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Fungi of the Bonin Islands I

By

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With 3 text-figures

The earliest collection of fungi from Bonin Islands was made by CHARLES WRIGHT, Naturalist of the American North Pacific Exploring Expedition held in 1853-1856. In 1860, M. J. BERKELEY and M. A. CURTIS described new fungi of his collection, comprising 174 species, among which 73 were those of the Islands.

The next collection of fungi appears to be that made by O. WARBURG in 1887. His specimens were identified by P. HENNINGS and ED. FISCHER, and they recorded seven species in 1893. Since that time only a few species have been reported from the Islands by C. G. LLOYD, A. YASUDA, etc.

During the months of October and November of the last year, the writers visited the Islands with a special interest for the purpose of collecting fungi. About 300 specimens of fungi were brought back and deposited in the Herbarium of the Faculty of Agriculture. As the first report, the present paper was intended to record 13 species of Gasteromycetous fungi, among which three species and one form are new to science.

The writers wish to express their cordial thanks to the Hattori Hôkôkai for a grant rendering possible the excursion. Thanks are also due to Messrs. Y. MACHIDA, K. DAIDÔ and M. OKABE. These gentlemen were with us on a number of collecting trips and their knowledge both of localities and of the native vegetation was of very great help.

1. *Mutinus boninensis* ED. FISCH.

Denkschr. Schweiz. Naturf. Ges. XXXIII, 39, pl. 3, f. 73-74, 1893.

Jansia boninensis LLOYD, Syn. Phalloids, 34, f. 35, 1909-Sacc. Syll. Fung. XXI, 461, 1912-ED. FISCH. in ENGLER & PR. Nat. Pfl. Fam. 2 Aufl. VIIa, 101, 1933.

Volva 1-2 cm. long, about 1 cm. thick, ovate or oblong, whitish or brownish;

fructification 3–6 cm. long, about 5 mm. thick, equal and cylindrical but attenuated at both ends; pileus long conical, red or nearly scarlet, 1–1.5 cm. or more long, adnate to the stipe, surface tuberculately rugulose below, transversely rugose above, covered at first with green mucus; stipe white but often rosy above, hollow, cellular; spores ellipsoidal or subcylindrical, smooth, yellowish-hyaline, $3.5-5 \times 1.5-2\mu$.

Hab. on the ground in woods. Haha-shima: Okimura-Kuwanokiyama (Nov. 18, 1936).

Jap. name. *Munin-kitsune-no-efude* (nom. nov.).

The writers consider that the present fungus is better to be classified as a species of *Mutinus* instead of *Jansia*.

2. *Colonnaria columnata* (BOSC) ED. FISCH.

in ENGLER & PR. Nat. Pfl. Fam. 2 Aufl. VIIa, 85, f. 57B, 1933.

Clathrus columnatus BOSC, Mag. Gesell. Nat. Freunde Berlin, V, 85, pl. 5, f. 5, 1811—COKER & COUCH, Gaster. East. U. S. Canada, 5, pl. 1, f. right, 1928.

Laterna columnata NEES v. ES. Syst. Pilze, 253, pl. 36b, f. 262, 1817—A. MÖLL. Brasil. Pilzbl. 42, pl. 2, f. 3–4, 1895—LLOYD, Syn. Phalloids, 48, f. 57–58, 1909—RICK, Estudo Phalloid. Riogrand. 22, pl. 4, f. 3–4, pl. 7, f. 2, pl. 8, f. right-below, 1932.

Volva at first globose, then oblong, 2–3 cm. long, 1.5–2 cm. thick, white or whitish, becoming sorbid; fructification 3.5–5 cm. high; stipe none; columns 4 in number, 5–7 mm. thick, attenuated at both ends, united but sometimes once clathrate at the apex, nearly scarlet, with two parallel low ridges in whole length of the column on the outer side, and distinctly transversally plicate on the inner side; gleba dark, nearly black, at first filling the space between the columns except for the basal part, later becoming only adhering as masses at the inner side of columns, except on the basal part, odour foetid; spores oblong or subcylindrical, smooth, yellowish-hyaline, $4-5 \times 2\mu$.

Hab. on the ground in woods. Haha-shima: Kitamura-Sekimonzan (Nov. 20, 1936).

Jap. name. *Yotsude-take* (nom. nov.).

3. *Pseudocolus javanicus* (PENZ.) LLOYD

Myc. Notes, No. 28, 358, 1907; Syn. Phalloids, 52, f. 66, 1909.

Colus javanicus PENZ. Ann. Jard. Bot. Buitenzorg, XVI, 160, 1899.

