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New and Rare British Fungi

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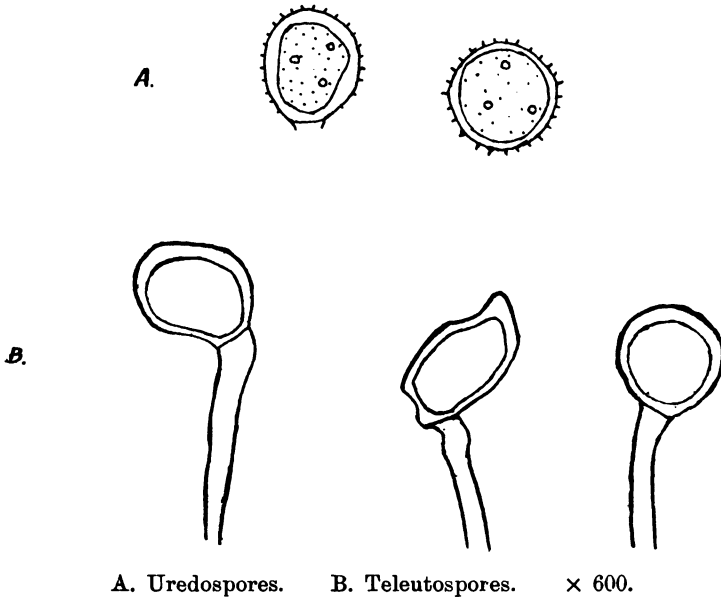


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The description of this rust is as follows:—

Uromyces pedicellata, *Pole Evans*. *Sori uredosporiferi* amphigeni, praecipue epiphylli, sparsi, oblongi, minuti, $\frac{1}{2}$ -1 mm. longi vel confluendo striiformes majoresque, epidermide diutius tecti, flavo-brunnei; *uredosporae* globosae vel subglobosae, subtiliter echinulatae, flavae, 23-27 μ diametro, poris germinationis



5-7 instructae. *Sori teleutosporiferi* amphigeni vel culmicolae, minuti, oblongi vel lineares, epidermide diu tecti, atri; *teleutosporae* variabiles, globosae, subglobosae, piriformes, vel ellipsoideae, saepe angulatae, apice rotundatae vel truncatae, non vel lenissime incrassatae, leves, castaneo-brunneae, 15-22 \times 21-30 μ ; pedicellus hyalinus, apice leviter brunneolus, persistens, usque 45 μ longus.

SOUTH AFRICA. Transvaal: Pretoria, on leaves and stems of *Eragrostis abyssinica*, Link, and *E. curvula*, Nees, *Pole Evans*, 8945 (1915), 11318 and 11319 (1918).

XXVIII.—NEW AND RARE BRITISH FUNGI.

E. M. WAKEFIELD.

During the past two years a number of miscellaneous fungi new to the British Flora have been noted in the course of official work.

The fungus *Cercospora Antirrhini*, apparently an undescribed species, has been twice reported as doing some damage to cultivated Antirrhinums. *Nectria fusco-purpurea* occurred on plum trees of the variety Pond's Seedling which had died

but there seems to be no evidence that this fungus was the cause of death. It was not, however, observed on other varieties of plum. The saprophyte *Merulius pinastris* frequently occurs in greenhouses and hothouses, and thrives so well in the moist, warm atmosphere as to become sometimes quite a pest. *Helminthosporium Warpuriae* appears to belong to the class of facultative parasites. It had gained entrance to the plant through a wound, and was growing further parasitically, but probably it is as a rule a saprophyte, and would not attack an uninjured plant.

The four following species are additions to the Flora of the Royal Gardens, Kew:—*Lepiota nauseosa*, Wakef., *Merulius pinastris* (Fr.) Burt, *Mastigosporium album*, Riess, var. *muticum*, Sacc., and *Helminthosporium Warpuriae*, Wakef.

The colour terms used are those of Ridgway's "Color Standards and Color Nomenclature."

***Lepiota nauseosa*, Wakef. sp. nov.**

Pileus expansus, subumbonatus, carneo-ochraceus, circa 12 cm. diametro, adpresso-tomentosus, umbonem versus carneo-fulvus, areolato-rimosus; caro pilei crassa, albida, fracta vix flavescens. *Lamellae* latae, subdistantes, liberae, utrinque angustatae, e cremeo leviter roseo-tinctae. *Stipes* 16 cm. longus, 8-9 mm. diametro, pileo concolor sed tactu fulvescens, fibrillis paucis brunneis ornatus, sursum incrassatus, pallidus, deorsum vix bulbosus, albidus, intus solidus; caro stipitis albida fracta praesertim infra flavescens. *Annulus* superus, araneosus, fugax. *Sporae* hyalinae, globosae, basi apiculatae, 6·5-8 μ . *Odor* nauseosus.

On soil in *Nepenthes* House, Kew, Feb. 1918.

