

Taxonomical Studies on Discomycetes in Korea(I)

Pyoung-Jae Park, Ji-Yul Lee* and Yoshio Otani**

Suwoen Girl's High School, Suwoen 170, *Chonju Teacher's College, Chonju 520, Korea
and **National Science Museum, 7-20 Ueno, Daito-ku, Tokyo, Japan

韓國產盤菌綱의 分類學的 研究(I)

朴平濟·李址烈*·大谷吉雄**

水原女子高等學校·*全州教育大學·**日本 東京都 國立科學博物館

Abstract: Two-hundred fifty specimens of Discomycetes were collected, for the most part, at Gwangneung, Mt. Deokyu, Mt. Seulak, Mt. Sungsu, Mt. Paldal, from March, 1982 to July, 1984. These Discomycetes were identified and classified into 2 orders, 9 families, 18 genera and 23 species. Among them, *Helvella pezizoides* Afz. ex Fr., *Peziza celtica* (Boud.) Moser, *Humaria hemisphaerica* (Wiggers ex Fr.) Fuckel, *Trichophaea gregaria* (Rehm) Boud., *Trichoglossum walteri* (Berk.) Durand, *Spathularia flavida* Pers. ex Fr., *Arachnopeziza aurelia* (Pers. ex Fr.) Fuckel, *Rutstroemia americana* (Durand) White, *Rutstroemia macrospora* (Peck) Kanouse apud Wehmeyer forma *gigaspora* Korf, *Ascocoryne cylichnium* (Tul.) Korf, *Bisporella citrina* (Batsch. ex Fr.) Korf et Carpenter, *Chlorosplenium chlora* (Schw. ex Fr.) Curtis, *Chlorociboria aeruginascens* (Nyl.) Kanouse ex Ramamurthi, Korf et Batra subsp. *aeruginascens*, *Hymenoscyphus scutula* (Pers. ex Fr.) Phillips, *Cyathicula cyathoidea* (Bull. ex Fr.) de Thumen were new records in Korea. These species are described and their Korean names are designated.

Keywords: Discomycetes, *Helvella pezizoides*, *Peziza celtica*, *Humaria hemisphaerica*, *Trichophaea gregaria*, *Trichoglossum walteri*, *Spathularia flavida*, *Arachnopeziza aurelia*, *Rutstroemia americana*, *Rutstroemia macrospora* (Peck) Kanouse apud Wehmeyer forma *gigaspora* Korf, *Ascocoryne cylichnium*, *Bisporella citrina*, *Chlorosplenium chlora*, *Chlorociboria aeruginascens* (Nyl.) Kanouse ex Ramamurthi, Korf et Batra subsp. *aeruginascens*, *Hymenoscyphus scutula*, *Cyathicula cyathoidea*.

Taxonomic study on Ascomycetes has been carried out by number of mycologists since Kaburagi's 'Seon Man Sil Yong Im Eob Pyeon Ram' was published in 1940. J.Y. Lee (1957) reported 15 species of Ascomycetes, including 11 species of Discomycetes, 4 of which are new species, in his 'The List of the Fungi of Korea'. Lee and Lee reported one new species of Discomycetes in 1957 and 6 species of Ascomycetes, including 3 species of Discomycetes, one of which is new species, in 1958 in their 'A list

of the Korean Fungi I and II'. Y.W. Lee (1959) reported 7 species of Ascomycetes, including 6 species of Discomycetes, 5 of which are new species, in his 'A list of the Korean Fungi III'. 'Colored Illustrations of Fungi of Korean' was published by Lee, Lim and Lee in 1959, in which 19 species of Ascomycetes, including 13 species of Discomycetes were described. Lim and Kim (1972) reported 29 species of Ascomycetes, including 20 species of Discomycetes in their 'Taxonomic investigations on Korean hig-

her fungi (I). In 1974, S.W. Hong, reported 9 species of Ascomycetes, including 4 species of Discomycetes, 2 of which is new species, from in Mt. Naejang. Lee and Cho (1975) reported 2 new species of Discomycetes in their 'Notes on Korean Higher Fungi'. They also reported one new species of Ascomycetes in their 'Notes on Korean Higher Fungi (II)' in 1977. They reported 5 species of Discomycetes, including one new species found Mt. Sobaek, Yongju and Andong in 1979. They reported one species of Ascomycetes in their 'Fungal Flora in Bamboo Forests of Korea (II)' (1980) and 3 species of Ascomycetes, including 2 species of Discomycetes found Mt. Mudeung (1981). J.Y. Lee (1976) reported 2 species of Ascomycetes, including one species of Discomycetes in his 'Fungi of Bulyeongsa Valley'. Hong and Chung (1976) reported 6 species of Ascomycetes, including 4 species of Discomycetes found Mt. Chiak. In 1977, they also reported 10 species of Discomycetes, including 3 new species found Mt. Jogye. J.Y. Lee (1981) reported 5 species of Discomycetes, including 2 unrecorded species of Discomycetes in his 'Taxonomical Studies on Korean Higher Fungi for the publication of colored Illustrations'. Lee and Lee (1982) reported 32 species of Discomycetes, including 2 new species of Discomycetes in their 'Taxonomical Studies on Korean Fungi of Ascomycetes for the publication of Colored Illustrations'. In 1982, Park and Sin reported 8 species of Ascomycetes, including 5 species of Discomycetes from Mt. Gyeryong area. As a result, it is reported that about 30 species of Discomycetes have been found in Korea.

Pezizales

Helvellaceae 안장버섯과

Helvella pezizoides Afz. ex Fr. 황희색 안장버섯 (新稱)

Syst. Myc. 2:20 (1823)—Dissing, *Dansk Bot.*

Ark. 25(1):117, figs. 32, 33 (1966)—Weber, *Mich. Bot.* 11:176 figs. 30, 31 (1972).