Anthurus javanicus CUNNINGH. Proceed. Linn. Soc. New South Wales, LVI, 186, 1931—BOEDIJN, Bull. Jard. Bot. Buitenzorg, 3 sér. XII, 78, 1933.

Volva at first globose, then oblong, 1–1.5 cm. long, about 1 cm. thick, white or whitish, then becoming sordid; fructification 4–5 cm. high; stipe about half the length of fructification including the volva, hollow, open at the apex, pale red above, nearly white below, divides into three attenuated arms at the top, which are united at the apex, but at times or in old specimens becoming free; arms nearly scarlet, fading into pale red below, with two parallel low ridges in whole length of the arms on the outer side, and distinctly transversally plicate on the inner side; gleba dark, nearly black, at first filling the space between the arms except for the basal part, later becoming only adhering as masses at the inner side of the arms, except on the basal part, odour foetid; spores oblong or subcylindrical, $3-4 \times 1.5-2\mu$, smooth, yellowish-hyaline.

Hab. on the ground in woods. Haha-shima: Okimura-Kuwanokiyama (Nov. 18, 1936).

Jap. name. *Sanko-take*.

SUMSTINE reported *Colus Schellenbergiae*, from Pennsylvania of North America, in which the arms are orange-colored. BOEDIJN mentioned its name in the list of the synonyms of his *Anthurus javanicus*. In Hokkaido, the junior author collected a fungus, probably identical with the American species, in which the arms are maize-yellow to orange-buff. The yellow one seems to us to be a northern form of the present fungus. We wish to treat it as *Pseudocolus javanicus* f. *Schellenbergiae* S. ITO et IMAI.

4. *Geastrum pectinatum* PERS.

Syn. Fung. 132, 1801—ED. FISCH. in ENGLER & PR. Nat. Pfl. Fam. 2 Aufl. VIIa, 73, 1933—IMAI, Bot. Mag. (Tokyo), L, 217, f. 1, 1936.

Geaster plicatus BERK. Ann. Nat. Hist. III, 399, 1839—LLOYD, Lycop. Austr. 17, f. 13, 1905.

Geaster tenuipes BERK. in HOOK. Journ. Bot. XII, 576, 1848—DE TONI, in SACC. Syll. Fung. VII, 76, 1888.

Geaster biplicatus BERK. et CURT. Proceed. Amer. Acad. Arts & Sci. IV, 124, 1860—DE TONI, in SACC. Syll. Fung. VII, 76, 1888.

Geaster pectinatus HOLLÓS, Természetr. Füzet. XXV, 121, 1901; Gaster. Hung. 55 & 152, pl. 8, f. 1–7, pl. 29, f. 16, 1904—LLOYD, Geast. 15, f. 19–22, 1902—PETRI, Fl. Ital. Crypt., Gaster. 77, f. 40, 1909—REA, Brit. Basid. 40, 1922—COKER & COUCH, Gaster. East. U. S. Canada, 132, pl. 74, pl. 75, f. upper, 1928.

Gregarious. Buttons globose, surface somewhat rough by short strigose villi; exoperidium splitting up into 5–10, acute lobes up to about half way down, revolute, outer surface white, then ochraceous, binds together leaves or soil by floccose mycelium, inner surface when fresh whitish or ochraceous, fleshy,

cracking and falling away, when dried becoming olive-brown or Hay's brown colored and dried up to very thin membrane, and then falling away and leaving a subavellaneous face of outer layer; endoperidium 1–3 cm. broad, subglobose or depressed globose, black and densely covered with whitish powders, striate or sulcate at the base, often indistinctly formed a slightly raised collar around the base; peristome prominent, long, narrowly conical, deeply sulcate, fimbriate at the apex; stalk usually slender, often with a sulcate or striate ring near center or base; spores blackish-brown, globose, with large blunt warts, about 5μ in diam.

Hab. on the ground among fallen leaves. Chichi-shima: Ôgimura-Furiwakeyama (Jan. 8 & 25, 1937, M. OKABE).

Jap. name. *Kikuza-tsuchiguri*.

5. *Geastrum mirabile* (MONT.) ED. FISCH.

in ENGLER & PR. Nat. Pfl. Fam. 2 Aufl. VIIa, 73, 1933; Ann. Myc. XXXI, 121, 1933–IMAL, Bot. Mag. (Tokyo), L, 219, 1936.

