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ON THE AGARICALES FLORA OF THE ZAAMIN NATIONAL PARK II

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The following list consists of 31 species of the Hygrophoraceae, Entolomataceae, Pluteaceae, Agaricaceae, Coprinaceae, Bolbitiaceae, Strophariaceae and Cortinariaceae found by the author in the Zaamin National Park in the Dzhizak region of the Uzbek SSR on the northern

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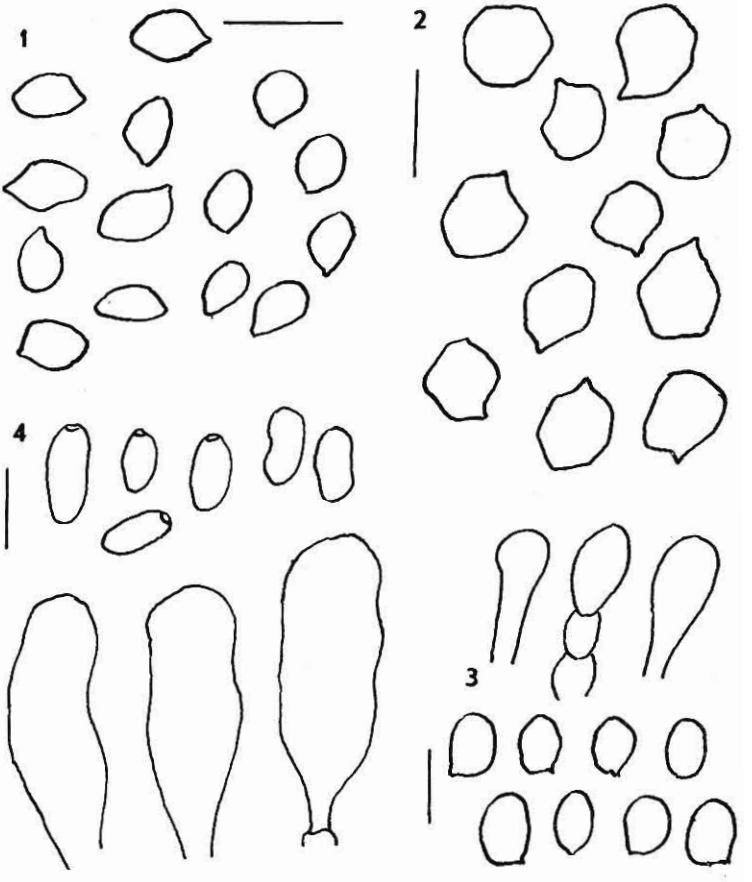
slopes of the Turkestan ridge of the Pamiro-Alai mountains from 22 to 31 May, 1980. There are the following investigation areas in this district in the altitude of 2000 to 3700 m above sea level: 1. Kashkasu, 2. Kulsai, 3. Tujasai, 4. Guralash, 5. Tujuksai, and 6. Dzulsai. The areas 2 and 4-6 are situated on the territory of the Zaamin State Nature Reserve. The following vegetation types are investigated: a) valley flats of mountain rivers, b) juniper forests, c) mountain steppes and d) subalpine and alpine meadows. The fungal sites of the Zaamin National Park are characterized in more detail by Kalamees (1987).

For each species in this work the following data are presented: geographical area respectively to numbers 1-6 and vegetation type a-c given above, altitude in meters above sea level, substrates (if needed) and (in brackets) the numbers of herbarium specimens investigated in TAA (Herbarium Instituti Zoologici et Botanici Academiae Scientiarum R.P.S.S. Estoniae, Tartu).

Hygrophoraceae

Camarophyllus albidocinereus sp. nova. - 3b, 2600 (121359). Fig. 1.

Basidiocarposomata albidocinerea, hyalina. Pileus ad usque 0,8 cm latus, hygrophanus, striatus, convexus, glaber, laevigatus, siccus. Lamellae albidae, decurrentes. Stipes ad usque 1,5 cm longus et 1,5 mm crassus, pruinosus, siccus. Caro albida, hyalina. Odor et sapor indistincti. Basidia circa 70 x 14 µm, magna,



Figs. 1-4: 1 - Camarophyllus albidocinereus Kal. Spores (holotype); 2 - Entoloma subglobispora Kal. Spores (holotype); 3 - Agaricus subsquamuliferus Kal. Spores, cheilocystidia (holotype); 4 - Psathyrella gramina Kal. Spores, cheilocystidia (holotype). Bar = 10 µm.

clavata, tetrasporigera. Sporae 6,5-7 x 4,5-5,5 µm, subglobosae vel globoso-ellipsoideae, laevigatae, hyalinae, inamyloideae. Cheilo- et pleurocystidia nulla. In juniperetis subalpinis.

Holotypus: U.R.P.S.S., Uzbekistan, regio Dzhizak, distr. Zaamin, montes Pamiro-Alai, jugum Turkestan, Tujasai, in junipereto, alt. 2600 m s.m., 25. V 1980, K.Kalamees legit (TAA 121359).