Syn. *Leptopodia pezizoides* (Afz. ex Fr.) Boud., *Hist Class Discom. d'Europe* 37 (1907)—Dennis, *Brit. Ascom.* 10, fig. 3j (1978).

Fruit bodies up to 11cm high, fertile head saddle-shaped, 2-lobed, somewhat convoluted and undulating, yellowish grey outside of the pileus, villouse; stalk cylindrical, furrowed. Ascii cylindrical, uniseriate, containing 8-ascospores, pore not blued by Melzer's reagent, 210.0~290.0 × 12.5~17.5μm. Ascospores elliptical, containing a central large oil drop with small guttules at the end, 15.0~20.0 × 10.0~12.5μm. Paraphyses slightly clavate, septate, some branched, enlarged 4.0~7.5μm at the tip.

Hab. On soil in woods, July to September.

Distr. Korea (Gwangneung.), Japan, North America and Europe.

Pezizaceae 주발버섯과

Peziza celtica (Boud.) Moser 자갈색 주발버섯 (新稱)

in Gams, *Kleine Krypt.-fl. Bd. IIa* (1963)—Breitenbach & Kranzlin, *Pilze Schw. Bd.* 1:68 (1981). Syn. *Galactinia celtica* Boud., *Hist. Class. Disc. d'Europe* 48 (1907); *Icon. Myc.* II, pl. 289 (1905~'10).

Apothecia gregarious, cup-shaped, undulating, sessile, hymenium light violet to dark brown, up to 2.5cm in diameter, 1.5cm high. Ascii cylindrical, uni-seriately containing 8 ascospores, blued at the tip by Melzer's reagent, 240.0~320.0 × 12.5~15.0μm. Ascospores elliptical, warty, containing 1 or 2 oil drops, 15.0~17.5 × 7.5~10.0μm. Paraphyses slender, septate, 5.0~6.5μm at the tip.

Hab. On soil in woods, July.

Distr. Korea (Gwangneung) and Switzerland.

Humariaceae 점시버섯과

Humaria 사발버섯속 (新稱)

Humaria hemisphaerica (Wiggers ex Fr.)

Fuckel 갈색 사발 버섯(新稱)

Symb. Myc. 322 (1870)—Dennis, *Brit. Ascom.* 38, pl. IX C (1978).

Apothecia gregarious or scattered, up to 3cm in diameter, 1.3cm deep, sessile, cup shaped, hymenium grey, outer surface entirely covered with brownish stiff hairs. Hairs tapering at the tip, reaching a diameter of 2.0~2.5 μ m at the base and a length of 320~2,000 μ m, dark brown, septate. Asci cylindrical, uniseriate, containing 8 ascospores, not blued at the tip by Melzer's reagent, 220.0~250.0 \times 12.5~17.5 μ m.

Ascospores elliptical, containing two oil drops, coarsely warted, 20.0~25.0 \times 12.5 μ m. Paraphyses filiform, straight, enlarged at the tip, septate, 275.0~375.0 \times 3.0~7.5 μ m.

Hab. On soil in a forest, July to October.

Distr. Korea (Gwangneung), Europe, North America, India, Japan and Nepal.

Pyronemataceae 피로네마과(新稱)

Trichophaea 털종지버섯속(新稱)

Trichophaea gregaria (Rehm) Boud. 무리 털종지 버섯(新稱)

Hist. Class, Discom. d'Europe 60 (1907)—Eckblad, *Nytt Mag. Bot.* 15:58 (1968)—Dennis, *Brit. Ascom.* 39 (1978). Syn. *Patella gregaria* (Rehm) Seaver, North Amer. Cup-fung. operc. 176, pl. 15, fig. 1, pl. 45, figs. 13, 14 (1928).

Apothecia clustered, concave, up to 0.6cm in diameter, light grey, outer surface covered with brownish hairs. Hairs tapering at the tip, 250.0~550.0 μ m length, 7.5~17.5 μ m across at the base, brown, septate, the walls dark brown, 1.0~2.0 μ m thick. Asci cylindrical, uni-seriately containing 8 ascospores, not blued at the tip by Melzer's reagent, 212.5~250.0 \times 12.5~17.5 μ m. Ascospores fusiform, with 1 central large oil drop, minutely warted, 17.5~27.5 \times 10.0~15.0 μ m. Paraphyses clavate, slightly enlarged above, septate, 5.0 μ m at the tip.

Hab. On soil in woods, July.

Ditr. Korea (Gwangneung), Japan, Europe and North America.

Helotiales

Geoglossaceae 콩나물 버섯과

Trichoglossum walteri (Bark.) Durand 알트마귀 순갈 버섯(新稱)

Ann. Myc. 6:440 (1908)—Imai, *J. Fac. Agr. Hokkaido Imp. Univ.* XLV(4):224 (1941)—Maas Geesteranus, *Persoonia* 4:45, fig. 36 (1965).

Fruit bodies gregarious, up to 4.0cm high, velvety, variable in shape, lanceolate, slightly compressed, black or brownish black; stipes cylindrical, sometimes furrowed, 0.3cm in diameter, densely velvety with black, acicular spines. Asci cylindrical-clavate, blued at the tip by Melzer's reagent, containing 8 ascospores in parallel fascicles, 170.0~200.0 \times 12.5~15.0 μ m. Ascospores cylindrical-clavate, brown, 7-septate, 90.0~97.5 \times 5.0 μ m. Paraphyses cylindrical, septate, slightly enlarged above, curved at the tip. Setae dark brown, stiff, pointed, 190.0~250.0 \times 7.5~10.0 μ m.

Hab. On soils in forests, August.

Distr. Korea (Gwangneung), Japan, North America, Europe and Australia.

