

## Symbolae ad Floram Mycologicam Asiae Orientalis. II.

Auctore

**Sanshi Imai.**

Cum 1 tabula.

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### 13. **Neogyromitra** IMAI (Genus Helvellacearum).

*Helvella* Auct. plur. pro parte.

*Gyromitra* Auct. plur. pro parte.

*Gyromitra* (non FR.) BOUD. Bull. Soc. Myc. Fr. I, 98, 1885; Hist. Class. Disc. Eur. 35, 1907.

**Neogyromitra** IMAI, Bot. Mag. (Tokyo), XLVI, 174, 1932; Botany & Zoology, III, 1968, 1935.

Pileus inflatus lobatus undulato-plicatus, margine partim adnatus, hymenio gyroso anastomoso-lacunosove omnino tectus. Stipes robustus leviter lacunosus. Ascii clavati vel subcylindrici octospori. Sporae grandes elliptico-fusiformes ellipsoideaeve utrimque apiculatae vel non-apiculatae juvenile laeves dein asperulae demum leviter distincteve reticulato-sculptulatae. Paraphyses filiformes apice incrassatae.

Typus: *Helvella gigas* KROMBH.

Etym.: Neos + *Gyromitra*.

The well known genus *Gyromitra* was founded by FRIES in 1849 and based on *Gyromitra esculenta* which was formerly included in *Helvella* by PERSOON. The members of the genus have been increased since that time, while in 1885 and 1907, BOUDIER discussed the genus and newly proposed to divide it into two genera, namely *Physomitra* and *Gyromitra*. The representative of the former genus was *Gyromitra esculenta* and *G. infula* and the latter *Gyr. gigas*. In the writer's observation, the opinion of BOUDIER seems to be very right but it is not acceptable that the type species of FRIES' *Gyromitra* should also be the representative of the other genus *Physomitra*. In the other hand, *Gyromitra esculenta* appears to be a special form belonging to the genus *Helvella*, and then the genus *Gyromitra* of FRIES is included into the synonym of *Helvella* but represents a subgenus distinguishing the above species from the members of *Helvella* proper. However, *Gyr. gigas* can not be classified under the genus *Helvella*, because of the remarkable difference in that the spores are large, elliptico-fusiform, apiculate and becoming roughened and finally reticulato-sculpturated. For this reason, in 1932 the writer proposed a new genus name *Neogyromitra*

instead of BOUDIER's *Gyromitra*.

Although the writer indicated in a previous paper the type species of the genus as *Morchella caroliniana* FR., he correctly adopts here *Helvella gigas* KROMBH. as the type for the reason which is mentioned on a following page.

*Helvella Underwoodii* SEAVER and *Morchella caroliniana* BOSC ex FR. also may fall in the present genus.

As has been pointed out by NANNFELDT,<sup>1)</sup> the present genus has natural affinity with the genus *Discina*.

### 13<sup>bis</sup>. *Neogyromitra gigas* (KROMBH.) IMAI.

*Helvella gigas* KROMBH. Abbild. Schwämme, III, 28, t. 20, f. 1-5, 1834.

*Helvella fastigiata* KROMBH. Ibid. III, 32, t. 21, f. 9-11, 1834.

*Gyromitra curtipes* FR. Sv. Actl. Svamp. 34, t. 56, 1861—KARST. Myc. Fenn. I, 33, 1871—CKE. Mycogr. 192, t. 89, f. 329, 1878—SACC. Syll. Fung. VIII, 15, 1889—GRELET, Discom. Fr. II, 6, 1933.

*Gyromitra labyrinthica* FR. Vet. Ak. Förh. 173, 1871, teste NANNFELDT—REHM, Die Pilze, III, 1194, 1896.