Geaster mirabilis MONT. Crypt. Guyan. n. 595, in Ann. Sci. Nat. 4 sér. III, 139–140, pl. 6, f. 8, 1855–DE TONI, in SACC. Syll. Fung. VII, 79, 1888–LLOYD, Myc. Notes, No. 25, 313, pl. 100, f. 1–3, 1907–COKER & COUCH, Gaster. East. U. S. Canada, 116, pl. 65, f. upper, pl. 67, f. upper-left, pl. 115, f. 10–12, 1928.

Geaster papyraceus BERK. et CURT. Proceed. Amer. Acad. Arts & Sci. IV, 124, 1860–DE TONI, in SACC. Syll. Fung. VII, 80, 1888.

Geaster lignicolus BERK. Journ. Linn. Soc., Bot. XVIII, 386, 1881–DE TONI, Syll. Fung. VII, 80, 1888.

Geaster velutinus f. *caespitosus* LLOYD, Myc. Notes, No. 25, 315, pl. 100, f. 6–9, 1907.

Densely gregarious on whitish mycelial mat which binds together leaves and twigs. Buttons globose and sessile or obovate and faintly stipitate, not pointed at the apex, up to 10 mm. in diam. and height, strigosely villous, at first light-buff below, warm-buff or cinnamon-buff above, then becoming rough and warm-buff on white surface, when dried becoming pale pinkish-buff, light-buff or pinkish-buff and less strigosely villous; exoperidium 5–7 lobed, split to half or $2/5$ the depth, cupulate at the base, lobes revolute, about 12mm. thick when fresh, inner-surface at first pale ochraceous-buff or pale ochraceous-salmon, then becoming light pinkish-cinnamon, finally to sordid, when dried becoming tawny-olive or sayal-brown to snuff-brown or warm-sepia; endoperidium globose, sessile, at first light-drab or light avellaneous, then becoming darker (drab to hair-brown), with a delicately felted surface, peristome with very slightly depressed circular marking, conical above, powdery-fibrillose, darker than the inner peridium, mouth fimbriate, not sulcate; spores dark, slightly rough or

minutely warted, globose, 3–3.5 μ in diam.

Hab. on fallen leaves and twigs on the ground in woods. Chichi-shima: Ôgimura-Renjudani (Nov. 9, 1936), Asahiyama (Nov. 12, 1936), Ômura-Kiyose (Nov. 14, 1936). Haha-shima: Kitamura-Sekimonzan (Nov. 20, 1936).

Jap. name. *Hina-tsuchigaki*.

In the dried specimens the exoperidium is often easily separable into two thin coats. The outer coat is like a thin piece of parchment and the face kept in contact with the inner one is pale pinkish-buff to pinkish-buff. The inner coat is often peeled off and drops away.

forma ***chichishimae*** S. ITO et IMAI, f. nov.

A typo differt globulis majoris, usque 20 mm. in diam., obscurioris, "tawny-olive, cinnamon-brown or russet" et minus flocculosis, atque sporis majoris, distinctiore verruculosi.

From the typical form, the present form differs in the larger size, (9–20 mm. across) darker color (tawny-olive, cinnamon-brown or russet) and less floccose exoperidium, as well as by the slightly larger and more distinctly warted spores. The mycelium is less developed than that of the typical form.

Hab. on fallen leaves of *Osteomeles boninensis* NAKAI (*Tachi-tennoume*) or on the ground among fallen leaves. Chichi-shima: Ômura (Nov. 11, 1936).

Jap. name. *Chichishima-hina-gaki* (nov. nom.).

6. ***Geastrum triplex*** (JUNGH.) ED. FISCH.

in ENGLER & PR. Nat. Pfl. Fam. 2 Aufl. VIIa, 73, 1933.

Geaster triplex JUNGH. Fidskr. von Nat. Gesch. VII, 287, pl. 8, f. 1–3, 1840.—DE TONI, in SACC. Syll. Fung. VII, 74, 1888—HOLLÓS, Gaster. Hung. 73 & 158, pl. 11, f. 1–6, pl. 29, f. 17, 1904—LLOYD, Geastrae, 25, f. 47–49, 1902; Lycop. Austr. 23, f. 24, 1905; Myc. Notes, No. 25, 309, f. 144, 1907—PETRI, Fl. Ital. Crypt., Gaster. 72, f. 38, 1909—REA, Brit. Basid. 43, 1922—COKER & COUCH, Gaster. East. U. S. Canada, 106, pl. 63, pl. 115, f. 1, 1928.

Geaster Michelianus W. G. SM. Garden. Chron. No. 18, 608, with fig., 1873.

