaeolus) separatus* L. ex Fr. — This species is now correctly named *Anellaria semiovalis* (Fr.) Singer.

*Agaricus (Pleurotus) atrocaeruleus* Fr. — The form illustrated here is dark blue with villous surface and yellowish lamellae.

*Agaricus (Pleurotus) decorus* Fr. — This species is now correctly called *Tricholomopsis decora* (Fr.) Sing.

*Agaricus (Pleurotus) dictyorrhizus* and *A. septicus*. — These small white forms cannot be determined from the characters exhibited on the plates.

*Agaricus (Pleurotus) glandulosus* Bull. ex Fr. — This is a form of *Pleurotus ostreatus* (Jacqu. ex Fr.) Quél.

*Agaricus (Pleurotus) mitis* (Pers. ex Fr.) — This species form is usually called *Pleurotus sapidus* by European mycologists but it cannot be separated from *Pleurotus ostreatus*.

*Agaricus (Pleurotus) mitis* (Pers. ex Fr.) — This species is now correctly called *Panellus mitis* (Pers. ex Fr.) Sing.

*Agaricus (Pleurotus) porrigens* Pers. ex Fr. — This species is now correctly called *Pleurocybella porrigens* (Pers. ex Fr.) Sing.



*Agaricus (Pleurotus) serotinus* Schrader ex Fr. — This species is now correctly called *Hohenbuehelia serotina*.

*Agaricus (Pleurotus) ulmarius* Bull. ex Fr. — Although it is impossible to tell, without microscopical analysis, whether this is *Lyophyllum ulmarium* or *Hypsizygus tessulatus*, it must be admitted that this picture is more like the latter.

*Agaricus (Tricholoma) brevipes* Bull. ex Fr. and *A. humilis* Pers. ex Fr. — Both are *Melanoleucas* and agree with the current interpretation such as expressed in my keys. *A. brevipes* is not the large form called so by Bresadola.

*Agaricus (Tricholoma) cnista* Fr. — Since this species has been misinterpreted as a *Melanoleuca*, it is not without interest to state that the plate conserved here is undoubtedly a species belonging to *Tricholoma sensu stricto*. It is very similar to the plates of *T. resplendens* and *T. impositum*.

*Agaricus (Tricholoma) flavobrunneus* Fr. — In agreement with the interpretation of all European authors.

*Agaricus (Tricholoma) frumentaceus* Bull. ex Fr. — This is an *Inocybe* of the *I. Patouillardii* group.

*Agaricus (Tricholoma) grammopodius* Bull. ex Fr. — In agreement with the interpretation of all modern authors.

*Agaricus (Tricholoma) leucocephalus* Fr. — This is undoubtedly a species rather frequent in Northern Europe, closely related to *Collybia maculata*, but different.

*Agaricus (Tricholoma) personatus* Fr. — This is a form of *Lepista nuda* rather than of what is now called *L. personata*.

*Boletus asprellus* Fr. — This is probably *Porphyrellus pseudoscaber* ( Secr. ) Sing.

*Boletus badius* Fr. and *B. bovinus* L. ex Fr. — Both plates correspond to the generally accepted interpretation.

*Boletus calopus* Fr. — This is *B. calopus* of most modern authors ( e. gr. Kallenbach ).

*Boletus castaneus* Bull. ex Fr. — This is *Gyroporus castaneus* ( Bull. ex Fr. ) Qué l. of modern authors. 2 plates.

*Boletus chrysenteron* Bull. ex Fr. — This is *Xerocomus chrysenteron* ( Bull. ex Fr. ) Qué l. of modern European authors.

*Boletus cyanescens* Bull. ex Fr. — This is the *Gyroporus cyanescens* ( Bull. ex Fr. ) Qué l. of modern authors.

*Boletus elatior* Fr. — Appears to be *Xerocomus subtomentosus* in our sense.

*Boletus edulis* Bull. ex Fr. — The form represented is *Boletus edulis* ssp. *euedulis* R. Maire, or as it should be called if this picture is taken as additional evidence in favor of typifying the

species with this race of the frondose woods with interwoven trichodermium, *Boletus edulis* ssp. *edulis* (according to the new rules of nomenclature voted in Stockholm).

*Boletus felleus* Bull. ex Fr. — This is the species so common in northern woods and well understood in Europe but never occurring in purple colors as indicated in the United States where it has been confused with *Tylopilus plumbeoviolaceus* (Snell) Snell.

*Boletus flavidus* Fr. — This is precisely the species described under this name by Kallenbach and Singer.

*Boletus floccopus* Fl. D. ex Fr. — This is precisely the species described as *Strobilomyces floccopus* by me (Farlowia 2: 110. 1945).

*Boletus granulatus* L. ex Fr. — This is a rather surprisingly short-stemmed form of the European race, i. e. *Suillus granulatus* (L. ex Fr.) Kuntze ssp. *granulatus*.

*Boletus impolitus* Fr. — The first plate is identical with what most modern authors (incl. Kallenbach) call *Boletus impolitus* Fr.; the second plate is doubtful.

*Boletus lividus* ssp. *alneti* Fr. — The inscription on this plate says "B. alneti aff. livido". It is a form of *Gyrodon lividus* (Bull. ex Fr.) Sacc.

*Boletus lupinus* Fr. — Most probably a bleached specimen of *Boletus luridus* Schaeff. ex Fr.

*Boletus luridus* var. *erythropus* Fr. — The synonymy given in my account on the group (The Amer. Midland Naturalist 37: 83. 1947) is corroborated by this plate which shows clearly the species called *Boletus erythropus* by many authors, including myself, and *Boletus miniatoporus* Secr. by others especially Kallenbach. The correct name of this bolete is *Boletus erythropus* (Fr. ex Fr.) Pers. em. Fr. non Pers. ex Kallenbach.

*Boletus luteus* L. ex Fr. — This is *Suillus luteus* (L. ex Fr.) S. F. Gray.

*Boletus mitis* Krombh. — The picture represents a form of *Suillus bovinus* (L. ex Fr.) Kuntze.

*Boletus pachypus* Fr. — This is either *B. calopus* or *B. radicans* Pers. sensu Kallenbach.

*Boletus parasiticus* Bull. ex Fr. — As understood by all authors.

*Boletus piperatus* Bull. ex Fr. — As above.

*Boletus pruinosus* Fr. — This picture is determined by E. M. Fries with a question mark. It may be a *Xerocomus* of the *Submentosi*, but cannot be determined with certainty. The species remains doubtful.

*Boletus purpureus* Fr. — This is *Boletus rhodoxanthus* Kallenbach; but one should keep in mind that *Boletus purpureus* Fr. is a later homonym, as was pointed out by me in Amer. Midl. Naturalist **37**: 81—82. 1947.

*Boletus regius* Krombh. — This represents the species as understood by all authors who know it.

*Boletus scaber* Bull. ex Fr. — This represents *Leccinum aurantiacum* (Bull. ex) S. F. Grey or *L. testaceosabrum* (Secr.) Sing. This form, aside from its ambiguity, cannot be considered the type of *Boletus scaber* sensu Fr. 1821 for reasons indicated in Amer. Midl. Naturalist **37**: 123—124. 1947.

*Boletus sordarius* Fr. — This is *Boletus luridus* Schaeff. ex Fr.

*Boletus subtomentosus* L. ex Fr. — This represents a form of this species as now generally recognized but the pileus is painted too green and the stipe too reticulate.