*Gyromitra gigas* QUÉL. Champ. Jura Vosg. II, in Mém. Soc. D'Emul. Montb. 2 sér. V, 388, 1873; Ench. Fung. 272, 1886—CKE. Mycogr. 191, t. 88, f. 327, 1878—PHILLIPS, Brit. Discom. 9, 1887—SACC. Syll. Fung. VIII, 15, 1889—W. G. SM. Outl. Brit. Fung. Suppl. 345, 1891—SCHROET. Pilze Schles. II, 28, 1893; in ENGLER & PR. Naturl. Pflanzenfam. I, 1, 170, f. 142EF, 1894—MASS. Brit. Fung. Fl. IV, 478, 1895—REHM, Die Pilze, III, 1193, 1896—KILLERM. Krypt. Forsch. No. 3, 152, 1918—NANNF. Friesia, I, 35, f. 1-2, 1932—GRELET, Discom. Fr. II, 6, 1933.

*Gyromitra fastigiata* REHM, Die Pilze, III, 1194, 1896.

*Neogyromitra caroliniana* IMAI, Bot. Mag. (Tokyo), XLVI, 174, 1932, pro parte.

*Neogyromitra gigas* IMAI, Botany & Zoology, III, 1969, 1935.

Nom. jap. *O-shaguma-take* (IMAI).

Hab. ad terram vel lignum putridum in silvis. Hokkaido: Prov. Ishikari, Nopporo (S. IMAI, Jun. 5, 1923; Mai. 21, 1929; Jun. 7, 1931).

Distr. Europa, Japonia.

SEAVER, in 1928,<sup>2)</sup> treated *Helvella caroliniana* as an identical species with *Helvella gigas* of the European species. The writer also in a previous paper reported the two as identical according to the SEAVER's proposal. In 1931, SEAVER<sup>3)</sup> published a paper on the giant *Helvella*, and illustrated an ascophore, an ascus and a reticulated free spore, and he has stated in

1) J. A. NANNFELDT, Bleka Stenmurklan, *Gyromitra gagas* (KROMBH.) CKE. in Friesia, I, 34-45, 1932—Contributions to the Mycoflora of Sweden, 4. On Some species of *Helvella*, together with a Discussion of the Natural Affinities within Helvellaceae and Pezizaceae Trib. Acetabuleae, in Svensk Bot. Tidsk. XXXI, 47-66, t. 1-2, 1937.

2) F. J. SEAVER, The North American Cup-fungi (Operculate), p. 253, 1928.

3) F. J. SEAVER, Photograph and Descriptions of Cup-fungi, XV, The Giant Elvela, in Mycologia XXIII, 409-410, t. 29, 1931.

his text "BOUDIER's illustration of the KROMBHOLZ species shows the spores to be more fusoid than those of our specimens. Also, the convolutions of the pileus seem to be less intricate." HARD's<sup>4)</sup> and SEAVER's illustrations show the more intricate convolution of the pileus than that of our specimens, while the spores of SEAVER's specimen is ellipsoidal in shape and not apiculate, and the reticulation of epispore is more distinct and sharp than that of ours.

Although KROMBHOLZ described the spores are large and ovate, COOKE, PHILLIPS, MASSEE; REHM and BOUDIER have described fusiform spores for *Gyromitra gigas*, and also SCHROETER, REHM, BOUDIER and BRESADOLA have described or illustrated the apiculation at the ends of spores. These authors have not yet described the warts or reticulations on the wall of the spores which are found on close inspection, however, GRELET has recorded the verrucose spores for *G. gigas*. The writer also observed the reticulated sculpture on the spores of the Japanese specimens and also of the Swedish one which was kindly sent from Dr. NANNFELDT.<sup>5)</sup>

As to the identity of the European fungus and the Japanese one, the writer could not detect any specific difference under the microscope between the said Swedish fungus and our Japanese ones. There are slight differences in the macroscopic features between the two fungi, these differences, however, seem to be caused by individual variability.

As far as may be judged from the illustrations by HARD and SEAVER, the American species, *Morchella caroliniana* BOSCH ex FR. is undoubtedly a distinct species from the European and Japanese species, *Helvella gigas* KROMBH.