Geaster Kalchbrenneri HAZSL. Verhandl. Zool. Bot. Ges. Wien, XXVI, 220, 1876—DE TONI, in SACC. Syll. Fung. VII, 89, 1888.

Gregarious. Buttons acuminate ovate, 1.5–3 cm. in diam., surface in dried specimens buckthorn-brown or brownish-olive, warty-rough or powdery-granulate; exoperidium splitting up into 4–7, long acuminate lobes up to about half way down, inner surface brownish, fleshy layer thick, cracking and peeling off with the exception of a cup-like basal portion which formed around the endoperidium, when dried becoming avellaneous to natal-brown or bone-brown and

very thin; endoperidium subglobose, 1.2–3 cm. broad, sessile, pale brownish, when dried becoming subavellaneous or nearly drab color; mouth subconcolorous or paler, broadly conical, fibrillose, surrounded by an indistinctly depressed orbicular zone or not; spores dark brown, globose, about 5μ in diam., distinctly warted.

Hab. on the ground. Chichi-shima: Ôgimura-Renjudani (Nov. 9, 1936), Asahiyama (Nov. 12, 1936). Haha-shima: Kitamura-Sekimonzan (Nov. 20, 1936).

Jap. name. *Erimaki-tsuchiguri*.

7. *Lycoperdon subincarnatum* PK.

24 Ann. Rept. N. Y. State Mus. n. 83, 1872–MASS. Journ. Royal Microsc. Soc. 1887, 719–DE TONI, in SACC. Syll. Fung. VII, 131, 1888–LLOYD, Myc. Notes, No. 20, p. 233, pl. 63, f. 5–9, 1905; Letters, No. 60, p. 15, 1915–COKER & COUCH, Gaster. East. U. S. Canada, 80, pl. 51, pl. 57, f. above, pl. 113, f. 9–10, 1928–KRIEGER, Mushroom Handb. 382, 1936.

Fructification small, 1–2 cm. or more in diam., globose or depressed globose, almost or quite sessile, growing on dead trunks, stumps or logs and attached by white mycelial thread of rhizoid; surface at first densely covered with minute, brown warts, which are easily separable and leaving by falling away the characteristic marking of small pits outlined by acute, reticulated ridges, appearing under a lens exactly like a thimble, color of the surface becoming tawny-olive above, pinkish-buff below; gleba buff-brown or nearly light brownish-olive, sterile base none or very scanty; spores globose, $3.5\text{--}4.5\mu$, echinulate; capillitium long, mostly simple, septate, thick, about twice the diameter of the spores, subhyaline.

Hab. on dead trunks, stumps or logs. Haha-shima: Kitamura-Sekimonzan (Nov. 20, 1936).

Jap. name. *Abata-chabukuro* (nom. nov.).

8. *Lycoperdon polymorphum* VITT.

Monogr. Lyc. in Mem. Acad. Torino, V, 183, pl. 2, f. 8, 1842–MASS. Journ. Royal Microsc. Soc. 1887, 715–LLOYD, Lycop. Austr. 29, pl. 34, f. 1–6, 1905; Myc. Notes, No. 19, 215, pl. 52, 1905–PETRI, Fl. Ital. Crypt., Gaster. 47, 1909–REA, Brit. Basid. 36, 1922–COKER & COUCH, Gaster. East. U. S. Canada, 92, pl. 113, f. 29, 1928.

Lycoperdon furfuraceum SCHAEFF. Fung. Bavar. pl. 294, 1774.

Lycoperdon cepaeforme BULL. Champ. Fr. pl. 435, f. 2, 1791, p. p.

Lycoperdon ericetorum PERS. Journ. Bot. II, 17, pl. 2, f. 1a-b, 1809.

Lycoperdon ericaeum BONORD. Bot. Zeit. XVI, 628, 1858—WINT. Die Pilze, I, 903, 1884—DE TONI, in SACC. Syll. Fung. VII, 114, 1888.

Globaria furfuracea QUÉL. Champ. Jura Vosg. II, in Mém. Soc. D'Emul. Montb. 2 sér. V, 370, pl. 3, f. 6, 1873—SCHROET. Pilze Schles. I, 699, 1889, p. p.

Utraria furfuracea QUÉL. Ench. Fung. 241, 1886.

Lycoperdon furfuraceum DE TONI, in SACC. Syll. Fung. VII, 110, 1888, p. p.—HOLLÓS, Gaster. Hung. 105 & 168, pl. 21, f. 19–28, 52–56, pl. 22, f. 8–15, 1904.

