



Formosan Capnodiaceae

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FORMOSAN CAPNODIACEAE

Wataro YAMAMOTO

Key to the genera of Formosan Capnodiaceae

- A. Perithecia mostly stipitate
1. Perithecia glabrous
 - a. Ascospores phaeophragmiae or phaeodictyae
 - (1) Pycnosporos septate1. **Capnodium**
 - (2) Pycnosporos continuous
..... 2. **Neocapnodium**
 - b. Ascospores hyalophragmiae.....3. **Scorias**
 2. Perithecia setose
 - a. Ascospores hyalophragmiae
.....4. **Chaetoscorias**
 - b. Ascospores phaeophragmiae, rarely phaeodictyae5. **Capnophaeum**
- B. Perithecia sessile
1. Mycelium setose6. **Chaetothyrium**
 2. Mycelium not setose
 - a. Perithecia setose
 - (1) Pycnidia mostly setose.....
..... 7. **Aithaloderma**
 - (2) Conidia triposporioid
.....8. **Triposporiopsis**
 - (3) Pycnidia or conidia lacking
..... 9. **Hypocapnodium**
 - b. Perithecia glabrous
 - (1) Ascospores hyalophragmiae
..... 10. **Limacinia**
 - (2) Ascospores hyalodictyae.....
..... 11. **Phaeosaccardinula**

1. **Capnodium** MONTAGNE emend. YAMAMOTO

Ann. Soc. Nat. 3, XI, p. 233, 1849; SACCARDO, Syll. Fung. I, p. 73, 1882; WINTER, in RABENHOST, Krypt.-Fl. I, Teil. ii, p. 74, 1887; ELLIS & EVERHART, N. Amer. Pyren. p. 49, 1892; THEISSEN & SYDOW, Ann. Myc. XV, p. 473, 1917; CLEMENTS & SHEAR, Gen. Fung. p. 57 & 254, 1931; FISHER, Ann. Bot. N. S. III, p. 408, 1939; YAMAMOTO, Jubilee Publ. in Commem. of Sixtieth Birthdays

The specimens recorded in the present paper are all kept in the Herbarium of the Phytopathological Laboratory, Faculty of Agriculture, Taiwan University, Taihoku, Formosa.

of Profs. TOCHINAI and FUKUSHI, p. 54, 1955.

Perithecia subglobosa vel elongata, plerumque stipitata, indistincte ostiolata, coriacea, mucilagina, atra, glabra. Asci obovoidei, oblongi vel clavati, octospori, aparaphysati. Sporidia phaeodictyae vel phaeophragmiae. Pycnidia lageniformis, obclavata vel subcylindracea, apice non vel hyalino-fimbriata. Pycnosporae phragmosporae, didymosporae vel scolecosporae.

(1) **Capnodium** *Walteri* SACCARDO emend. FRASER

Hedw. XXXII, p. 58, 1893; SACCARDO, Syll. Fung. XI, p. 270, 1895; FRASER, Proc. Linn. Soc. N. S. W. LX, p. 160, 1935; YAMAMOTO, Ann. Phytopath. Soc. Japan, XIX, p. 1, figs. 1-4, 1954; HANSFORD, Reinw. III, p. 115, 1954.

Coloniis epiphyllis, effusis, tenuissime crustaceis, atro-brunneis, plus minusve strigosis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, dematioideis, anastomosantibus, mucilaginis, olivaceo-brunneis vel olivaceo-fuscis, 4.5~8 μ crassis, cellul subglobosis vel oblongis et 4.5~11 μ longis composito; pycnidiiis subgregariis, elongato-lageniformibus, inferiore inflatis, apicem versus attenuatis, apice ostiolatis et non fimbriatis, atris vel fuscis sed superiore pallidioribus, 182~336 μ longis, 60~92 μ crassis, apice 16~21 μ crassis; pycnosporis vermicularibus, sursum attenuatis, apice subacutis, basi truncato-rotundatis, 7~18-septatis, ad septa non vel vix constrictis, olivaceo-brunneis, 60~88 \times 7~9 μ ; peritheciis subgregariis, globosis vel obovoideis, plus minusve stipitatis, apice rotundatis vel vix papillatis, indistincte ostiolatis, glabris, coriaceis, atris, 100~115 μ altis, 85~108 μ crassis; ascis clavatis, apice rotundatis et incrassatis, breviter pedicellatis, octosporis, 53~87 \times 23~30 μ ; sporidiis polystichis, elongato-ovoideis, rectis vel leniter curvatis, apice obtusis, raro rotundatis, basi obtusis, 3-septatis, ad septa leniter vel fortiter constrictis, olivaceo-brunneis, mucilaginis, 23~37 \times 7~9 μ . (Figs. 1~5).

Hab. On leaves of *Achras Sapota* L. Prov. Taihoku: Sirin (Jan. 15, 1946, W. YAMAMOTO).

On *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sirin (Jan. 15, 1946, W. YAMAMOTO).

2. Neocapnodium YAMAMOTO

Jubilee Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 54 & 56, 1955.

Perithecia subglobosa vel elongata, plerumque stipitata, indistincte ostiolata, coriacea, mucilagina, atra, glabra. Asci ovoidei vel clavati, octospori, aparaphysati. Sporidia phaeophragmiae vel phaeodictyae. Pycnidia stipitata, ampulliformis, obclavata vel subcylindracea, apice non vel hyalino-fimbriata. Pycnosporae hyalosporae.

(2) Neocapnodium Tanakae (SHIRAI et HARA) YAMAMOTO

Ann. Phytopath. Soc. Japan, XIX, p. 1, figs. 5~10, 1954; Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 54, 1955.

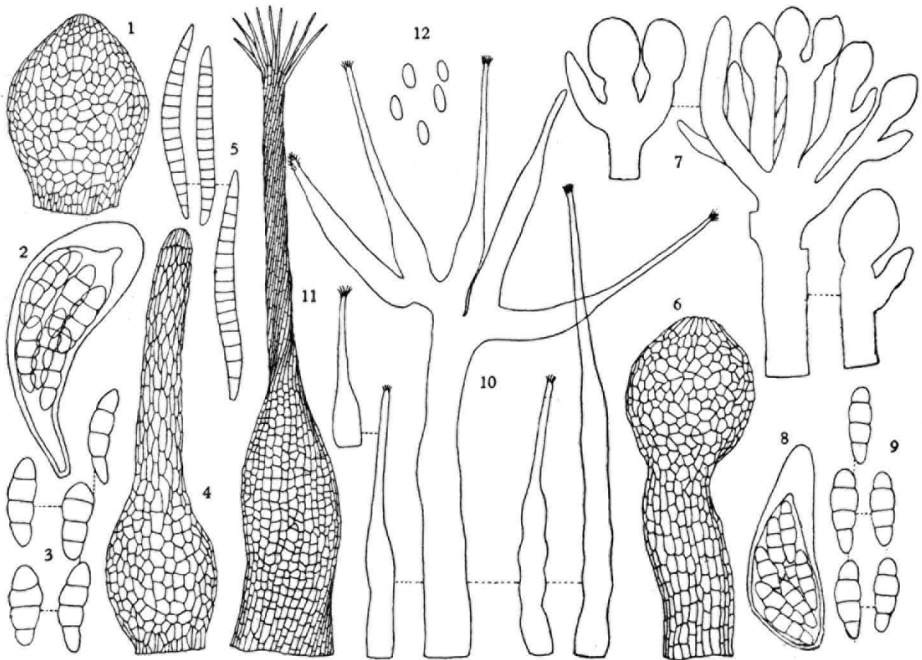
Capnodium Tanakae SHIRAI et HARA, HARA, Fruit Tree Diseases, p. 239, 1916; Path. Agr. Plant. p. 560, 1930; IDETA, Jap. Phytopath. (Suppl. I), p. 230, 1925; SACCARDO, Syll. Fung. XXIV, p. 383, 1926; SHIRAI & HARA, List Jap. Fung. p. 63, 1927; YAMAMOTO, Jour. Soc. Trop. Agr. (Formosa), XIV, p. 103 & 107, 1942.

Capnodaria Tanakae (SHIRAI et HARA) SAWA-

DA, Stud. Citrol. III, p. 264, 1929; HARA, Path. Agr. Plant. p. 63, 1927.

Antennella Citri SAWADA, Stud. Citrol. III, p. 261, 1929; Descr. Cat. Form. Fung. V, p. 27; 1931; YAMAMOTO, Jour. Soc. Trop. Agr. (Formosa), XIV, p. 103 & 107, 1942.

Coloniis epiphyllis, effusis, tenue crustaceis, strigosis; mycello dense intertexto, ex hyphis dense irregulariterque ramosis, anastomosantibus, dematioideis, mucilaginosis, olivaceo-brunneis vel fuscis, 3~7 μ crassis, cellulis subglobosis, oblongis vel subcylindraceis et 5~16 μ longis composito; pycnidiiis gregariis vel subgregariis, ampulliformibus, interdum dichotomicis vel irregulariter ramosis, longiore rostratis, apicem versus attenuatis, apice ostiolatis et hyalino-fimbriatis, atris vel olivaceo-fuscis sed superiore pallide brunneis 168~1614 μ altis, 23~74 μ crassis; pycnosporis oblongis vel ellipsoideis, continuis, hyalinis, 3~5 x 1.5~2.5 μ ; peritheciis gregariis, subglobosis, stipitatis, apice plus minusve papillatis et ostiolatis, atris, glabris, mucilaginosis, coriaceis, 69~102 μ crassis, 55~98 μ altis; stipitibus simplicibus vel



Figs. 1~12.