*Boletus subtomentosus* ssp. *fusipes*. — This is a *Xerocomus* and appears to be very reminiscent of the American *X. illudens* (Peck) Sing. except for the indistinct ribs at the apex of the stipe. Without the reaction with  $\text{NH}_3$  and spore measurements it is very difficult for someone not acquainted with the local flora to determine this subspecies which does not seem to have found its way in the European literature on boletes.

*Boletus variegatus* Swartz ex Fr. — As interpreted by all European authors.

*Boletus versipellis* Fr. — Seems to be a mixture of *Leccinum aurantiacum* and *L. testaceo-sabrum*.

*Boletus viscidus* L. ex Fr. — This is what is now correctly named *Suillus aeruginascens* (Secr.) Sing. It is hardly Linné's species since in Linné's times the species did not occur in Sweden. However, Fries saw this species in Upsala where I had a chance to observe it in July 1950, together with Dr. Nannfeldt.

*Gomphidius viscidus* Fr. — This is a large form of this common European species, always correctly interpreted in Europe. Its correct name is *G. rutilus* (Schaeff. ex Fr.) Lundell & Nannfeldt subspecies *rutilus*.

*Gomphidius glutinosus* (Schaeff. ex Fr.) Fr. — As interpreted by all European authors.

*Gomphidius glutinosus* var. *roseus* Fr. — This is the *G. roseus* (Fr.) Karst. of all European authors.

*Panus conchatus* (Bull. ex Fr.) Fr. — This is a good picture of this species, "direxit et approbavit Fries", on *Fraxinus excelsior* at Upsala 1861. I have seen the same species still

growing on stumps in the Park of Upsala, likewise on *Fraxinus*. It has been argued that *P. torulosus* is the better known species, and that therefore the latter should be the type of the genus *Panus*, and if the two species are identical, *P. conchatus* should be the synonym. Since the opposite is the case — few Friesian concepts of agarics are so well established as that of *Panus conchatus* — it is submitted that *Panus conchatus* should be the lecto-type of *Panus*, and not *P. torulosus*, and the species should be known as *Panus conchatus* (Bull. ex Fr.) Fr. The fact that Fries indicated in a later paper that *Panus stypticus* is most typical of the genus does not affect the original publication, and would, if taken as a guide for the typification, cause nomenclatorial difficulties since *Panus stypticus* is now known as *Panellus stypticus*, a genus separated from *Panus* by Karsten, and *Panus sensu stricto* would remain without a legitimate name.

*Panus patellaris* Fr. — Interpretation of the modern authors seems to be correct.

*Panus stypticus* (Bull. ex Fr.) Fr. — As above.

*Panus urnula* Fr. — The picture suggests *Pleurotus ostreatus* rather than any *Panus* known to me.

*Paxillus atrotomentosus* and *P. panuoides* Fr. — Both exactly as understood by all modern mycologists.

*Paxillus panuoides* var. Fr. — This picture represents *Hohenbuehelia serotina* (Schrader ex Fr.) Sing.

*Paxillus lepista* Fr. — Bresadola's interpretation of this species appears to coincide with this plate. Since this species belongs in the genus *Lepista*, Fries' name would create a tautonym and has to be replaced by another epithet.

*Lactarius cilicioides* Fr. — I do not know what this is but it is not the small short-stemmed with the species near *L. torminosus*, often named *L. cilicioides*.

*Lactarius cyathula* Fr. — This is much like the interpretation of this species given by Neuhoff.

*Lactarius obscuratus* f. *major*. — This seems to be a very dark form of *L. fuliginosus*.

*Russula adusta* Fr. and *R. adusta* var. *caeruleascens* Fr. — The two plates of the type form were only directed, not approved by Fries. The bluing form found in Upland, 1860.

*Russula alutacea* Pers. ex Fr. — The form depicted is undoubtedly *R. Romelli* Maire, from Femsjö where it probably occurred under *Fagus silvatica*. Since this is not a type painting, but executed much after Fries acceptance of the species, it cannot be regarded as determining the type form of this collective species.

*Russula aeruginea* Lindb. — This was directed by Lindblad and approved by Fries. It comes from Kungshamns Kog. September 1856. This is an authentic picture, and, although not exactly forceful — especially since the lamellae are white — there is no serious contradiction with the modern interpretation of this species.

*Russula aurata* With. ex Fr. — Good illustration of the modern interpretation of this species.

*Russula consobrina* var. *sororia* Fr. — This represents what is now well known under this name, or as *Russula sororia*.

*Russula decolorans* Fr. and *R. delica* Fr. — Both in agreement with modern interpretation.

*Russula depallens* Fr. — This is very difficult to interpret. There is not the slightest indication that it is *R. pulchella* = *exalbicans* = *palustris* rather than a form of *R. vinosa* or *vesca* Fr., or even *R. atropurpurea*.

*Russula emetica* (Schaeffer ex Fr.) Pers. ex Gray. — In spite of some red on the stipe which may have originated by contact with attached pilei, there can be no doubt but that this is what is currently known as forma *gregaria* of ssp. *euemetica* Sing., or according to the revised rules of nomenclature *R. emetica* ssp. *emetica*, type form.

*Russula fellea* Fr. — This was collected in Femsjö, evidently under *Fagus*. Good picture.

*Russula foetens* (Pers. ex Fr.) Fr. — This is evidently the type form of the species as understood by all specialists.

*Russula fragilis* (Pers. ex Fr.) Fr. — This is a purple form with umber center, evidently what I used to call forma *fallax*.

*Russula furcata* (Lam. ex Fr.) Pers. ex Fr. — This is most probably *Russula cyanoxantha* f. *Peltereaui* or var. *variata*.

*Russula „heterophylla* Fr.?" — This is what we now call *Russula vesca* Fr.

*Russula integra* (L. ex Fr.) Fr. — These plates prove that Fries had no clear conception of *R. integra*, and that nobody can speak of a *Russula integra* sensu Fr. In plate I which was directed and approved by Fries (and should therefore have preference over plate II where it is not stated that Fries directed or approved the plate), there are six carpophores, upper left and center as well as upper right bright red, and if it may be argued that the left figures are too large for *R. integra* sensu Singer = *Velenovskyi*, and therefore rather belonging to *R. paludosa*, this would not hold for the figure at the right upper corner which is definitely too small for *R. paludosa*. Considering the description

which excludes species with deep ochraceous lamellae, one would have to admit that at least this figure is most probably *R. integra* sensu Sing. Since it is hard to understand that Fries omitted from his species both *R. paludosa* and *R. integra* sensu Sing. which are among the most common species in Sweden, it is logical to assume that they were determined *R. integra* by him. In the lower row, there is a purple, a yellow and another yellow form (in this order) of what appears to be *R. polychroma* Sing. = *R. integra* sensu R. Maire although in the lamellae are painted too light. In plate II, we can see only a mixture of *R. punctata* Krombh. and *R. polychroma* Sing. Since Linné's description on which the first Friesian account was based, excludes dark-spored, yellow and purple forms, it seems logical to exclude these from Fries' interpretations also, regarding them as later misdeterminations. Since, of the remaining two species, *R. paludosa* and *R. integra* sensu Singer, the former was named twice, once by a Swedish author who worked in close cooperation with Fries, long before the other, *R. Velenovskyyi*, was renamed by Melzer and Zvára (1927) there is certainly a case for interpreting *R. integra* as it was done by me since 1923. This does not exclude the alternative solution: to declare *R. integra* a nomen dubium.