Lycoperdon cepaeforme LLOYD, Lycop. Austr. 30, f. 31, 1905; Myc. Notes, No. 19, 215, pl. 53, f. 1–4; Ibid. No. 20, 234, pl. 65, f. 1–7, 1905.

Fructification variable in form, subglobose or subpyriform with an attenuated stem like base, 1.5–2 cm. or more broad and high; peridium in dried material nearly pinkish-buff above and cinnamon-buff below and densely covered all over with sayal-brown or snuff-brown colored minute persistent flecks or granular particles, thin and papery; gleba dark-olive-buff or isabella color; sterile base not distinctly differentiated from the gleba, but paler, more compact and not powdery; spores dark olive-buff in mass, globose, smooth, with a short pedicel, 3–4 μ in diam.; capillitium filiform, branched, yellow colored, nearly the same to twice the diameter of the spores.

Hab. on the ground. Haha-shima: Okimura-Kuwanokiyama (Nov. 18, 1936).

Jap. name. *Tamanegi-chabukuro* (nom. nov.).

9. *Lycoperdon purpurascens* BERK. et CURT.

Proceed. Amer. Acad. Arts & Sci. IV, 124, 1860—MASS. Journ. Royal Microsc. Soc. 1887, 724—DE TONI, in SACC. Syll. Fung. VII, 488, 1888.

?*Lycoperdon fuligineum* BERK. et CURT. Journ. Linn. Soc., Bot. X, 345, 1869—MASS. Journ. Royal Microsc. Soc. 1887, 718—DE TONI, in SACC. Syll. Fung. VII, 132, 1888—LLOYD, Myc. Notes, No. 20, 234, 1905.

Bovista purpurea DE TONI, in SACC. Syll. Fung. 97, 1888.

Fructification small, about 1–1.5 cm. thick, subglobose or subobovate, almost or quite sessile, nearly chaetura-drab on the dried specimens, beset below with subfascicled spines which are whitish, yellowish or brownish and up to 1 mm. in length, rest above appearing as velvety with very short strigose hairs after falling away the fascicled spines, no reticulation remaining, sterile base distinct; spores nearly avellaneous in mass, globose, echinulate, yellowish, 4–5 μ ; capillitium nearly hyaline or very pale, sparingly branched.

Hab. on decayed wood. Haha-shima: Okimura-Kuwanokiyama (Oct. 17, 1936, M. OKABE).

Jap. name. *Kuroge-chabukura* (nom. nov.).

Lycoperdon fuligineum BERK. et CURT. from Cuba is undoubtedly the same with this fungus, but *L. subincarnatum* PK. is quite distinct, although LLOYD considered them as the same species.

10. *Cyathus boninensis* S. ITO et IMAI, sp. nov.



Fig. 1. *Cyathus boninensis* S. ITO et IMAI.
About natural size.

Peridio subcylindrico vel subcampanulato, basi angustato, substipitato, circa 1 cm. alto, extus "natal-brown" vel "bone-brown", primo squamulis villosa-strigosis fasciculatisque dense oblecto, dein apice subglabrescente, intus leve, vix vel leviterime striato, subplumbeo, nitente; tunica juvenile praesente, tenuissima, subplumbea, dein evanescente; peridiolis subatris, circa 2 mm. in diam., levibus, nitentibus, funiculatis; sporis late ellipsoideis vel subglobosis, $15-25 \times 12.5-22.5\mu$, hyalinis.

Peridia rather slender, subcylindrical or subcampanulate, with a short slender base, about 1 cm. long; outer surface natal-brown or bone-brown, rather densely covered with shaggy-strigose fasciculate scales when young, then becoming less shaggy and nearly smooth above; inner surface smooth, hardly or very slightly striate, lead colored, shiny; mouth entire, or at first appearing fimbriate from the surrounding hairy covering, but not ciliate-fimbriate, concolorous; tunica present when young, lead colored, thin, almost disappearing when matured; peridioles blackish or black, about 2 mm. in diam., smooth, shiny, usually attached to the peridium by funiculi; spores broadly ellipsoidal or subglobose, $15-25 \times 12.5-22.5\mu$, hyaline, thick-walled; hyphae hyaline, branched, about 2.5μ thick, thick-walled.

Hab. On dead wood. Chichi-shima: Ômura-Kiyose (Nov. 4, 1936).

Jap. name. *Munin-chadaigoke* (nom. nov.).

The present fungus is allied to *C. stercoreus* (SCHW.) DE TONI, from which it is distinguished by the darker colored and less shaggy peridia and the presence of tunica, as well as by the smaller spores.

