NOTE ON SOME NEW SPECIES OF FUNGI COLLECTED IN MT. TAISETSU

BY

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(With 4 text-figures)

Since 1931, the authors have engaged in studies of fungus-flora of Mt. Taisetsu and vicinity. As a part of these studies it is proposed to describe some ascomycetous fungi new to science in the present paper.

Mt. Taisetsu consists of an enormous group of active and extinct volcanos and is situated in the central part of Hokkaido Island. Nearly surrounding a vast central crater-basin which has an average altitude of about 1,800 m. above the sea-level, several peaks over 2,000 m. altitude stand prominently. On the mountain-sides magnificient primeval forests luxuriate and the peaks and crater-basin are covered with well developed associations of alpine plants. The plants are particular and rich in kinds, accordingly the fungi parasitic on them are interesting. The altitude of Mt. Taisetsu is only a little higher than 2,000 m., even the highest point of Peak of Asahi being only 2,290 m., but the climatic conditions are alpine owing to the comparatively high latitude of the locality. It influences the living of plants as well as their parasites resulting in peculiarity of their flora.

The authors have the pleasure to express their cordial gratitude to Professor SEIYA ITO for his valuable suggestions given in the identification of the fungi, and it is their great delight to publish the present paper in this Commemoration Number in honour of his quarter century's service in the Hokkaido Imperial University.

Meliola Vaccinii sp. nov.

Coloniis hypophyllis, atris, circularibus vel irregularibus, diffusis, 0.5–2 mm. diam.; mycelio dense contexto, ramis utplurimum oppositis, repentibus, septatis, fuscis, 6-8 μ crassis; hyphopodiis plerumque alternantibus, forma varia (rhomboideis, angulatis, etc.), stipitatis, 17.5–22.5 × 12.5–15; setis simplicibus, rigidis, rectis, ad apicem attenuatis, septatis, atris, 492–518 μ longis, basi 10 μ crassis;

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peritheciis superficialibus, globosis, verruculosis, atris; ascis ellipticis, evanescentibus, 4-sporis, 63.6-120 × 32.4-45.6 μ; sporidiis cylindraceis, 3-septatis, parum constrictis, fuligineis, 45.6-77.5 × 15.6-19.2 μ; paraphysibus filiformibus, hyalinis, 60-110 × 4.4-4.8 μ.

Hab. in foliis *Vaccinii Vitis-Idaei* L. (Koke-momo). Peak Chûbetsu, Mt. Taisetsu vicinity, Prov. of Ishikari, Aug. 20, 1931, Y. IMAI & S. YAMAGIWA.

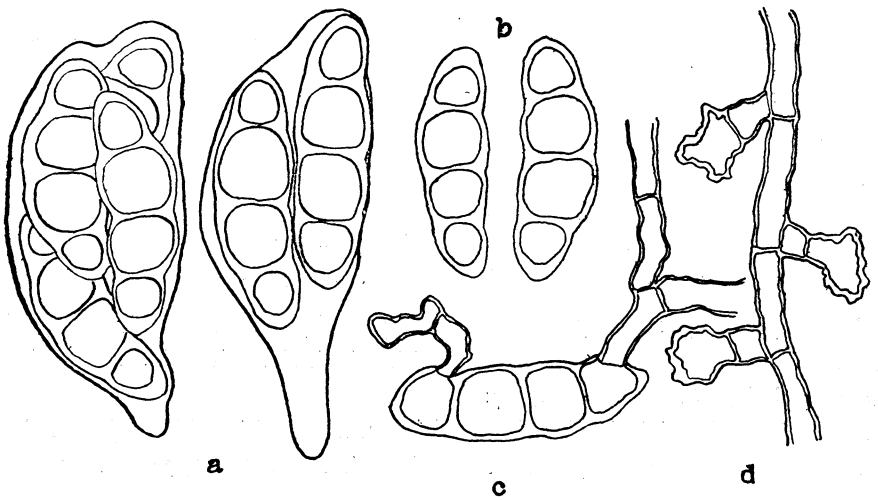

Fig. 1. *Meliola Vaccinii*

a. Asci b. Ascospores c. Germinated ascospore d. Hyphopodia

Remarks: There are three species of *Meliola* parasitic on *Vaccinium Vitis-Idae* and somewhat resembling the present fungus. They are *M. nidulans*, *M. Niessleana*, and *M. pulchella*. The present fungus differs from *M. nidulans* in smaller ascospores and longer mycelial setae, from *M. pulchella* in larger perithecia and ascospores, and in longer mycelial setae, and from *M. Niessleana* in the presence of mycelial setae. It is an unusual fact that the presence of paraphyses is noticed in this fungus. The presence of paraphyses has not hitherto been described in the fungi belonging to the genus Meliola, but the authors should like to consider the present fungus as a new species of this genus, because all the other characters of it are nothing other than those of Meliola.