*Russula nauseosa* (Pers. ex Secr.) Fr. — Mixture of *R. nauseosa* (typica) — upper left and middle center —, *nauseosa* forma *xanthophaea* (Boud.) — upper center and right — and a green form of some similar species.

*Russula nigricans* (Bull. ex) Fr. — Coincides with the modern interpretation.

*Russula nitida* (Pers. ex Fr.) Fr. — The two upper figures on the sides, probably from Femsjö, are what is generally called *R. nitida* by modern specialists; the three others are difficult to determine, and might, as suggested by J. Schaeffer, be white-stemmed *R. sphagnophila* Kauffm. with the lamellae painted too bright and deep. Nevertheless, this interpretation is merely a guess, and the figures may represent some other species; in any case they are not suggestive of any species known to me.

*Russula ochracea* (A. & S. ex Secr.) Fr. — This is undoubtedly the same as described by me as *R. lutea* var. *ochracea* (A. & S. ex Secr.) Sing.

*Russula ochroleuca* (Pers. ex) Fr. — Coincides with the modern interpretation.

*Russula „olivascens* Pers.“ — This is probably the green form of *R. xerampetina* (Schaeff. ex Fr.) Fr., so common in northern birch woods.

*Russula pectinata* Fr. — This is an excellent picture of *Russula pectinata* Fr. as described by me, the only exception of its exaggerated size. Many of Fries' pictures appear slightly to strongly enlarged, and there is no other explanation in this case since no other species corresponds to this painting if it were assumed that it was painted in natural size.

*Russula puellaris* Fr. — This is most certainly the species called *R. scrotina* Quél. by Melzer *R. versicolor* by J. Schaeffer, and *R. Blackfordiae* (the correct name) in the North American literature. It was collected at Upsala where it was also collected recently by Dr. Lundell. Since it was directed and approved by Fries (consequently authentic) but executed 22 years after publication of the species and in contradiction with the original description, it is suggested here to consider this painting a misdetermination rather than an authoritative interpretation, inasmuch as the interpretation of *R. puellaris* in Europe is unanimous, and in discrepancy with that of the painting referred to.

*Russula rosacea* Fr. — This is a good picture of the species described by me under this name, and by some others as *R. sanguinea* (Bull. ex Rocq.) Fr.

*Russula rubra* (Fr.) Fr. — This picture, from Femsjö, is *Russula badia* Quél., not *R. rubra* in the sense of Bresadola.

*Russula sanguinea* (Bull. ex Rocqu.) Fr. — This is the same species as *R. rosacea* (see above). The epithet *sanguinea* was preoccupied when first used for a *Russula* and cannot be adopted.

*Russula sardonica* Fr. — This is *Russula chrysodacryon* of my papers, directed and approved by Fries. However, the picture was executed in 1854, long after the ambiguous type description had been published and cannot be considered a type picture.

*Russula semicrema* Fr. — I think this is an albino form of one of the *Nigricantes*.

*Russula vesca* Fr. — This is not what is now called *R. vesca* by all modern authors, but rather *R. rosacea* or *R. xerampelina* var. *rubra*.

*Russula vesca* var. *cyanoxantha* (Schaeff. ex Secr.) — This is typical *R. cyanoxantha* in the sense of all modern authors.

*Russula virescens* (Schaeff. ex Zant.) Fr. — This is typical *R. virescens* in the sense of all modern authors.

*Russula xerampelina* (Schaeff. ex Secr.) Fr. — Three purple forms at the left may also be interpreted as *R. olivacea* if they are not the purple form of the birch race, often occurring in the North of Europe; at the right is var. *rubra*. This was approved by Fries. It came from Femsjö, 1855.

3. Type material at the Naturhistoriska Riksmuseet, Stockholm.

*Panus guaraniticus* Speg. — This specimen (Roume-guère, Fungi sel. exsicc. 4102, from Guarapí, „Brazil“, collected 1884 by Balansa) is *Panus rudis* var. *strigellus*. Since it comes from the original collector, it is at least authentic. This corroborates my type studies at La Plata.

*Panus fulvidus* Bres. — The type coincides with the description I have made on the basis of material collected by me, and by Vassilieva. The spores are as indicated by Bresadola, and so are the cystidia (metuloids). A specimen of *Lentinus sulcatus* also preserved at Stockholm is in full agreement with material studied by me in the United States, and bears Bresadola's note „*Lentinus sulcatus* = *Panus fulvidus* Bres.!“. However, this statement is wrong. The two species, both belonging in *Lentinus*, as pointed out by Pilát and me before, are not identical but closely related.

*Pleurotus resinusus* Bres. — The type from São Leopoldo Brazil, Rick 309, is now reddish as some specimens of *Dictyopanus* become in the herbarium; it is *Pleurotus*-like, or somewhat like *Crepidotus calolepis*, as indicated by Bresadola, with comparatively thick stipe, and entire gill edge. The spores are about  $6-8 \times 3-6 \mu$ , smooth and amyloid. The trama is regular; subhymenium present; cystidia none. These data would tend to prove that this is not a *Pleurotus* in the narrower sense, but a *Panellus*.

*Pleurotus Rickii* Bres. — The type is evidently a *Pleurotus* (subhymenium present; trama intricately interwoven and irregular; spores cylindric and nonamyloid), obviously of the *Dryinus*-group (hyphae of the trama rather thin-walled; veil present) where black dots on the stipe (here consisting of deep brown hyphal bunches, some of them branched and some inflated) often occur (see Bresadola, Iconogr. Mycol. 6:278. 1928).

*Pleurotus Romellianus* Pilát. — The type is somewhat similar to *Clitopilus argentinus* Sing. because of the greyish hue of its carpophores; however these latter lack the characteristic crystalline incrustation of the hyphae, and cannot be anything but a form of *Clitopilus septicoides* (Henn.) Sing. (*Pleurotus septicoides* Henn. = *Octojuga pleurotelloides* Kühner) which I have observed on mosses in Finland. The spores are (7.5)  $7.8-10 \times 4.25-5.8 \mu$ , — with eight longitudinal ridges. Hyphae without clamp connections and without incrustations of any kind except for a very slight hyaline incrustation at places. Aside from this (no. 9220), there is also the exsiccatum, Lundell & Nanfeldt, from Smoland, Femsjö parish under the same name.



*Pleurotus septicoides* Henn. — Part of the type, E. U l e 2730, from Rio Juruá, Brazil, September 1901 has slightly smaller spores ( $5.5-7.5 \times 3.8-4.5 \mu$ ) which are likewise angular when seen from above; there are no clamp connections. This is the same as the European *Octojuga pleurotelloides*, which I have collected near and at the Brazilian border at Iguassú, i. e. under but slightly less tropical climatic conditions than U l e's material. Since H e n n i n g's description has the priority, I accept his name, and propose the new combination *Clitopilus septicoides* (Henn.) Sing. with *Pleurotus pusillus* Speg. and *Octojuga pleurotelloides* as well as *Octojuga Fayodi* Konr. & Maulb. as synonyms. Here, we have one of the rare cases when a species common in Europe and also in all other continents (*C. septicoides* is a cosmopolitan species) has first been validly published from South America. It is of course true that some of the Fiesian nomina dubia among the small white „*Pleuroti*“ may belong here but since there is no material left, and the plates in existence remain doubtful without microscopical data, these names should be discarded for good, and H e n n i n g's name should be accepted on the grounds that he is the first who distributed determinable material under this name.