This species is evidently related to C.albipes (Peck) Murr. which has grayish-brown pileus but white more solid (3-5 mm thick) glabrous stipe. From the alpine zone in Europa C.alpinus Mos. (ined.) is described but it has a luteous fruit body and longer spores (8-10 x 4,5-5 µm, cf. Moser, 1983).

Entolomataceae

Entoloma subglobispora sp. nova. - 3b, 2500 (121371). Fig. 2.

Pileus ad usque 2 cm latus, applanatus, hygrophanus, griseo-brunneus, dense villosus. Lamellae adnatae usque ad subdecurrentes, distantes, sordide roseo-griseo-brunneae. Stipes ad usque 2 cm longus et 0,2 cm crassus, fibrillosus, leviter villosus, ad apicem flocculosus, ad basim albo-byssoideus. Odor et sapor indistincti. Basidia tetrasporigera. Sporae 8-9 x 6,5-7 µm, paene isodiametricae, subglobosae, leviter angulosae, inamyloideae, hyalinae. Cheilo- et pleurocystidia nulla. In juniperetis subalpinis.

Holotypus: U.R.P.S.S., Uzbekistan, regio Dzhizak, distr. Zaamin, montes Pamiro-Alai, jugum Turkestan, Tujasai, in junipereto, alt. 2500 m s.m., 25. V 1980, K. Kalamees legit (TAA 121371).

This species belongs to the subgenus Pouzaromyces Pil. There are no similar species.

Pluteaceae

Volvariella speciosa (Fr.: Fr.) Sing. - 2c, 2100 (121294).

Agaricaceae

Agaricus abruptibulbus Peck. - 2b, 2100 (121329).

A. maškae Pil.- 1a, 2000 (121286).

A. spissicaulis (Möll.) Möll. - 1c, 2000 (121289).

Agaricus subsquamuliferus sp. nova. - 2c, 2500 (121372). Fig. 3.

Pileus ad usque 20 cm latus, applanatus vel applanato-umbonatus, albo-cremeus, tectus squamulis tenuibus fibrillosis griseo-brunnescentibus appressis. Lamellae primum albido-cremeae, dein brunnescentes. Stipes 5-10 cm longus, 2-2,5 (ad basim 3) cm crassus, pallide brunneus, apice sericeo-fibrillosus, ab inferiore concentrice albido-squamulosus, basi bulboso-incrassatus. Annulus bistratosus, griseo-brunneus, strato inferiori margine dentato,

ascendens. Caro alba, ad basim stipitis distincte sed paurum intensive rufescens. Odor et sapor indistincti. Reactio Schaefferiana negativa. Basidia tetrasporigera. Sporae (7)-8-9,5 x 5,5-6,5 µm, late ellipsoideae. Cheilo- et pleurocystidia ovoideae, piriformia vel clavata, tenuiter tunicata. In steppis montanicis.

Holotypus: U.R.P.S.S., Uzbekistan, regio Dzhizak, distr. Zaamin, montes Pamiro-Alai, jugum Turkestan, reservatum Zaamin, Kulsai, in steppa montana, alt. 2500 m s.m., 26. V 1980, K. Kalamees legit (TAA 121372).

This species is related to A. squamuliferus (Möll.) Pil. but the former has smaller spores (6-6,8 x 4,2-4,6 µm, cf. Wasser, 1980).

A. xanthodermus var. **meleagroides** Pears. s. Wass. - 2c, 2500 (121376).

Lepiota alba (Bres.) Sacc. - 2b, 2100 (121327).

L. clypeolarioides Rea. - 3c, 2500 (121351).

Coprinaceae

Anellaria semiovata (Sow.: Fr.) Pears. et Denn. - Frequent on horse dung all over the area investigated (121293).

Panaeolus fimicola (Fr.) Quél. s. Kühner et Romag. - 3c, 2100 (121331).

P. retirugis (Fr.) Gill. s. Moser, Lange, Ricken non s. Kühner et Romag. nec s. Ola´h.

Syn.: P. campanulatus s. Kühner et Romag. - 1, on dung near a farm, 2000 (121288).

P. rickenii Hora s. Moser. - 3c, 2600 (121364).

Psathyrella gramina sp. nova. - 2a, 2100 (121304). Fig. 4.

Pileus 3-6 cm latus, late campanulatus dein convexo-applanatus, ad marginem flocculosus, hygrophanus, brunneus. Lamellae brunnescentes, ad marginem albae, adnexae. Stipes albus, dense byssoideo-fibrilloso-flocculosus, ad usque 5 cm longus et 0,5 cm crassus. Velum distinctum, byssoideum. Caro brunnescens. Odor et sapor inconspecti. Sporae (7)-8-9,5-(11) x (4,5)-5-(5,5) µm, cylindraceo-ellipsoideae, multae leviter fabiformae, fuligineae. Cheilocystidia numerosa, clavata vel utriformia, circa 40 x 13 µm. Pleurocystidia nulla. In caespitibus Graminearum.

