

## English summary of papers which appeared in Nippon Kingakukai Kaiho Vol. 38 (1997)

### Original paper: Germination types and changes of inner tissues of buoyant and nonbuoyant sclerotia of *Corticium rolfsii*

Tomoki Motomura<sup>1)</sup>, Kinji Tanaka<sup>1)</sup> and Fukuji Nonaka<sup>2)</sup>

<sup>1)</sup>Faculty of Agriculture, Saga University, Saga 840, Japan

<sup>2)</sup>Kyushu Plant Protection Association, 4-9-12, Tenjin, Chuo-ku, Fukuoka 810, Japan

Germination and infectivity were examined for buoyant and nonbuoyant sclerotia of *Corticium rolfsii* isolated from water chestnut. In both types of sclerotia, germination occurred eruptively through a rind hole made with a sharp needle and from the whole surface of sclerotia treated with 0.5% NaClO for 10 min. When the sclerotia were air-dried, the buoyant tended to germinate more rapidly and eruptively than the nonbuoyant. Germination and infection on snap bean hypocotyls were also more rapid for the buoyant than the nonbuoyant. Irrespective of the germination type, morphological changes of the rind and cortex cells were similar in the course of germination, and hyphae were considered to be originated from the cortex and/or outer medulla cells of sclerotia. Compared with untreated sclerotia, adhesion of the skin to the outermost rind cells became looser in the dried sclerotia and more significantly in the NaClO-treated sclerotia.

Nippon Kingakukai Kaiho 38: 75–83, 1997

### Original paper: Studies on mycoflora of house dust for etiological analyses on causative agents of asthma

Noritsuna Toyazaki<sup>1)</sup> and Shun-ichi Udagawa<sup>2)</sup>

<sup>1)</sup>Public Health Research Institute of Kobe City, 4-6, Minatojima-naka-machi, Chuo-ku, Kobe 650, Japan

<sup>2)</sup>Nodai Research Institute, Tokyo University of Agriculture, 1-1-1, Sakuragaoka, Setagaya-ku, Tokyo 156, Japan

The mycofloristic results of 98 house dust samples from asthmatic patients' dwellings were compared by three isolation methods: dilution plate, ethanol pre-treatment and Warcup & Bakers' methods. Hydrophilic and mesophilic deuteromycota in which growth can develop only at water activity values ( $A_w$ ) greater than 0.80 were detected on PDA by dilution plating, while the microfungi developed on DG-18 plates by the same method were xerophilic and xerotolerant. *Eurotium* spp., *Aspergillus restrictus* and *Wallemia sebi*, which occurred in about 60% of the total isolated fungi on DG-18 plates, were the main xerophiles that were capable of growth below  $A_w$  0.80 in house dust. Isolates on PDA plates after ethanol pre-treatment consisted of 54% of ascomycota and 29% of deuteromycota, among which *Chaetomium* spp. and *Nigrospora oryzae* were predominant respectively. Approximately 88% of the total isolates on PDA after the treatment with ethanol and at 60°C (Warcup & Bakers'

method) were undoubtedly heat-resistant ascomycota such as species of *Talaromyces*, *Eurotium*, *Neosartorya* and *Eupenicillium*, because ascospores formed by these fungi were extremely heat-resistant compared with spores of other microfungi. Occurrence of *Eurotium* spp. on DG-18 plates after the heat treatment increased to as high as 92%. Diversity in these mycoflora shows that isolation methods are important for the enumeration of constant propagule types associated with house dust samples.

Nippon Kingakukai Kaiho 38: 133–141, 1997

### Original paper: Comparison of physiological characteristics of Japanese and Thai oyster mushrooms and their F<sub>1</sub> hybrid

Shingo Morimoto<sup>1)</sup>, Kenjiro Kinugawa<sup>1)</sup>, Eiji Tanesaka<sup>1)</sup> and Makoto Ogawa<sup>2)</sup>

<sup>1)</sup>Laboratory of Genetics and Plant Breeding, Faculty of Agriculture, Kinki University, 3327-204, Nakamachi, Nara 631, Japan

<sup>2)</sup>KEEC Biological Environment Institute, 8-4, Ujimatafuri, Uji, Kyoto 611, Japan

Japanese, Thai and their F<sub>1</sub> hybrid stocks of *Pleurotus ostreatus* were cultivated at 22°C during the spawn-run time, then at 15°C or 22°C during fruiting. There was no noticeable difference in change of CO<sub>2</sub> concentrations in sawdust-ricebran substrata between Japanese and Thai stocks during spawn-run time. However, Thai stocks fruited and raised CO<sub>2</sub> concentration of the substrata earlier than did Japanese stocks at both temperatures. At 22°C, Thai stocks formed plentiful fruit-body primordia that grew into normal fruit-bodies, while Japanese stocks formed sparse primordia that failed to follow normal growth. These traits of Japanese and Thai stocks segregated in their F<sub>1</sub> hybrid stocks, and many F<sub>1</sub> stocks represented the Thai phenotype.