*Clitopilus "variabilis var. microsporus"* Romell in herb. — This is considered a new species by P i l á t who made a corresponding note at the Riksmuseet. However, this material growing on a stump of *Picea* at Björnnäset, Stockholm, 13th of August 1905 is not different from *Clitopilus septicoides* (Henn.) Sing. (see above).

*Pleurotus rhodophyllus* Bres. — The type is *Clitopilus pinsitus* (Fr.) Jossierand. It has the spores somewhat less distinctly longitudinally ridged and flattened than most specimens of *Clitopilus septicoides*; the spores are about  $8 \times 5 \mu$ , and obscurely, indistinctly 6–10-angular with rounded angles when seen with the longitudinal axis pointing towards the objective of the microscope.

*Pleurotus pinsitifformis* P i l á t. — The type of this species from Sweden is very interesting. The hyphae have clamp connections, and the spores are perfectly smooth. This combination of anatomical characters excludes the genus *Pleurotellus* as well as *Clitopilus*. The comparatively thin-walled hyphae and the broad spores  $8 \times 6.5 \mu$  according to my notes, but  $5.5-7 \times 2.5-3 \mu$  according to P i l á t) exclude *Pleurotus*.

Since there are no data available as to the color of the spores in a print on white paper, and, furthermore in view of the discrepancy in the spore measurements, and lack of information on the exact structure of the hymenophoral trama, I refrain from any guess as

to the generic position of this fungus. However, it is not close to *Clitopilus Passeckerianus* (Pilát) Sing. as has been suggested by Pilát.

*Lentinus fissus* Henn. — The only material that seems to be in existence is authentic (E. Ule, 344, from São Francisco, Brazil; the type came from Togo, Africa). Ule's material is a form of *Panus rudis* with split margins.

*Lentinus dactyliophorus* Lév. — Materials preserved at Stockholm seem to be identical with those more authentic ones seen at the Farlow Herbarium. The characteristic annular ridge at the apex of the stipe appears to be the infallible means of recognizing this species macroscopically. The general appearance of this species is much like young *Panus conchatus* but with scurfy surface, later much like *Pleurotus sajor-caju*. The spores of a specimen collected by Vandersyst in the Congo region, and determined by Bresadola are  $6.2-9 \times 2.5-3.2 \mu$ , cylindrical and somewhat curved, as indicated by Bresadola. The trama is irregular, and there is no subhymenium. The hymenium is hyaline in  $\text{NH}_4\text{OH}$  and devoid of metuloids, or at least the latter not distinct, but there are pegs and hymenial hyphae protruding from the trama. There is also material from Uganda (Small no. 80, determined at Kew) and from the Belgian Congo, comm. Torrend. According to its characters, this species is a *Panus* rather than a *Lentinus*, and the new combination *Panus dactyliophorus* (Lév.) Sing. is proposed.

*Lentinus angustifolius* Romell. — The type is identical with specimens collected by the author in the North of Argentina and in Florida. Wright collected the same form in Cuba and it was published by Berkeley and Curtis as *Lentinus castoreus* var. *pusillus*. As has been pointed out, the amyloid reaction of the context is inconstant, or at least not correlated with the breadth of the lamellae. He met with a specimen from Germany which had non-amyloid context-hyphae. On the other hand, some of the specimens collected in the province of Tucumán in winter have distinctly amyloid hyphae. It remains to be seen whether or not the character emphasized by Romell is constant and whether there are transitions. If all tropical South and Central American collections constantly differ, and if Pilát's measurements (2—10 mm. in diameter) of the lamellae are correct for Europe, one might accept the neotropical race as a subspecies of *Lentinellus ursinus*. Until such an arrangement can be made, I prefer to use the varietal name proposed by Berkeley and Curtis, transferred to *Lentinellus ursinus*. On the other hand, it is also possible that a further study of the *Lentinellus vulpinus-ursinus-castoreus* complex proves

that there are three species in Europe; in this case one would be inclined to give the American species of the regions south of Florida to Argentina likewise specific status, and in that case, *Lentinus angustifolius* Romell would be recognized as the valid species but after transfer to *Lentinellus*.

*Naucoria scutellina* Quél. (see *Agaricus Phillipsii* Berk. in chapter 4!).

*Crepidotus epibryus* Fr. sensu Pilát. — The only sample of *Crepidotus epibryus* in the sense of Pilát (otherwise a doubtful species to me) I have studied, is an exsiccatum, viz. Thümen no. 401. The specimen deposited at the Farlow Herbarium is, as indicated by me (Lilloa **13**: 74. 1947), *Crepidotus luteolus* (Lamb.) Sacc. The specimen preserved at Stockholm which has been studied by Pilát who marked it "*Crepidotus epibryus* Fr." was also studied by me since it occurs frequently that exsiccata sets are mixed collections. However, in this case, I find the Stockholm specimen completely identical with the Cambridge specimen, and consequently with what I determine as *Crepidotus luteolus*. Pilát's key does not give much support: It says under 25 b "spores plus courtes, ... distinctement verruqueuses" but this leads to species with spores "très finement verruqueuses" (*C. subverrucisporus* Pilát) and the specimen Thümen 401, also with very slightly punctate spores. The spores of *C. epibryus* as indicated by Pilát are hardly larger than those of *C. luteolus*. Consequently, it might be that a character secondary or not emphasized in the keys distinguishes the other specimens attributed to *C. epibryus* by Pilát, i. e. *C. epibryus* sensu Pilát pro parte. If such a species exists, I don't know it; it would be characterized by strongly echinate spores and white, never yellowish pileus, and growth on mossy trunks (perhaps on the mosses rather than on the wood).

*Crepidotus echinosporus* Henn. — The co-type from Cameroon, collected by J. R. Jungner, is a true *Crepidotus* with very strongly imbedded-aculeolate spores which are short-ellipsoid  $9 \times 7.8 \mu$ . It differs, therefore, from the species it comes closest to, *C. Brunswickianus*, in the host (tropical woods, rather than *Berberis* and *Maytenus*), the slightly more conspicuously "echinate" spores, the more tomentose-villous surface and perhaps other slight macroscopical differences: possibly also in the cheilocystidia which were not studied in either of the specimens.

*Crepidotus pogonatus* Kalchbr. — The type, or topo-type material by the same collector and authenticated by Kalchbrenner, consequently, in any case, reliable material, is preserved at the Riksmuseet. This material has the spores strongly imbedded-aculeate with the spines deeper rusty colored than the imbedding membranous

layer, subglobose to short-ellipsoid, about  $5.4 \times 4.8 \mu$ . Clamp connections are frequent. — Kalchbrenner said that this species was closest to *Crepidotus epicrocinus* Berk. & Broome, but this is not possible since the latter has much larger spores. In reality, this is extremely close to *Crepidotus quitensis* Pat. from which it differs in slightly less spherical spores and perhaps some minor macroscopical characters which I cannot judge on the dried material. Consequently, I refrain from identifying the two species unconditionally.