Figs. 1~5. *Capnodium Walteri* SACC. Fig. 1. Perithecium, \times 190. Fig. 2. Ascus, \times ca. 400. Fig. 3. Ascospores, \times ca. 400. Fig. 4. Pycnidium, \times 190. Fig. 5. Pycnosporae, \times 660.

Figs. 6~12. *Neocapnodium Tanakae* (SHIRAI et

HARA) YAM. Fig. 6. Perithecium, \times 190. Fig. 7. Perithecia, \times 66. Fig. 8. Ascus, \times ca. 400. Fig. 9. Ascospores, \times ca. 400. Fig. 10. Pycnidia, \times 66. Fig. 11. Pycnidium, \times 190. Fig. 12. Pycnosporae, \times 660.

di vel trichotomice ramosis, postea interdum dendrice ramosis, olivaceis, olivaceo-fuscis vel atris, 280~560 μ altis, ad basim 28~60 μ crassis; ascis obclavatis vel elongato-obovoideis, apice rotundatis et valde incrassatis, sessilibus vel brevissime pedicellatis, 4~8-sporis, aparaphysatis, 25~46 \times 9~13 μ ; sporidiis elongato-ovoideis, utrinque obtusis, 3-septatis, ad septa vix constrictis, e hyalino olivaceo-brunneis, raro fusco-brunneis, 11~16 \times 3.5~5 μ . (Figs. 6~12).

Hab. On leaves of *Citrus Tankan* HAY. Prov. Taihoku: Taihoku (Dec. 25, 1940, W. YAMAMOTO). Prov. Sintiku: Simpo (Mar. 18, 1942, W. YAMAMOTO).

On *Citrus Kotokan* HAY. Prov. Sintiku: Simpo (Mar. 19, 1942, W. YAMAMOTO).

On *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sirin (Jan. 29, 1939; Feb. 2, 1941, W. YAMAMOTO). Prov. Sintiku: Simpo (Mar. 18, 1942, W. YAMAMOTO).

On *Citrus paradisi* MACF. Prov. Taihoku: Taihoku (Feb. 16, 1941, W. YAMAMOTO).

On *Citrus poonensis* HORT. Prov. Sintiku: Sansa (Mar. 19, 1942, W. YAMAMOTO). Prov. Taityu: Nanto (Mar. 20, 1942, W. YAMAMOTO).

On *Citrus sinensis* OSBECK. Prov. Taihoku: Taihoku (Feb. 22, 1942, W. YAMAMOTO). Prov. Taityu: Nanto (Mar. 21, 1942, W. YAMAMOTO).

On *Cinchona succirubra* PAV. Prov. Takao: Kuwarusu (Apr. 12, 1942, W. YAMAMOTO).

On *Coffea arabica* L. Prov. Taityu: Nisui (Jan. 29, 1942, W. YAMAMOTO).

On *Coffea liberica* HIERN. Prov. Taihoku: Taihoku (Jan. 12, 1939, W. YAMAMOTO).

On *Ficus bengalensis* L. Prov. Taihoku: Taihoku (Mar. 16, 1942, W. YAMAMOTO).

On *Mallotus repandus* L. Prov. Taihoku: Taikoku (Feb. 28, 1941, W. YAMAMOTO).

3. *Scorias* FRIES emend. YAMAMOTO

Syst. Orb. Veg. I, p. 171, 1925; SACCARDO, Syll. Fung. I, p. 83, 1882; ELLIS & EVERHART, N. Amer. Pyren. p. 55, 1892; THEISSEN & SYDOW, Ann. Myc. XV, p. 473, 1917; CLEMENTS & SHEAR, Gen. Fung. p. 57 & 254, 1931; FISHER, Ann. Bot. N. S. III, p. 408, 1939; YAMAMOTO, Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 54, 1955.

Perithecia subglobosa vel elongata, plerumque stipitata, distincte vel insistenti ostiolata, coriacea, mucilagina, atra, glabra. Asci ovoidei vel clavati, octospori, aparaphysati. Sporidia hyalophragmiae. Pycnidia ellipsoidea vel elongata, stipitata, superiore non vel rostrata, apice non vel fimbriata. Pycnosporae hyalosporae.

Key to the species of *Scorias*

1. Pycnidia ellipsoid, long-synnematioid-stipitate, long-rostrate.....*S. communis* YAM.
2. Pycnidia cylindrical, not rostrate
.....*S. cylindrica* YAM.

(3) *Scorias communis* YAMAMOTO

Ann. Pytopath. Soc. Japan, XIX, p. 3 & 4, figs. 11~16, 1954; Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 54, 1955.

Scorias sp., YAMAMOTO, Jour. Soc. Trop. Agr. (Formosa), XIV, p. 101, figs. B & 4~6, 1942.

Coloniis epiphyllis, effusis, tenue crustaceis, strigosis, atris vel fuscis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, dematioidis, anastomosantibus, mucilaginis, olivaceo-brunneis vel fuscis, 4~7 μ crassis, cellulis oblongis vel subcylindratis et 6~16 μ longis composito; pycnidiiis gregariis, microxyphioformibus, longissime stipitatis, totaliter longitudine 308~1148 μ longis, 30~69 μ crassis; stipitibus synnematioidis, rectis vel leniter curvatis, raro superiore dichotomice ramosis, atris, opacis, 224~896 μ longis, ad basim 23~46 μ crassis, apice inflatis et pycnidiiis ornatis; pycnidiiis propiis ellipsoideis vel elongato-ellipsoideis, longiore rostratis, atris vel atro-brunneis, opacis sed superiore pallide brunneis, apicem versus attenuatis, apice ostiolatis et hyalino-fimbriatis, partis pycnidiiis 84~126 μ longis et 30~69 μ crassis, partis rostriformibus 70~168 μ longis; pyconsporis oblongis vel ellipsoideis, continuis, hyalinis, 4~5.5 \times 2~2.5 μ ; peritheciis sparsis vel subgregariis, pyriformibus vel subglobosis, plus minusve stipitatis, apice plus minusve papillatis et indistincte ostiolatis, glabris coriaceis, mucilaginis, atris, 112~154 μ altis, 93~133 μ crassis; stipitibus 18~55 μ altis, 48~53 μ crassis; ascis copiosis, clavatis, elongato-ellipsoideis vel clavato-cylindratis, apice late rotundatis et in crassatis, breviter pedicellatis, 4~8-sporis, aparaphysatis, 41~64 \times 14~19 μ ; sporidiis elongato-obovoideis, apice rotundatis, ad basim obtusis, 2~5-septatis, plerumque 3~4-septatis, ad septa non vel vix constrictis, e hyalino dilute olivaceis, 17~28 \times 4.5~6 μ . (Figs. 13~18).

Hab. On leaves of *Coffea liberica* HIERN. Prov. Taihoku: Taihoku (Jan. 12, 1939, type; Feb. 10, 1941, W. YAMAMOTO).

On *Castanea crenata* SIEB. et ZUCC. Prov. Taihoku: Taihoku (Oct. 16, 1938, W. YAMAMOTO).

On *Cinchona succirubra* PAV. Prov. Takao: Kuwarusu (Apr. 12, 1942, W. YAMAMOTO).

On *Citrus maxima* (BURM. f.) MERR. Prov. Tainan; Mato (Dec. 2, 1942, W. YAMAMOTO). Prov. Sintiku: Simpo (Mar. 9, 1942, W. YAMAMOTO).

On *Citrus poonensis* HORT. Prov. Sintiku: Sansa (Mar. 19, 1942, W. YAMAMOTO).

On *Citrus sinensis* OSBECK. Prov. Taiyu: Nanto (Mar. 21, 1942, W. YAMAMOTO).

On *Citrus Tankan* HAY. Prov. Taihoku: Sirin (Feb. 8, 1942, W. YAMAMOTO).

On *Dendrocalamus latiflorus* MUNRO. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Ficus retusa* L. Prov. Sintiku: Sansa (Mar. 19, 1942, W. YAMAMOTO).

On *Ficus septica* BURM. f. Prov. Taihoku: Taihoku (Jan. 12, 1939, W. YAMAMOTO).

On *Ficus Wightiana* WALL. Prov. Taihoku: Taihoku (Jan. 13, 1939, W. YAMAMOTO).

On *Gardenia angusta* (L.) MERR. var. *ovalifolia* (CURT.) HORT. Prov. Taihoku: Taihoku (Mar. 16, 1941, W. YAMAMOTO).

On *Leleba dolichoclada* (HAY.) KANEH. Prov. Taihoku: Sinten (Jan. 14, 1941, W. YAMAMOTO).

On *Leleba Oldhami* NAK. Prov. Taihoku: Mokusaku (Mar. 16, 1941, W. YAMAMOTO).

On *Maesa formosana* MEZ. Prov. Tainan: Kansirei (Dec. 28, 1938, W. YAMAMOTO).