11. *Pisolithus tinctorius* (PERS.) COKER et COUCH

Gaster. East. U. S. Canada, 170, pl. 96-97, pl. 120, f. 13-19, 1928-ED. FISCH. in ENGLER & PR. Nat. Pfl. Fam. 2 Aufl. VIIa, 39, f. 28, 1933.

Scleroderma tinctorium PERS. Syn. Fung. 152, 1801.

Scleroderma arhizum PERS. Ibid. 152, 1801.

Pisolithus arenarius ALB. et SCHW. Consp. Fung. Nisk. 82, pl. 1, f. 3, 1805—SCHROET. Pilze Schles. I, 706, 1889—HOLLÓS Gaster. Hung. 134 & 179, pl. 27, pl. 28, f. 1–6, 1904.

Lycoperdon capsuliferum Sow. Engl. Fung. pl. 425, 1809.

Polysaccum crassipes DC. Fl. Fr. VI, 103, 1815—FR. Syst. Myc. III, 53, 1829—CORDA, Icon. Fung. V, 63, pl. 4, f. 41, 1842—BARLA, Champ. Nice, 125, pl. 47, f. 11, 1859—WINT. Die Pilze, I, 891, 1884—DE TONI, in SACC. Syll. Fung. VII, 147, 1888—LLOYD, Genera Gastr. f. 9 & 36, 1902.

Polysaccum acaule DC. Fl. Fr. VI, 103, 1815.

Pisocarpium clavatum NEES v. ES. Syst. Pilze, 138, f. 131, 1817.

P. tinctorium NEES v. ES. Ibid. 138, 1817.

P. arenarium NEES v. ES. Ibid. 139, f. 131 β , 1817.

Polysaccum turgidum FR. Syst. Myc. III, 53, 1829—DE TONI, in SACC. Syll. Fung. VII, 147, 1888.

P. olivaceum FR. Syst. Myc. III, 54, 1829—DE TONI, in SACC. Syll. Fung. VII, 148, 1888.

P. Pisocarpium FR. Ibid. III, 54, 1829—DE TONI, in SACC. Syll. Fung. VII, 148, 1888.

P. subarrhizum FR. Ibid. III, 54, 1829.

P. tuberosus FR. Ibid. III, 55, 1829—DE TONI, in SACC. Syll. Fung. VII, 149, 1888.

P. conglomeratum FR. Ibid. III, 55, 1829—DE TONI, in SACC. Syll. Fung. VII, 150, 1888.

P. arenarium CORDA, Icon. Myc. II, 25, pl. 12, f. 91, 1838.

P. crassipes var. *clavatum* BARLA, Champ. Nice, 126, pl. 47, f. 12–13, 1859.

P. boreale KARST. Fung. Fenn. Exs. no. 570; Myc. Fenn. III, 363, 1876; Finl. Basidsv. 17, 1889—DE TONI, in SACC. Syll. Fung. VII, 148, 1888.

P. pisocarpium var. *Refinesquii* DE TONI, in SACC. Syll. Fung. VII, 148, 1888.

Pisolithus crassipes PETRI, Fl. Ital. Crypt., Gaster. 106, 1909.

P. tuberosus PETRI, Ibid. 107, 1909.

P. tuberosus var. *conglomeratus* PETRI, Ibid. 107, 1909.

Gregarious or solitary. Fructification up to 18 cm. long and 10 cm. thick, irregularly globose or pear-shaped, usually attenuated downward to a stout, stem-like, irregular base of very variable length and thickness, rarely sessile, solid and firm, at first olivaceous-yellow but usually dull ochraceous when first appeared, then brownish to blackish, the surface nearly glabrous; peridium very thin and at maturity becoming brittle and soon cracking into flakes above until

the whole contents are exposed; peridioles in section whitish or yellow; then watery vinaceous, then through darker vinaceous to nearly black, subpherical, irregularly angular, usually compressed, about 1–2 mm. thick and up to 4 mm. long, smaller toward the base; texture that of a firm elastic and translucent jelly until the desiccation at maturity; peridioles separated by a nearly black jelly enclosing a densely woven mass of delicate threads with clamp connections; spores cinnamon-brown in mass, globose, spiny, 7.5–12.5 μ in diam., spines 1.5–2.5 μ long.

Hab. on the ground. Haha-shima: Okimura (Nov. 23, 1936). Chichi-shima: Ôgimura (Jan. 14, 1937, M. OKABE).

Jap. name. *Ko-tsubu-take*.

Above description was largely adopted from that of COKER and COUCH, as our specimens were somewhat incomplete.

