Species of *Septobasidium* from Japan

By

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In the recent work of Dr. S. Ito, "Mycological Flora of Japan", vol. II, no. 4, issued in 1955, there are listed six species of the genus *Septobasidium* as being recorded from Japan. They are *Septobasidium bogoriense* Pat., *S. Tanakae* (Miyabe) Boedijn et Steinm., *S. prunophilum* Couch, *S. indigophorum* Couch, *S. mariani* Bres. var. *japonicum* Couch and *S. pilosum* Boedijn et Steinm. Among them, the former two are very commonly found on various plants in Japan, and had long been called *S. pedicellatum* (Schw.) Pat. and *Helicobasidium* Tanakae Miyabe respectively. Among the other four species, the three species (including one variety) named by Couch were originally collected in Japan and described by him in his "Genus *Septobasidium*" in 1938.

During these years, the writer has collected many specimens of the genus at various localities in the provinces of Tamba, Settu, Kawachi, Yamasiro and Yamato. They are classified into six species, *S. Tanakae*, *S. bogoriense* and four new species, by the writer. In the present paper, the writer gives diagnoses of these species, and consequent upon his observations, he came to the conclusion that *S. prunophilum* is identical with *S. Tanakae*, and *S. indigophorum* is synonymous with *S. bogoriense*. So, there exist nine species and one variety of the genus in the present Japanese mycological flora.

Key to the six species of *Septobasidium*

Basidia 2-celled.....1. *S. nigrum* YAMAMOTO
Basidia 4-celled

Basidia with probasidial cells

Basidia straight

Middle regions of context thin and not
stratose.....2. *S. tambaensis* YAMAMOTO

Middle regions of context thick and stratose
.....3. *S. Miyakei* YAMAMOTO

Basidia curved

Probasidial cells clavate.....

..... 4. *S. clavulatum* YAMAMOTO

Probasidial cells subglobose

..... 5. *S. bogoriense* PATOUILLARD

Basidia without probasidial cells..... 6. *S.*

Tanakae (MIYABE) BOEDIJN et STEINMANN

1. *Septobasidium nigrum*

YAMAMOTO sp. nov. (桜黒色紋羽菌)

Pileo resupinato, effuso, coriaceo, 2~15 cm. lato, usque 30 cm. longo nigro vel atro-fusco, in sporifero-tempore griseo-albo superficie glabro sed margine velutino et determinato, raro totaliter velutino; contextu tristratoso, 290~530 μ crasso; strato basilari tenui, 10~20 μ crasso, ex hyphis fuscidulis, 3~4 μ diam. constituto; strato medio 170~440 μ crasso, ex hyphis fuscidulis vel fusco-brunneolis, 3.5~4.5 μ diam., laxae intertextis et ascendentibus neque columnalibus composito; strato hymeniali 42~64 μ crasso, ex hyphis densissime ramosis et intertextis, subhyalinis vel hyalinis, 2.5~4 μ diam. composito; probasidiis globosis, ellipsoideis vel obovoideis, hyalinis, 9.5~14 $\times$ 5.5~10.5 μ ; basidiis subcylindraceis, deorsum leniter attenuatis, rectis, 1-septatis, hyalinis, 28~36 $\times$ 5.5~8 μ ; sterigmatibus acro-pleurogenis, 10~35 μ longis; sporis ellipsoideocylindraceis, leniter curvatis, apice obtusis, ad basim apiculatis, hyalinis, 13.5~24 $\times$ 4~5.5 μ .