Didymosphaeria atropunctata sp. nov.

Peritheciis phyllogenis, epiphyllis, punctiformibus, globosis, atris, subcutaneo-erumpentibus, 198-264 μ diam.; ascis tereti-clavatis, brevissime stipitatis, apice

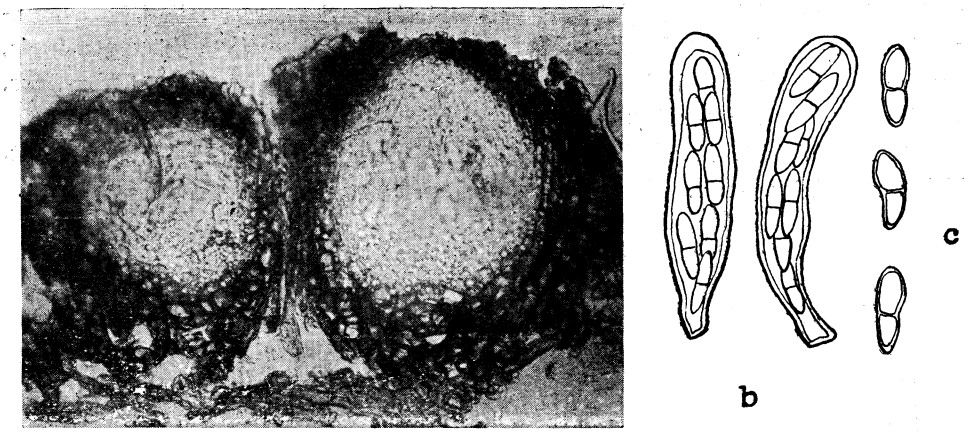

Fig. 2. *Didymosphaeria atropunctata*
a. Perithecia b. Asci c. Ascospores

rotundatis, 27.5-62.5 × 8-12.5 μ, octosporis; paraphysibus filiformibus; sporidiis distichis vel oblique monostichis, oblongo-biconicoideis, olivaceis, 1-septatis, ad septis constrictis, 16.8-18 × 2.6-4.8 μ

Hab. in foliis etiolatis *Arctoi japonici* NAKAI (Urashima-Tsutsuji). Takane-ga-hara, Mt. Taisetsu vicinity, Prov. of Ishikari, Aug. 18, 1931, Y. IMAI & S. YAMAGIWA.

Remarks: The present fungus which may be a weak parasite is found commonly on dying leaves of *Arctous japonicus*, but the perfectly matured specimen is rather rarely met.

Gnomonia polyasca sp. nov.

Peritheciis primo subepidermicis, sparsis, depresso-globosis, membranaceis, atris, 0.3-0.4 mm. lat.; rostro cylindraceo, versus apicem leniter attenuato, rigido, 100-160 μ long.; ascis clavatis, in stipites brevissime attenuatis, 8-sporis, 27.5-45 × 7.5-10 μ; sporidiis bistichis, oblongo-cylindraceis, utrinque rotundatis, infra medium 1-septatis, non constrictis, hyalinis, 4-guttulatis, 10-12.5 × 2.5-5 μ.

Hab. in caule putri *Polygoni polymorphi* LEDEB. var. *ajanensis* REGEL et TIL. forma *pilosi* TAKEDA (Hosoba-ontade). Takene-ga-hara, Mt. Taisetsu vicinity, Prov. of Ishikari, July 18, 1931, S. YAMAGIWA.

Remarks: Young peritheria are formed embedded in the tissue of stem, and on maturity the characteristic beaks project breaking the epidermis. The perithecia are usually formed on dead stems, but they are found very rarely on the nerves of leaf. A perithecium contains extremely numerous asci occupying the whole cavity, and the species name of this fungus is derived from this

character. The tip of the clavate ascus thickens a little and two pores are present at the apex which is stained deeply by taking iodine potassium iodide. Ascospore has two cells, the upper cell being larger than the lower one, and containing some guttae.