This fine species in general characters is near to the larger species of *Lepiota*, but it is remarkable for the delicate, cortinate annulus, in which respect it agrees with the genus *Cortinellus* of Roze. *L. Cortinarius*, Lange, has a similar veil, but is much smaller, and has different spores. The ground colour of the pileus is "light ochraceous buff" of Ridgway's system, whilst the tomentose scales about the disk are from fawn to hazel. The annulus is coloured like the pileus, but paler, and the fibrils on the stem are hazel. The whole fungus has a heavy, sickening odour.

***Merulius pinastris*, Burt in Ann. Miss. Bot. Gard. iv., 1917, p. 356.**

Hydnum pinastris, Fr. Obs. Myc. I, p. 149.

A *Merulius* which is apparently this species occurred in abundance in the Tropical Pits at Kew in September, 1917, growing over benches, flower-pots, the cedar chips in which the pots are imbedded, and on an old piece of sacking. The Kew material, however, shows some features which are not mentioned in the description given by Burt. His description of the fructifications as "pinard yellow at first, then olive-ocher, the margin whitish," and of the spores as "pale ochraceous" applies only to small, young specimens, but even

in these there is frequently a tinge of pale flesh-pink in the marginal mycelium. In older specimens, which may extend for about 8 in. when growing under suitable conditions, as on the under side of a bench, the reddish colour of the mycelium is often quite pronounced, and may be best described as deep brownish vinaceous. It is due to a reddish colouring matter which is excreted from the hyphae, and is seen adhering to them in the form of small drops. The spores of old specimens are also more deeply coloured (fulvous), so that the hymenium eventually becomes from Dresden brown to raw umber. When dry the fructification is exceedingly thin and paper-like, with a rather broad, cobwebby margin.

Hymenium for a long time smooth, at length raised in shallow folds which form irregular, angular pores or reticulations, 0.5-1.5 mm. in diameter, or when growing on an upright surface may be prolonged as short teeth. Hyphae hyaline, 2-4 μ in diameter. Spores yellow-brown, elliptical, smooth, 5-7 \times 4 μ (average 6 \times 4 μ).

Lysurus, borealis, (*Burt*) *P. Henn.* in *Hedwigia* xli, 1902, p. 173.

Typical specimens of this plant, agreeing exactly with Burt's description and figures of the American species, appeared on a heap of stable refuse in Chiswick, at intervals from September until the end of November, 1916, and again in the same place in September, 1917. It is characterised by having the arms of the receptacle beneath the gleba of a beautiful pale reddish colour, which is reproduced exactly in the coloured figure given by Murrill in *Mycologia* iv., Pl. LXVIII.

There have been two previous records of species of *Lysurus* in this country. The first was found at Kidderminster, and referred by Rea to *L. australiensis*, Cke. & Mass.* His figure represents it as having arms of a yellowish-brown, but he describes the colour as reddish-brown. Another specimen found at Manchester by Mr. H. Murray had red arms, and was named by Lloyd *L. borealis*.† If the descriptions of *L. australiensis* and *L. borealis* be compared, it is obvious that the plants are very close, and the question arises whether the names be synonymous. The chief difficulty is due to this question of the colour of the receptacle.

The original description of *L. australiensis* gives "receptaculo fusco," but as it was probably drawn up from dried material, little weight can be attached to this statement. Later descriptions, also, for the most part, say little about the colour of the plant. An enquiry as to this point was therefore sent to Dr. J. B. Cleland, of Sydney, who is working out the Basidiomycetes of New South Wales. Dr. Cleland states in reply that the Australian plant is usually entirely white, but that he has seen one large specimen (4 in. high and 1 in. thick), in which the arms were orange, the upper part of the stem paler orange, and the base whitish. There is also in the Kew Herbarium a

* *Trans. Brit. Myc. Soc.* ii, 1903, p. 57.

† Lloyd, *Syn. Phall.* 1909, p. 40.

pencil sketch of a *Lysurus* by the late F. M. Bailey, on which he noted that the arms had a "rose-coloured border."

It seems, therefore, that *L. australiensis*, though typically entirely white except for the gleba, may occasionally vary in the direction of developing some colour in the arms of the receptacle.

On the other hand, the American and European plant has usually distinctly reddish arms. An entirely white form, however, has been recorded from Mecklenburg, Germany, and named by Hennings *L. borealis*, var. *Klitzingii*.* In this connection it may also be noted that when eggs of the Chiswick plant were allowed to develop indoors, the red colour was absent, suggesting that it is dependent on the presence of sufficient light.

Difference of illumination, however, will not account for the fact that the Australian *Lysurus* is normally entirely white, while the plant of the northern hemisphere has normally red arms. If they be regarded as two distinct species, Hennings' var. *Klitzingii* should be referred to as a synonym of *L. australiensis*. But except for this colour difference, the plants appear to be indistinguishable, and it seems more probable that they represent geographical forms of one species. In view of the fact that the difference is fairly constant, it is nevertheless desirable to keep the distinctive name *borealis* for the red Northern form.