Hab. On branches and trunks of *Prunus yedoensis* (*Somei-yoshino*). Prov. Tamba: Okano-mura (Dec. 10, 1953, W. Y.); Sasayama (May 14, 1954, W. Y. type); Nishikomume-mura (May 19, 1954, W. Y.). Prov. Settu: Minoo (May 14, 1955, W. Y.). Prov. Kawachi: Kawachi-nagano (May 14, 1955, W. Y.). On *Prunus donarium* (*Sato-zakura*). Prov. Tamba: Sasayama (Apr. 18, 1954, W. Y.); Kanesaka (May 9, 1955, W. Y.); Shino-mura (May 19, 1954, W. Y.). Prov. Yamato: Yoshino-yama (Aug. 8, 1955, W. Y.). On *Prunus subhirtella* (*Higan-zakura*). Prov. Settu: Minoo (May 14, 1955, W. Y.).

The present species resembles *Septobasidium sinuosum* COUCH, but differs from the latter by the smaller size of probasidia, basidia and basidiospores.

2. *Septobasidium tambaensis*

YAMAMOTO sp. nov. (桜暗褐色紋羽菌)

Pileo resupinato, effuso, coriaceo, tenuissimo, 1~4 cm. lato, 1~7 cm. longo, cinnamomeo-brunneo, superficie glabro, aspero, margine griseo-albo vel albo, determinato; contextu indistincte tristratoso, 180~340 μ crasso; strato basilari 16~45 μ crasso, ex hyphis dilute brunneolis, dense lateraliter intertextis, 3~4 μ diam. composito; strato medio 95~244 μ crasso, ex fascicularis hypharum laxae vel dense columnalibus 53~72 μ altis et 16~80 μ diam. efformato, interdum nec columnalibus efformato, in superiore ex hyphis brunneis, dense oblique vel

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Fig. 1. *Septobasidium nigrum*. Fig. 2. *Septobasidium tambaensis*. Fig. 3. *Septobasidium Miyakei*. Fig. 4. *Septobasidium clavulatum*. Fig. 5. *Septobasidium bogoriense*. Fig. 6. *Septobasidium Tanakae*. Figs. 1~6, $\times 50$.

irregulariter intertextis et ascendentibus composito; strato hymeniali indistincto, $34\sim 53\mu$ crasso, ex hyphis hyalinis vel dilute brunneolis, $2.5\sim 3.5\mu$ diam. composito; probasidiis subglobosis vel obovoideis, hyalinis, $9\sim 16\times 8\sim 12\mu$; basidiis subcylindraceis, rectis, apicem versus vel utrimque leniter attenuatis, apice subacutis, 3-septatis, raro ad septa leniter constrictis, hyalinis, $56\sim 80\times 5.5\sim 7.5\mu$; sterigmatibus pleurogenis, brevibus, $3\sim 10\mu$ longis; sporis ellipsoideo-cylindraceis, leniter curvatis, apice obtusis, ad basim apiculatis, hyalinis, $14\sim 24\times 4\sim 5\mu$.

Hab. On branches and trunks of *Prunus donarium* var. *spontanea* (Yama-zakura). Prov. Tamba: Kanegasaka (Jan. 31, 1955; Apr. 26, 1955, W. Y. type).

The present species closely resembles *S. curtisii* (BERK. et DESM.) BOED. et STEINM. in the shape of basidia, sterigmata and basidiospores, but differs from the latter by the structure of top layer and in the color of fructification.

3. *Septobasidium Miyakei*

YAMAMOTO sp. nov. (ぐみこはく色紋羽菌)

Pileo resupinato, effuso, coriaceo, $1\sim 5$ cm. lato, $3\sim 13$ cm. longo, cinnamomeo-brunneo, superficie glabro, rigidulo, margine tenui, pallide brunneo