Spathularia flavida Pers ex Fr. 황금 넓적 콩나물 버섯(新稱)

Syst. Myc. 1:491 (1821)—Imai, *J. Fac. Agr. Hokkaido Imp.*

Univ. XLV (4):199 (1941)—Dennis, *Brit. Ascom.* 99, pl. XIV I (1978).

Fruit bodies solitary or gregarious, up to 5cm high, fertile head flattend fan-shaped, forming a broad flange round the upper part of the stalk, golden yellow; stalk slender, light yellow, smooth. Asci clavate, pore not blued by Melzer's reagent, containing 8 ascospores in parallel fascicles, 92.5~115.0 \times 11.0~12.5 μ m. Ascospores cylindrical-clavate, pointed below, hyaline, 4~6 septate, 32.5~57.5 \times 2.5 μ m. Paraphyses slender, branched, curled at the tip.

Hab. On the ground in coniferous forests, August.

Distr. Korea (Chonju Sungsusan), Japan, North America and Europe.

Hyaloscyphaceae 거미줄 증지버섯과(新稱)

Arachnopeziza 거미줄증지버섯속(新稱)

Arachnopeziza aurelia (Pers. ex Fr.) Fuckel
거미줄증지버섯(新稱)

Symb, *Myc.* 303 (1870)—Korf, *Lloydia* 14(3): 160(1951)—Dennis, *Mycol. Pap.*, 32:88, fig. 96 (1949).

Apothecia scattered or gregarious, seated on a spreading white or yellowish subiculum, concave, sessile, pale orange, covered with stiff hairs, up to 3mm in diameter, 2mm deep. Hyphae of the subiculum 3.0~4.0 μ m wide, septate, smooth, hyaline to slightly yellowish, branching freely. Asci clavate, bi-seriately containing 8 ascospores, pore blued by Melzer's reagent, 92.5~125.0 \times 7.5~10.0 μ m. Ascospores hyaline, fusiform, 3-septate, 15.0~18.0 \times 2.5~4.0 μ m. Paraphyses filiform, 2.0 μ m wide. Hairs very long, slender, tapering, up to 400 \times 3.0 μ m, multiseptate, containing golden yellow sap.

Hab. On rotting leaves, debris, cupules and twigs in the forest, May.

Distr. Korea (Gwangneung), Japan, North America and Europe.

Sclerotiniaceae 군핵버섯과(新稱)

Rutstroemia 자루접시버섯속(新稱)

Rutstroemia americana (Durand) White 밤송이 자루 접시버섯(新稱)

Lloydia 4(3):188(1941)—Dennis, *Brit. Ascom.* 113, pl. XVIII P (1978). Syn. *Ciboria americana* Durand, *Bull. Torrey Bot. Club* 29:461 (1902).

Apothecia solitary, stipitate, slightly concave or flattened, up to 5mm in diameter, light brown, with long slender stalk. Asci cylindric, uni-seriately containing 8 ascospores, not blued by Melzer's reagent, 70.0~107.5 \times 5.0~7.5 μ m.

Ascospores ellipsoid, nonseptate with two

small oil drops at each end, 6.0~10.0 \times 3.5~5.0 μ m. Paraphyses filiform.

Hab. On fallen involucre of *Castanes sativa*, October.

Distr. Korea(Gwangneung), Japan, Europe and North America.

Rutstroemia macrospora (Peck) Kanouse apud Wehmeyer forma *gigaspora* Korf 갈색자루접시버섯(新稱)

Bull. Natn. Sci. Mus. Tokyo No. 45:397, fig. 6 (1959).

Apothecia gregarious, concave, brown with creamcolor, up to 4mm in diameter, with a short stalk. Asci cylindric, biseriately containing 8 ascospores, pore not blued by Melzer's reagent, 172.5~205.0 \times 10.0~12.5 μ m. Ascospores fusiform, some budding minute, ovoid, secondary spores, 2~5 septate, 30.0~47.5 \times 6.0~7.5 μ m. Paraphyses cylindrical, some branched, up to 2.5 μ m thick at the tip.

Hab. On rotting wood, September.

Distr. Korea (Gwangneung) and Japan.

Helotiaceae 고무버섯과(新稱)

Ascocoryne 짧은대 꽃잎버섯속(新稱)

Ascocoryne cylichnium (Tul.) Korf 짧은대꽃잎버섯(新稱)

Phytologia 21:202 (1971)—Dennis, *Brit. Ascom.* 121, pl. XIX X (1978).

Apothecia shallow cup shaped, purple, disc concave, often irregular with furrows and outside scurfy, very short stalked or almost sessile. Asci cylindric, bi-seriate, containing 8-spores, pore blued by iodine, 175.0~185.0 \times 7.5~10.0 μ m. Ascospores fusiform, inequilateral 2-septate, 22.5~28.0 \times 5.0~6.0 μ m.

Paraphyses slender, enlarged at the tip, septate.

Hab. Clustered, on rotting woods in the coniferous trees, October.

Distr. Korea (Gwangneung), Japan, North America and Europe.

Bisporella citrina (Batsch. ex Fr.) Korf et Carpenter 황색 황고무버섯 (新稱)

Mycotaxon 1:58(1974)—Dennis, *Brit. Ascom.* 131. pl. XX A (1978).

Apothecia gregarious, shallow cup-shaped, with very short stalk, yellow, up to 3.5mm in diameter. Asci cylindric-clavate, pore blued by Melzer's reagent, uni-seriately containing 8 ascospores, $95.0\sim 125.0\times 5.0\sim 7.5\mu\text{m}$. Ascospores elliptical, 1~3 small oil drops, often 1-septate, $10.0\sim 15.0\times 4.0\sim 5.0\mu\text{m}$. Paraphyses slender, containing yellow guttules, $2.0\mu\text{m}$. thick at the tip.

