

Agaricales of West Bengal VIII: Some mushrooms of 24-Parganas District, West Bengal

P. BASAK* AND N. SAMAJPATI

Department of Botany, Calcutta University, Calcutta 700 019

In this paper five species of mushrooms were reported (namely *Lepiota mimica* Masee, *Leucoagaricus excoriatus* (Schaeff & Fr.) Singer, *Panaeolus papilionaceus* (Bull. ex Fr.) Quel, *Pleurotus djamor* (Fr.) Boedijin, and *Rhodocybe subgliva* (Berk. & Br.) Pegler from 24 - Parganas district, West Bengal.

Key words: Taxonomy, mushrooms, 24-Parganas district

INTRODUCTION

The agaric flora of different districts of West Bengal were reported from this laboratory (Ray and Samajpati, 1976; 1979; 1980; 1980 a, b; Roy and Samajpati, 1980; 1981 Roy *et al.*, 1978; Md. Shajahan *et al.*, 1988;) The agaric flora of 24-Parganas district was also reported earlier (Manna and Samajpati, 1998; Basak and Samajpati, 1998). This is the third report in the series on agaric flora of 24-Parganas district and the eighth in the series of agaric flora of West Bengal.

MATERIALS AND METHODS

During the rainy season (June to September) the basidiocarp of agarics were collected from different localities of 24-Parganas district. At the time of collection habit, gross soil type, soil pH and other necessary field data of the individual species were recorded. In the laboratory all the observations were made following the methods of Singer (1975). All the species were housed in the Herbarium of Mushroom Research Centre, Mycology Laboratory, Department of Botany, Calcutta University, and duplicate collection in the Kew Herbarium, Royal Botanic Garden, Surrey England.

ENUMERATION OF THE SPECIES

Lepiota mimica Masee, Fungi Exotici - XIV; Kew Bull 1912:253-255

Pileus : 57-77 mm. in diameter; convex, somewhat flattened with age; umbonate, sometimes a little depression at the centre; smooth, scaly, dry; *Margin* : round, entire, thin, incurved, sulcate; *Lamellae* : free, regular, close, pinkish, sometimes white. *Context* : fleshy, white sometimes pinkish, 4-8 mm. thick at the centre; *Stipe* : central, cylindric, long, stout, hollow, base bulbous, solid, fleshy, hard; *Annulus* : present at the half-way down, movable at maturity, white, sometimes pinkish; *Basidia* : normal, clavate, tetrasterigmatic; 22.54 μ - 31.31 μ (27.20 μ) x 8.44 μ - 9.90 μ (9.06); *Basidiospores* : subglobose, slightly narrow at the apex, doubled walled, hyaline, smooth, guttulate; 7.54 μ - 9.90 μ (8.72 μ) x 5.90 (5.54 μ); Q. value - 1.6; *Spore print* white; *Hymenophoral trama* : regular, homiomereus, filamentous, comprising of hyaline, thin-walled cells, 6.92 μ - 12.90 μ in diameter; *Cystidia* : Both cheilocystidia and pleurocystidia absent; *Subhymenium* : fairly developed; structure similar to hymenial form; *Pileal surface* : trichodermal element loosely arranged, clamp connection present, cells thin-walled, 38.50 μ - 67.28 μ x 6.90 μ - 12.54 μ ; *Pileal context* : consisting of round to oval cells, thin-walled,

*Present Address : Department of Botany, Sree Chaitanya College, Habra, 24 Parganas (North)

4.72 μ - 5.90 μ x 4.54 μ - 7.72 μ ; hyphal diameter 5.31 μ - 7.72 μ ; *Stipe surface*: comprising of thin-walled, long, filamentous hyphae, 5.31 μ - 12.54 μ in diameter;

Habit and Habitat: on ground, in groups.

Chemical characters: Content turns brown with aniline and HNO₃. No reaction with phenol, 10% FeSO₄, and 40% Formalin. The tissue turns 'buff' with 20% KOH, 30% and NH₄OH.

Distribution: In decaying mowed grasses, Calcutta, West Bengal, E.M.Burkill, 31; G. Masee, 1912. Sarsuna, South 24-Parganas; P. Basak, 20th July, 1980. M. H. No. 106/80.

Leucoagaricus excoriatus (Schaeff. Fr.) Singer

= *Lepiota excoriata* (Schaeff.) Fr.