On *Mallotus japonicus* MUELL.-ARG. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Phyllostachys Makinoi* HAY. Prov. Takao: Kuwarusu (Apr. 12, 1942, W. YAMAMOTO).

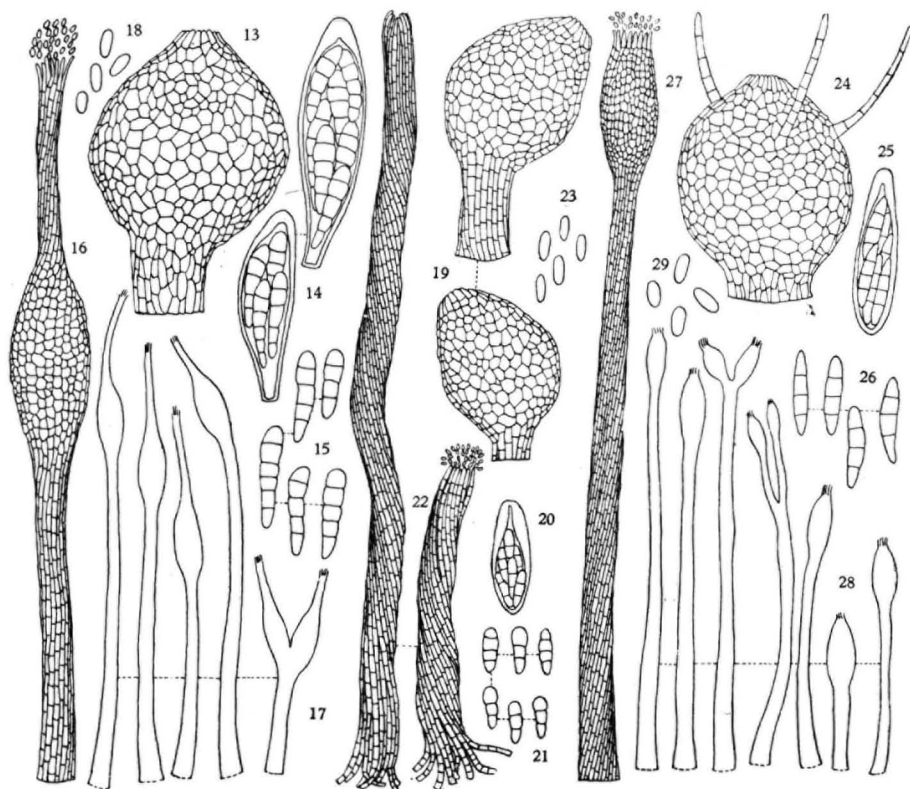
On *Psidium Guajava* L. Prov. Taihoku: Taihoku (Jan. 13, 1939, W. YAMAMOTO).

On *Quercus serrata* THUNB. Prov. Taihoku: Taihoku (Nov. 6 1938, W. YAMAMOTO).

On *Schefflera octophylla* (LOUR.) HARMS. Prov. Taihoku: Sinten (Feb. 22, 1932, W. YAMAMOTO).

On *Sapindus Mukurossi* GARTN. Prov. Taihoku: Taihoku (Sept. 21, 1938, W. YAMAMOTO).

On *Trema orientalis* BL. Prov. Taihoku: Sirin (Feb. 23, 1941, W. YAMAMOTO).



Figs. 13~29.

Figs. 13~18. *Scorias communis* YAM. Fig. 13. Perithecium, $\times 190$. Fig. 14. Ascus, $\times ca. 400$. Fig. 15. Ascospores, $\times ca. 400$. Fig. 16. Pycnidium, $\times 190$. Fig. 17. Pycnidia, $\times 66$. Fig. 18. Pycnospores, $\times 660$.

Figs. 19~23. *Scorias cylindrica* YAM. Fig. 19. Perithecia, $\times 190$. Fig. 20. Ascus, $\times ca. 400$. Fig.

21. Ascospores, $\times ca. 400$. Fig. 22. Pycnidia, $\times 190$. Fig. 23. Pycnospores, $\times 660$.

Figs. 24~29. *Chaetoscorias vulgare* YAM. Fig. 24. Perithecium, $\times 190$. Fig. 25. Ascus, $\times ca. 400$. Fig. 26. Ascospores, $\times ca. 400$. Fig. 27. Pycnidium, $\times 190$. Fig. 28. Pycnidia, $\times 66$. Fig. 29. Pycnospores, $\times 660$.

(4) *Scorias cylindrica* YAMAMOTO

Ann. Phytopath. Soc. Japan, XIX, p. 3 & 5, figs. 23~26, 1954; Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FKUSHI, p. 54, 1955.

Coloniis epiphyllis, effusis, strigosis, atris; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, anastomosantibus, mucilaginis, olivaceis vel olivaceo-brunneis, $3.5\sim 6\ \mu$ crassis, cellulis oblongis vel subglobosis et $4.5\sim 11\ \mu$ longis composito; pycnidiiis gregariis, cylindraceutis, rarissime dichotomiceramosis, rectis vel leniter curvatis, apicem versus non vel parum attenuatis, apice ostiolatis et non fimbriatis, opacis sed ad apicem pallidioribus, $250\sim 700\ \mu$ longis, ad basim $16\sim 32\ \mu$ crassis; pycnosporis oblongis vel ellipsoideis, continuis, $3.5\sim 4.5\times 1\sim 1.8\ \mu$; peritheciis sparsis, ellipsoideis vel ovoideis, plus minusve stipitatis, indistincte ostiolatis, glabris, coriaceis, mucilaginis, atris, $84\sim 126\ \mu$ altis, $70\sim 90\ \mu$ crassis; stipitibus $28\sim 112\ \mu$ altis, $25\sim 35\ \mu$ crassis; ascis obovoideis vel clavatis, apice late rotundatis et incrassatis, $4\sim 8$ -sporis, $23\sim 39\times 9\sim 11.5\ \mu$; sporidiis elongato-obovoideis, ad basim leniter attenuatis et obtusis, apice rotundatis vel obtusis, $2\sim 3$ -septatis, dilutissime olivaceis, $9\sim 14\times 3\sim 4.5\ \mu$. (Figs. 19~23).

Hab. On leaves of *Gardenia angusta* (L.) MELL. var. *ovalifolia* (CURT.) HORT. Prov. Taihoku: Taihoku (June 25, 1940, W. YAMAMOTO, type).

On *Myrica rubra* SIEB. & ZUCC. Prov. Taihoku: Taihoku (May 20, 1942, W. YAMAMOTO).

On *Ixora coccinea* L. Prov. Taihoku: Taihoku (Jan. 3, 1942, W. YAMAMOTO).

4. *Chaetoscorias* YAMAMOTO

Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 54 & 56, 1955.

Perithecia subglobosa vel plus minus elongata, parum stipitata, indistincte ostiolata, mucilagina, atra, superne setosa. Asci obovoidei vel clavati, octospori, aparaphysati. Sporidia hyalophragmiae. Pycnidia ellipsoidea, longiore synnematioideo-stipitata, apice ostiolata et hyalino-fimbriata. Pycnosporae hyalosporae.

(5) *Chaetoscorias vulgare* YAMAMOTO

Ann. Phytopath. Soc. Japan, XIX, p. 3 & 5, figs. 17~22, 1954; Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 54, 1955.

Coloniis epiphyllis, effusis, crustaceis, strigosis, atris; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, anastomosantibus, mucilaginis, olivaceo-brunneis vel fuscis, $4.5\sim 6\ \mu$ crassis, cellulis subglobosis, oblongis vel subcylindraceutis et $6\sim 18\ \mu$ longis composito; pycnidiiis gregariis, longis-

sime stipitatis; stipitibus synnematioideis, rectis vel plus minus curvatis, apicem versus attenuatis, raro superiore dichotomiceramosis, atro-brunneis, opacis, $140\sim 1064\ \mu$ longis, ad basim $25\sim 69\ \mu$ crassis, apice abrupte inflatis et pycnidiiis ornatis; pycnidiiis propiis ellipsoideis vel elongato-ellipsoideis, apice ostiolatis et hyalino-fimbriatis, $56\sim 112\times 25\sim 46\ \mu$; pycnosporis ellipsoideis vel oblongis, continuis, hyalinis, $3\sim 6\times 1.5\sim 3\ \mu$; peritheciis subgregariis vel sparsis, subglobosis, apice plus minusve papillatis et indistincte ostiolatis, non vel parum stipitatis, superiore $1\sim 8$ -setosis, coriaceis, mucilaginis, atris, $83\sim 138\ \mu$ altis, $74\sim 115\ \mu$ crassis; stipitibus usque $25\ \mu$ altis; setis perithecialibus rectis vel leniter curvatis, apice obtusis, indistincte $3\sim 7$ -septatis, e atro fuscis, opacis sed superiore pallidioribus et subpellucidis, $41\sim 115\ \mu$ longis, ad basim $4.5\sim 5.5\ \mu$ crassis; ascis elongato-obovoideis vel obclavato-cylindraceutis apice late rotundatis et incrassatis, $4\sim 8$ -sporis, aparaphysatis, $42\sim 56\times 12\sim 14\ \mu$; sporidiis elongato-ellipsoideis vel elongato-ovoideis, utrinque obtusis vel subacutis, 3 -septatis, e hyalino subhyalinis, $18\sim 25\times 4\sim 5\ \mu$. (Figs. 24~28).