Hab. On dead branches of trees, October.

Distr. Korea (Gwangneung and Chonju), Japan, North America and Europe.

Chlorosplenium chlora (Schw. ex Fr.) Curtis 황녹청균 (新稱)

in Sprague, Proc. Boston Soc. NAT. Hist. 5:330 (1856)—Dixon, *Mycotaxon* 1(2):78, figs. 1-5, 8 (1974).

Apothecia gregarious, shallow cup-shaped, sessile, yellowish, up to 5mm in diameter. Asci clavate, 1 or 2-seriate, containing 8 ascospores, pore blued by Melzer's reagent, $35.0\sim 55.0\times 4.0\sim 6.0\mu\text{m}$. Ascospores elliptical or narrowly elliptical, $5.0\sim 10.0\times 1.5\sim 2.5\mu\text{m}$. Paraphyses slender, septate, branched at the base, $2.5\mu\text{m}$ thick.

Hab. On rotting wood in the forests, October.

Distr. Korea (Gwangneung), Japan and North America.

Chlorociboria 술잔녹청균속 (新稱)

Chlorociboria aeruginascens (Nyl.) Kanouse ex Ramamurthi, Korf et Batra subsp. *aeruginascens* 변형술잔녹청균 (新稱)

in Dixon, *Mycotaxon* 1(3):207, figs. 10-14, 24 (1975). Syn. *Chlorosplenium aeruginascens* (Nyl.) Karst., Not. Sallsk. Fauna Flora Fennica 11:233(1870)—Breitenbach & Kränzlin, *Pilze Schw. Bd.* 1:199 (1981).

Apothecia somewhat cup shaped but often becoming one-sided and somewhat spatulate, stalk short, slender, blue-green throughout, disc up to 5mm in diameter and 8mm high. Asci cylindric-clavate, 1 or 2-seriate, containing 8 ascospores, pore blued by Melzer's reagent, $50.0\sim 82.5\times 3.0\sim 5.0\mu\text{m}$. Ascospores fusiform, with 2-small oil drops at each end, $6.0\sim 10.0\times 2.0\sim 2.5\mu\text{m}$. Paraphyses slender, cylindrical, nonseptate, branched at the base, $2.0\mu\text{m}$. thick.

Hab. On rotting logs and woods, wood permeated by the mycelium is itself stained blue-green, May to September.

Distr. Korea (Gwangneung), Japan, North America and Europe.

Hymenoscyphus scutula (Pers. ex Fr.) Phillips 긴자루술잔고무버섯 (新稱)

Brit. Discom.: 137, (1887)—Dennis, *Brit. Ascom.* 136, pl. XX F (1978)—Breitenbach & Kränzlin, *Pilze Schw. Bd.* 1:170 (1981). Syn. *Helotium scutula* (Pers. ex Fr.) Karst., in Dennis, *Mycol. Pap.* No. 62:74 (1956).

Apothecia scattered, shallow cup-shaped or flat with a slender cylindrical stalk, yellowish, disc up to 2mm in diameter. Asci cylindric, bi-seriate, containing 8 ascospores, pore blued by Melzer's reagent, $77.5\sim 110.0\times 7.5\sim 10.0\mu\text{m}$. Ascospores somewhat fusiform, acute below and abrupt above, containing 2~6 oil drops, 1~2 septate, $17.5\sim 25.0\times 4.0\sim 5.0\mu\text{m}$. Paraphyses slender, $2.0\mu\text{m}$ wide.

Hab. On dead stems of grass, October.

Distr. Korea (Gwangneung and Paldalsan), Japan, North America and Europe.

Cyathicula 자루술잔버섯속 (新稱)

Cyathicula cyathoidea (Bull. ex Fr.) de Thumen 황색자루술잔버섯 (新稱)

Fungi austriaci 11, 15 (1874)—Dennis, *Brit. Ascom.* 143, pl. XXI A (1978)—Breitenbach & Kränzlin, *Pilze Schw. Bd.* 1:170 (1981). Syn. *Peziza cyathoidea* Bull., Champ. 250, T. 416,

fig. 3, (1791~'92)—Fries, *Syst. Myc.* II:124 (1823).

Apothecia scattered, cup-shaped with a slender cylindrical stalk, yellowish, disc up to 1mm in diameter. Asci cylindric-clavate, biseriate containing 8 ascospores, pore blued by Melzer's reagent, 85.0~87.5×7.0~7.5μm. Ascospores fusiform, with 1-septum or 3 oil drops, 17.5~20.0×3.8~4.5μm. Paraphyses slender, septate, 2.5 μm wide.

Hab. On dead stems of grass, September.

Distr. Korea (Gwangneung), North America and Europe.

摘 要

1982년 3월부터 1984년 7월까지 京畿道 光陵 試驗林을 주로하고, 덕유산, 설악산, 전주 성수산, 수원 팔달산에서 採集된 250여점의 반균강을 同定한 결과 2目 9科 18屬 23種을 分類하였는데 그중에서 *Helvella pezizoides* Afz. ex Fr., *Peziza celtica* (Boud.) Moser, *Humaria hemisphaerica* (Wiggers ex Fr.) Funckel, *Trichophaea gregaria* (Rehm) Boud., *Trichoglossum walteri* (Berk.) Durand, *Spathularia flavida* Pers. ex Fr., *Arachnopeziza aurelia* (Pers. ex Fr.) Fuckel, *Rutstroemia americana* (Durand) White, *Rutstroemia macrospora* (Peck) Kanouse apud Wehmeyer forma *gigaspora* Korf, *Ascocoryne cylichnium* (Tul.) Korf, *Bisporella citrina* (Batsch. ex Fr.) Korf et Carpenter, *Chlorosplenium chlora* (Schw. ex Fr.) Curtis, *Chlorociboria aeruginascens* (Nyl.) Kanouse ex Ramamurthi, Korf et Batra subsp. *aeruginascens*, *Hymenoscyphus scutula* (Pers. ex Fr.) Phillips, *Cyathicula cyathoidea* (Bull. ex Fr.) de Thumen는 韓國未記錄種이며, 그 普通名과 記載를 報告한다.