12. *Hysterangium hahashimense* S. ITO et IMAI, sp. nov.

Receptaculis gregariis vel solitariis, subglobosis, 1–2 cm. in diam., albidis, radicibus albidis praemorsis; peridio duplo: exoperidio circa 200 μ crasso, hyphis dense compactis, hyalinis, 4–7.5 μ in diam.; endoperidio 0.5–3 mm. crasso, gelatinoso, hyphis laxae implexis, circa 2.5 μ in diam.; gleba “buffy-olive”, “iron-gray” vel “olivaceous-black”; columella pendula, recta, circa 1 mm. crassa, brevi, cylindrica, non ramosa, alba, gelatinosa; basidiis 8-sporis, filiformibus, circa 1.5–2 μ crassis; sporis ellipsoideis, levibus, subhyalinis, 4–5 $\times$ 2–2.5 μ .

Fructification gregarious or solitary, 1–2 cm. in diam., subglobose, white or whitish when fresh, becoming olive-buff or deep olive-buff when preserved in alcohol; rhizoids subconcolorous, up to 1.5 mm. thick, branched below; peridium duplex: the outer layer about 200 μ thick, of thick-walled, hyaline, densely woven hyphae about 4–7.5 μ in diam., inner layer very variable in thickness because of the preserved liquids ranging from 0.5–3 mm., composed of loosely woven, thin-walled hyaline hyphae about 2.5 μ in diam., imbedded in a gel, rarely mixed with swollen nodulose hyphae; gleba buffy-olive to iron-gray or olivaceous-black; columella straight, 1 mm. thick, cylindrical, unbranched, pendently seated on the top of the gleba, white, gelatinous; septa composed of nearly the same hyphae with the inner peridium; basidia filiform, usually 8-spored, about 1.5–2 μ thick, hyaline; sterigmata obscure; spores ellipsoidal, smooth, nearly hyaline, 4–5 $\times$ 2–2.5 μ .

Hab. in woods. Haha-shima: Kitamura-Sekimonzan (Nov. 20, 1936).

Jap. name. *Hahashima-akô-shôro* (nom. nov.).

The present fungus is closely allied to *H. Thaxteri* ZELLER et DODGE, from which it is distinguished by paler fructification and the color of the gleba. It may be a local variety of the South American fungus and requires further

critical study on the relation between them.

13. *Rhizopogon boninensis* S. ITO et IMAI, sp. nov.

Fructificationis gregariis vel solitariis, globosis, oblongis vel irregulariter globosis, 1.5–7.0 cm. in diam., recente et subterraneo albis, aerate “cinnamon-buff” vel “cinnamon”, demum “tawny” vel “russet”, siccate “army-brown” vel “bone-brown”; funiculis copiosis, plurimis, innato-applicatis, ramosis, etiam reticulatis, totam fructificationem in reticulo saepe circumcludentis, recente et juvenile ablis, siccate nigrescentibus; peridio crassissimo, 500–2000 μ crasso, simplici, recente albo vel dilute flavidulo vel dilute carniusculo, dein atrobrunneo vel nigrescente; gleba carnosa, molli, juvenile alba, dein “olive-buff”; locellis sublabyrinthiformibus vel subcircularibus, septis 100–150 μ crassis, hyalinis, non scissilis; basidiis subcylindricis vel subclavatis, hyalinis, 2–8-sporiferis; sterigmatibus brevissimis; sporis acrogenis, in cumulo “tawny-olive”, oblongis vel ellipsoideis, 6.5–10 $\times$ 2.5–3.5 μ , levibus, primo 2-guttulatis, demum uniseptatis.

Fructification gregarious or solitary, globose, oblong or irregularly globose, 1.5–7 cm. in diam., when young, and on the subterranean part white, but on the exposed part to air becoming cinnamon-buff or cinnamon, finally to tawny or russet, on preserved specimens in formalin becoming ferruginous or Hay’s russet to natal-brown or bone-brown, when dried becoming, army-brown to bone-brown; fibrils conspicuous and abundant, at first white, in soaked specimens becoming darker than the peridium, and when dried becoming blackish, innately adpressed, branched and reticulated, often enclosing the whole fructification in a net; peridium thick, 500–2000 μ thick, simple, when fresh white and with yellowish or pinkish flush, in preserved specimens becoming dark-brown or blackish, mixed with septate hyphae containing pigmented granules; gleba fleshy, soft, white when young, becoming olive-buff, then darker; cavities sublabyrinthiform or subcircular; septa 100–150 μ thick, hyaline, not scissile; basidia subcylindrical or subclavate, hyaline, 2–8-spored; sterigmata very short; spores

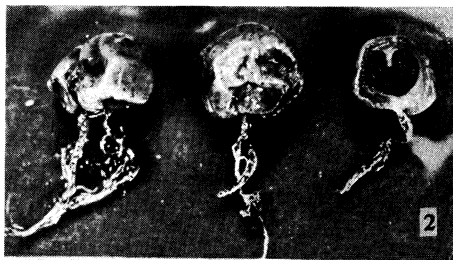


Fig. 2. *Hysterangium hahashimense* S. ITO et IMAI. About natural size.