Hab. On leaves of *Sanchezia nobilis* HOOK. f. Prov. Taihoku: Taihoku (Mar. 8, 1942, W. YAMAMOTO, type).

On *Coffea arabica* L. Prov. Taiyu: Nisui (Jan. 29, 1942, W. YAMAMOTO).

On *Diospyros Kaki* L. f. Prov. Taihoku: Taihoku (Nov. 16, 1938, W. YAMAMOTO).

On *Eugenia malaccensis* L. Prov. Taihoku: Taihoku (Oct. 1, 1938, W. YAMAMOTO).

On *Ficus septica* BURM. f. Prov. Taihoku: Taihoku (Oct. 20, 1938, W. YAMAMOTO).

On *Holarrhena antidysenterica* WALL. Prov. Taihoku: Taihoku (Mar. 9, 1941, W. YAMAMOTO).

On *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sirin (Jan. 15, 1942, W. YAMAMOTO).

On *Cinchona succirubra* PAV. Prov. Takao: Kuwarusu (Apr. 12, 1942, W. YAMAMOTO).

5. *Capnophaeum* SPEGAZZINI emend. YAMAMOTO

Physis IV, p. 287, 1918; SACCARDO, Syll. Fung. XXIV, p. 384, 1926; CLEMENTS & SHEAR, Gen. Fung. p. 57 & 254, 1931; YAMAMOTO, Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 54, 1955.

Perithecia subglobosa vel plus minus elongata, leniter stipitata, indistincte ostiolata, coriacea, mucilagina, atra, breviter setosa. Asci ovoidei vel clavati, octospori, aparaphysati. Sporidia phaeophragmiae, raro phaeodictyae. Pycnidia subglobosa vel elongata, interdum setosa. Pycnosporae hyalosporae.

(6) Capnophaeum fuliginodes (REHM)

YAMAMOTO

Ann. Phytopath. Soc. Japan, XIX, p. 4, figs. 27~30, 1954; Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI p. 54, 1955.

Capnodium fuliginodes REHM, Ascomyc. n. 245, 1874; SACCARDO, Syll. Fung. I, p. 65, 1882; FRASER, Proc. Linn. Soc. N. S. W. LX, p. 162, 1935.

Meliola fuliginodes (REHM) SACCARDO, Syll. Fung. I, p. 65, 1882.

Limacinia fuliginodes (REHM) SACCARDO, Hedw. XXXVI, p. xx, 1897; SACCARDO, Syll. Fung. XIV, p. 474, 1899.

Capnophaeum nipponicum IGATA, Path. & Therap. Stud. Import. Paras. Dis. Jap. Persimmon, p. 24 & 261, 1942; YAMAMOTO, Ann. Phytopath. Soc. Japan, XIX, p. 4, 1954; HARA, List Jap. Fung. p. 41, 1954.

Coloniis epiphyllis, effusis coriaceo-crustaceis, glabris, scabris, atris; mycelio densissime intertexto, ex hyphis densissime irregulariterque ramosis, interdum longitudinaliter connatis, plus minusve dematioideis, anastomosantibus, mucilaginis, olivaceo-brunneis vel olivaceo-fuscis, 4.5~9 μ crassis, cellulis oblongis vel subglobosis et 7~14 μ longis composito; pycnidiiis gregariis, ovoideis, ellipsoideis vel subglobosis, raro oblongis apice obtusis vel leniter papillatis et ostiolatis, interdum circa ostiolum breviter 2~10-setosis, subcoriaceis, mucilaginis, e fusco brunneis, 46~87 μ altis, 40~74 μ crassis; setis pycnidialibus corniformibus, apice obtusis vel subacutis, continuis, atro-brunneis, 9~23 \times 4.5~6 μ ; pycnosporis globosis, e hyalino dilutissime olivaceis, 1.2~2.5 μ diam.; peritheciis gregariis, globosis vel ellipsoideis, plus minusve stipitatis, apice rotundatis vel plus minus papillatis et ostiolatis, breviter 10~20-setosis, coriaceis, mucilaginis, fuscis vel atris, 78~115 μ altis, 73~104 μ crassis, stipitibus 28~70 μ altis; setis perithecialibus corniformibus, apice obtusis vel acutis, atris, opacis, continuis vel uniseptatis, 9~37 \times 4.5~6 μ ; ascis copiosis, clavato-cylindraceutis vel subcylindraceutis, apice rotundatis, ad basim attenuatis, octosporis, aparaphysatis, 32~39 \times 7~10 μ ; sporidiis 2~3-stichis, ellipsoideis, fusiformibus vel ovoideis, transverse 3-septatis, ad septa non vel parum constrictis, raro longitudinaliter vel oblique 1~2-septatis, ochraceo-brunneis, 9~12 \times 3.5~5 μ . (Figs. 30~34).

Hab. On leaves of *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sirin (Mar. 8, 1942, W. YAMAMOTO). Prov. Tainan: Toroku (Nov. 29, 1941, W. YAMAMOTO).

On *Citrus paradisi* MACF. Prov. Taihoku: Sirin (Jan. 29, 1939, W. YAMAMOTO).

On *Citrus sinensis* OSBECK. Prov. Taiyu: Nanto (Mar. 21, 1942, W. YAMAMOTO).

On *Citrus Tankan* HAY. Prov. Taihoku: Seisiryō (Mar. 15, 1942, W. YAMAMOTO).

6. Chaetothyrium SPEGAZZINI

Fung. Guaran. II, n. 123, 1888; SACCARDO, Syll. Fung. IX, p. 1061, 1891; THEISSEN & SYDOW, Ann. Myc. XV, p. 477, 1917; STEVENS, BISHOP Mus. Bull. XIX, p. 56, 1925; CLEMENTS & SHEAR, Gen. Fung. p. 57 & 253, 1931; FRASER, Proc. Linn. Soc. N. S. W. LX, p. 281, 1935; FISHER, Ann. Bot. N. S. III, p. 411, 1939; YAMAMOTO, Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 54, 1955.

Zukalia SACCARDO, Syll. Fung. IX, p. 431, 1891.

Chaetasterina BUBAK, Ann. Nat. Hofmus. Wien, XXIII, p. 102, 1909.

Perithecia depresso-globosa vel hemisphaeroidea, indistincte ostiolata, subcoriacea, atra vel fusca, setosa vel glabra. Asci clavati, octospori, aparaphysati. Sporidia hyalophragmiae. Pycnidia vel conidia defecta. Mycelium setosum.

Key to the species of *Chaetothyrium*

1. Perithecia glabrous; hyphae echinulate.....
.....*C. echinulatum* YAM.
2. Perithecia setose; hyphae not echinulate.....
.....*C. Sawadai* YAM.

(7) Chaetothyrium echinulatum YAMAMOTO

Ann. Phytopath. Soc. Japan, XXI, p. 167, 1956.

Coloniis epiphyllis, late effusis, tenuissime crustaceis, strigosis, cinereo-fuscis vel fusco-brunneis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, anastomosantibus, dematioideis, subhyalinis vel fusco-brunneis, minutissime echinulatis, 3~4.5 μ crassis, cellulis oblongis vel subcylindraceutis et 7~15 μ longis composito; setis mycelialibus numerosis, simplicibus, rectis vel leniter curvatis, apice obtusis, atris, opacis sed superiore subpellucidis, 168~322 μ longis, ad basim 7~8 μ crassis, interdum hyphis hyalinis usque ad apices setarum repentibus et tectis; peritheciis subgregariis, depresso-globosis, indistincte ostiolatis, siccis, apice collabentibus, glabris, subcoriaceis, atris 170~238 μ diam.; ascis subcylindraceutis vel ellipsoideo-cylindraceutis, apice rotundatis, ad basim, brevissime pedicellatis, octosporis aparaphysatis, 46~65 \times 11~14 μ ; sporidiis 2~3-stichis, oblongis vel elliptico-oblongis, utrinque rotundatis vel obtusis, rectis vel leniter curvatis; 3-septatis, hyalinis, 13~21 \times 4.5~5 μ . (Figs. 35~37).

Hab. On leaves of *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sinten (Mar. 16, 1941, W. YAMAMOTO, type).

On *Bladhia Sieboldii* (MIQ.) NAK. Prov. Taihoku: Taihoku (Mar. 16, 1941, W. YAMAMOTO).

On *Citrus Tankan* HAY. Prov. Taihoku: Sinten (Mar. 16, 1941, W. YAMAMOTO).

On *Euphoria Longana* LAM. Prov. Taihoku: Sinten (Jan. 2, 1939, W. YAMAMOTO).

On *Itea chinensis* HOOK. & ARN. var. *subserata* MAX. Prov. Taihoku: Sinten (Mar. 16, 1941, W. YAMAMOTO).

On *Lasianthus plagiophyllus* HANCE. Prov. Taihoku: Sinten (Mar. 16, 1941, W. YAMAMOTO).

On *Phyllostachys Makinoi* HAY. Prov. Taihoku: Sinten (Mar. 16, 1941, W. YAMAMOTO).