vel albo, determinato; contextu saepe pleuristratoso, $440\sim 830\mu$ crasso; strato basilari $25\sim 55\mu$ crasso, ex hyphis brunneis, $2.5\sim 3.5\mu$ diam., dense lateraliter intertextis composito; strato medio saepe bi vel tristratoso, $360\sim 720\mu$ crasso, ex fascicularis hypharum columnalibus $70\sim 120\mu$ altis et $50\sim 180\mu$ diam. efformato; strato hymeniali $45\sim 60\mu$ crasso, ex hyphis densissime ramosis et intertextis, pallide brunneolis vel hyalinis, $1.2\sim 3\mu$ diam. composito, raro stratoso; probasidiis subglobosis, obovoideis vel piriformibus, hyalinis, $10.5\sim 19\times 8\sim 11\mu$; basidiis subcylindraceis, rectis, deorsum vel utrimque paulatim attenuatis, apice obtusis vel subacutis, hyalinis, plerumque 3-septatis, $45\sim 65\times 5\sim 6\mu$; sterigmatibus pleurogenis, brevibus, $3\sim 8\mu$ longis; sporis elongato-ellipsoideis, leniter curvatis, deorsum leniter attenuatis, apice obtusis, ad basim apiculatis, hyalinis, $12\sim 19\times 3\sim 4\mu$.

Hab. On branches and trunks of *Elaeagnus pungens* (Nawashiro-gumi). Prov. Tamba: Johokumura (May 16, 1954, A. MIYAKE, type; Apr. 29, 1955, W. Y.). On *Diospyros Kaki* (Kaki). Prov. Tamba: Johoku-mura (Jan. 15, 1955, A. MIYAKE).

The present species is closely related to *S. ficicolum* PAT, but distinguished from the latter by the thicker and stratoso middle region.

4. *Septobasidium clavulatum*

YAMAMOTO sp. nov. (ぐみ灰黒色紋羽菌)

Pileo resupinato, effuso, coriaceo, $0.5\sim 4.5$ cm. lato, $1\sim 15$ cm. longo, superficie glabro, atro vel fusco, dein saepe medio pallescente et griseo-albo, interdum submargine griseo-brunneolo, margine albo et determinato, concentriciter zonato; contextu tristratoso, $420\sim 720\mu$ crasso; strato basilari $20\sim 40\mu$ crasso, raro usque 70μ crasso, ex hyphis fusco-brunneis, lateraliter dense intertextis composito; strato medio $380\sim 530\mu$ crasso, interdum bistratoso, ex fascicularis hypharum columnalibus $60\sim 150\mu$ altis et $50\sim 250\mu$ diam. efformato, in superiore ex hyphis fusco-brunneis, laxo intertextis et ascendentibus, $3\sim 4\mu$ diam. composito; strato hymeniali $30\sim 45\mu$ crasso, ex hyphis pallide brunneolis vel hyalinis, $2.3\sim 3.5\mu$ diam., densissime ramosis et intertextis praedito; probasidiis clavatis, spatulatis, piriformibus vel obovoideis, hyalinis, $14\sim 32\times 8.5\sim 12.5\mu$; basidiis cylindraceis, uncinatis, 3-septatis, hyalinis, $30\sim 52\times 6.5\sim 10\mu$; sterigmatibus pleurogenis, $10\sim 25\mu$ longis; sporis ellipsoideo-cylindraceis, leniter curvatis, apice obtusis, ad basim apiculatis, hyalinis, $14\sim 27\times 3.3\sim 5.5\mu$.

Figs. 1~3. *Septobasidium nigrum*. 1. Probasidia. 2. Basidia. 3. Basidiospores. Figs. 4~5. *Septobasidium tambaensis*. 4. Probasidia. 5. Basidia and basidiospores. Figs. 6~8. *Septobasidium Miyakei*. 6. Probasidia. 7. Basidia. 8. Basidiospores. Figs. 9~11. *Septobasidium clavulatum*. 9. Probasidia. 10. Basidia. 11. Basidiospores. Figs. 12~14. *Septobasidium bogoriense*. 12. Probasidia. 13. Basidia. 14. Basidiospores. Figs. 15~16. *Septobasidium Tanakae*. 15. Basidia. 16. Basidiospores. Figs. 1~16. $\times$ ca. 530.

Hab. On branches and trunks of *Elaeagnus multiflora* (Natsu-gumi). Prov. Tamba: Johokumura (May 14, 1954, W. Y. type); Sasayama-cho (Feb. 1, & Apr. 28, 1955, W. Y.).