Holotypus: U.R.P.S.S., Uzbekistan, regio Dzhizak, distr. Zaamin, montes Pamiro-Alai, jugum Turkestan, Kulsai, reservatum Zaamin, in prato inundato, in caespitibus Graminearum, alt. 2100 m s.m., 23. V 1980, K. Kalamees legit (TAA 121304).

P. gramina is related to P. hymenocephala (Peck) A.H. Smith which has smaller fruit bodies as well as smaller spores: 6-8-(9) x (3,5)-4-4,5-(5) µm, cf. Smith, 1972. The former grows under hardwoods.

P. cf. **reticulata** Romag. - 2b, 2100 (121333).

Pileus 3.5-5 cm broad, hygrophanous, dirty brownish-gray to grayish-brown, not dark-coloured, fading beige yellowish, strongly radially rugose on disc but reticulate-rugose at margin, campanulate, then convex-plane, with small umbo on centre, at margin sparse brownish-fibrillose from veil. **Lamellae** violaceous-gray when young, then violaceous-brown with white-flocculose margin, adnate with a tooth. **Stipe** 5-10 cm long, 0,5-0,8 cm thick, white and flocculose at apex, dirty light brownish-yellow and fibrillose below, with white basal tomentum up to 1/3 from base up, hollow, almost radicating, very fragile. **Spores** 9-9,5-(11) x 5-5,5 µm, cylindric-ellipsoid, fuligineous but transparent. **Cheilo-** and **pleurocystidia** numerous, lageniform-ventricose.

Our specimens are very similar to P. reticulata but the former has opaque spores and ochre-yellowish pileus.

Bolbitiaceae

Agrocybe arenaria (Peck) Sing. s. Peck non s. Sing. - Very frequent all over the area investigated in semisavannas and valley flats by Carex pachystilis Gay in the altitude of 2000 to 2800 m above sea level (121303, 121340, 121339).

A. molesta (Lasch) Sing. Syn.: A. dura (Bolt.: Fr.) Sing. - 1, on summer-fallow, 2000 (121290).

Conocybe semiglobata (Kühner ex) Kühner et Watl. - 2b, 2100 (121320); 5a, 2800 (121387); 5b, 2800 (121390).

C. **subovalis** (Kühner ex) Kühner et Watl. s. Watl. non s. Mos. - 2a, 2100 (121336).

Strophariaceae

Psilocybe inquilina (Fr.: Fr.) Bres. - 3b, on juniper twig, 2300 (121348); 3b, on hare dung, 2500 (121350).

Stropharia coronilla (Bull.: Fr.) Quél. - 3c, 2600 (121362).

The spores are very variable both by shape and size: ovoid, cuneate, ellipsoid, cylindric, 8-11-(17,5) x 5-5,5 µm.

S. **semiglobata** (Batsch: Fr.) Quél. Syn.: S. stercoraria (Schum.: Fr.) Quél. - Frequent on horse dung all over the area investigated on pasture lands and valley flats of rivers in the altitude of 2000 to 2500 m above sea level (121287, 121306, 121307, 121315, 121380, 121386).

In some herbarium specimens the spores are bigger than has been given in literature: 16-23 x 9-13 µm (121380), 16-22,5 x 9,5-11 µm (121306), 17-26 x 10,5-13 µm (121287); cf. Watling, Gregory, 1987.

S. aff. **thrausta** (Schulz.) Sacc. s. Mos. - 2, in Picea sp. plantation, on furrow slice, on soil, 2100 (121341).

The specimens described below are the young ones.

Pileus at least 2 cm broad, glutinous, convex, inrolled and dense cottony-fibrillose at margin, bright orange, at margin light yellowish. **Lamellae** rounded adnate, pale brown, with lighter margin. **Stipes** at least 3 cm long and 0,5 cm thick, clavate, dry, cream, densely cottony-shaggy, with cottony 1-2 mm broad ring at apex, with mycelial strands at base. **Odour** and **taste** strong mealy. **Context** fleshy. **Spores** 13-16 x 8-10,5 µm, ellipsoid, thick-walled, with large germ-pore.

S. thrausta differs from our specimens by somewhat smaller spores (12-13,5 x 6-7 µm, cf. Moser, 1983) and by the site on wood. Pileus of S. thrausta is acutely nipple-shaped, with acute papille as indicated by Moser (1983).

Tubaria conspersa (Pers.: Fr.) Fayod. - 2a, 2100 (121309, 121310).

Cortinariaceae

Galerina laevis (Pers.) Sing. Syn.: G. gramina Vel. - 2b, on juniper wood, 2100 (121313).