On *Scheffera octophylla* (LOUR.) HARMS. Prov. Taihoku: Sinten (Nov. 28, 1938, W. YAMAMOTO).

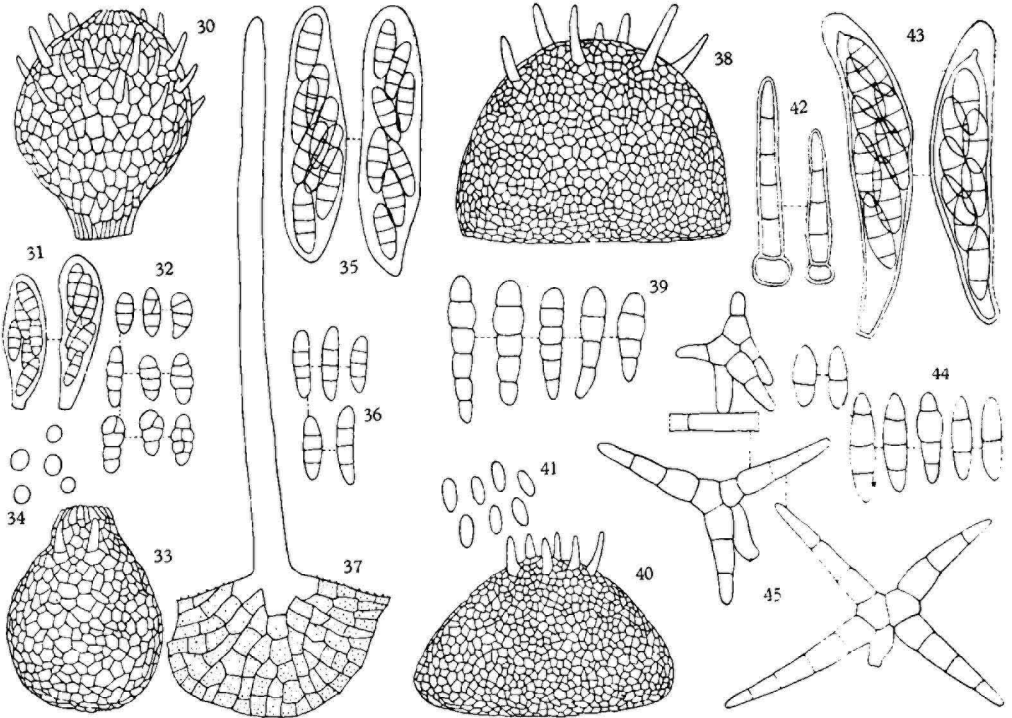
On *Styrax suberifolius* HOOK. & ARN. Prov. Taihoku: Sekitei (Nov. 23, 1938, W. YAMAMOTO).

(8) *Chaetothyrium Sawadai* YAMAMOTO

Ann. Phytopath. Soc. Japan. XXI, p. 167, 1956.

Hypocapnodium strigosum SAWADA, Stud. Citrol. III, p. 255, 1929; Descr. Cat. Form. Fung. V, p. 22, 1931; HARA, Path. Agr. Plant. p. 561, 1930; List Jap. Fung. p. 163, 1954.

Coloniis epiphyllis, late effusis, tenuissime crustaceis, strigosis, cinereo-brunneis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, dematioideis, anastomosantibus, subhyalinis vel dilute brunneolis, 2.5~4.5 μ crassis, cellulis oblongis vel subcylindraceis et 6~18.5 μ longis composito; setis mycelialibus numerosis, simplicibus, rectis vel parum curvatis, apice obtusis, fuscis vel fusco-brunneis, opacis sed superiore pellucidis, 84~238 μ longis, ad basim 3~7 μ crassis; peritheciis sparsis vel subgregariis, depresso-globosis, subcoriaceis, fusco-brunneis, in-



Figs. 30~45.

Figs. 30~34. *Capnophaeum fuliginodes* (REHM) YAM. Fig. 30. Perithecium, \times 190. Fig. 31. Asci, \times ca. 400. Fig. 32. Ascospores, \times ca. 400. Fig. 33. Pycnidium, \times 190. Fig. 34. Pycnospores, \times 660.

Figs. 35~37. *Chaetothyrium echinulatum* YAM. Fig. 35. Asci, \times ca. 400. Fig. 36. Ascospores, \times ca. 400. Fig. 37. Mycelial seta, \times ca. 400.

Figs. 38~41. *Aithaloderma clavatisporum* SYD.

Fig. 38. Perithecium, \times 190. Fig. 39. Ascospores, \times ca. 400. Fig. 40. Pycnidium, \times 190. Fig. 41. Pycnospores, \times 660.

Figs. 42~45. *Triposporiopsis spinigera* (v. HOEH.) Fig. 42. Perithecial setae, \times ca. 500. Fig. 43. Asci, \times ca. 500. Fig. 44. Ascospores, \times ca. 500. Fig. 45. Triposporioid condidia, \times ca. 500.

distincte ostiolatis, 23~53-setosis, 120~182 μ diam.; setis perithecialibus simplicibus, rectis vel leniter curvatis, apice obtusis, atris vel fuscobrunneis, opacis sed superiore pallidioribus et subpellucidis, 84~210 μ longis, ad basim 5~7 μ crassis; ascis clavatis vel clavato-cylindraceis, apice late rotundatis et incrassatis, ad basim breviter pedicellatis, octosporis, aparaphysatis, 41~60 \times 11.5~16 μ ; sporidiis clavatis interdum elongato-ovoideis, utrinque obtusis vel rotundatis, 3~5-septatis, e hyalino subhyalinis, 21~30 \times 5~7 μ .

Hab. On leaves of *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Seisiryō (Mar. 15, 1942, W. YAMAMOTO). Prov. Tainan: Mato (Nov. 2, 1942, W. YAMAMOTO). Prov. Sintiku: Simpo (Mar. 19, 1942, W. YAMAMOTO).

On *Citrus poonensis* HORT. Prov. Sintitu: Sansa (Mar. 19, 1942, W. YAMAMOTO).

On *Citrus Tankan* HAY. Prov. Taihoku: Taihoku (Feb. 15, 1941, W. YAMAMOTO); Sinten (Mar. 16, 1941, W. YAMAMOTO).

On *Euphoria longana* LAM. Prov. Taihoku: Kokanron (Oct. 30, 1938, W. YAMAMOTO).

7. *Aithaloderma* SYDOW emend. YAMAMOTO

Ann. Myc. XI, p. 257, 1913; THEISSEN & SYDOW, Ann. Myc. XV, p. 477, 1917; SACCARDO, Syll. Fung. XXIV, p. 376, 1926; CLEMENTS & SHEAR, Gen. Fung. p. 253, 1931; FRASER, Proc. Linn. Soc. N. S. W. LX, p. 280, 1935; FISHER, Ann. Bot. N. S. III, p. 410, 1939; YAMAMOTO, Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI, & FUKUSHI, p. 55, 1955.

Perithecia breviter conica, apice ostiolata, coriacea, mucilagina, atra, prope ostiolum setosa. Asci crasse clavati, octospori, aparaphysati. Sporidia hyalopragmiae. Pycnidia conica, ostiolata, plerumque prope ostiolum setosa. Pycnosporae hyalosporae.

(9) *Aithaloderma clavatisporum* SYDOW emend. YAMAMOTO

Ann. Myc. XI, p. 257, 1913; Philip. Jour. Sci. C. Bot. VIII, p. 482, 1913; THEISSEN & SYDOW, Ann. Myc. XV, p. 477, 1917; SYDOW, Ann. Myc. XXI, p. 97, 1923; SYDOW & PETRAK, Ann. Myc. XXIX, p. 188, 1931; YATES, Philip. Jour. Sci. XII, p. 373, 1917; MENDOZA, Philip. Jour. Sci. XLIX, p. 129, 1932; SACCARDO, Syll. Fung. XXIV, p. 377, 1926; YAMAMOTO, Ann. Phytopath. Soc. Japan, XXI, p. 169, 1956.

Chaetothyrium clavatisporum (SYDOW) HANSFORD, Mycol. Pap. No. 15, p. 150, 1946.

Coloniis epiphyllis, late effusis, tenue crustac-

eis, glabris, cinereo-atris vel atris; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, dematioides, anastomosantibus, saepe longitudinaliter connatis, mucilaginis, olivaceis vel olivaceo-brunneis, 3.5~7 μ crassis, cellulis oblongis vel subcylindraceis et 5.5~11 μ longis composito; pycnidiiis subgregariis, breviter conoideis vel hemisphaeroideis, ostiolatis, circa ostiolum setosis, subcoriaceis, brunneis, 78~106 μ diam., 57~78 μ altis; setis pycnidialibus rectis, apice subacutis, e atro fuscis, 16~32 μ longis, ad basim 4.5~7 μ crassis; pycnosporis oblongis, continuis, hyalinis, 4.5~6 \times 2.5 μ ; peritheciis subgregariis, hemisphaeroideis vel breviter conoideis, ostiolatis, circa ostiolum 8~15-setosis, coriaceis, e atro fuscis, 126~144 μ diam.; setis perithecialibus simplicibus, apice acutis vel subacutis, e atro fuscis, 14~35 μ longis, ad basim 5~7 μ crassis; ascis ovoideis vel ellipsoideis, apice obtusis et incrassatis, ad basim brevissime pedicellatis, 4~8-sporis, aparaphysatis, 37~55 \times 14~21 μ ; sporidiis 3~4-stichis, subclavatis, ad basim vel utrinque attenuatis 3~5-septatis, ad septa non vel leniter constrictis, e hyalino dilute olivaceis, 19~37 μ longis, 4.5~7 μ crassis. (Fig. 38~41).