Nippon Kingakukai Kaiho 38: 237–242, 1997

### Short Communication: A poisonous species, *Tricholoma pardinum* newly recorded in Japan

Shinnosuke Miyauchi

Department of Bio-Engineering, Faculty of Engineering, Nagaoka University of Technology, 1603-1, Kamitomioka, Nagaoka 940-21, Japan

A poisonous *Tricholoma* species, collected in a broad-leaved forest in Sado island, Niigata prefecture, was identified as *Tricholoma pardinum*, new to Japan. The poisoning by it was not fatal but gastrointestinal in its effects.

Nippon Kingakukai Kaiho 38: 85–86, 1997

**Short Communication: Occurrence of seedling damping-off of Jew's mallow, *Corchorus olitorius* caused by *Rhizoctonia solani* AG-2-1**

Yuuko Satoh<sup>1)</sup>, Tsutomu Kanehira<sup>2)</sup>  
and Masayuki Shinohara<sup>2)</sup>

<sup>1)</sup>Keisei Rose Nurseries Inc., Ohwadashinden, Yachiyo, Chiba 276, Japan

<sup>2)</sup>College of Bioresource Sciences, Nihon University, Kameino, Fujisawa, Kanagawa 252, Japan

Seedling damping-off of Jew's mallow (*Corchorus olitorius*) occurred in Kanagawa Prefecture, Japan in May, 1994. Twelve isolates of fungi were obtained from the diseased tissues. In inoculation tests at 15 and 25°C, only one isolate was pathogenic on Jew's mallow and radish seedlings at 15°C, but not at 25°C. The isolate from diseased plants was identified as *Rhizoctonia solani*, based on the morphological and cultural characteristics. The isolate anastomosed with standard isolate of AG-2-1 only and restriction fragment length polymorphisms (RFLP) patterns of internal transcribed spacers (ITS) region of rDNA were the same as those of the standard isolate of AG-2-1.

Nippon Kingakukai Kaiho 38: 87-91, 1997

**Short Communication: Effect of addition of corn fiber in the medium on the fruit-body production of edible mushrooms**

Takao Terashita<sup>1)</sup>, Masahiko Umeda<sup>2)</sup>, Reiichirou Sakamoto<sup>3)</sup>, Naoto Arai<sup>3)</sup> and Jiko Shishiyama<sup>1)</sup>

<sup>1)</sup>Faculty of Agriculture, Kinki University, 3327-204, Nakamachi, Nara 631, Japan

<sup>2)</sup>Iiyama-Miyuki Agriculture Cooperative Society, Iiyama 3567, Iiyama 389-22, Japan

<sup>3)</sup>Research and Development Laboratory, Oji Corn Starch Co. Ltd., 9, Yahata-Kaigandouri, Ichihara 290, Japan

Corn fiber, the waste product of corn starch manufacture, was studied to estimate its applicability as a substrate for the commercial production of several edible mushrooms in Japan by bottle cultivation. The use of corn fiber successfully increased the yield of fruit-bodies (fresh weight basis) of *Pleurotus ostreatus*, *P. sajor-caju*, *Pholiota nameko* and *Hypsizygus marmoreus* by 1.02-1.31 times when it was added to the basal medium (10-30%) consisting of sawdust and rice bran.

Nippon Kingakukai Kaiho 38: 243-248, 1997

**Short Communication: Materials for the fungus flora of Japan (52)**

Keisuke Tubaki<sup>1)</sup>, Seiji Tokumasu<sup>2)</sup> and Michiko Konno<sup>3)</sup>

<sup>1)</sup>Nodai Research Center, Tokyo University of Agriculture, Sakuraoka, Setagaya-ku, Tokyo 156, Japan

<sup>2)</sup>Sugadaira Montane Research Center, University of Tsukuba, Sugadaira, Nagano 386-22, Japan

<sup>3)</sup>Institute of Biochemistry Applied for Soil Eumycetes, Kariwana, Nishisenboku, Senboku, Akita 019-21, Japan

A hyphomycete, *Alysidium resinae* var. *microsporium*, newly found on a plastic doll in Japan, is described.