G. pseudomycenopsis Pil. - 2b, 2100 (121322).

Our specimens have a very narrow ring on the stipes. Hymenial cystidia are a little shorter than those presented in literature, namely: 35-40 x 6-8 x 2,5-3 µm. Spores are absolutely smooth, (9)-11-(13) x 5,5-6 µm.

Hebeloma aff. **mesophaeum** (Pers.: Fr.) Quél. - 2a, in shrub of Salix sp., 2100 (121308).

Macroscopic description of the fruit bodies corresponds completely to the description of H. mesophaeum. Spores are (9)-9,5-11,5-(14,5) x (5,5)-6,5-7-(8) µm, ovoid-ellipsoid, almost smooth, scarcely rugulose, without germ-pore.

Our specimens differ from H. mesophaeum by the site under Salix sp. whereas the former is a mycorrhizal fungus of conifers. Besides, H. mesophaeum has smaller spores (8-10 x 5-6 µm, cf. Moser, 1983).

Inocybe dulcamara var. **homophron** Mal. et Bert. - Very frequent all over the investigation area on valley flats in shrubs of Salix sp. (121305).

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TOMENTELLOID FUNGI NEW FOR THE SOVIET UNION

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INTRODUCTION

Descriptions of 13 species of the genera Pseudotomentella, Tomentella and Tomentellastrum (Aphyllophorales, Thelephoraceae s.str.) based on specimens studied by the author of this paper are presented. All the species found in the SU Far East and described in this paper are new for this country.

MATERIAL AND METHODS

The papers by M.J.Larsen (1968, 1971, 1974a, 1974b) and W.Jülich (1984) have been used for identification. Colour indexes of basidiocarps are given according to the Munsell (1976) colour system. The capitalized names of colours, however, have been obtained from the "A mycological colour chart" by R.W.Rayner (1970).

For microscopic studies a Jenaval, Carl Zeiss light microscope was used. Descriptions were obtained from cross sections of basidiocarps mounted in 2% KOH solution. Size, shape and ornamentation of spores were observed using

oil immersion (1000x). Spore size (length of the aculei excluded) is given on the basis of 30 measurements per each specimen. The terminology of spore shape and ornamentation has been used in accordance with Larsen (1967).

All specimens examined are kept to the mycological herbarium of the Institute of Zoology and Botany (TAA) in Tartu, Estonian SSR.

The following abbreviations of collectors and identificators have been used: LJ (L.Järva), BK & AR (B.Kullmann and A.Raitviir), UK (U.Kõljalg), MJL (M.J.Larsen), TLN (T.L.Nikolajeva), EP (E.Parmasto) and MS (M.Saar).

SPECIES DESCRIPTIONS

Pseudotomentella flavovirens (Höhn.& Litsch.) Svrček, Česká Mykol. 12: 68. 1958.

Basidiocarp resupinate, separable, pelliculose; fertile area Smoke Grey (10.0 Y 6-7/2 to 2.5 GY 6/2), smooth; sterile margin villose to fimbriate, paler than fertile area.

Basal hyphae of two kinds, some 2-2.5 µm diam., simple-septate, brownish; some skeletals 2-2.5 µm diam., yellowish; **cordons** 30-60 µm diam., composed of both generative and skeletal hyphae; **subhymenial hyphae** 2-2.5 µm diam., simple-septate, greenish; **cystidia** absent; **basidia** 65-80 x 7-8 µm, freguently with median septa, simple-septate at base, greenish, with 4 sterigmata up to 7 µm long; **spores** 7-8 µm wide, irregularly globose, warted, the warts usually bifurcate, hyaline.

Specimens examined: Primorsk Reg.: Ternei

Distr., Sikhote- Alin Nature Reserve, on Abies nephrolepis, leg.EP 11.IX.1976, det.UK (TAA 100413); Lazo Distr., Lazo Nature Reserve, on Pinus koraiensis, leg.EP 7.IX.1971, det.UK (TAA 16195).

Pseudotomentella humicola M.J.Larsen, Mycologia 60: 547. 1968.

Basidiocarp resupinate, separable, pelliculose, cracking on drying; fertile area Grey Olivaceous to Smoke Grey (7.5 Y 5-6/2 to 10.0 Y 6/2), smooth; sterile margin paler than fertile area.

Basal hyphae 2-3 µm diam., with clamps, yellowish brown, sometimes greenish; **cordons** 20-25 µm diam., brownish, hyphae up to 3 µm diam., with clamps; **subhymenial hyphae** 2-3 µm diam., with clamps, hyaline to sometimes greenish; **cystidia** absent; **basidia** 50-62 x 7-10 µm, clamped at base, hyaline, with 4 sterigmata up to 6 µm long; **spores** 6.5-8 µm wide, irregular to sometimes lobed, warted, warts usually bifurcate, hyaline.

Specimen examined: Primorsk Reg., Ternei Distr., Sikhote- Alin Nature Reserve, on Abies nephrolepis, leg.UK 16.IX.1987, det.UK (TAA 149229).