The present species resembles *S. bogoriense* PAT. in general character, but differs from the latter by the longer and clavate probasidial cells.

5. *Septobasidium bogoriense*

PATQUILLARD

in P. HENNINGS, *Monsunia*, 1: 138, 1900; SACCARDO, *Syll. Fung.* 16: 184, 1902; BOEDIJN

& STEINMANN, *Bull. Jard. Bot. Buitenzorg*, III, no. 11: 205, 1931; COUCH, *Genus Septobasidium*, 213, 1938; ITO, *Myc. Fl. Jap.* II, no. 4: 11, 1955.

Septobasidium pedicellatum (non PATOUILLARD) in SAWADA, *Bot. Mag. Tokyo*, 26: 307, 1912; *Descr. Cat. Form. Fung.* 1: 416, 1919; YASUDA, *Bot. Mag. Tokyo*, 28: 477, 1914; FUJIKURO, *ibid.* 28: 482, 1914; MIYAKE, *Bull. Ser. Exp. Sta.* I, no. 5: 332, 1916; LLOYD, *Lett.* 46: 7, 1917.

Septobasidium Mompa (TANAKA) RADIBORSKI in *Bull. Acad. Sci. Cracovie*, 3: 355, 1909; SACCARDO, *l. c.*, 21: 445, 1912; COUCH, *Genus*

Septobasidium, 213, 1938.

Septobasidium indigophorum COUCH

Genus *Septobasidium*, 282, 1938; ITO, Myc. Fl. Jap. II, no. 4: 14, 1955.

Fructification resupinate, effused, coriaceous, 1.5~7 cm. long, 1~5 cm. wide. Surface inherently smooth, lilac gray, purplish dark gray to purplish black. Margin determinate, fibrillose and white. Context usually composed of three layers, in section 200~480 μ thick. Subiculum thin, usually 15~30 μ thick, composed of pale brownish to dark brownish hyphae which are 3~4 μ thick. From the subiculum arise short, stubby pillars, 40~130 μ thick by 55~125 μ tall. The hyphae of the pillars loosely arranged, ascending, dark brownish, 3~4 μ thick. Hymenial layer 30~65 μ thick, composed of densely interwoven, hyaline to brownish hyphae which are 2.3~3 μ thick. Probasidia subglobose, 8~12 $\times$ 6.5~11 μ . Basidia cylindric, curved, 3-septate, 29~40 $\times$ 5.5~8 μ . Sterigmata pleurogenous, 7~20 μ long. Basidiospores long elliptic, slightly curved, apiculate at the basal end, hyaline, 12~24 $\times$ 3.5~5.5 μ .

Hab. On branches and trunks of *Broussonetia Kazinoki* SIEB. (Kozo). Prov. Tamba: Okano-mura (W. Y.). On *B. papyrifera* (Kazinoki). Prov. Tamba: Okano-mura (W. Y.). On *Mallotus japonicus* (Akame-gashiwa). Prov. Tamba: Okano-mura (W. Y.). On *Morus bombycis* (Kuwa). Prov. Tamba: Okano-mura (A. MIYAKE); Johoku-mura (W. Y.). On *Paulownia tomentosa* (Kiri). Prov. Tamba: Okano-mura (W. Y.). On *Xanthoxylum piperitum* (Sansho). Prov. Tamba: Okano-mura (W. Y.); Maki-mura (W. Y.).

The present species has generally been referred to *S. pedicellatum* in Japan, but was established by ITO (1955) that the fungus is identical with *S. bogoriense* PAT. *S. indigophorum* COUCH on the flowering cherry trees which was originally collected at Shino-mura, Prov. Tamba and described as new species but it seems to be not distinct from *S. bogoriense*.