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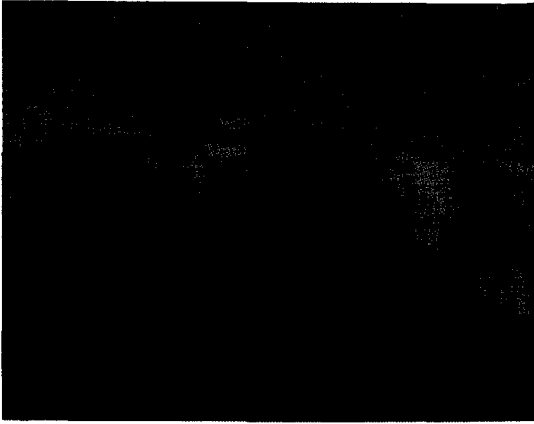
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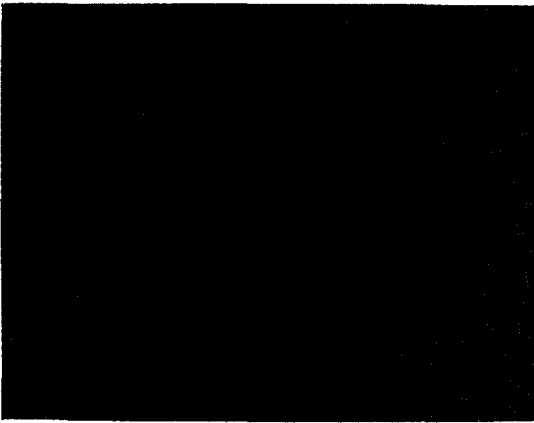
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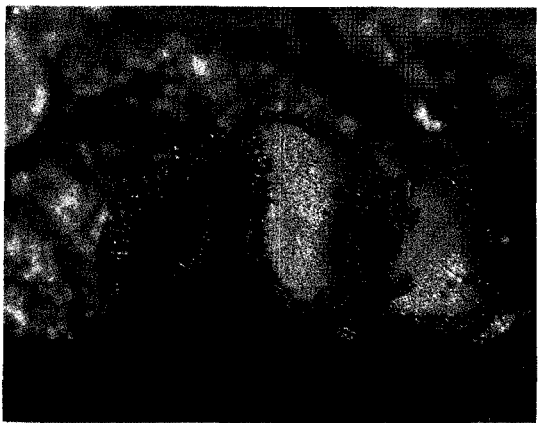
A



B



C



D



E

- Plate I.** A. *Helvella pezizoides* Afz. ex Fr.
B. *Peziza celtica* (Boud.) Moser
C. *Humaria hemisphaerica* (Wiggers ex Fr.) Fuckel
D. *Trichophaea gregaria* (Rehm) Boud.
E. *Trichoglossum walteri* (Berk.) Durand



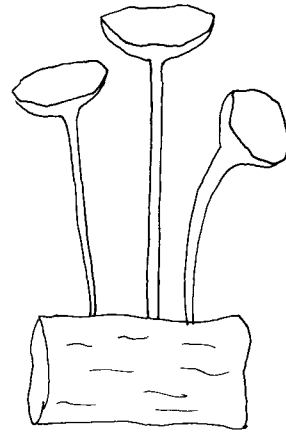
F



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H



I

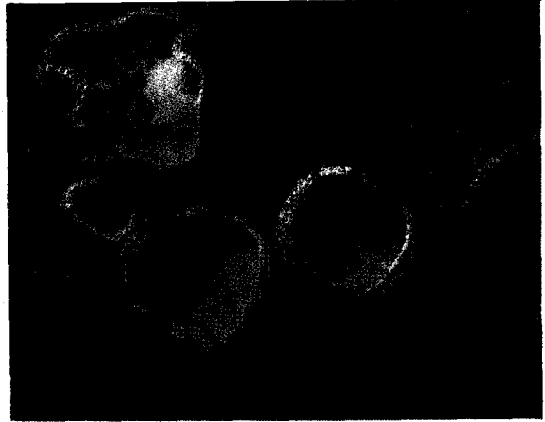


J

- Plate II.** F. *Spathularia flavida* Pers. ex Fr.
G. *Arachnopeziza aurelia* (Pers. ex Fr.)
Fuekel
H. *Rutstroemia americana* (Durand) White
I. *Rutstroemia macrospora* (Peck) Kanouse
apud Wehmeyer forma *gigaspora* Korf
J. *Ascocoryne cylichnium* (Tul.) Korf



K



L



M



N



O

- Plate III.** K. *Bisporella citrina* (Batsch. ex Fr.)
Korf et Carpenter
L. *Chlorosplenium chlora* (Schw. ex Fr.)
Curtis
M. *Chlorociboria aeruginascens* (Nyl.)
Kanouse ex Ramamurthi, Korf et Batra
subsp. *aeruginascens*
N. *Hymenoscyphus scutula* (Pers. ex Fr.)
Phillips
O. *Cyathicula cyathoidea* (Bull. ex Fr.)
de Thumen