Pseudotomentella vepallidospora M.J.Larsen, Can. J. Bot. 45: 1299. 1967.

Basidiocarp resupinate, separable, pelliculose; fertile area Grey Olivaceous to Smoke

Grey (10.0 Y 5-6/2), smooth; sterile margin somewhat villose, darker than fertile area.

Basal hyphae of two kinds, some 3.5-5 µm diam., with clamps, bluish green; some skeletals 1.5-2 µm diam.; **cordons** up to 35 µm diam., composed of both generative and skeletal hyphae; **subhymenial hyphae** 3-6.5 µm diam., with clamps, bluish green; **cystidia** absent; **basidia** 60-75 x 10-14 µm, often with medial septa, clamped at base, greenish, with 4 sterigmata up to 11 µm long; **spores** 8-10 µm wide, irregular to sometimes lobed, warted, warts usually bifurcate, hyaline; **chlamydospores** up to 25 µm diam., hyaline to yellowwish brown, closely associated with cordons as mentioned already by Larsen (1974b).

Specimen examined: Primorsk Reg., Ternei Distr., Sikhote- Alin Nature Reserve, on Larix ochotensis, leg.EP 13.IX.1976, det.UK (TAA 100 485).

Tomentella brunneorufa M.J.Larsen, Mycol. Mem. 4: 37. 1974.

Basidiocarp resupinate, separable, arachnoid; fertile area Citrine (7.5 YR 5/8), smooth; sterile margin indeterminate.

Basal hyphae 2-4.5 µm diam., with clamps, yellowish, cells up to 160 µm long; **cordons** up to 100 µm diam., composed of both generative and skeletal hyphae, individual generative hyphae 2-2.5 µm diam., yellowish and skeletal hyphae 1.5-2 µm diam., yellowish; **subhymenial hyphae** up to 5 µm diam., with clamps, yellowish; **cystidia** absent; **basidia** 30-55 x 5-7

µm, rarely with median septa, clamped at base, hyaline, with 4 sterigmata up to 8 µm long; **spores** 5-6 µm wide, mostly globose, aculeolate to echinulate (aculei up to 0.75 µm long), pale brown.

Specimen examined: Primorsk Reg., Ussurijsk Distr.,Anisimovka, on litter, leg.MS 14.X.1977, det.UK (TAA 110776).

Tomentella clavigera Litsch. in Svrček, Sydowia 14: 192. 1960.

Basidiocarp resupinate, adherent, mucedinoid; fertile area Sepia (5.0 YR 4/4), somewhat granulose; sterile margin indeterminate.

Basal hyphae 3-4 µm diam., with clamps, sometimes simple-septate, dark brown; **cordons** absent; **subhymenial hyphae** 3-4 µm diam., with clamps, hyaline; **cystidia** up to 140 µm long, 6-8 µm diam. at apex, clavate, clamped at base, hyaline; **basidia** 35-45 x 9-10 µm, clamped at base, greenish, with 4 sterigmata up to 4 µm long; **spores** 7-9 µm wide, irregular to lobed, echinulate (aculei up to 1 µm long), brown. Fig. 1, 2.

Specimen examined: Primorsk Reg., Ternei Distr., Sikhote- Alin Nature Reserve, Ust-Serebryanka, on Populus maximowiczii, leg.UK 13.IX.1987, det.UK (TAA 149194).

Tomentella galzinii Bourd.,Bull. Soc. Mycol. France 40: 143. 1924.

Basidiocarp resupinate, adherent, somewhat

arachnoid; fertile area Greenish Olive (7.5 Y 6/3), granulose; sterile margin indeterminate.

Basal hyphae 3-4 µm diam., with clamps, pale yellowish; **cordons** absent; **subhymenial hyphae** 3-5 µm diam., with clamps, hyaline; **cystidia** 40-60 µm long, up to 6 um diam. at base and 2-3 µm diam. at apex, clavate, clamped at base, hyaline; **basidia** 29-40 x 7-8 µm, clamped at base, hyaline, with 4 sterigmata up to 5 µm long; **spores** 6.5-8 µm wide, irregular to lobed, echinulate (aculei up to 1 µm long), pale brown.

Specimen examined: Primorsk Reg., Ternei Distr., Sikhote- Alin Nature Reserve, on Eleutherococcus senticosus, leg.MS 13.IX.1976, det.UK (TAA 111262).

Tomentella griseo-umbrina Litsch. in Lund. & Nannf., Fungi Exc.Suec. fasc. VII & VIII, no. 357, Uppsala 1936.

Basidiocarp resupinate, separable, arachnoid; fertile area Hazel to Vinaceous Buff (10.0 YR 6-7/4), smooth; sterile margin indeterminate.

Basal hyphae 3-4 µm diam., with clamps, pale brown; **cordons** absent; **subhymenial hyphae** 2-3.5 µm diam., with clamps, hyaline; **cystidia** absent; **basidia** 20-25 x 4-5 µm, clamped at base, hyaline, with 4 sterigmata up to 3 µm long; **spores** 4.5-5.5 µm wide, globose, rarely subglobose, aculeolate (aculei up to 0.5 µm long), pale brown.