Pileus: convex with umbo, glabrous, fleshy, scaly (small), vinaceous buff colour, 45-58 mm in diameter, 8-12 mm thick at the temple, clamp connection absent, inamyloid; *Cuticle*: mat, scaly, peels off easily, vinaceous buff colour; *Margin*: crenulate, not striate, finely sulcate, 4-6 mm thick, rough; *Lamellae*: free, sub-crowded, edge regular, pliable, lamellae-four different lengths, 18-20 mm. long, 4-6 mm broad, whitish to light smoke grey colour; *Stipe*: cylindrical, hollow, straight, tough, 65-72 mm long, 6-8 mm in diameter, base slightly broader, distinct annual ring present, persistent, fixed, finally becoming movable, 18-20 mm below gill attachment to pileus, white at young, vinaceous buff with age, volva absent, hyphae without clamp connection, inamyloid, *Epicutis*: a trichodermium; *Basidia*: monomorphic, tetrasterigmatic; 18.32 μ - 23.04 μ (20.73 μ) x 3.54 μ - 4.72 μ (4.24 μ); *Spore print colour*: buff; *Basidiospores*: ellipsoid, with distinct germ pore, smooth, hyaline, clear in water, wall thick, 5.9 μ - 9.44 μ (7.48 μ) x 5.9 μ - 7.08 μ (6.13 μ) Q. value - 1.2; *Pileal tissue*: consisting of interwoven hyphae, clamp connection absent, inamyloid, 2.36 μ - 4.72 μ (4.10); *Hymenophoral trama*: regular, clamp connection absent, inamyloid, cell diameter - 2.36 μ - 5.9 μ (4.48 μ); *Cheilocystidia*: absent; *Habit and Habitat*: single on humous soil.

Chemical characters: no visible change of context tissue with 2% phenol, 10% FeSO₄, 20% KOH, 30% NaOH, 40% NH₄OH, 40% Formalin and (1:1) aniline water. With conc. HNO₃ and H₂SO₄, the tissue turns to rust colour. Melzer's reagent reactions - negative.

Distribution and ecological data: almost cosmopolitan in distribution. India- West Bengal; 24-

Parganas district-Behala; P. Basak, 26th June 1980. M.H. No. 94.

The mushroom is an edible one and is used as food by the local people.

Panaeolus papilionaceus (Bull. ex Fr.) Quel. Enchiriodon fungorum in Europea et praesertim in Gallia vigenitum, P. I-IV, 1-352 (1886)

Pileus: 20-28 mm in diameter, campanulate, sometimes slightly hemispherical, with advancement of age, a tendency towards flattening; hygrophorous; soft, fleshy; at the top of the pileus, a little umbo present; cuticle yellowish at young but gradually becoming pinkish to brownish with maturity. A distinct brown patch is present at the centre from where furrows of different nature develops in mature condition. Surface smooth; *Margin*: regular, thin, extending over the gills; *Lamellae*: adnate; broad (2-3 mm) in diameter, regular, entire, yellowish brown; becoming darker with maturity, edge smooth, not deliquescent; *Context*: thin, fibrous, white; *Stipe*: 40-48 mm x 5-12 mm, centric, slender, long, cylindrical, stout, concolours with the pileus; annulus absent, surface smooth, stain in different regions; arising from a tuft of white mycelium, hollow; *Basidia*: long, cylindrical, fusoid, tetrasterigmatic, 5.4-7.6 μ x 2.4-3.6 μ ; *Basidiospores*: lemon shaped to elliptic; smooth and thick-walled; black coloured; colour remained unchanged when treated with conc. H₂SO₄; 7.6-10.0 μ x 5.2-6.4 μ ; *Spore print*: black; *Hymenophoral trama*: intermixed to irregular, homiomeric; made up of thin-walled filamentous hyphae; 1.3-2.6 μ in diameter; *Subhymenium*: not clearly differentiated; *Cheilocystidia*: abundant, forming clear sterile gill edge; cylindrical to bulbous, thin-walled, hyaline; 7.6-10.0 μ x 4.2-5.2 μ ; *Pleurocystidia*: absent; *Pileal surface*: cellular, made up of thin-walled repent hyphae, arranged radially and anastomosing with each other; 1.2-3.6 μ in diameter; *Stipe surface*: made up of hyaline, thin-walled, filamentous cells, 2.4-5.0 μ in diameter; *Habit and Habitat*: grows in clusters on dead wood of plain land. *Chemical characters*: The chemical test could not be performed due to quick distortion of the tissue.

Distribution: Aurangabad (S.W. India); AMH 2391; Subhasgram, 24-Parganas, West Bengal; Behala, South 24-Parganas (West Bengal); P. Basak, M.H. No. 90/80.