The further suggestion, made by both Lloyd † and Cleland, ‡ that *L. borealis* and *L. australiensis* are identical with *L. Gardneri*, Berk., of Ceylon, does not appear to be justified. According to Petch § the arms of *L. Gardneri* (referred by him to *Colus*) are always united at the apex, a condition which is only exceptional in *L. australiensis*. Furthermore, the gleba in *L. Gardneri* does not as a rule extend to the base of the arms, whereas it always does so in *L. borealis* and *L. australiensis*. No red form of *L. Gardneri* has ever been recorded.

***Nectria fusco-purpurea*, Wakef., sp. nov.**

Stromata dilute lateritia, ceracea, applanata, 4-8 mm. longa, 1-2 mm. lata, per rimas transversas corticis erumpentia, primo conidia gerentia. *Conidia* cylindrica, utrinque obtusa, vix curvula, 8-11 × 2-2.5 μ. *Conidiophora* simplicia vel ramosa, hyalina, 1.5-2 μ diametro. *Perithecia* dense constipata, compressione laterali deformia, stroma obscurata, sessilia, fusco-purpurea, carnosula, contextu parenchymatico rubro, sicco collapsa, pezizoidea, rugulosa, 0.25 mm. diametro, ostiolo minuto pertusa. *Asci* cylindracei, octospori, 80-90 × 10-12 μ. *Paraphyses* filiformes, ramosae, hyalinae, 1.5 μ diametro. *Sporae* monostichae vel subdistichae, variabiles, oblongae, utrinque obtusae, medio 1-septatae, interdum 2-3-septatae, ad septa constrictae, 14-33 × 4.5-8.5 μ.

* Hedwigia xli., 1902, p. 173.

† Lloyd in Myc. Notes, No. 28, p. 370. Lloyd corrected this opinion in his Syn. Phall., but reverted to it in Myc. Notes No. 41, p. 571.

‡ Cleland and Cheel in Journ. and Proc. Roy. Soc. New South Wales, lxi., 1915, p. 204.

§ Ann. Roy. Bot. Gard. Peradeniya, iv., p. 174.

On dead branches of plum (Pond's Seedling), Wisbech, coll. J. C. F. Fryer, 1917; A. D. Cotton, 1917.

While most of the spores have only one septum, occasional large spores with two or three septa are present, suggesting relationship with the genus *Calonectria*. Frequently one or more cells of these larger spores are much swollen, as in Saccardo's figures of abnormal spores of *Calonectria varians*.

The transversely elongated stromata give the species a habit markedly different from that of the other British *Nectrias*. The conidial stage is bright pink, but the stroma is eventually almost completely hidden by the crowded perithecia which are dark brownish-purple to the naked eye, but whose walls are red by transmitted light.

***Cercospora Antirrhini*, Wakef., sp. nov.**

Maculae orbiculares, depressae, ex atro-viridi pallidae, arescentes, 2-4 mm. diametro. *Acervuli* epiphylli, sparsi, minuti, albi vel demum conglutinati, subhyalini, dilute roseo-tincti. *Conidiophora* dense constipata, hyalina, ramosa, 2-4 μ diametro. *Conidia* hyalina, elongato-obclavata, curvula, 25-48 \times 2.25-3.5 μ , ad 3-septata.

Hab. On living leaves and stems of garden Antirrhinums, Worcester, Sept., 1917; also Birmingham, June, 1918, W. B. Grove.

The fungus attacks the still living, vigorous leaves and stem, forming small sunken patches having a darker green waterlogged appearance. Under the lens the minute sori are seen scattered all over the patch, whitish and pulverulent at first, but in the presence of abundant moisture becoming agglutinated and pale rose-coloured. Later the spots dry out from the centre, becoming pale alutaceous and thereby more definite and conspicuous.

***Mastigosporium album*, var. *muticum*, Sacc. Ann. Myc., 1911, p. 254.**

Distinguished from the type form by the conidia having no cilia and being slightly smaller. *Conidiophores* 13-15 \times 3-5 μ . *Conidia* 32-38 \times 10-12 μ , oblong-elliptical, rounded at both ends, 3-septate.

On leaves of *Dactylis glomerata*, Kew, 1918, and Oxshott, Oct., 1917.

***Helminthosporium Warpuriae*, Wakef., sp. nov.**

Mycelium atro-olivaceum, lanosum, effusum. *Conidiophora* rigida, erecta, umbrina, apice rotundata vix dilatata, 300-500 \times 6.8 μ . *Conidia* solitaria, obclavata, apice obtusa, pallide grisea, crasse tunicata, 8-11-septata, 115-190 \times 12-14 μ .

On an injured stem of *Warpuria clandestina*, Stapf, Tropical Pits, Kew, July, 1917.