On the other hand, *C. quitensis* occurs most probably not only in tropical America but in Asia (a variety has been described by Graf from the Philippine Islands), and the species described by Pilát as *Crepidotus Wakefieldiae* Pilát is so close to *C. quitensis*, it can hardly be distinguished from it, at least according to the description. But here again, not having seen the specimens, there might still be a difference in clamp connections, or some other characters not emphasized by Pilát.

If *Crepidotus pogonatus* (Kalchbr.) Sacc. is conspecific with *C. quitensis* the latter would become a later synonym of *Crepidotus pogonatus*.

*Crepidotus haustellaris* sensu Bres., Pilát. — In the Riksmuseet, there is a specimen collected by Bresadola at Monte dei Cappucini, October 1896. This Italian material has been determined *Crepidotus haustellaris* by Bresadola — and was confirmed as such by Pilát who indicates this collection in his monograph. The spores and the anatomical structure are as indicated by Pilát. There is no gelatinous layer, and the hyphae have clamp connections. This is a form with very short stipe (Bresadola: “forma brevissime stipitata”) but otherwise completely identical with what the French mycologists call *Naucoria effugiens* Qué! — Since Pilát admits that “la description de *Crepidotus haustellaris* Fr. donné par Fries est peu clair”, and no material exists to clarify Fries’ concept of the species, we agree with the French mycologists in accepting Quélet’s name for this species, inasmuch as *Crepidotus haustellaris* sensu Bresadola, Pilát is not a *Crepidotus* but a *Naucoria* sensu stricto.

*Crepidotus Ragazzianus* Bres. — Bresadola’s type has been studied by Pilát and by me. The Pilát comes to the result, Atlas Champ. Eur. 6: 39. 1948, that this species is identical with *Crepidotus haustellaris* (Fr.) Qué! Yet, the specimens have 2-spored basidia with very strongly double- and thick-walled spores; the endosporium is cinnamon pallid and the exosporium light cinnamon-ferruginous, smooth; the size of the spores is about

10.3—11.3 × 5—9  $\mu$ . The pigment of the hyphae and the hymenium — apart from the richer chestnut and melleous membranal pigment of certain parts, is lemon yellow. I do not know to which genus this species belongs — unless it is *Pleuroflammula* — since a more detailed study could not be undertaken. However, I do not think that *Crepidolus Ragazzianus* is another synonym of *Naucoria affugiens* Qué!.

*Crepidolus spathulatus* Bres. — The type, collected by V. Ragazzi in tropical Eastern Africa, has smooth ellipsoid stramineous spores without germ pore and with a slight suprahilar depression; they measure 7.7—8.7 × 5.2—6.2  $\mu$ ; there are no clamp connections. I did not see any cystidia.

The color of the spore print is unknown. Judging from the pale color of the spores in the carpophore, one would assume that this species is closely related if not identical with *Pleurotellus chioneus* (Pers. ex Fr.) Fayod ex Konrad & Maublanc sensu Pilát. If it were a true *Crepidolus* one would range it with *Crepidolus uber* (Berk. & Curt.) Sacc.

*Crepidolus Lundellii* Pilát. — The type is Lundell & Nanfeldt, Fungi Exs. no. 220. The specimen has slightly and indistinctly punctate spores which are ellipsoid and without suprahilar depression, melleous, and measuring about 7.2—9 × 5.8  $\mu$ . The clamp connections are frequent. The cheilocystidia are versiform. The margin of the pileus has a tendency to be pinkish, when dried, in the herbarium. I think it is identical with *Crepidolus submollis* Murr. Both *C. submollis* and *C. Lundellii* would fall into synonymy if it could be proved that *Crepidolus dishonestus* Karst. is the same species, as suggested by Pilát. Indeed, there is a specimen (LE) collected in the Caucasus by Vasilieva and determined *C. dishonestus* by me on the grounds that its characters match those of Karsten's description extremely well. This is the same species as *Crepidolus Lundellii* as seen at Stockholm. If there is a type, it should be easy to corroborate this interpretation of Karsten's species.

*Crepidolus microsporus* (Karst.) Pilát. — The small-spored form of *Claudopus variabilis* mentioned by Karsten is obviously (see Singer, Farlowia 2: 559. 1946) *Clitopilus septicoides* (Henn.) Sing. and not a *Crepidolus*. What Romell (in herbario) and Pilát consider a species of *Crepidolus*, is, consequently either a new species in that genus which should be given a new name, or else a synonym of some other species. The only species in *Crepidolus* which comes close to the description of what Pilát calls *Crepidolus microsporus* (Karst.) Pilát is *Crepidolus variabilis* (Pers. ex Fr.) Qué!. There is, in the Riksmuseet, a specimen collected by Romell at Enkede, Stockholm, 9th of September 1900, herb. no. 10218. The

pileus is 10—30 × 10—40 mm., sessile, whitish scrupose-tomentose; lamellae ferrugineous-fulvous at first almost isabellinous. The spores of this specimen are small and narrow, 5—7 × 3—4  $\mu$  and distinctly imbedded-punctate. I measured 6.3—6.8 × 3.2  $\mu$  in an average, and I observed numerous as lecto-type of *C. variabilis* viz. the exsiccatum of Desmazières no. 407 which was determined by Persoon himself. Consequently, one would assume that *C. microsporus* sensu Pilát is a synonym of *C. variabilis*. However, Pilát indicates that his *C. microsporus* differs from *C. variabilis* in more considerable (in size?) carpophores and spores of the same size as but another shape than those of *C. variabilis*. Since in both cases, they are about twice as long as broad and ellipsoid to ellipsoid-oblong, I cannot see this difference. The apical end is not constantly either attenuate or broadly rounded-ovoid in my specimens. I believe that the two species are identical. At any rate Karsten's name should not be used for a *Crepidotus*.

*Campbellia africana* Cooke & Masee. — There is a specimen at the Riksmuseet which came from the Herbarium Sydow and is evidently part of the type as it was collected by Wood 1888. Since it is the first species of this dubious genus available for examination, it is here considered as type of the genus. The genus *Campbellia* was inserted in the *Polyporaceae* by Saccardo which seems to be the logical place for it as long as the boletes and the Laschias and *Meruliaceae* were all included in that family. After the family was split up, nobody ever suggested the correct position of *Campbellia*.

The specimen mentioned is obviously a species of *Gyrodon*, possibly near the species described as *Favolus purpureus* by Beeli (non *Favolus purpureus* Mass. 1899). The spores are of the *Gyrodon* type, brownish, ellipsoid to subreniform, smooth, without germ pore, 10 × 6  $\mu$  in an average; the basidia are normal, non-septate, 4-spored; the cystidia are not very conspicuous, also of the *Gyrodon* type as described in *G. merulioides* by me, mostly ventricose with narrowed but more or less obtuse apex, small; clamp connections are numerous. The new combination *Gyrodon africanus* (Cooke & Mass.) Sing. is proposed. The genus *Campbellia* is a synonym of *Gyrodon* Opat.

*Boletus Braunii* Bres. — This species, obviously a common African species closely related with *Phaeogyroporus tropicus*, and indicated as the type of the genus *Phaeogyroporus* was not found among the specimens of the Herbarium Bresadola, now preserved at Stockholm.