6. *Septobasidium Tanakae*

(MIYABE) BOEDIJN et STEINMANN

in Bull. Jard. Bot. Buitenzorg, III, no. 11: 169, 1931; ITO, Myc. Fl. Jap. II, no. 4: 13, 1955.

Helicobasidium Tanakae MIYABE in SAWADA, Bot. Mag. Tokyo, 26: 104 & 307, 1912; Descr. Cat. Form. Fung. II: 104, 1922; MIYAKE, Bull. Ser. Exp. Sta. I, no. 5: 333, 1916; SACCARDO, l. c. 23: 558, 1925.

Septobasidium prunophilum COUCH

Genus *Septobasidium*, 280, 1938; ITO, Myc. Fl.

Jap. II, no. 4: 14, 1955.

Fructification resupinate, effused, coriaceous, 1~9 cm. long, 0.8~8 cm. wide. Surface velvety, deep brown. Margin determinate, finely fimbriate, grayish white to white. Context usually composed of three layers, in section 300~520 μ thick. Subiculum thin, dark brown, compact, 15~30 μ thick, from the subiculum arise the rather scattered, short and stubby pillars, 40~170 μ thick by 40~138 μ tall. The hyphae of the pillars deep brown, 3.5~5 μ thick, branching out above to the hymenial layer. Hymenial layer 53~96 μ thick, composed of brownish to hyaline, upright, branched, straight or wavy, closely arranged hyphae which are 3~4 μ thick. Probasidia not formed. Basidia formed directly from the hyphae in the basal region of hymenium, clavate, more or less curved, rounded at apex, 3-septate, 27~53 $\times$ 8~11 μ . Sterigmata pleurogenous, 20~45 μ long. Basidiospores long elliptic, slightly curved, obtuse at the apex, apiculate at the basal end, hyaline, 16~29 $\times$ 4~6.5 μ .

Hab. On branches and trunks of *Broussonetia Kazinoki* (Kozo). Prov. Tamba: Okano-mura (W. Y.). On *Diospyros Kaki* (Kaki). Prov. Tamba: Sasayama (W. Y.). On *Morus bombycis* (Kuwa). Prov. Tamba: Okano-mura (A. MIYAKE); Johoku-mura (W. Y.). On *Osmanthus fragrans* var. *aurantiacus* (Kin-mokusei). Prov. Tamba: Sasayama (W. Y.). On *Paulownia tomentosa* (Kiri). Prov. Tamba: Okano-mura (W. Y.). On *Prunus Armeniaca* var. *Ansu* (Anzu). Prov. Tamba: Sasayama (A. MIYAKE). On *P. donarium* SIEB. var. *spontanea* MAK. (Yama-zakura). Prov. Tamba: Kanegasaka (W. Y.). On *P. Mume* (Ume). Prov. Tamba: Sasayama (W. Y.); Okano-mura (A. MIYAKE); Maki-mura (W. Y.); Shino-mura (W. Y.). Prov. Kawachi: Kawachi-nagano (W. Y.). On *P. Persica* (Momo). Prov. Tamba: Sasayama (W. Y.). On *P. salicina* (Sumomo). Prov. Tamba: Sasayama (W. Y.). Prov. Settsu: Minoo (W. Y.). On *P. yedoensis* (Somei-yoshino). Prov. Tamba: Sasayama (W. Y.); Okano-mura (A. MIYAKE); Shino-mura (W. Y.). Prov. Yamashiro: Arashiyama (W. Y.). On *Xanthoxylum piperitum* (Sansho). Prov. Tamba: Okano-mura (A. MIYAKE); Sasayama (A. MIYAKE). Prov. Yamato: Yoshinoyama (W. Y.).

Although the present species has generally been referred to *Helicobasidium Tanakae* MIYABE in Japan, it was transferred to *Septobasidium* by BOEDIJN and STEINMANN (1931). *S. prunophilum* Couch which was originally collected at Shino-mura, Prov. Tamba seems to be identical with the present species. (Received August 18, 1955)