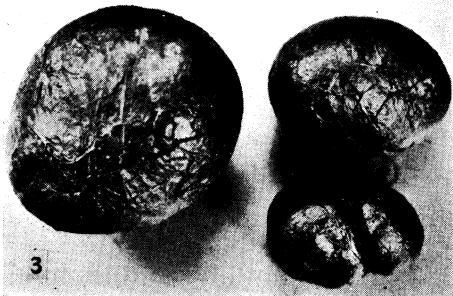


Fig. 3. *Rhizopogon boninensis* S. ITO et IMAI. About $\frac{2}{3}$ natural size.

acrogenous, tawny-olive in mass, oblong or ellipsoidal, smooth, $6.5-10 \times 2.5-3.5\mu$, at first with a two small guttae, at length becoming 1-septate.

Hab. in clay soil at the border of woods. Chichi-shima: Ôgimura (Nov. 5, 7, 9, 1936).

Jap. name. *Munin-shoro* (nom. nov.).

The present fungus is somewhat allied to *R. pachyphloeus* ZELLER et DODGE, from which it is clearly distinct.

摘 要

小笠原群島ノ菌類 (一)

本報告ニ於テハ腹菌類 (Gasteromycetes) 13 種 1 品種ヲ報告セリ。

1. **ムニンキツネノエフデ** (新稱) *Mutinus boninensis* ED. FISCH. 1887 年獨逸人 O. WARBURG 氏ガ小笠原島ニ於テ採集セルモノニヨリテ制定セラレタル種類ニシテ、其後 *Jansia boninensis* (ED. FISCH.) LLOYD ト呼バルルモノナリ。

2. **ヨツデタケ** (新稱) *Colonnaria columnata* (BOSC) ED. FISCH. 從來 *Clathrus columnatus* BOSC 或ハ *Laternea columnata* NEES v. ES. ト稱セラレシモノナリ。

3. **サンコタケ** *Pseudocolus javanicus* (PENZ.) LLOYD.

4. **キクザツチグリ** *Geastrum pectinatum* PERS. 1854 年北米合衆國人 CHARLES WRIGHT 氏ガ小笠原島ニテ採レル新種 *G. biplicatus* BERK. et CURT. ハ本種ト同一種ナリ。

5. **ヒナツチガキ** *Geastrum mirabile* (MONT.) ED. FISCH. 1854 年 C. WRIGHT 氏ガ小笠原島ニテ採レル新種 *G. papyraceus* B. et C. ハ本種ト同一種ナリ。尙本種ノ一新品種**チチシマヒナガキ** *G. mirabile* f. *chichishimae* S. ITO et IMAI ヲ採レリ。

6. **エリマキツチグリ** *Geastrum triplex* (JUNGH.) ED. FISCH.

7. **アバタチヤブクロ** (新稱) *Lycoperdon subincarnatum* PK.

8. **タマネギチヤブクロ** (新稱) *Lycoperdon polymorphum* VITT.

9. **クロゲチヤブクロ** (新稱) *L. purpurascens* B. et C. 1854 年 C. WRIGHT 氏ガ最初ニ小笠原島ニ於テ採集セル種類ナリ。

10. **ムニンチヤダイゴケ** (新種) *Cyathus boninensis* S. ITO et IMAI. 外側暗褐色毛狀ノ鱗被アル約 1 糎ノ高サル類圓筒形ノ菌ニシテ朽木上ニ生ズ。

11. **コツバタケ** *Pisolithus tinctorius* (PERS.) COKER et COUCH.

12. **ハハシマアコウシヨウロ** (新種) *Hysterangium hahashimae* S. ITO et IMAI. 直徑 1-2 糎アル類球形膠質ノ菌ニシテ、内部ニ暗綠色ノ子實層部アリ。

13. **ムニンシヨウロ** (新種) *Rhizopogon boninensis* S. ITO et IMAI. 直徑 1.5-7 糎アル類球形ノ松露ナリ。