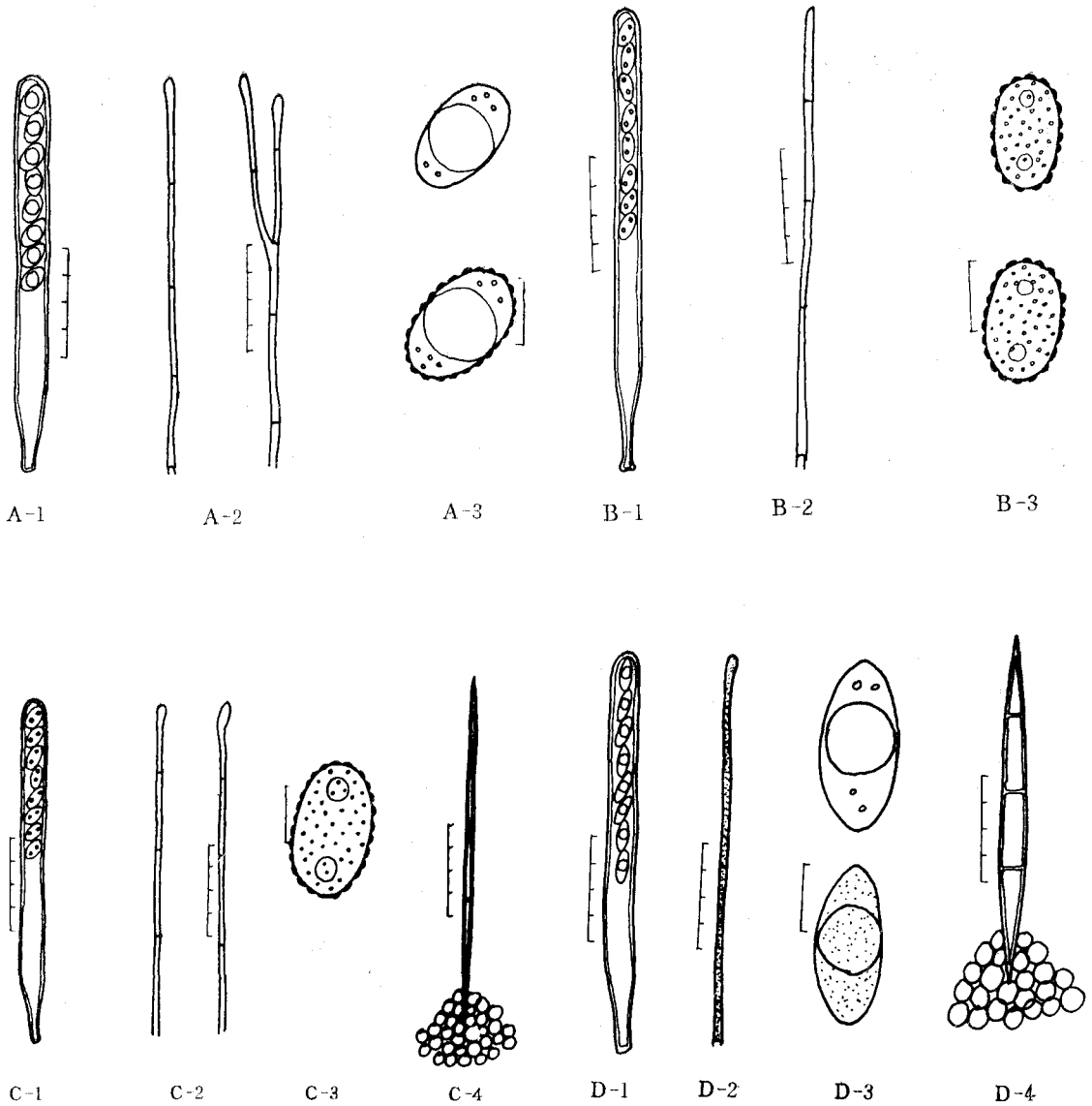


Plate IV. A. *Helvella pezizoides* Afz. ex Fr.
 A-1 ascus A-2 paraphyses A-3 ascospores
 B. *Peziza celtica* (Boud.) Moser
 B-1 ascus B-2 paraphyses B-3 ascospores
 C. *Humaria hemisphaerica* (Wiggers ex Fr.) Fuckel
 C-1 ascus C-2 paraphyses C-3 ascospores C-4 hairs
 D. *Trichophaea gregaria* (Rehm) Boud.
 D-1 ascus D-2 paraphyses D-3 ascospores D-4 hairs
 A graduation in scales represents 10 μ m.

