Psalliota villatica. "Who shall decide when Doctors disagree?"

535. The lower figures communicated by the Rev. M. J. Berkeley, as Ag. coronillus Bull. are marked by myself on the plate as = Agaricus melaspermus Bull.

543. The much-disputed *storea* of this plate is better placed as *Stropharia cotonea* Quél, and after many years of dispute I am glad that the question should be settled at last.

566. Hypholoma lachrymabundum is another species which has occasioned much controversy here for many years. The figures represented on Plate 566 had the approval of M. J. B. as to name, which latterly I am disposed to doubt.

I certainly shall not discuss the strictures on species of *Cortinarius*. Possibly difference in locality, climate, and surroundings alter and modify colour in such genera as *Cortinarius* and *Russula*.

1,087. I may note that on this plate, called *R. rubra*, var. *sapida*, there is an acknowledgment upon the plate itself that it is synonymous with *Russula atropurpurea* Krombh.*

955. Armillaria Jasonis C. & M. I think that Mr. Massee is quite capable of defending his species from the charge of being only a luxuriant development of Lepiota amianthina.

FURTHER NOTES ON BRITISH CLAVARIAE.

By A. D. Cotton, F.L.S.

Although the past season was not a specially favourable one for fungi, the writer was enabled, through the kindness of members of the British Mycological Society, to examine a considerable number of specimens of *Clavaria*. Nothing is of greater value when undertaking a critical study of a group than the opportunity of examining fresh material; indeed, in such a genus as *Clavaria* it is essential. *Repeated* observation also is important, and members of the Society may be assured that all specimens forwarded are received with the greatest interest and appreciation.

Several plants came to hand to which no name could be given. Delay in naming plants may be partly accounted for as follows. A plant may appear to agree with a certain little-known species, the diagnosis of which is brief and vague. Before, however,

* See also "Handbook," 2 edition, p. 326.

that name is definitely assigned, and an attempt made to amplify or amend the description, it is often advisable to wait a few seasons in order to see whether another species may not be forthcoming which more nearly agrees with the original description. C. Kunzei may be cited as a case in point. Here at least two distinct species have been received, both of which can be included in the original description. In the case also of a supposed new species, before drawing up a diagnosis, it is safer to examine several plants, and not to rely on one or two individuals from a single gathering.

Amongst numerous specimens examined recently, attention may be drawn to the species mentioned below. The spore measurements given are taken from spores that have been shed in the form of a spore print, and not directly from the plant. By this method greater uniformity of measurement is secured.

1. Clavaria luteoalba Rea. Several correspondents forwarded specimens of this species, which was first detected and described by Carleton Rea in 1903. In the field its small size and apricotyellow clubs, with the apex usually white, distinguish it from *C. inaequalis*. The flesh also is practically identical in colour with the exterior of the club, whereas in *C. inaequalis* the flesh is white. Should any further doubt exist, the smooth spores $6-7 \times 3 \mu$ will at once settle the question. On drying the plant rapidly loses the apricot hue, and finally becomes pale ochraceous, the stem usually retaining the colour longer than the club, and becoming twisted.

There is another species of *Clavaria* very similar to *C. luteoalba*, which in the field is exceedingly difficult to separate from it. This species is apparently an undescribed one. It has been received more than once, but not in a condition sufficiently satisfactory enough for drawing up a diagnosis. For the present it will suffice to say that the species in question differs from *C. luteoalba* by the absence of a white tip, by becoming deep orange on drying, and by the spores, which are subglobose with an oblique apiculus.

The white apex from which the plant derives its name is a peculiar feature. It is more marked in some cases than others, and may even be altogether absent. Mr. Rea remarks in a letter that the white colour is very obvious in the field, but seems to disappear on drying. It can, however, generally be revived by throwing it on water.

C. luteoalba is the plant referred to by the writer in the Transactions for last year (p. 165, note) as C. helvola Pers. On account of the smooth spores, some authorities have named it C. inaequalis, but a glance at the original figure of that species will show that such an argument cannot be maintained. The full description is as follows :----

Clavaria luteoalba Rea, Trans. Brit. Myc. Soc., 1903, p. 66, Pl. 3, fig. B.