In 1932, the writer described the genus character of *Neogyromitra* as "Genus affine *Helvellae* sed sporaе magnaе subfusiformaе apiculatae et sculptulae". According to the genus character of subfusiform and apiculate spores, it is more reasonable and correct that the type species should be newly indicated *Helvella gigas* instead of *Morchella caroliniana*.

#### 14. *Discina perlata* FR.

*Peziza ancilis* PERS. Myc. Eur. I, 219, 1822.

*Peziza (Discina) perlata* FR. Syst. Myc. II, 43, 1823—KARST. Monogr. Peziz. Fenn. in Pro Faun. Fl. Fenn. X, 109, 1869; Myc. Fenn. I, 39, 1871—CKE. Mycogr. 141, t. 62, f. 239, 1876.

*Peziza (Discina) ancilis* FR. Ibid. 43, 1823—QUÉL. Champ. Jura Vosg. II, in Mém. Soc. D'Emul. Montb. 2 sér. V, 391, 1873.

*Discina perlata* FR. Summa Veg. Scand. 348, 1849—SACC. Syll. Fung. VIII, 99, 1889.

4) M. E. HARD, The Mushroom, Edible and Otherwise, f. 419, 1908.

5) The writer expresses here his indebtedness to Dr. J. A. NANNFELDT, of Uppsala, Sweden, for his kindness.

- Rhizina helvetica* FÜCK. Symb. Myc. Nachtr. II, 66, 1873.  
*Peziza Warnei* PK. 30 Ann. Rep. N. Y. State Mus. 59, 1878, teste SEEVER.  
*Aleuria ancilis* GILL. Disc. Fr. 36, 1879.  
*Helvela acetabulum* var. *ancilis* QUÉL. Ench. Fung. 275, 1886.  
*Peziza repanda* var. *perlata* QUÉL. Ibid. 276, 1886.  
*Discina Warnei* SACC. Syll. Fung. VIII, 102, 1889.  
*Discina ancilis* SACC. Ibid. 103, 1889—REHM, Die Pilze, III, 979, 1896—SEEVER, North Amer. Cup-fungi, 216, t. 28, f. 2, 1928.  
*Discina helvetica* SACC. Ibid. 103, 1889.

Nom. jap. *Fukuro-shitonetake* (n.n.).

Hab. ad terram vel lignum putridum in silvis. Hokkaido: Prov. Ishikari, Nopporo (S. IMAI, Jun. 7, 1931); Sapporo (K. MIYABE, 1915; S. ITO & S. IMAI, Mai. 23, 1930).

Distr. Europa, Amer. bor., Japonia.

### 15. *Peziza badia* PERS. ex FR.

- Helvella cochleata* BOLT. Fung. Halif. III, 99, t. 99, 1789, teste FRIES.  
*Peziza badia* PERS. Obs. Myc. II, 78, 1799; Syn. Fung. 639, 1801; Myc. Eur. I, 224, 1822—FR. Obs. Myc. I, 164, 1815.  
*Scodellina badia* S. F. GRAY, Nat. Arr. Brit. Pl. I, 669, 1821.  
*Peziza badia* FR. Syst. Myc. II, 46, 1823—BERK. in SMITH, Engl. Fl. V, 2, 187, 1836; Outl. Brit. Fung. 363, t. 22, f. 4, 1860—KARST. Monogr. Peziz. Fenn. in Pro Faun. Fl. Fenn. X, 115, 1869; Myc. Fenn. I, 56, 1871—CKE. Handb. Brit. Fung. II, 667, 1871; Mycogr. 130, t. 57, f. 226, 1876; Handb. Austr. Fung. 253, 1892—QUÉL. Champ. Jura Vosg. II, in Mém. Soc. D'Emul. Montb. 2 sér. V, 392, 1873; Ench. Fung. 280, 1886—PHILLIPS, Brit. Discom. 58, 1887—SACC. Syll. Fung. V, 82, 1889—SCHROET. Pilze Schles. II, 41, 1893—MASS. Brit. Fung. Fl. IV, 436, 1895—SEEVER, Mycologia, VII, 90, t. 155, f. 2, 1915; North Amer. Cup-fungi, 221, 1928.  
*Plicaria badia* FÜCK. Symb. Myc. 327, 1869—REHM, Die Pilze, III, 1010, 1896.  
*Aleuria badia* GILL. Disc. Fr. 43, cum icone, 1879.  
*Galactinia badia* BOUD. Bull. Soc. Myc. Fr. I, 101, 1885; Hist. Class. Disc. Eur. 48, 1907—GRELET, Discom. Fr. V, 6, 1937.