Specimens examined: Primorsk Reg.: Kavalerovo Distr., on Picea sp., leg.MS 8.X.1977, det.UK (TAA 110606); Ternei Distr.,

Sikhote- Alin Nature Reserve, Ust- Serebryanka, on Populus maximowiczii, leg.UK 13.IX.1987, det.UK (TAA 149199).

Tomentella muricata (Ell.& Ev.) Wakef., Mycologia 52: 924. 1960.

Basidiocarp resupinate, separable, arachnoid; fertile area Fawn to Cinnamon (5.0 YR 5/4-6), smooth; sterile margin villose, concolorous with fertile area.

Basal hyphae 4-5 µm diam., with clamps, pale brown, rarely incrustated; **cordons** 20-90 µm diam., brownish, individual hyphae with clamps up to 4 µm diam., pale brown; **subhymenial hyphae** 4-6 µm diam., with clamps, hyaline; **cystidia** up to 90 µm long, 4-5 µm diam. at base and 5-6 µm diam. at apex, clavate, hyaline; **basidia** 35-45 x 9-10 µm, clamped at base, hyaline, with 4 sterigmata up to 5 µm long; **spores** 7.5-9 µm wide, irregular, mostly aculeate (aculei up to 1.5 µm long), yellowish brown. Fig. 5.

Specimen examined: Khabarovsk Reg., Selikhino, Kabansopka, on Tilia amurensis, leg.EP 17.VIII.1961, det.TLN (TAA 15637).

Tomentella pilosa (Burt) Bourd. & Galz., Bull. Soc. Mycol. France 40: 151. 1924.

Basidiocarp resupinate, separable, arachnoid to byssoid; fertile area Isabelline to Cinnamon (7.5 YR 5/4 or 6/6 to 10.0 YR 5/4), smooth; sterile margin villose, paler than fertile

area.

Basal hyphae of two kinds, some 5-6 µm diam., with clamps, yellowish; some 4-7 µm diam., simple-septate, golden brown, usually incrustated; **cordons** up to 120 µm diam., dark brown, individual hyphae of two kinds, some 3-5 µm diam., with clamps, pale brown; others skeletal 3-4 µm diam., without septa, yellowish; **subhymenial hyphae** 4-6 µm diam., with clamps, yellowish; **cystidia** up to 150 µm long, up to 15 µm diam. at apex and up to 6 µm diam. at base, capitulate, sometimes with median septa which are often clamped, projecting above the hymenium; **basidia** 30-45 x 8-9 µm, clamped at base, hyaline, with 4 sterigmata up to 5 µm long; **spores** 7.5-9 µm wide, irregular to irregularly globose, sometimes lobed, echinulate or aculeate (aculei up to 2 µm long), brownish. Fig. 3, 4.

Specimens examined: Primorsk Reg.: Lazo Distr., Lazo Nature Reserve, Petrov Island, on Kalopanax septemlobum, leg.EP 1.IX.1961, det.TLN (TAA 16071); Kavalerovo Distr., Chrustalnyi, on Acer sp., leg.EP 3.X.1977, det.UK (TAA 101808); Olga, on Betula dahurica, leg.EP 7.IX.1976, det.UK (TAA 100315).

Tomentella subclavigera Litsch., Bull. Soc. Mycol. France 49: 57. 1933.

Basidiocarp resupinate, adherent, arachnoid; fertile area Sepia to Umber (5.0 YR 4/4-5), granulose; sterile margin indeterminate.

Basal hyphae almost indeterminate (basidiocarps are very thin); **cordons** absent;

subhymenial hyphae 3-6 µm diam., with clamps, hyaline; **cystidia** up to 170 µm long, 3-6 µm diam. at base and 6-8 µm diam. at apex, clavate, generally with median septa, projecting above the hymenium, hyaline; **basidia** 30-40 x 6-7 µm, clamped at base, hyaline with 4 sterigmata up to 7 µm long; **spores** 6-8 µm wide, globose to subglobose, echinulate (aculei up to 1 µm long), dull brown.

Specimens examined: Sakhalin Reg.: Sakhalin Island, Novo- Aleksandrovsk, on Filipendula sp., leg.BK & AR 18.VIII.1970, det.MJL (TAA 61650); Sakhalin Island, Nevelsk Distr., Kuznetsovo, on Abies sp., leg.LJ 14.IX.1979, det.UK (TAA 93178).

Tomentella terrestris (Berk. & Br.) M.J.Larsen, Mycol. Mem. 4: 105. 1974.

Basidiocarp resupinate or effused when dry, adherent, mucedinoid; fertile area Fawn (2.5 YR 5/4), smooth; sterile margin indeterminate.