Hab. On leaves of *Achras Sapota* L. Prov. Taihoku: Sirin (Jan. 15, 1942, W. YAMAMOTO).

On *Bladhia Sieboldii* (MIQ.) NAK. Prov. Taihoku: Taihoku (Jan. 13, 1939; Feb. 2, 1942, W. YAMAMOTO).

On *Bischofia javanica* BL. Prov. Taihoku: Taihoku (Feb. 4, 1942, W. YAMAMOTO).

On *Camellia Sasanqua* TAUNB. Prov. Taihoku: Sirin (Jan. 29, 1938; May 20, 1942, W. YAMAMOTO).

On *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sirin (Jan. 29, 1938; May 20, 1942, W. YAMAMOTO).

On *Citrus Tankan* HAY. Prov. Taihoku: Seisiryō (Mar. 15, 1942, W. YAMAMOTO).

On *Diospyros Kaki* L. f. Prov. Taihoku: Sozan (Oct. 1939, W. YAMAMOTO)

On *Elaeocarpus serratus* L. Prov. Taihoku: Sirin (Jan. 15, 1942, W. YAMAMOTO).

On *Eugenia malaccensis* L. Prov. Taihoku: Taihoku (Oct. 1, 1939, W. YAMAMOTO).

On *Ficus retusa* L. Prov. Taihoku: Taihoku (Jan. 5, 1942, W. YAMAMOTO); Maruyama (Feb. 27, 1942, W. YAMAMOTO). Prov. Sintiku: Sansa (Mar. 19, 1942, W. YAMAMOTO).

On *Osmanthus asiaticus* NAK. Prov. Taihoku: Maruyama (Feb. 27, 1942, W. YAMAMOTO).

On *Psidium Guajava* L. Prov. Taihoku: Taihoku (Jan. 13, 1939, W. YAMAMOTO).

On *Psychotria Revesii* WALL. Prov. Taihoku: Taihoku (Mar. 12, 1942, W. YAMAMOTO).

S. Triposporiopsis YAMAMOTO

Jubil. Publ. Commem. Sixt. Birth. Profs. TOCHINAI & FUKUSHI, p. 55 & 56, 1955.

Perithecia depresso-globosa vel subglobosa, indistincte ostiolata, membranacea vel subcoriacea, e atro fusca, setosa. Asci clavati, octospori, aparaphysati. Sporidia hyalophragmiae. Conidia triposporioidea generans.

(10) Triposporiopsis spinigera (v. HÖHN.) YAMAMOTO

Ann. Phytopath. Soc. Japan, XXI, p. 168, 1956; Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 55, 1955.

Limacinia spinigera v. HOEHNEL Sitzb. K. Akad. Wiss. Wien, Math.-Nat. Kl. CXVI, Abt. I, p. 100, 1907; SACCARDO, Syll. Fung. XXII, p. 62, 1912.

Chaetothyrium spinigerum (v. HOEHNEL) YAMAMOTO, Jour. Soc. Trop. Agr. (Formosa), XIII, p. 221, 1941.

Chaetothyrium spinigera (v. HOEHEL) HANSFORD, Reinw. III, p. 114, 1954.

Hypocapnodium mikanum HARA, Path. Agr. Plant. p. 557, 1930; IGETA, Jap. Phytopath. (Suppl. I), p. 226, 1925; HARA, Fungi, I, no. 2, p. 15, 1931; YAMAMOTO, Jour. Soc. Trop. Agr. (Formosa), XIII, p. 221, 1941; HARA, List Jap. Fung. p. 163, 1954.

Hypocapnodium Citri SAWADA, Stud. Citrol. III, p. 254, 1929; Descr. Cat. Form. Fung. V, p. 21, 1931; HARA, Path. Agr. Plant. p. 561, 1930; YAMAMOTO, loc. cit.; HARA, List Jap. Fung. P. 163, 1954.

Hypocapnodium quercifolium HARA, Fung. I, no. 2, p. 17, 1931; List Jap. Fung. p. 163, 1954; YAMAMOTO, loc. cit.

Hypocapnodium sp. YAMAMOTO, Ann. Phytopath. Soc. Japan, VIII, p. 101, 1930; Jour. Soc. Trop. Agr. (Formosa), XIII, p. 221, 1941.

Coloniis epiphyllis, late effusis, tenue crustaceis, glabris, atro-brunneis vel brunneis; mycelio dense intertexto, ex hyphis laxae oppositae vel irregulariter ramosis, remote septatis, ad septa non vel leniter constrictis, hypopodiatis, e brunneo olivaceo-brunneolis, 4.5~7 μ crassis, cellulis oblongis vel cylindraceis et 8~22 μ longis composito; hyphopodiis mucronatis paucis, solitariis vel unilateralibus, ampulliformibus, 12~18 \times 3.5~4.5 μ ; conidiis triposporioideis, 3~4-radiatis, pedicellatis; radiis apicem versus attenuatis, e hyalino brunneolis, 1~5-septatis, 25~51 \times 6~10 μ ; pedicellulis, continuis, 11~14 \times 4.5~7 μ ; peritheciis sparsis vel subgregariis, depresso-globosis, ostiolatis, membranaceis vel subcoriaceis, 20~65-setosis, e fusco brunneis, 112~196 μ diam.; setis perithecialibus simplicibus, rectis vel leniter curvatis, apice obtusis vel rotundatis, 2~11-septatis sed plerumque

3~6-septatis, ad septa non vel parum constrictis, e fusco dilute brunneis, 46~147 \times 5.3~7.4 μ ; ascis clavatis, clavato-cylindraceis vel elongato-ellipsoideis, apice rotundatis et incrassatis, ad basim breviter pedicellatis, 6~8-sporis, aparaphysatis, 51~87 \times 14~17 μ ; sporidiis ellipsoideis vel elongato-ellipsoideis, utrinque obtusis, 1~3-septatis, 14~30 \times 5.5~7 μ . (Figs. 42~45).

Hab. On leaves of *Callicarpa formosana* HAY. Prov. Taihoku: Taihoku (Mar. 13, 1941, W. YAMAMOTO).

On *Castanea crenata* SIEB. & ZUCC. Prov. Taihoku: Taihoku (Oct. 16, 1938, W. YAMAMOTO).

On *Citrus Limon* BURM. f. Prov. Takao: Heito (Dec. 2, 1941, W. YAMAMOTO). Prov. Sintiku: Simpo (Mar. 18, 1942, W. YAMAMOTO).

On *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Taihoku (Feb. 2, 1941, W. YAMAMOTO). Prov. Tainan: Mato (Dec. 2, 1941, W. YAMAMOTO). Prov. Taityu: Nanto (Mar. 21, 1942, YAMAMOTO). Prov. Sintiku: Simpo (Mar. 18, 1942, W. YAMAMOTO).

On *Citrus paradisi* MACF. Prov. Taihoku: Sirin (Feb. 16, 1941, W. YAMAMOTO).

On *Citrus poonensis* HORT. Prov. Taityu: Innrin (Jan. 25, 1939; W. YAMAMOTO).

On *Citrus sinensis* OSBECK. Prov. Taityu: Nanto (Mar. 21, 1942, W. YAMAMOTO).

On *Citrus Tankan* HAY. Prov. Taihoku: Mokusaku (Oct. 24, 1938, W. YAMAMOTO); Sirin (Feb. 23, 1941, W. YAMAMOTO); Seisiryō (Feb. 15, 1941, W. YAMAMOTO).

On *Citrus* sp. Prov. Taihoku: Taihoku (Oct. 16, 1938, W. YAMAMOTO).

On *Coffea arabica* L. Prov. Taihoku: Taihoku (Feb. 10, 1941, W. YAMAMOTO).

On *Coffea liberica* HIERN. Prov. Taihoku: Taihoku (Feb. 10, 1941, W. YAMAMOTO).

On *Coffea* sp. Prov. Taityu: Nisui (Jan. 29, 1942, W. YAMAMOTO).

On *Cyclobalanopsis glauca* (THUNB.) OERST. Prov. Taihoku: Taihoku (Feb. 15, 1941, W. YAMAMOTO).

On *Dendrocalamus latiflorus* MUNRO. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO); Mokusaku (Feb. 9, 1941, W. YAMAMOTO).

On *Euphoria Longana* LAM. Prov. Taihoku: Sinten (Oct. 30, 1938, W. YAMAMOTO).

On *Ficus bengalensis* L. Prov. Taihoku: Taihoku (Mar. 16, 1941, W. YAMAMOTO).

On *Ficus retusa* L. Prov. Taihoku: Taihoku (Mar. 13, 1941, W. YAMAMOTO).

On *Ficus Wightiana* WALL. Prov. Taihoku: Taihoku (Jan. 13, 1939, W. YAMAMOTO).