Clubs simple, isolated, or in 2's or 3's, apricot-yellow, with apex white, small 3-5 cm. high, very slender 1.5-3 mm. thick, cylindrical or slightly compressed, smooth, solid, usually attenuated, apex acute or obtuse. Stem not sharply marked, often becoming more distinct on drying. Flesh orange-yellow. Internal structure not pseudo-parenchymatous in transverse section, but composed of loosely packed longitudinally-running filaments, hyphae 5-6 μ diam., containing orange-coloured granules. Basidia small 25-30 × 5-7 μ , contents slightly granular, sterigmata 4, erect. Spores hyaline, smooth, ovoid, av. 6-7 × 3 μ (6-8 × 3-4 μ), not apiculate. Smell none. Taste like tallow.

Hab. In short grass, mossy banks. Not uncommon. Specimens received from Lyme Regis (Miss G. Lister, 1904); Grassington (C. Crossland, 1907); Newport, Isle of Wight (J. F. Rayner, 1907); Falmouth (Miss A. Fry, 1907); collected by the writer at Haslemere (Foray, 1905); and Bexhill (1906 and 1907).

2. Clavaria acuta Sow. In 1803 Sowerby described and figured a white Clavaria, which he named C. acuta. He represented it as a somewhat delicate species, possessing simple clubs, with an acute apex and a well-marked stem. Up to the middle of last century the plant appears to have been well known under that name, but at the present time C. acuta is to many mycologists an unrecognized plant. This may perhaps be explained (i.) by the fact that the name "acuta" is not a particularly good one, inasmuch as the clubs are frequently obtuse; and (ii.) that the spore measurements given in recent works are incorrect. There is no doubt, however, as to the identity of Sowerby's plant; it is a good and recognizable species. A revised and enlarged description is therefore subjoined :—

C. acuta Sowerby Fungi. t. 333; Fr. Syst. Mycol., vol. i., p. 485; Berk. Outl, p. 283; Cooke Handb., n. 991; Fr. Hym. Eur., p. 679; Stev. Brit. Fungi, vol. ii., p. 301; Massee Brit. Fung. Flora, vol. i., p. 85.

Clubs simple, isolated, or in 2's or 3's, glistening white, medium sized 3-7 cm high, slender 2-3 mm thick, cylindrical or compressed, smooth, becoming hollow, very brittle, attenuated, apex acute or obtuse. Stem usually very distinct, 1-2 cm long. Internal structure pseudo-parenchymatous in transverse section, cells av. 10 μ diam. Basidia small 30-35 \times 7-8 μ , conspicuous, contents granular, sterigmata 4. Spores hyaline, smooth, guttulate then granular, subglobose, av. 8-9 \times 7-8 μ (7-10 \times 6-9 μ), minutely apiculate. Smell none. Taste pleasant. Hab. In short grass in woods, shady lawns, flower-pots in greenhouses.

Specimens received from Huddersfield (C. Clarke, 1904); Grassington (C. Crossland, 1907); collected by the writer at Whitby (Foray, 1904); Botanic Gardens Kew, Arboretum and Greenhouses (1906 and 1907).

.Plants of *C. acuta* have probably often been referred to *C.* fragilis, a species which, as shown below, has been misunderstood. From *C. vermiculata*, Scop., the common white species, *C acuta* may be readily distinguished by (1) its very distinct stem, (2) its habit of growth (not tufted), and (3) its large spores.

The frequent occurrence of C acuta in greenhouses has been noted by several writers. Schroeter, for instance, states (Kryptogamen-Flora von Schlesien, vol. iii., p. 444) that in the Breslau Botanic Gardens it regularly occurs in certain large pots, producing crops which continue for several weeks. At Kew the plant behaves in a similar manner. Presumably, the mycelium is introduced with the turfy-loam employed in potting.