Basal hyphae 4-5.5 µm diam., with clamps, hyaline to very pale brown; cordons absent; **subhymenial hyphae** 3.5-6 µm diam., with clamps, hyaline to pale brown; **cystidia** absent; **basidia** 50-75 x 12-19 µm, clamped at base, hyaline to pale brown, with 4 sterigmata up to 10 µm long; **spores** 7-8.5 µm wide, irregular to irregularly globose, echinulate to sometimes aculeate (aculei 1-1.5 µm, to sometimes up to 2 µm long), pale brown. Fig. 6, 7.

Specimens examined: Kamtshatka Reg., Kozyrevsk, on Larix kurilensis var. glabra, leg.EP 21.VIII.1960, det.UK (TAA 12339);

Sakhalin reg., Sakhalin Island, Nevelsk distr., Kuznetsovo, on Abies sachalinensis, leg.EP 13.IX.1979, det.UK (TAA 102428); Primorsk Reg.: Ternei Distr., Sikhote- Alin Nature Reserve, Ust- Serebryanka, on Larix dahurica, leg.UK 11.IX.1987, det.UK (TAA 149164); Lazo Distr., Lazo Nature Reserve, on Quercus mongolica, leg.UK 21.IX.1987, det.UK (TAA 149238).

Tomentella umbrinospora M.J.Larsen, State Univ. N.Y. Coll. Forest. Syracuse Univ., Tech. Publ. 93: 61. 1968.

Basidiocarp resupinate, separable, arachnoid; fertile area Rust (10.0 R 4/6-7), granulose; sterile margin paler than fertile area.

Basal hyphae of two kinds; some 5-6 µm diam., incrustated, simple-septate, golden brown; some 2-3 µm diam., with clamps, pale yellowish; **cordons** up to 50 µm diam., pale brown, individual skeletal hyphae 1.5-2 µm diam., yellowish; **subhymenial hyphae** 2-4 µm diam., with clamps, yellowish; **cystidia** absent; **basidia** 40-50 x 7-10 µm, clamped at base, often with median septa, hyaline, with 2 or 4 sterigmata up to 7 µm long; **spores** 6.5-8.5 µm wide, irregular to irregularly globose, sometimes lobed, echinulate (aculei up to 1 µm long), dark brown.

Specimens examined: Primorsk Reg.: Olga, on Quercus mongolica, leg.EP 28.VIII.1961, det.UK (TAA 15233); Lazo Distr., Lazo Nature Reserve, Petrov Island, on Quercus mongolica, leg.EP 1.IX.1961, det.UK (TAA 16073); Ternei Distr., Sikhote- Alin Nature Reserve, Netshet, on

Quercus sp., leg.LJ 25.IX.1979, det.UK (TAA 93276).

Tomentellastrum badium (Link) M.J.Larsen, Nova Hedwigia 35: 1-16. 1981.

Basidiocarp resupinate, separable, arachnoid; fertile area Umber (7.5 YR 4/4), granulose; sterile margin villose, darker than fertile area.

Basal hyphae 4-6.5 µm diam., simple-septate, medium brown; **cordons** absent; **subhymenial hyphae** 3-6 µm diam., simple-septate, pale brown to hyaline; **cystidia** absent; **basidia** 36-62 x 8-9 µm, simple-septate at base, sometimes with median septa, hyaline to sometimes greenish, with 4 sterigmata up to 10 µm long; **spores** 9-11 µm wide, irregular to somewhat lobed, echinulate or mostly aculeate (aculei up to 1-2.5 µm long), brownish. Fig. 8.

Specimens examined: Primorsk Reg.: Ternei Distr., Sikhote-Alin Nature Reserve, Ust-Serebryanka, on Matteuccia sp., leg.UK 13.IX.1987, det.UK (TAA 149210); Lazo Distr., Lazo Nature Reserve, Sokolovka, on Juglans manshurica, leg.UK 23.IX.1987, det.UK (TAA 149251).