Nom. jap. *Oni-chawantake* (n.n.).

Hab. ad terram vel corticem trunci frondoci emortui in silvis. Hokkaido: Prov. Ishikari, Nopporo (S. IMAI, Jun. 30, 1929; Jul. 17, 1932); Prov. Kitami, Biwaushizawa (S. IMAI, Sept. 28, 1934).

Distr. Europa, Amer. bor., Japonia, Australia.

### 16. *Peziza brunneoatra* DESM.

- ?*Peziza macrospora* WALLR. Fr. Crypt. Germ. II, 500, 1833.  
*Peziza brunneoatra* DESM. Ann. Sci. Nat., Bot. 2 sér. VI, 244, 1836—BERK. et BR. Ann. Mag. Nat. Hist. 3 ser. XVIII, 124, t. 4, f. 18, 1866—CKE. Handb. Brit. Fung. II, 677, 1871; Mycogr. 43, t. 20, f. 78, 1875; Handb. Austr. Fung. 254, 1892—QUÉL. Ench. Fung. 280, 1886—PHILLIPS, Brit. Discom. 76, 1887—SEEVER, North Amer. Cup-fungi, 222, 1928.  
*Humaria macrospora* FÜCK. Symb. Myc. 323, 1869, teste MASSEE—MASS. Brit. Fung.

Fl. IV, 422, 1895.

*Peziza macrospora* CKE. Mycogr. 43, t. 20, f. 77, 1875.

*Aleuria brunneoatra* GILL. Discom. Fr. 53, 1879.

*Plicaria brunneoatra* REHM, Die Pilze, III, 1010, 1896.

*Galactinia brunneoatra* BOUD. Hist. Class. Disc. Eur. 49, 1907—GRELET, Discom. Fr. V, 16, 1937.

Nom. jap. *Ko-kurochawantake* (n.n.).

Hab. ad terram in silvis. Hokkaido: Prov. Ishikari, Sapporo (S. ITO, Jul. 28, 1935).

Distr. Europa, Amer. bor., Japonia.

### 17. *Otidea leporina* (BATSCH ex FR.) FÜCK.

*Peziza leporina* BATSCH, Elench. Fung. 117, t. 7, 1783—SOW. Engl. Fung. I, t. 79, 1797—PERS. Syn. Fung. 637, 1801; Myc. Eur. I, 223, 1822—NEES v. ES. Syst. Pilze, 262, f. 278, 1817.

*Peziza onotica* PERS. Syn. Fung. 637, 1801; Myc. Eur. I, 222, 1822—NEES. v. ES. Syst. Pilze, 262, f. 278B, 1817.

*Scodellina leporina* S. F. GRAY, Nat. Arr. Brit. Pl. I, 668, 1821—SEEVER, North Amer. Cup-fungi, 185, 1928.

*Scodellina onotica* S. F. GRAY, Ibid. 668, 1821.

*Peziza leporina* FR. Syst. Myc. II, 47, 1823—BERK. Otul. Brit. Fung. 363, 1860—KARST. Monogr. Peziz. Fenn. in Pro Faun. Fl. Fenn. X, 111, 1869; Myc. Fenn. I, 41, 1871—CKE. Handb. Brit. Fung. II, 668, 1871; Mycogr. 123, t. 54, f. 211, 1876—QUÉL. Champ. Jura Vosg. II, in Mém. Soc. D'Emul. Montb. 2 sér. V, 393, 1873—PHILLIPS, Brit. Discom. 53, 1887.