On *Gardenia angusta* (L.) MERR. var. *ovalifolia* (CURT.) HORT. Prov. Taihoku: Taihoku (Mar. 16, 1941, W. YAMAMOTO).

On *Glochidion dasyphyllum* KOCH. Prov. Taihoku: Taihoku (Feb. 15, 1941, W. YAMAMOTO).
 On *Holarrhena antidiysenterica* WALL. Prov. Taihoku: Taihoku (Mar. 9, 1941, W. YAMAMOTO).
 On *Leleba dolichoclada* (HAY.) KANEH. Prov. Taihoku: Sinten (Jan. 14, 1939, W. YAMAMOTO).
 On *Leleba Oldhami* NAK, Prov. Taihoku: Mokusaku (Mar. 16, 1941, W. YAMAMOTO).
 On *Murraya paniculata* L. Prov. Taihoku: Taihoku (Feb. 15, 1941, W. YAMAMOTO).
 On *Photinia taiwanensis* HAY. Prov. Taihoku: Taihoku (Jan. 12, 1939, W. YAMAMOTO).
 On *Phyllostachys Makinoi* HAY. Prov. Taihoku: Sinten (Mar. 16, 1914, W. YAMAMOTO).
 On *Psidium Guajava* L. Prov. Taihoku: Taihoku (Feb. 25, 1941, W. YAMAMOTO); Mokusaku (Nov. 25, 1938, W. YAMAMOTO). Prov. Taityu: Taityu (Jan. 25, 1942, W. YAMAMOTO).
 On *Quercus serrata* THUNB. Prov. Taihoku: Taihoku (Nov. 6, 1938, W. YAMAMOTO).
 On *Sapindus Mukurossi* GAERTH. Prov. Tai-

hoku: Taihoku (Sept. 21, 1939, W. YAMAMOTO).
 On *Thea sinensis* L. Prov. Taihoku: Taihoku (Jan. 12, 1939; Mar. 13, 1941, W. YAMAMOTO).

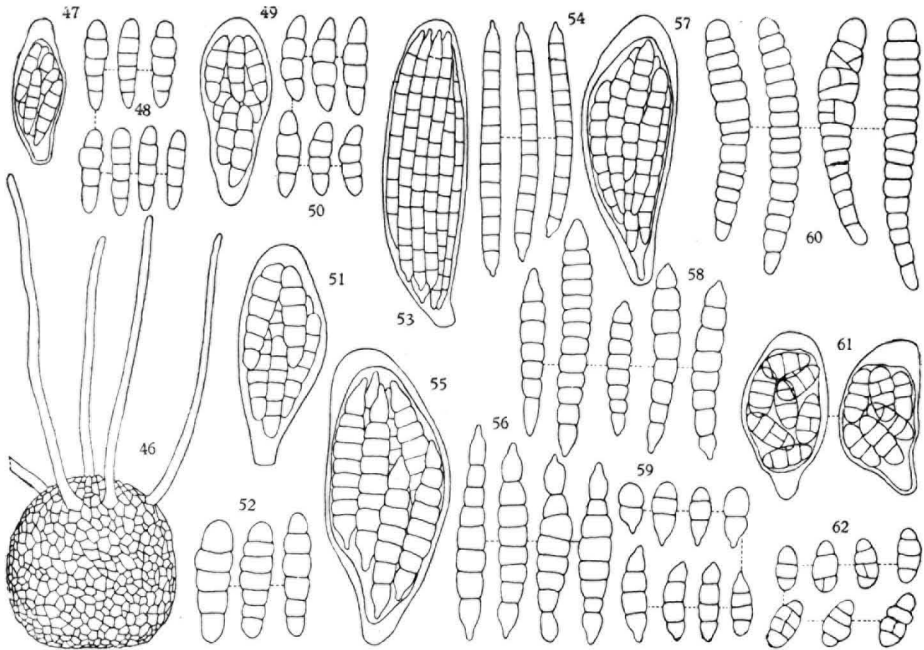
9. Hypocapnodium SPEGAZZINI

Physis II, p. 287, 1918; SACCARDO, Syll. Fung. XXIV, p. 376, 1926; CLEMENTS & SHEAR, Gen. Fung. p. 57 & 254, 1931; YAMAMOTO, Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 55, 1955.

Perithecia conico-globosa vel subglobosa, sessilis, indistincte ostiolata, coriacea, mucilaginea, atra, superiore setosa. Asci clavati vel ovati, octospori, aparaphysati. Sporidia hyalophragmiae. Pycnidia vel conidia defecta.

(11) Hypocapnodium setosum (ZIMMERMANN) SPEGAZZINI

Physis II, p. 287, 1918; SACCARDO, Syll. Fung. XXIV, p. 376, 1926; CLEMENTS & SHEAR, Gen. Fung. p. 254, 1931; YAMAMOTO, Ann. Phytopath.



Figs. 46~62.

Figs. 46~48. *Hypocapnodium setosum* (ZIMM.) SPEG. Fig. 46, Perithecium. Fig. 47. Ascus. Fig. 48. Ascospores.
 Figs. 49~50. *Limacinia Auranti* HENN. Fig. 49. Ascus. Fig. 50. Ascospores.
 Figs. 51~52. *Limacinia clavatispora* YAM. Fig. 51. Ascus. Fig. 52. Ascospores.
 Figs. 53~54. *Limacinia filiformis* YAM. Fig. 53. Ascus. Fig. 54. Ascospores.

Figs. 55~56. *Limacinia formosana* YAM. Fig. 55. Ascus. Fig. 56. Ascospores.
 Figs. 57~58. *Limacinia globosa* (FRAS.) YAM. Fig. 57. Ascus. Fig. 58. Ascospores.
 Fig. 59. *Limacinia ovispora* SAW. Ascospores.
 Fig. 60. *Phaeosaccardinula longispora* YAM. Ascospores.
 Figs. 61~62. *Phaeosaccardinula Penzigi* (SACC.) YAM. Fig. 61. Asci. Fig. 62. Ascospores.
 (Fig. 46 × 190, Figs. 47~62 × ca. 400).

Soc. Japan, XXI, p. 163, 1956.

Antennaria setosa ZIMMERMANN, Cetralb. Bakt. Paras. Infekt. Abt. ii, VIII, p. 151, 1932; SACCARDO, Syll. Fung. XVII, p. 557, 1905.

Limacinia setosa (ZIMM.) SACCARDO & D. SACCARDO, Syll. Fung. XVII, p. 557, 1905; SYDOW & PETRAK, Ann. Myc. XXIX, p. 183, 1931.

Aithaloderma setosa (ZIMM.) BOEDIJN, Bull. Jard. Bot. Buit. Sér. III XI, p. 22, 1931; SYDOW & PETRAK, loc. cit.

Chaetothyrium setosum (ZIMM.) HANSFORD, Reinw. III, p. 113, 1954.

Capnodium Guajava BERNARD, Bull. Dept. Agr. Ind. Néerl. XI, p. 21, 1907; SACCARDO, Syll. Fung. XXII, p. 63, 1913.

Limacinia Guajava (BERNARD) SACCARDO & D. SACCARDO, Syll. Fung. XXII, p. 63, 1913.

Aithaloderma longisetum SYDOW, Ann. Myc. XII, p. 545, 1914;—XV, p. 477, 1917;—XXI, p. 97, 1923; SACCARDO, Syll. Fung. XXIV, p. 377, 1926; SYDOW & PETRAK, loc. cit.

Zukalia Theae SAWADA, Spec. Bull. Agr. Exp. Stat. Formosa, XI, p. 122, 1915; Descr. Cat. Form. Fung. I, p. 195, 1919; TANAKA, Mycol. IX, p. 170, 1917; PETCH, Dis. Tea Bush. p. 42 & 206, 1923; IZETA, Jap. Phytopath. (Suppl. I), p. 223, 1925; SACCARDO, Syll. Fung. XXIV, p. 382, 1926; SHIRAI & HARA, List Jap. Fung. p. 423, 1927.

Chaetothyrium Theae (SAWADA) HARA, Dis. Tea Bush. p. 109, 1931; List Jap. Fung. p. 63, 1954.

Coloniis epiphyllis, late effusis, tenue crustaceis, atris; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, saepe longitudinaliter connatis et crassioribus, mucilaginis, olivaceis vel olivaceo-brunneis, 3.5~5.5 μ crassis, cellulis oblongis vel subcylindraceis et 8~16 μ longis composito; peritheciis subgregariis, depresso-globosis, ostiolatis, circa ostiolum 1~11-setosis, coriaceis, atris, 84~98 μ diam.; setis perithecialibus divergentibus, simplicibus, rectis vel leniter curvatis, apicem versus leniter attenuatis, apice obtusis vel rotundatis, e atro fuscis, 42~160 \times 5~7 μ ; ascis ellipsoideis vel subclavatis, apice rotundatis et incrassatis, ad basim brevissime pedicellatis, 6~8-sporis, aparaphysatis, 32~44 \times 12~20 μ ; sporidiis 3~4-stichis, elongato-ovoideis vel subcylindraceis, ad basim vel utrinque attenuatis, apice rotundatis, 2~5-septatis, ad septa non vel leniter constrictis, e hyalino dilute olivaceo-brunneis, 16~25 \times 4~5.5 μ . (Figs. 46—48).