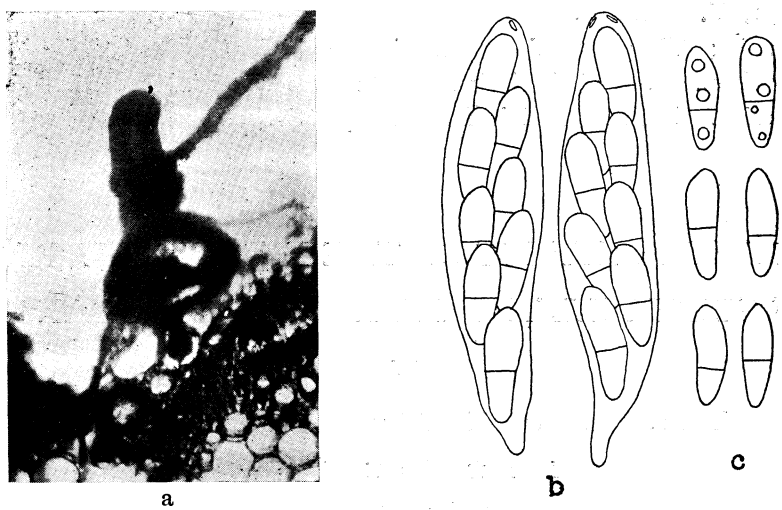

Fig. 3. *Gnomonia polyasca*
a. Perithecium b. Asci Ascospores

Bagnisiopsis coptidis sp. nov.

Epiphylla. Stromate nigro, rotundato vel irregulari, usque 0.4-0.8 mm. diam., 0.16-0.18 mm. alt., depresse pulvinato vel noduloso, epidermide rupta cincto, superficie muriculata, loculis numerosis, 90-180 μ diam., 78-158 μ alt.;

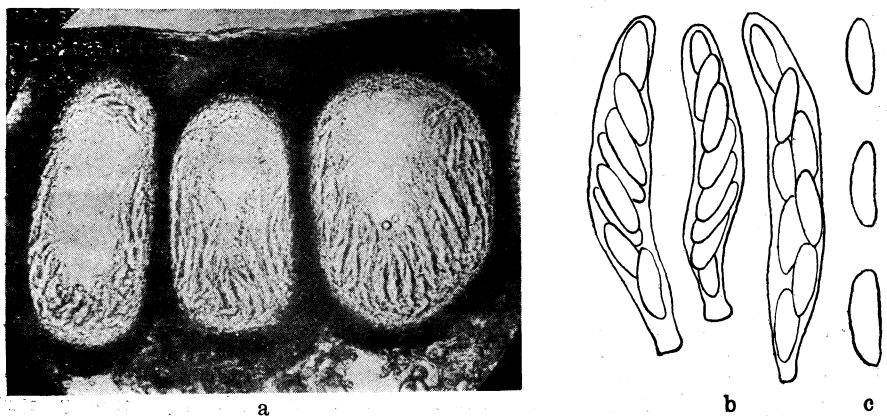

Fig. 4. *Bagnisiopsis coptidis*
a. Perithecia b. Asci c. Ascospores

ascis cylindraceis, apice rotundatis, 50-75 × 10-13 μ, octosporis, brevissime stipitatis, filiformiter paraphysatis; sporidiis distichis, ellipsoideis, continuis, hyalinis.

Hab. in foliis *Coptidis trifolii* SALISB. (Mitsuba-wôren). Peak Kuro-dake, Aug. 11, 1928, G. HAYASHI, Aug. 1931, H. ÔTANI & KIKUCHI; Peak Chûbetsu, Aug. 1931, Y. TOCHINAI.

Remarks: The present fungus attacks the old living leaves of *Coptis trifolia*, and kills them. The pitch-black stromata are formed in the middle of a discolored lesion. Each affected leaf has comparatively few stromata scatteredly.

THE AFTER EFFECT OF THE FUNGUS FILTRATE OF GIBBERELLA FUJIKUROI ON RICE PLANTS

BY

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(With 1 text figure)

Since E. KUROSAWA[1] found, in 1926, that the abnormal elongation of rice seedlings which is the characteristic symptom of the "*Bakanae*"-disease is entirely due to the toxic action of the growth promoting substance excreted by the causal fungus (*Gibberella Fujikuroi*), several investigations of the problem from various standpoints have been reported by many authors. But, in general, the studies hitherto published in connection with the toxic substance in question, have been limited to the early stage of the growth of the affected seedlings.

The present studies have been carried out to learn preliminarily the after effects of the toxin produced by the fungus. The rice seedlings were cultivated under the influence of the fungus filtrate, and the affected seedlings were transplanted at certain intervals in the nutrient solution which contains no fungus excretion. In continuing the sand culture with normal nutrient solution it is examined whether or not the influence of the toxin which worked at the early stage of the development of seedlings affects their further growth.

No. 36 and No. 42, two of the forty seven strains of the "*Bakanae*"-fungus

1) E. KUROSAWA:—Experimental studies on the filtrate of the causal fungus of the "*Bakanae*" of the rice-plants (preliminary report). Trans. Nat. Hist. Soc. Formosa, XVI, pp. 213-227, 1926. (*In Japanese*).

[Trans. Sapporo Nat. Hist. Soc., Vol. XIII, Pt. 3, 1934]