*Peziza onotica* FR. Syst. Myc. II, 48, 1823—BERK. in SMITH, Engl. Fl. V, 2, 187, 1836; Outl. Brit. Fung. 363, 1860—KARST. Monogr. Peziz. Fenn. in Pro Faun. Fl. Fenn. X, 110, 1869—CKE. Handb. Brit. Fung. II, 668, 1871; Mycogr. 122, t. 53, f. 210, 1876—QUÉL. Champ. Jura Vosg. II, in Mém. Soc. D'Emul. Montb. 2 sér. V, 393, 1873—PHILLIPS, Brit. Discom., 52, 1887.

*Peziza onotica* β *ochracea* FR. Syst. Myc. II, 48, 1823.

*Otidea leporina* FÜCK. Symb. Myc. 329, 1869—QUÉL. Ench. Fung. 276, 1886—SACC. Syll. Fung. VIII, 94, 1889—REHM, Die Pilze, III, 1025, 1896—BRES. Icon. Myc. XXV, t. 1223, 1933.

*Otidea onotica* FÜCK. Ibid. 329, 1869—QUÉL. Ibid. 275, 1886—SACC. Ibid. 94, 1889—REHM, Ibid. 1025, 1896—BRES. Ibid. t. 1222, 1933.

*Peziza ochracea* KARST. Monogr. Peziz. Fenn. in Pro Faun. Fl. Fenn. X, 110, 1869.

*Peziza unicus* PK. 26 Ann. Rep. N. Y. State Mus. 81, 1874, teste CKE. atque SEEVER.

*Aleuria leporina* GILL. Discom. Fr. 40, 1879.

*Aleuria onotica* GILL. Ibid. 40, cum icone, 1879.

*Otidea onotica* β *ochracea* SACC. Syll. Fung. VIII, 95, 1889.

*Otidea ochracea* SEEVER, Bull. Lab. Nat. Hist. State Univ. Iowa, V, 45, t. 10, 1904.

Nom. jap. *Ki-mimi-take* (n.n.).

Hab. ad terram vel ramulos emortuos inter muscos in pinetis. Hokkaido: Prov. Ishikari, Nopporo (S. KAMEI & S. IMAI, Aug. 28, 29, 1936).

Distr. Europa, Amer. bor., Japonia.

18. **Wynnea americana** THAXT.

*Wynnea americana* THAXT. Bot. Gaz. XXXIX, 246, t. 4-5, 1905—SEEVER, North Amer. Cup-fungi, 181, t. 16, 1928.

*Midotis americana* SACC. et TRAV. in SACC. Syll. Fung. XX, 92, 1911; Ibid. XXII, 711, 1913.

Nom. jap. *Ô-mi-no-mimibusatake* (n.n.).

Hab. ad terram in silvis. Hokkaido: Prov. Ishikari, Nopporo (S. IMAI, Sept. 1, 1935).

Distr. Amer. bor., Japonia.

19. **Plectania protracta** (FR.) IMAI, comb. nov.

*Peziza protracta* FR. Nov. Symb. Myc. Mont. 230, 1851.

*Microstoma hiemale* BERNST. Nov. Act. Ak. Leop. XXIII, 2, 649, t. 61, 1852, sec. REHM.—MILDE, Bot. Zeit. X, 208, 1852, sec. SACC.

*Peziza mirabilis* BORSZ. Fung. Ingrisi, 61, t. 4-5, 1857, teste REHM—CKE. Mycogr. 56, t. 25, f. 98, 1875.

*Sclerotinia baccata* FÜCK. Symb. Myc. 331, t. 4, f. 38, 1869, teste REHM.

*Peziza hiemalis* KARST. Myc. Fenn. I, 44, 1871.

*Sclerotinia hiemalis* FÜCK. Symb. Myc., Nachtr. II, 65, 1873, teste REHM.

*Anthopeziza Winteri* WETTST. Verh. Zool. Bot. Ges. 1885, 383, t. 16, 1885, teste SACC. atque REHM.