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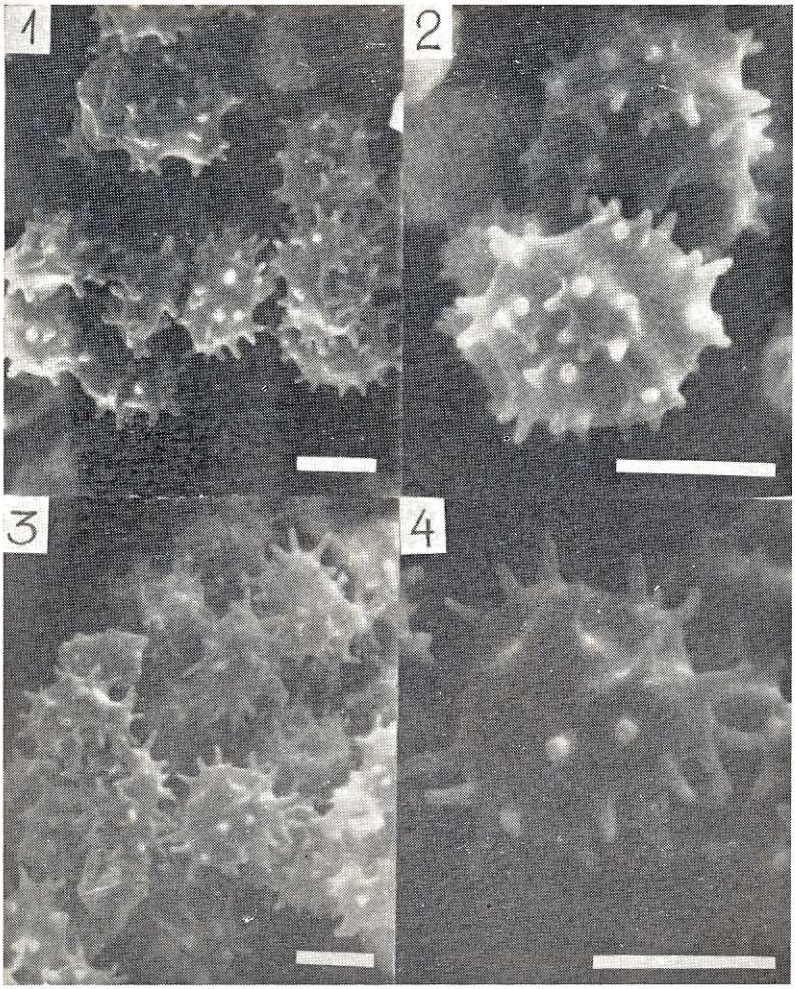
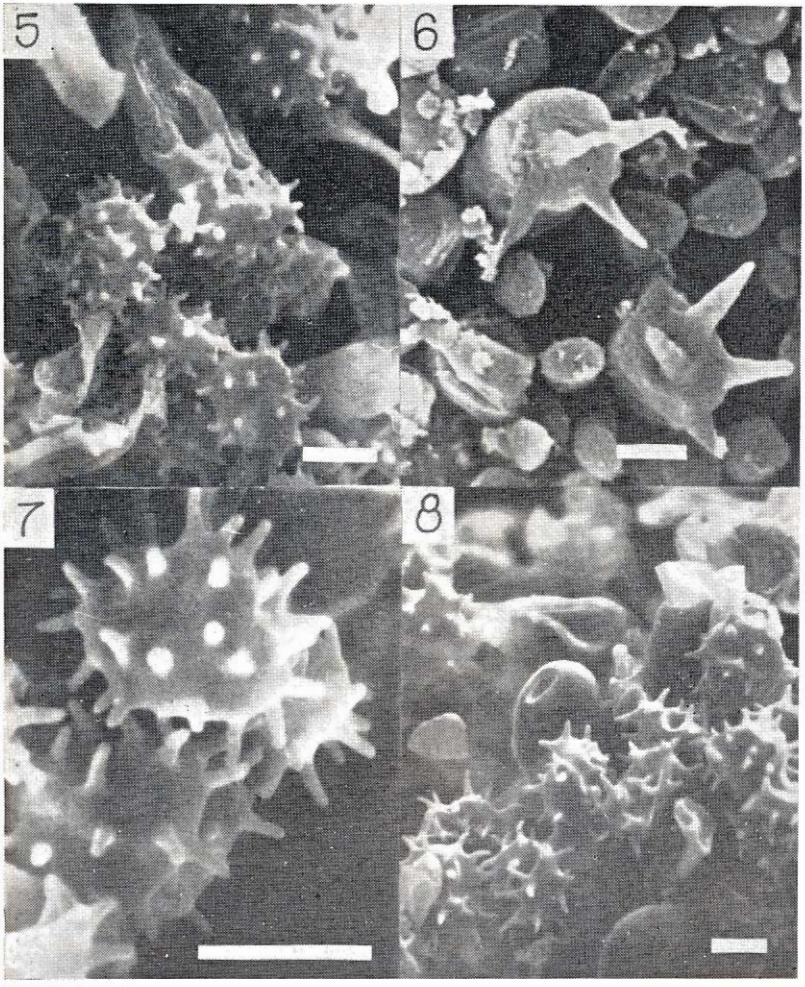


Figs. 1–4. Scanning electron micrographs of basidiospores. 1. *Tomentella clavigera* (TAA-149194), x2100. 2. *T.clavigera* (TAA-149194), x4200. 3. *T.pilosa* (TAA-101807), x1900. 4, *T.pilosa* (TAA-101807), x4800. Scale = 5 μm.



Figs. 5–8. Scanning electron micrographs of basidia and basidiospores. 5. *Tomentella muricata* (TAA-15637), x1950. 6. *T. terrestris* (TTA-149424), x1850. 7. *T. terrestris* (TTA-149164), x4650. 8. *Tomentellastrum badium* (TAA-149251), x1450. Scale = 5 μm.

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