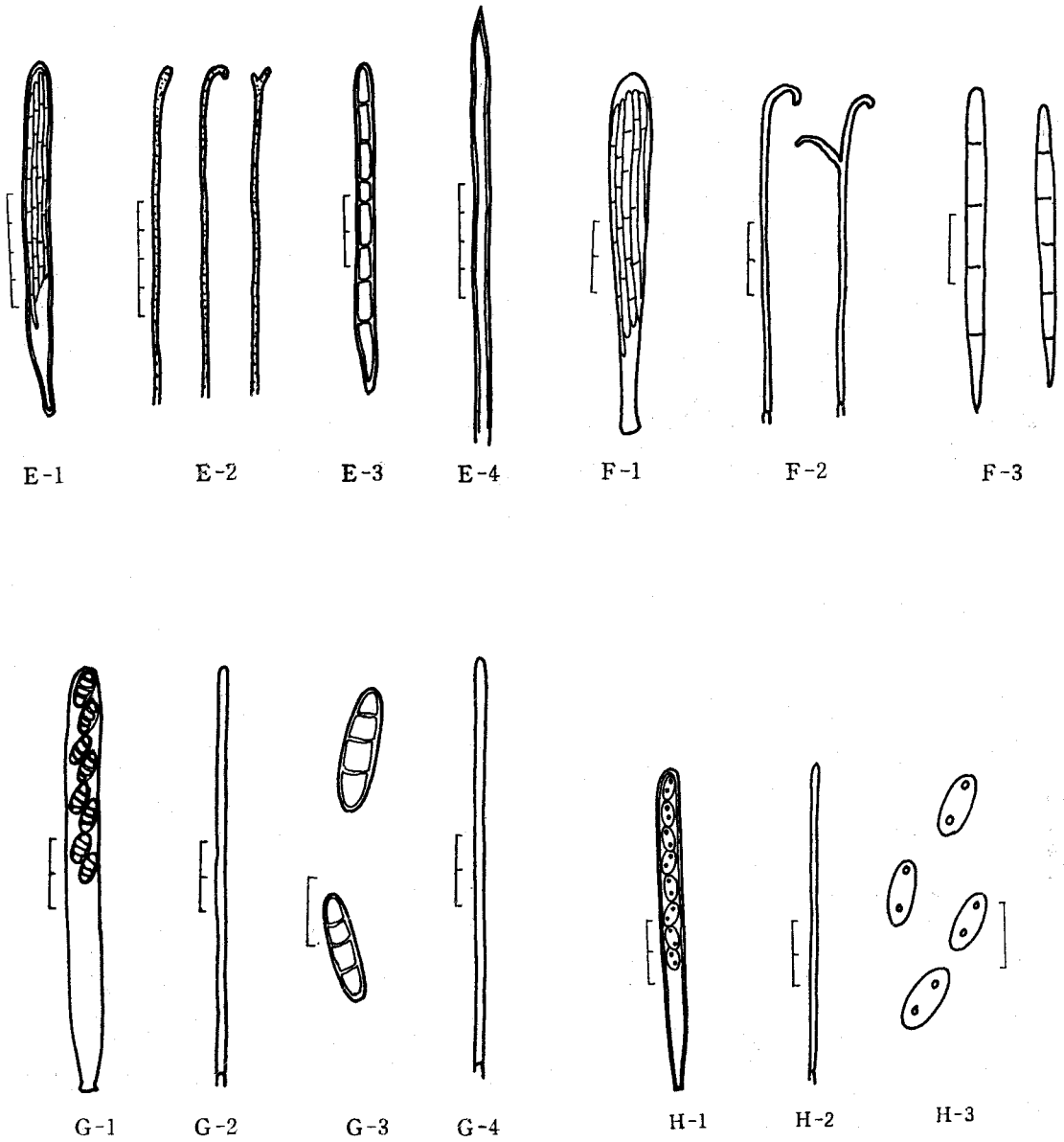


Plate V. E. *Trichoglossum walteri*(Berk.) Durand
 E-1 ascus E-2 paraphyses E-3 ascospores E-4 hairs