*Boletus ater* Henn. — This species, obviously badly described by Hennings (Engler's Bot. Jahrb. 30:44. 1902, not 1901,

at indicated in Saccardo), is not a true bolete but a *Strobilomyces*. The spores are winged as those of *Strobilomyces costatisporus* (Beeli) Gilbert which is closest to this species. It is here assumed that the spore print is black since all other characters are those of *Strobilomyces* rather than *Porphyrellus* and *Boletellus*. However, it is possible that the species is misdescribed to the point of being ambiguous and completely misleading. If the pores and the context were originally yellowish, one might have to place this species in *Boletellus*. But the evidence as obtained from the material, would indicate that this is not the case, and that *B. ater* is a naked form of or a species very closely related to *Strobilomyces costatisporus*. If the two species were identical, the epithet „*ater*“ would have priority. It should now be possible to re-collect this species near the original locality (Bipinde, Camerouns), and redescribe it so that its identity or non-identity with the species from the Belgian Congo can be established.

*Russula Turci* Bres.; *R. neglecta* Sing.; *Russula "chamaeleontina* Fr." sensu J. Schaeffer. This problem has been discussed many times in Europe with the participation of the author; it has finally degenerated into sterile polemics. Now, we have new data at our disposal, and some of the old arguments can be checked upon. It is perhaps the best time now for a review of the situation since the type method will provide the solution now that all the necessary facts are available. First let us see which species of *Russula* enter the discussion. There is 1.) a species closely related to *Russula nauseosa* from which it differs in combining mild taste, presence of dermatopseudocystidia, hymenial cystidia which stain blue with sulfovanillin (not merely at the apex), and spores with a large percentage of reticulate or subreticulate ornamentations. This species is usually purple above, and has deep ochraceous spore print. It has been confused with *R. punctata* Krombh. sensu Sing., *R. nauseosa* Fr. sensu Sing., and *R. neglecta* Sing. (see below). It occurs in coniferous woods in Europe, especially in Germany, Italy, and Austria, but perhaps also in other countries, especially in mountain regions. It has lately been discovered in England.

2.) A *Russula*, closely related to *R. punctata* Krombh. sensu Sing. but differing in having spores with isolated or sparingly connected warts or spines. This species has been found in Swedish coniferous woods but occurs also in other countries of Europe as we shall see later. It differs from *R. olivascens* in purple pileus. Its odor has never been studied in the field.

Since my early work on *Russula* (1923—26) did not quite sharply differentiate between *Russula* 1 and 2, both went into the description

of *Russula Turci* Bres. sensu Sing. Hedwigia **66**: 181. 1926. Later (1932), my *R. Turci* was well enough defined and contained nothing more than *R. 1* which I called *R. Turci* Bres. for reasons evident in my explanation given in various papers mainly based on my personal correspondence and exchange of material with Bresadola, the author of *R. Turci*. My interpretation was in contrast to that of R. Maire and later Melzer & Zvára (who took Maire's word for it) and J. Schaeffer who first followed my nomenclature to a certain degree but later, on the basis of material he studied at the Riksmuseet felt he had to change his opinion. Pearson, in one of his earlier papers energetically sided with Schaeffer, although he had no knowledge of the species involved nor of the reasons for the name choices. This became obvious when, many years later, he discovered the species *R. 1* in England, and not recognizing it as my *R. Turci*, published it as a new species. As it was sent to me for determination, I answered that it was *R. Turci* sensu Singer 1932 etc., but that a new name for this species might be desirable in view of the already confused situation, i. e. in view of the wish of numerous mycologists to declare *R. Turci* Bres. a nomen confusum (ambiguum).

As for *Russula 2*, the species remained unnamed until J. Schaeffer proposed the name *R. chamaeleontina* for it. Not enough with all the previous proposals and interpretations, we have now to deal with a temporary name — in view of the incomplete description, especially as far as the odor is concerned — *R. chamaeleontina* Fr. sensu J. Schaeffer. However, in 1941, the authentic material sent by Bresadola to Murill was studied by me in the New York Botanical Garden. Five years later, I proposed this as the type of a species based on my interpretation of *R. Turci* Bres. (i. e. of 1941, or more precisely Mycologia **34**:91. 1942.)

J. Schaeffer left the specialists of the genus under the impression that there were numerous specimens of *R. Turci* Bres. at the Riksmuseet, all of them *R. punctata* sensu Singer, none of them *R. Turci* sensu Singer, or *chamaeleontina* sensu Schaeffer, in fact no type recognizable and no specimens indicated as especially typical unless they were *R. punctata* sensu Singer.

What is the real situation when the specimens are considered? It turns out that J. Schaeffer did not recognize *R. Turci* sensu Singer 1932, i. e. *R. 1*, when he collected it. Two specimens in his *Russulae exsiccatae* were distributed as *R. nauseosa* but, as everybody can check, they are not this species since they have other spores and cystidia, and coincide precisely with *R. 1*. The same has happened with the specimen at the Riksmuseet which must be considered most authentic since it was collected the year *R. Turci*



was published and might even be part of the type or a co-type if it is assumed that the rest of the type material has been lost since. It is a collection in good condition and consists of two specimens, one having spores  $11 \times 8.8 \mu$  large in an average, with an ornamentation of type VI, VI—VIII, also IV and IV—II, projecting  $0.8-0.9 \mu$ ; the dermatopseudocystidia are rather numerous and well developed, ventricose with subampullaceous apex, or narrowly clavate, or fusoid with rounded apex,  $60-100 \times 6-12.2 \mu$ , with banded contents. The other specimen has no dermatocystidia of the macrocystidial type, and is probably *R. punctata* sensu Sing. There is a specimen which also deserves to be mentioned as particularly important because it is marked by Bresadola as „*R. Turci* — icon optima“ because of the accompanying picture made by Romell. The specimens were collected by Romell, Kaknäsikogen, Stockholm, September 27, 1891, no. 6631. They were tentatively determined *R. mollis* (a very good guess!) f. *nitida?* vel *nauseosa*, and named by Quélet “vel *R. nitida?*“, by J. Schaeffer “*R. nauseosa*“. The spores are mostly of ornamentation type VI, i. e. with isolated warts or spines, some of type IV, and few IV—II. The epicutis consists of an trichodermial palisade of more or less erect hyphae with  $4.5 \mu$  diameter and no banded contents, some with some scattered granulosity inside or outside, some with occasional septa near the rounded or acute apex; below it there is a layer of horizontal but interwoven hyphae in the ordinary hypodermium structure. This is evidently not *R. punctata* sensu Singer but *R. chamaeleontina* sensu J. Schaeffer. It is remarkable that J. Schaeffer also put specimens of *Russula* 1 and *R.* 2 in the same species, in his case in *R. nauseosa* which is not identical with either of these forms. There can be no doubt about *R. chamaeleontina* sensu J. Schaeffer since I have also studied his specimens, especially the ones named by him, and a *Russula* collected in woods at Södersunda in Sweden under *Pinus* and *Picea*, the 14th of September 1949, This was given to me for determination by Dr. Haglund. It has greyish violet margin and greyish yellow center; it is viscid and mild, and appears to be quite glabrous. It has, in dried condition, olive center and a dusky violet margin as *R. nitida* f. *pseudomethystina* Sing.

Thus, the situation is simple: The earliest existing collection and possibly type of *Russula Turci* Bres. is *Russula* 1, mixed up with *Russula punctata* sensu Sing. Another collection marked especially „icon optima“ of *R. Turci* by Bresadola, is *Russula* 2. The earliest interpretation of *R. Turci* is that proposed by R. Maire but rejected by Bresadola in litt. and in print, viz. by citation of Singer's interpretation, not Maire's. This would logically

lead to recognition of the *R. Turci* sensu Singer which however in the years of our correspondence with Bresadola and the publication of the monograph cited by Bresadola, was a mixture of *Russula 1* and *Russula 2*.