Nippon Kingakukai Kaiho 38: 249-250, 1997

**Note: Materials for the fungus flora of Japan (50)**

Tsuguo Hongo

3-3-7, Oogaya, Otsu, Shiga 520-21, Japan

The following four species, new to Japan, are reported: *Clitocybe sinopica*, *Tricholoma pardinum*, *Cortinarius decipiens*, and *Entoloma incanum*.

Nippon Kingakukai Kaiho 38: 99-100, 1997

**Note: The effects of culture conditions on volatiles produced by *Lasiodiplodia theobromae***

Miwako Matsumoto<sup>1)</sup> and Tatsuyuki Sugahara<sup>2)</sup>

<sup>1)</sup>Setouchi Junior College, 2379, Shimokatuma, Takase-cho, Mitoyo-gun, Kagawa 767, Japan

<sup>2)</sup>Kagawa Nutrition University, 3-9-21, Chiyoda, Sakado-shi, Saitama 350-02, Japan

The effects of culture conditions on the production of volatiles by *Lasiodiplodia theobromae* were studied. 2-Octeno- $\delta$ -lactone was produced in significant yield only in potato-glucose medium by *L. theobromae* cultured for 14 d. About 0.5 mg was produced by *L. theobromae* cultured on a plate of the medium (20 ml) in the dark, as also noted with fluorescent light. In liquid medium, however, the fungus produced no  $\delta$ -lactone in the dark, in contrast to the result obtained with light. 2-Octeno- $\delta$ -lactone within or on the surface of agar medium covered with *L. theobromae* was essentially the same, regardless of mycelial content.

Nippon Kingakukai Kaiho 38: 251-255, 1997

**Review: Plasmid DNA in fungi**

Koji Katsura, Atsuko Sasaki and Teruyoshi Hashiba

Faculty of Agriculture, Tohoku University, 1-1, Tsutsumi-dori Amemiya-cho, Aoba-ku, Sendai 981, Japan

Nippon Kingakukai Kaiho 38: 3-16, 1997

**Review: Taxonomic studies on Plectomycetes (Cleistotheacial ascomycetes)**

Shun-ichi Udagawa

Nodai Research Institute, Tokyo University of Agriculture, 1-1-1, Sakuragaoka, Setagaya-ku, Tokyo 156, Japan

Species of plectomycetous ascomycetes comprise a biologically diverse and interesting group. They are ubiquitous in our environment, but principally occur in nature as soil-dwelling saprobes and as decomposers of organic debris in terrestrial ecosystems. Recent molecular studies on the phylogenetic relationships of filamentous ascomycetes have shown that the orders Ascospaerales, Onygenales and Eurotiales are better accommodated in the Plectomycetes as a monophyletic group. Among them, the Onygenales and Eurotiales contain a number of economically important species including well-recognized agents of dermatomycoses, opportunistic and allergenic diseases of humans and higher animals, mycotoxigenic decomposers of agricultural commodities and processed foods, producers of important pharmaceuticals such as antibiotics and starters of traditional fermented foods. This review presents an over-

view of our taxonomic studies on the Plectomycetes, with special reference to up-to-date knowledge of the Onygenales. Three new combinations were made: *Arachniotus trochleosporus* (Kuehn et Orr) Udagawa, *Gymnostellatospora alpina* (E. Müll. et v. Arx) Udagawa, and *Gymnostellatospora dendroidea* (Locq.-Lin.) Udagawa.

Nippon Kingakukai Kaiho 38: 143–157, 1997

**Review: Studies on flora of parasitic fungi to woody plants in Japan and certain tropical and subtropical area**

Takao Kobayashi

Department of International Agricultural Development, Faculty of Agriculture, Tokyo University of Agriculture, 1–1–1, Sakuragaoka, Setagaya, Tokyo 156, Japan

Through the survey on fungi parasitic to woody plants in Japan except Nansei Islands, 158 species of 76 genera including 4 new genera and 58 new species were

newly added to the Japanese fungus flora. They belonged Ascomycotina (46%, 35 genera and 72 species) and Deuteromycotina (54%, 41 genera and 86 species). In total 231 species belonging to 92 genera were recorded from the Nansei Islands, which distribute between Kyushu and Taiwan. The number of fungi fixing southern limit of distribution at the Nansei Islands gradually decreased from the northernmost Islands (Yaku-Tane Islands) to the southernmost Islands (Yaeyama Islands). Reversely, the number of fungi fixing northern limit of distribution decreased from south to north. Percentage of indigenous fungi were almost equal throughout the Nansei Islands. In the Philippines, Indonesia and Paraguay, manuals for tree diseases and their control measures were published based on the survey of tree diseases and their causal fungi together with the research counterparts in each countries.

Nippon Kingakukai Kaiho 38: 159–165, 1997