Pleurotus djamor (Fr.) Boedijn

Pileus: white, pigment absent, centre slightly buff colour, convex at young; plane with incurved margin

with maturity, centrally grooved but not very prominent, young, 20-60 mm in diameter, 5-6 mm in thickness at the stipe attachment, fleshy, tough with age; *Cuticle* : peels off easily at young stage, gradually becomes somewhat tough, glabrous, scaly, scales very small in size; *Margin* : incurved, not striate, sulcate, irregularly wavy; *Stipe* : eccentric, short, cylindrical, gradually narrow towards the base, white to buff colour, solid, 4-10 mm long, 2.3 mm in diameter, annulus absent, volva absent; *Lamellae* : subdecurrent, white, subcrowded, brittle, edge wavy, crenulate, lamellae-four different lengths, 20-30 mm long; *Context* : fleshy, moderately tough, revive after watering, white; *Basidia* : normal, tetrasterigmatic, $14.88 \mu - 18.32 \mu$ (15.78μ) \times $3.54 \mu - 4.72 \mu$ (4.40μ); *Spore print* : pure white; *Basidiospores* : clear in water, globose to ellipsoid, epical pore absent, small, thin, simple non-amyloid walls, $4.72 \mu - 7.08 \mu$ (5.62μ) \times $3.34 \mu - 3.54 \mu$ (3.45μ); Q, value - 1.6; *Pileal tissue* : tough, hyphae with numerous clamp connections, inamyloid; cell diameter - $2.36 \mu - 7.08 \mu$ (4.36μ); *Hymenophoral trama* : irregular, consisting of thin-walled hyphae, cell diameter- $2.36 \mu - 4.72 \mu$ (3.70μ); *Subhymenium* : very strongly developed, well differentiated and broad; *Cheilocystidia* : present, $20.9 \mu - 22.5$ (20.5μ) \times $2.50 \mu - 3.75 \mu$ (3.50μ), cylindrical to subglobose; *Habit and Habitat* : on dead wood, in groups. *Chemical characters* : no change of colour of the context tissue observed with 2% phenol, 10% FeSO_4 , 40% Formalin, (1:1) aniline water. But with HNO_3 , H_2SO_4 : the colour of the context tissue changes to brown. *Distribution* : Cosmopolitan in distribution, India - West Bengal; 24-Parganas district (South) - Sarsuna; Altitude - 20 ft. from sea level, soil pH 6.0; P. Basak, 20th August, 1980; M.H. No. 110. *Rhodocybe subgliba* (Berk. & Br.) Pegler *Kew Bull.* Addit. Ser. 6, 1977 *Pileus* : 42-93 mm wide, somewhat flattened, sometimes convex or campanulate; differently shaped, may be a little umbonate, fleshy, hygrophanous, surface smooth, peelible; soft; dull white to drab coloured cuticle; *Margin* : thick, entire, round or wavy somewhere; more often or not incurved. *Lamellae* : adnate to subdecurrent; close to crowded, whitish, 30-75 mm long, 10-25 mm broad, separable, edge straight, smooth. *Context* : white, fleshy, soft, thick; *Stipe* : excentric, solid, fleshy, cylindric, sometimes unequal in length, 30-45 mm long, 10-15 mm in diameter, buff

coloured, surface smooth. *Basidia* : normal, cylindric tetrasterigmatic, granulate; $17.76 \mu - 19.90 \mu$ (18.97μ) \times $8.06 \mu - 10.44 \mu$ (8.54μ). *Basidiospores* : elliptical, thin-walled, smooth, dull pink coloured in mass; amyloid, $8.06 \mu - 8.54 \mu$ (8.12μ) \times $5.44 \mu - 6.76 \mu$ (6.08μ); Q. value - 1.3; *Spore print* : dull pink; *Hymenophoral trama* : regular, homiomorous, constitute of thin-walled, filamentous hyphae, $5.44 \mu - 10.90 \mu$ in diameter; *Subhymenium* : not well differentiated; *Cystidia* : both cheilocystidia and pleurocystidia absent; *Pileus and epicutis* of filamentous thin-walled hyphae, parallel to each other; $8.06 \mu - 10.50 \mu$ in diameter; *Pileal surface* is a trichodermium, constitute of cylindrical elements; $45.20 \mu - 58.48 \mu \times 9.90 \mu - 14.94 \mu$; *Stipe surface* : made up of filamentous hyphae; thin-walled; clamp connection absent; *Habit and Habitat* : grows singly on meadow, on moist grass soil.

Chemical characters : The chemical test could not be performed due to quick distortion of the tissue.

Distribution : Sarsuna, South 24-Parganas (West Bengal); P. Basak; M. H. No. 108/80.

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