The specimen preserved at New York Botanical Garden mentioned above could not be studied thoroughly because of the disintegration of some tissues. However, there is a specimen collected at the same place (Mendola) and the same month, identical in all visible characters, preserved at the Riksmuseet, and it is this specimen which gives us certainty regarding the identity of the form designated type of *Russula neglecta* nov. nom. This Stockholm specimen, marked „vid. J. Schaeffer“, meaning that it is *R. Turci* sensu J. Schaeffer is nothing like that but is identical with *R. chamaeleontina* sensu J. Schaeffer, i. e. *Russula 2*.

We have, then, the following situation: *Russula Turci* is a mixture of *Russula 1*, *Russula 2*, and *Russula punctata* sensu Sing. Even the oldest and possibly typical specimen is a mixed collection. It may therefore be declared a nomen confusum; and it is certainly a good example of a nomen ambiguum. This was first suggested by me in 1947. If rejected according to this view point, the name *R. Turci* has to be replaced.

For *Russula 1*, A. A. Pearson proposes a new name *R. cessans* Pearson\*) based on his English material. This was studied by me and found to be identical with the dermatopseudocystidia-bearing portion of the early specimen at the Riksmuseet i. e. *Russula 1*.

For *Russula 2*, the name *R. neglecta* Sing. should be used rather than *R. chamaeleontina*, because if *R. Turci* is a nomen confusum and/or a nomen ambiguum, then *R. chamaeleontina* is a nomen dubium and/or ambiguum. The type of *R. neglecta* Sing. is in existence and easily available; it may be supplemented by the corresponding material at the Riksmuseet.

For *Russula punctata* Krombholz sensu Sing., a new name is not needed. *Russula amethystina* Quéf. is available for those who do not recognize the author's interpretation of Krombholz's species.

With these type studies, an old nomenclatorial and taxonomical question has finally been cleared up. Who was right and who was wrong? I was wrong by not consistently separating the two non-*punctata*-constituents of the original *Russula Turci*. J. Schaeffer was wrong by not separating these constituents from other species, and by misinterpreting the types and authentic materials he had seen in Sweden.

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\*) Pearson, A. A. A New *Lactarius* and a New *Russula*. The Naturalist (1950): 101. 1950.

#### 4. Type Material from The Herbarium Kewense.

The largest and most important collection of types not yet revised by the author is preserved at the Kew Herbarium. While it was possible to analyse a few specimens which were described as types of genera, or were suspected to be types of new genera (*Linderomyces*, *Macrometrula*, *Clarkeinda*, etc.), the large majority of species not duplicated in the Curtis Herbarium remains unrevised. Occasional species and whole genera were studied by various mycologists (especially Pilát) but a systematic attempt to gather data on the *Basidiomycetes*, particularly the agarics and boletes preserved at Kew has not been made thus far. A few specimens were sent to the author recently, thanks to the courtesy of the Director of the Kew Garden and Miss Elsie Wakefield. The following notes are based on this material.

*Agaricus longinquus* Berk. in Hooker. — The type is well preserved. It was collected on Hermite Island, Cape Horn, Chile, by officers of the Antarctic Expedition, and was determined and incorporated in the Herbarium Berkeley under no. 750. There are however, no uncollapsed spores, but those that are measurable are smooth, amyloid and about  $8.2 \times 2.7 \mu$  large. There is much amyloid spore trash, very much like in the type of *Agaricus minusculus* Speg. which is identical. There are numerous clamp connections on the hyphae of the pileus; many of the basidia are transformed into cystidioles. There is a gelatinized zone in the upper portion of the pileus. The new combination *Panellus longinquus* (Berk.) Sing. is proposed.

*Marasmius fulviceps* Berk. — The type was collected by Gardner in the Hauton Range, Ceylon, July 1844 no. 73, and determined by Berkeley. The epicutis is a hymeniform layer consisting of broom-cells. The trama of the pileus and the lamellae is amyloid. There were numerous large bodies which now appear yellow and which might be cystidia. There are no spores in the fragments studied by me. This species is characterized by a fulvous brownish strigosity at the base of the stipe which is much like that seen in *Marasmius helvolus*. But the lamellae are much closer in the Ceylon species than in the neotropical *M. helvolus*.

Other specimens now on the same sheet and all determined by Berkeley himself as *Marasmius fulviceps* are not *M. fulviceps* but belong to various other species of *Marasmius*. There is one collection of a much smaller species (Peradenya, no. 807\*). Other specimens were collected in Panuré, Brazil. No. 92 and no. 107 have much more distant lamellae than the original type and belong to either *M. Berteroi* or (less likely) *M. Balansae*. They are broader and have no colored strigosity at the base of the stipe. No. 100, likewise

from Brazil has slightly smaller pileus and slightly less distant lamellae than the other Brazilian specimens, being, in this regard, more similar to the original type, yet certainly different because of sordid-whitish strigosity at the base, and probably identical or very close to *M. Balansae*.

*Agaricus hepatochrous* Berk. — The type comes from Tasmania; it has all the characters of *Melanotus*, and should be transferred to that genus, as *Melanotus hepatochrous* (Berk.) Sing, comb. nov. The specimen is well preserved and consists of numerous carpophores on a trunk (possibly palm). They have a rather robust but short stipe which is eccentric, and the spore dust still accumulated on the specimens corresponds to pl. 15, H—12 (Maerz & Paul), but is probably faded. The carpophores are rather large (comparatively, for a *Melanotus*), but not excessively so. The spores are  $6-6.3 \times 4-4.2 \mu$ , with germ pore, smooth, fuliginous-melleous, few somewhat but not strongly lentiform, most not lentiform, at all; cheilocystidia subulate with a long filiform upper portion and a basal swelling,  $13.3 \times 5.5-7 \mu$ , making the edge of the lamellae heteromorphous. Epicutis made up of repent hyphae forming a cutis; these hyphae strongly incrustated by pigment and colorless incrustations. Some of the hyphae of the hymenophoral trama and the trama of the pileus are somewhat thick-walled; all hyphae with clamp connections.