*Anthopeziza baccata* WETTST. Ibid. 384, 1885, teste REHM.

*Peziza coccinea* var. *hiemalis* QUÉL. Ench. Fung. 282, 1886.

*Sarcoscypha protracta* SACC. Syll. Fung. VIII, 155, 1889—REHM, Die Pilze, III, 1072, f. 4 (p. 1035), 1896.

*Lachnea mirabilis* PHILLIPS, Grev. XVIII, 83, 1890.

Nom. jap. *Ko-beni-chawantake* (n.n.).

Hab. ad ramulos inter folia in silvis. Hokkaido: Prov. Ishikari, Nopporo (S. IMAI, Mai. 3, 11, 1925); Prov. Shiribeshi, Kutchan (K. MATSUHISA, Apr. 29, 1930).

Distr. Europa, Japonia.

20. **Lamprospora leiocarpa** (CURR.) SEEVER.

*Peziza leiocarpa* CURR. Trans. Linn. Soc. XXIV, 493, t. 51, f. 4, 6, 1864—BERK. et BR. Ann. Mag. Nat. Hist. 3 ser. XV, 404, t. 14, f. 14, 1865—CKE. Handb. Brit. Fung. II, 671, 1871; Mycogr. 151, t. 67, f. 256, 1877—QUÉL. Ench. Fung. 280, 1886—PHILLIPS, Brit. Discom. 65, 1887.

*Plicaria foveata* FÜCK. Symb. Myc. 326, 1869.

*Plicaria leiocarpa* BOUD. Bull. Soc. Myc. Fr. I, 102, 1885.

*Detonia foveata* SACC. Syll. Fung. VIII, 105, 1889.

*Detonia leiocarpa* SACC. Ibid. 105, 1889.

*Aleuria leiocarpa* GILL. Discom. Fr. tab.

*Curreyella foveata* MASS. Brit. Fung. Fl. IV, 402, 1895.

*Plicariella leiocarpa* REHM, Die Pilze, III, 994, f. 1-4 (p. 989), 1896.

**Lamprospora leiocarpa** SEEVER, Mycologia, VI, 21, 1914; North Amer. Cup-fungi, 73, 1928.

Nom. jap. *Maru-mi-no-chawantake* (n.n.).

Hab. ad terram in silvis. Hokkaido: Prov. Tokachi, Lake side of Shikaribetsu (S. KAMEI, Jun. 11, 1931).

Distr. Europa, Amer. bor., Japonia.

21. ***Ascotremella turbinata* SEAVER.**

*Ascotremella turbinata* SEAVER, Mycologia, XXII, 53, t. 12, 1930.

Nom. jap. *Nikawa-chawantake* (n.n.).

Hab. ad truncos emortuos in silvis. Hokkaido: Prov. Ishikari, Sapporo (K. SASAKI, Oct. 20, 1929); Prov. Oshima, Shiriuchi (S. IMAI, Nov. 1, 1933).

Distr. Amer. bor., Japonia.

**Explanato Tabulae II.**

Fig. 1 & 2. *Neogyromitra gigas* (KROMBH.) IMAI.

Fig. 3 & 4. *Discina perlata* FR.

Fig. 5. *Wynnea americana* THAXTER.

Fig. 6 & 7. *Ascotremella turbinata* SEAVER.

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**Contributions to the Knowledge of the Systematics  
of *Morus* in Japan. XIII.**

***Morus* in Cultivation. VIII.**

By

**Teikichi Hotta.**

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**Key to the species, varieties and forms of *Morus*  
found in cultivation.**

1. Style long, stigma divided into two parts at its apex,  
     Sect. I. **Dolichostylae** KOIDZ. . . . . 2
- Style none or very short with sessile or subsessile stigma divided into two parts.  
     Sect. II. **Macromorus** KOIDZ.  
         *Morus latifolia* POIRET . . . . . 17
2. Cystolith of epidermis is papillate and obtuse, and deeply placed in tissue.  
     *Morus Mizuho* HOTTA . . . . . 3