It is quite possible that the plant described by Persoon (1797) as *C. falcata* (a name kept up in Continental works) is the same species as *C. acuta.* Persoon's description is, however, hardly sufficient to justify the adoption of his name.

3. Clavaria fragilis Holmsk. This species must be regarded as a synonym of C. vermiculata Scop. (= C. vermicularis Fr.), and may therefore be deleted from our books. The name C. fragilis, which was originally given by Holmskiold (Beata Ruris Otia, Descriptio Clavariarum, p. 7), has always been a subject of perplexity. A careful consideration of Holmskiold's figure and description can, however, leave no doubt that the principal plant that he had before him was C. vermiculata, though he doubtless included others with it. In his first figure, "C. fragilis a" the tufted plant on the right is evidently C. vermiculata, whilst those on the left probably represent slender forms of C. rugosa. C. fragilis, though an excellent name for C. vermiculata, cannot be adopted, as, according to rules of nomenclature, the latter name, having been published by Scopoli 27 years previously, has priority.

Considerable confusion existed as to the two names in older works, where they occur either united or separated. Modern authors have usually followed Fries, who kept up both names, though he added (Syst. Mycol., vol. i., p. 484) "an distincta."* In 1885 Schroeter (Kryptomagen-Flora von Schlesien, p. 445) broke away from tradition, and united *C. fragilis* with *C.*

*Fries (Hym. Eur. p. 675) also altered Scopoli's name—C. vermiculata to C. vermicularis. The latter is more accurate, but this cannot be regarded as a sufficient reason for abandoning the original name. *vermiculata.* This, as shown above, is the only satisfactory course to pursue, though unfortunately Schroeter adopted Holmskiold's name instead of Scopoli's.

4. Clavaria gigas pora Cotton. Discovered by Mr. Crossland in November, 1906, this very distinct species was published by the writer under the above name in "The Naturalist" (March, 1907, p. 97). The description is as follows:—

Branched, caespitose, but distinct at the base, or isolated, greyish, with a tinge of yellow, small up to 3 cm. high, flesh tough. Branching irregular, sometimes almost palmate. Branches erect, occasionally forked, often wrinkled, solid, terete or compressed, much compressed at the acute axils, ultimate branches attenuated, apices blunt. Stem hardly distinct, about 1 cm. long. Internal structure not pseudo-parenchymatous in transverse section, but composed of densely-packed hyphae 4-4'5 μ diam., forming a firm, tough tissue, horny when dry. Basidia large 60-70 \times 15 μ , contents granular, sterigmata 4, stout, 8-10 μ long. Spores hyaline, smooth, broadly elliptical, guttulate then granular, slightly oblique, av. 12-16 \times 8 μ , very variable (10-20 \times 7-9 μ). Smell none. Taste none.

Hab. Amongst moss on rocky heathy slope. A small dingy yellowish white plant, scarcely overtopping the moss in which it grows. In appearance it somewhat resembles certain forms of *C. cinerea* and *C. cristata*, but is readily distinguished from either by the large spores. The structure is also somewhat exceptional, being composed of very fine, densely-matted hyphae, which give rise to unusually large basidia.

5. Clavaria rufa Flora Danica t. 775, fig. 1; Stev. Brit. Fung., vol. ii., p. 296; Massee Brit. Fung. Flora, vol. 1, p. 82.

C. rufa is likewise a name that can be omitted from our books. The species is based on a coloured drawing in Flora Danica (1778), named "Clavaria polymorpha rufa." This was taken up by Persoon, who in his Commentatio furnished a diagnosis, and named it C. rufa. Fries included Persoon's name in his Syst. Mycol., and also in his Epicrisis, in which he remarks after quoting the Danish locality, "dein a nullo lecta, hinc dubia." Having been recorded from Scotland, the name occurs in British works, but in the floras of most other countries it is absent. On referring to the original figure, there is no doubt that it represents an orange and distorted form of *C. inaequalis.* A precisely similar specimen has been recently observed, which proved both in texture and microscopic characters to be in perfect agreement with this well-known species. C. rufa may therefore disappear, together with the numerous other synonyms of C. inaequalis.

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