*Agaricus Phillipsii* Berk. & Br. — *Naucoria scutellina* Qué. — Authentic material of *Naucoria scutellina* Qué. preserved at the Riksmuseet at Stockholm, and the type of *Agaricus (Crepidotus) Phillipsii* Berk. preserved at Kew are identical with each other, and agree well with the descriptions published by Romagnesi (as *N. scutellina*) and Pilát (as *C. Phillipsii*). The spores of both specimens are perfectly smooth,  $5.7-6.3 \times 2.7-3.3 \mu$ ; they are not lentiform and their color is pale melleous, with comparatively thin but undoubtedly double (epi- and endosporium, the latter hyaline) wall and inconstant, small to faint germ pore. The basidia are remarkably short and broadly clavate, hyaline, 4-spored, about  $6 \mu$  broad. The cheilocystidia are clavate, most of them with a filiform elongation. There are no pleurocystidia, the epicutis is difficult to study in these materials, yet it seems to consist of repent elongate hyphae forming a cutis. All spores seen were deprived of a supra-hilar depression, and the hyphae have numerous clamp connections. Macroscopically, this reminds one of certain *Crepidoti* and *Melanoti*; indeed the presence of a germ pore, and various other features would point to this genus rather than to *Crepidotus* as the appropriate generic determination of *Agaricus Phillipsii* and *N. scutellina*. However, when comparing the spores of these fungi with spores of typical

*Melanotus* species such as *M. bambusinus* Pat. or *M. hepatochrous* (Berk.) Sing., one will notice that the spores of the latter species are much deeper pigmented and have much broader germ pore. The author believes that *Agaricus Phillipsii* and *N. scutellina* should be considered to be species of the genus *Pleuroflammula* where the spores are often indistinctly pored. This latter genus differs from *Melanotus* chiefly by its different spore color, just the same as *Kuehneromyces* differs from *Deconica*, or *Naematoloma* from *Pholiota*. This would be the first European species referable to this American genus, differing from the other species in habitat (on grasses rather than on wood) and perhaps slightly paler spores under the microscope than ordinarily. Most ordinarily lignicolous genera contain a minority of grass-inhabiting forms, and the color of the spores under the microscope seems to be rather variable in *Pleuroflammula*. Consequently, there does not appear to be any serious objection against a transfer of the species under consideration to *Pleuroflammula*. The question is merely which of the species has priority. They were both published in the same year, but the British publication has about 11 month's priority over Quélet's species. Consequently, the new combination *Pleuroflammula Phillipsii* (Berk.) Sing. (with *Naucoria scutellina* Quélet as a synonym) is herewith proposed. It should be added that in the British material the hymenophoral trama is now slightly brownish and its structure subregular (hyphae subparallel-subintermixed); there is no yellow intercellular pigment as was observed in certain other species of *Pleuroflammula*. The type was collected at Shrewsbury, England, October 1896.

*Agaricus globiger* Berk. — This species was described from Australia, and the type is not available at Kew. It must have been lost. However, there is material from Melbourne in the Kew Herbarium, and this material is in good condition, and coincides with the original description in every detail. It grew at Eltham on a log, April 27, 1889, and the following additional notes on the fresh plant are noted on the sheet: "Pileus snowy white, smooth, convex, except at stem, edge very even, sharp and incurved. Stem eccentric, very short, gills very deep (meaning broad), ventricose, crowded (meaning close)" The spores are like those of *C. nephrodes*, and so are all other microscopical characters. I am certain that *A. globiger* is a synonym of *Crepidotus nephrodes* (Berk. & Curt.) Sacc.

*Agaricus interceptus* Berk. — The type from Tasmania is in poor condition. It certainly looks like a small *Pleurotus* or *Crepidotus* but it may just the same be a fragment of a centrally stipitate form, collected carelessly. The micro-characters do not coincide with those of any known genus among the pleurotoid forms.

The spores are thick-walled, subhyaline, smooth but soon becoming finely spinulose, mostly about  $6.8 \times 5.5 \mu$ , some smaller, some larger, neither amyloid nor pseudoamyloid, without a germ pore, with little protracted hilar appendage. The basidia are thick-walled, 2-spored and 4-spored. Two cystidioid bodies of the *Hohenbuehelia*-type (metuloids) were seen, but they are so rare, I am not sure that they are not of foreign origin. The hyphae are non-amyloid and with clamp connections. The structure of the epicutis could not be ascertained.

On the basis of the microscopical characters one would conclude that *A. interceptus* Berk. is a species of *Phaeomyces*, a genus recently proposed by Heim. Nevertheless, no transfer is proposed at the present time since the macroscopical description does not fit this genus unless the data given by Berkeley were erroneous.

*Agaricus hepaticus* Berk. — The type from Ceylon (no. 52 from the Herbarium Hookerianum) is in good condition. It is very close to *Pyrrhoglossum stipitatum* both macro- and microscopically, differing from the American plant in more somber colors, and in more prominent (especially in comparison with the size of the spores) warts on the epispodium of the spores, the latter showing much the same characters as those of the type of the genus, *Pyrrhoglossum pyrrius* (Berk. & Curt.) Sing. They are  $4.8-5.5 \times 3.5-4 \mu$  large. The strongly eccentric to sublateral stipe is  $12-20 \times 3-6$  mm. (in dried material); the pileus is strongly depressed above the insertion of the stipe. The new combination *Pyrrhoglossum hepaticus* (Berk.) Sing. is proposed.

*Agaricus glebarum* Berk. — The type was published in Flora Antarctica and is conserved in the Herbarium Hookerianum (Kew Herbarium). It has the aspect of a small *Cortinarius* but the spores have a plage (suprahilar smooth spot). Cystidia were not found, but the hymenium is not in very good condition. The spores are  $8-9.5 \times 4.8 \mu$  large and finely but distinctly verrucose, ellipsoid, rusty-melleous. The basidia are destroyed. No dermatocystidia are present on the surface of the stipe. Whether or not there was a veil is not evident. Consequently, the type of *A. glebarum* is a *Galerina* species. It cannot be said in which group it belongs because of the lack of some important information.

Other material determined by Berkeley (authentic) is on the same sheet. It consists of one collection from Marion Island (Challenger Expedition), collected December 26, 1873 on what is evidently Bolax, and another specimen in rather poor condition from Kerguelen's Island, collected likewise during the Challenger expedition, January 1874. The former is a *Pholiota*, the latter might be *Nae-matoloma elongatipes* (Peck.) Sing.

*Agaricus exquisitus* Berk. in Hooker, non Vitt. — Syn.: *Mycena exquisita* (Berk. in Hooker) Sacc. (non sensu Speg.) — *Naucoria exquisita* (Berk. in Hooker) Sacc. — The type, although small, is still in good condition. It was collected on the Malvinas Islands (Falklands) on *Chilotrimum amellioides* (*Compositae*) which is the most common larger plant on the Islands. Its spores are pale melleous brownish, smooth, with indistinct callus or without callus, without a trace of a germ pore, with rather thick wall,  $11.8-15 \times 7.5-11 \mu$  large. The basidia and cheilocystidia are now practically all destroyed, at least in the fragment studied by me. There are some cylindric ( $48 \times 4.5 \mu$ ) bodies on the edge which might have been cheilocystidia. The hyphae have clamp connections. The epicutis consists of upright chains of hyphae with (not very deeply or intensely colored) pigment-incrustation, the terminal member cylindric, clavate, or fusoid, broadly rounded at the tip,  $30-45 \times 7.5-13 \mu$ .

This is evidently a *Phaeomarasmius*, and, as Berkeley correctly states, very close to *P. horizontalis* but much smaller, with very little pigment as compared with similar preparations of the European fungus, with fewer lamellae, and apparently without lamellulae, also growing on another host.

The name *Agaricus exquisitus* is preoccupied by *Agaricus exquisitus* Vitt. which is different. Furthermore, Berkeley's binomial was misused for a *Mycena* collected by Spegazzini in South Chile, and Spegazzini's identification was followed by Saccardo which did not keep the latter from making another transfer to *Naucoria* a few years later, all without ever noticing that the binomial had been used before as quoted by Saccardo himself (Syll. 5: 994. 1887). — The new name *Phaeomarasmius chilotrimumi* Sing. nom. nov. (= *Agarius exquisitus* Berk. in Hooker non Vitt. nec Speg.) is proposed.

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