F. *Spathularia flavida* Pers. ex Fr.
 F-1 ascus F-2 paraphyses F-3 ascospores

G. *Arachnopeziza aurelia* (Pers. ex Fr.) Fuckel
 G-1 ascus G-2 paraphyses G-3 ascospores G-4 hairs

H. *Rutstroemia americana* (Durand) White
 H-1 ascus H-2 paraphyses H-3 ascospores

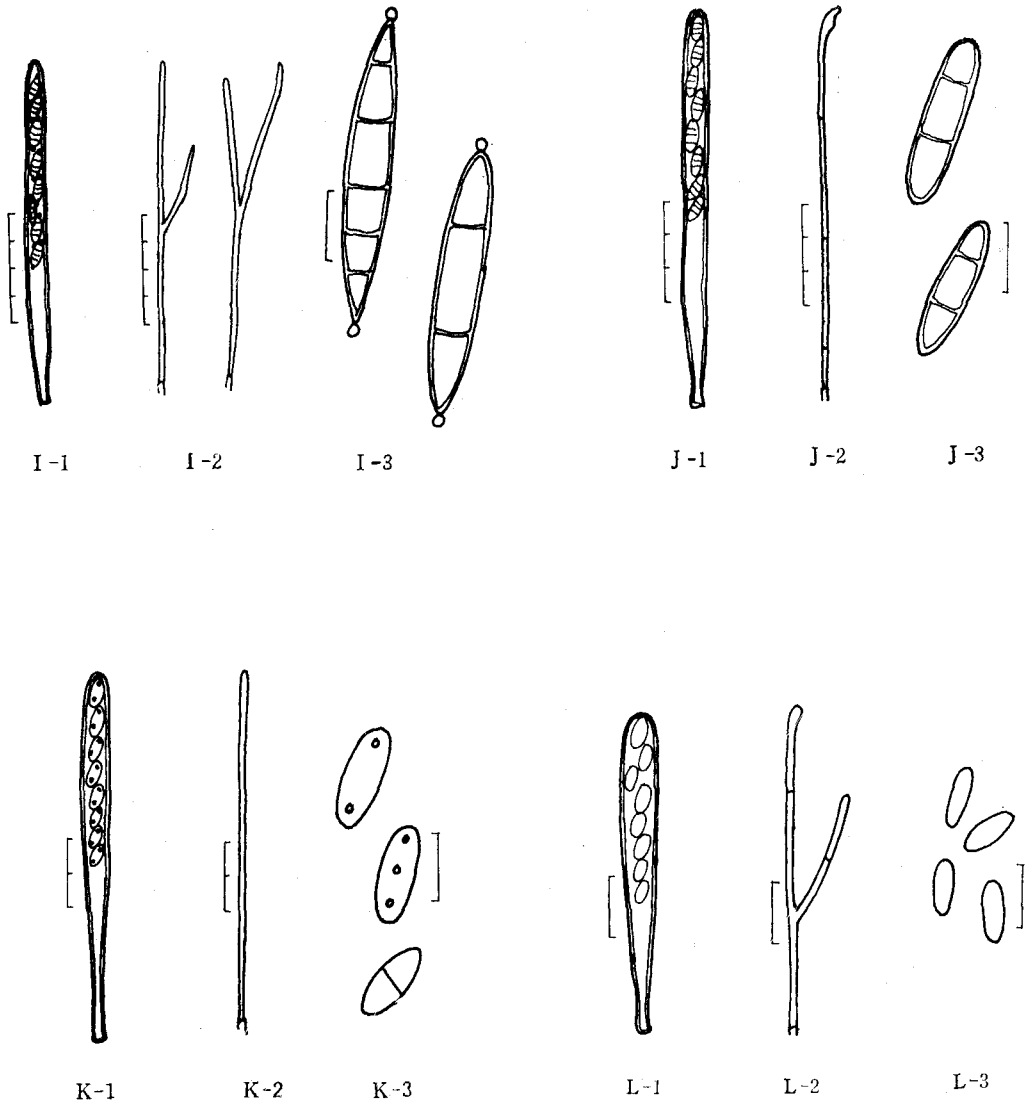


Plate VI. I. *Rutstroemia macrospora* (Peck) Kanous apud Wehmeyer forma *gigaspora* Korf
 I-1 ascus I-2 paraphyses I-3 ascospores
 J. *Ascocoryne cylichnium* (Tul.) Korf
 J-1 ascus J-2 paraphyses H-3 ascospores
 K. *Bisporella citrina* (Batsch. ex Fr.) Korf et Carpenter
 K-1 ascus K-2 paraphyses K-3 ascospores
 L. *Chlorosplenium chlora* (Schw. ex Fr.) Curtis
 L-1 ascus L-2 paraphyses L-3 ascospores

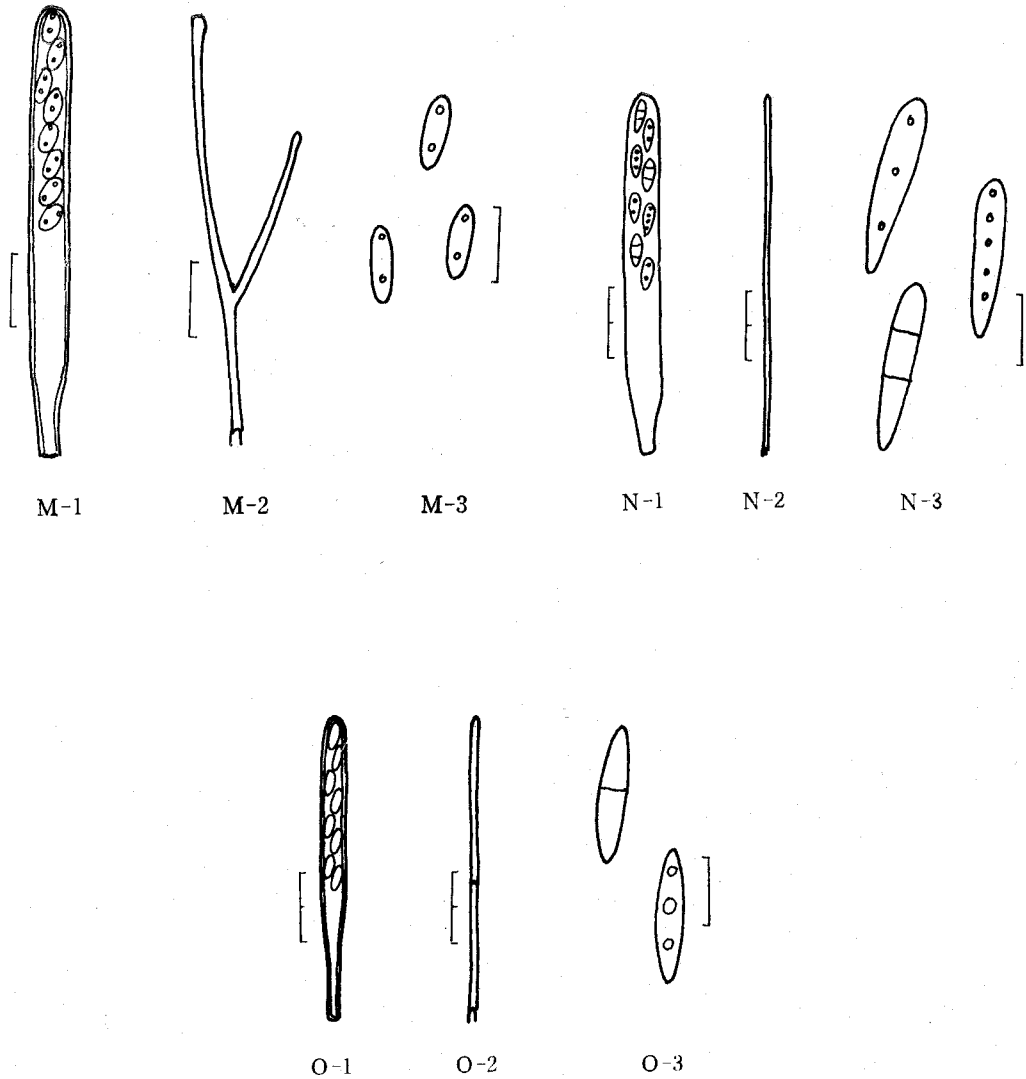


Plate VII. M. *Chlorociboria aeruginascens* (Nyl.) Kanouse ex Ramamurthi, Korf et Batra subsp. *aeruginascens*

- | | | |
|--|----------------|----------------|
| M-1 ascus | M-2 paraphyses | M-3 ascospores |
| N. <i>Hymenoscyphus scutula</i> (Pers. ex Fr.) Phillips | | |
| N-1 ascus | N-2 paraphyses | N-3 ascospores |
| O. <i>Cyathicula cyathoidea</i> (Bull. ex Fr.) de Thumen | | |
| O-1 ascus | O-2 paraphyses | O-3 ascospores |
- A graduation in scales represents 10 μ m.