Hab. On leaves of *Achras Sapota* L. Prov. Taihoku: Sirin (Feb. 8, 1942, W. YAMAMOTO).

On *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Mato (Dec. 2, 1941, W. YAMAMOTO). Prov. Taihoku: Sirin (Sept. 16, 1938; Mar. 8 & 16, 1942, W. YAMAMOTO).

On *Citrus paradisi* MACF. Prov. Taihoku: Sirin (Feb. 23, 1941, W. YAMAMOTO).

On *Citrus sinensis* OSBECK. Prov. Taihoku: Sirin (Mar. 16, 1942, W. YAMAMOTO).

On *Citrus Tankan* HAY. Prov. Taihoku: Sirin (Feb. 2, 1941, W. YAMAMOTO).

On *Chrysophyllum Cainito* L. Prov. Taihoku: Sirin (Feb. 8, 1942, W. YAMAMOTO).

On *Elaeocarpus serratus* L. Prov. Taihoku: Sirin (Jan. 12, 1939, W. YAMAMOTO).

On *Mimusops indica* A. DC. Prov. Taihoku: Sirin (Mar. 8, 1942, W. YAMAMOTO).

On *Psidium Guajava* L. Prov. Taihoku: Sirin (Feb. 8, 1942, W. YAMAMOTO).

10. *Limacinia* NEGER

JOHOW, Estud. Flor. J. F. p. 190, 1896; SACCARDO, Syll. Fung. XIV, p. 474, 1899; THEISSEN & SYDOW, Ann. Myc. XV, p. 478, 1917; CLEMENTS & SHEAR, Gen. Fung. p. 57 & 254, 1931; FISHER, Ann. Bot. N. S. III, p. 403, 1939; YAMAMOTO, Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 55, 1955.

Perithecia depresso-globosa vel subglobosa, indistincte ostiolata, subcoriacea vel membranacea, e atro fusca, glabra. Asci ovati vel clavati, aparaphysati. Sporidia hyalophragmiae. Pycnidia vel conidia plerumque defecta.

Key to the species of *Limacinia*

1. Ascospores usually obovoid, 1~3-septate.....
..... *L. ovispora* SAW.
2. Ascospores fusoid, 3-septate.....
..... *L. Auranti* HENN.
3. Ascospores clavate or long-obovoid, 3~6-septate.....
..... *L. clavatispora* YAM.
4. Ascospores vermicular or subcylindrical, 6~13-septate.....
..... *L. globosa* (FRAS.) YAM.
5. Ascospores filiform, 5~13-septate
..... *L. filiformis* YAM.
6. Ascospores elliptic-cylindrical, 6~8-septate, both end cells ampulliform, apiculate
..... *L. formosana* YAM.

(12) *Limacinia Auranti* HENNINGS emend. YAMAMOTO

Hedw. XLI, p. 298, 1902; SACCARDO, Syll. Fung. XVII, p. 556, 1905; SAWADA, Stud. Citrol. III, p. 250, 1929, excl. triposporio-conidia.

Coloniis epiphyllis, effusis, tenuissime crustaceis, glabris, brunneis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, anastomosantibus, olivaceo-brunneis vel brunneis, plus minusve mucilaginis, 3.5~6 μ crassis, cellulis oblongis vel subcylindraceis et 11~21 μ longis composito; peritheciis subgregariis, depresso-globosis vel hemisphaeroi-

deis, indistincte ostiolatis, glabris, subcoriaceis vel membranaceis, atris, 154~266 μ diam.; parietis crassioribus, stratosi, pseudoparencymaticis, 57~76 μ crassis; ascis clavatis, apice rotundatis et incrassatis, ad basim breviter pedicellatis, octosporis, aparaphysatis, 48~64 \times 16~23 μ ; sporidiis fusoides, utrinque obtusis vel subacutis, non vel leniter curvatis, 3-septatis, ad septa leniter constrictis, hyalinis, 16~27 \times 4.5~7 μ . (Figs. 49~50).

Hab. On leaves of *Citrus maxima* (BURM. f.) MERR. Prov. Sintiku: Sansyuko (Mar. 19, 1942, W. YAMAMOTO).

(13) *Limacinia clavatispora* YAMAMOTO

Ann. Phytopath. Soc. Japan, XXI, p. 170, 1956.

Coloniis epiphyllis, effusis, tenuissime crustaceis, glabris, atris; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, anastomosantibus, vix mucilaginis, dilute brunneis vel fuscis, 3.5~6 μ crassis, cellulis oblongis vel subcylindraceis et 9~21 μ longis composito; peritheciis subgregariis vel sparsis, depresso-globosis vel hemisphaeroideis, indistincte ostiolatis, subcoriaceis, glabris, e atro fuscis, 210~294 μ diam., 112~140 μ altis; superiore peritheciis cum subiculo circumdantibus et anastomosantibus; ascis copiosis, clavatis, apice late rotundatis et incrassatis, ad basim breviter pedicellatis, octosporis, aparaphysatis, 55~69 \times 18.5~25 μ ; sporidiis clavatis vel elongato-obovoideis, utrinque rotundatis, 3~6-septatis sed plerumque 4~5-septatis, ad septa non vel leniter constrictis, 21~34 \times 7~9 μ . (Figs. 51~52).

Hab. On leaves of *Citrus Tankan* HAY. Prov. Taihoku: Seisiryō (Mar. 15, 1942, W. YAMAMOTO).

(14) *Limacinia filiformis* YAMAMOTO

Ann. Phytopath. Soc. Japan, XXI, p. 170, 1956.

Coloniis epiphyllis, effusis, tenuissime crustaceis, glabris, cinereo-fuscis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, anastomosantibus, e subhyalino olivaceo-brunneis, plus minusve mucilaginis, 3~7 μ crassis, cellulis oblongis vel subcylindraceis et 14~23 μ longis composito; peritheciis subgregariis vel sparsis, depresso-globosis, indistincte ostiolatis, glabris, subcoriaceis, fuscis, 187~272 μ diam., 115~168 μ altis; ascis copiosis, clavatis vel elongato-ellipsoideis, apice rotundatis et leniter incrassatis, ad basim brevissime pedicellatis, octosporis, aparaphysatis, 58~85 \times 18~23 μ ; sporidiis parallele stipatis, filiformibus, utrinque non vel vix attenuatis, rectis vel leniter curvatis,

5~13-septatis, ad septa non constrictis, hyalinis, 46~76 \times 4~6 μ . (Figs. 53~54).

Hab. On leaves of *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sirin (Sept. 11, 1938, W. YAMAMOTO).

(15) *Limacinia formosana* YAMAMOTO

Ann. Phytopath. Soc. Japan, XXI, p. 169, 1956.

Coloniis epiphyllis, effusis, tenuissime crustaceis, glabris, cinereo-brunneis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, anastomosantibus, mucilaginis, e subhyalino dilute brunneis, 3.5~7 μ crassis, cellulis oblongis vel subcylindraceis et 7~19 μ longis composito; peritheciis sparsis, hemisphaeroideis, apice depressis et indistincte ostiolatis, glabris, subcoriaceis vel membranaceis, fuscis, 182~280 μ diam.; ascis copiosis, obovoideis vel clavatis, apice rotundatis et incrassatis, ad basim breviter pedicellatis, octosporis, aparaphysatis, 76~92 \times 23~30 μ ; sporidiis elliptico-cylindraceis, sursum attenuatis, 6~8-septatis, ad septa leniter vel fortiter constrictis, hyalinis, 35~58 \times 7~9 μ , ex cellulis terminatis vesiculososis, ampulliformibus, apice apiculatis praeditis. (Figs. 55~56).

Hab. On leaves of *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sinten (Feb. 21, 1942, W. YAMAMOTO).

(16) *Limacinia globosa* (FRASER) YAMAMOTO comb. nov.

Chaetothrium globosum FRASER, Proc. Linn. Soc. N. S. W. LX, p. 285, 1935.

Coloniis epiphyllis, effusis, tenuissime crustaceis, glabris, cinereo-brunneis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, anastomosantibus, mucilaginis, e subhyalino olivaceo-brunneis, 2.5~4.5 μ crassis, cellulis oblongis vel subcylindraceis et 10~25 μ longis composito; peritheciis sparsis vel subgregariis, depresso-globosis, indistincte ostiolatis, subcoriaceis, glabris, fuscis, 252~322 μ diam.; ascis copiosis, clavatis, obovoideis vel subcylindraceis, apice rotundatis et leniter incrassatis, ad basim breviter pedicellatis, 4~8-sporis, aparaphysatis, 65~83 \times 16~25 μ ; sporidiis polystichis, vermicularibus vel subcylindraceis, rectis vel leniter curvatis, sursum attenuatis, utrinque apiculatis, 6~13-septatis sed plerumque 6~7-septatis, ad septa leniter constrictis, hyalinis, 34~69 \times 5~8 μ . (Figs. 57~58).

Hab. On leaves of *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sinten (Mar. 16, 1941, W. YAMAMOTO).

(17) *Limacinia ovispora* SAWADA emend. YAMAMOTO

Stud. Citrol. III, p. 252, 1929; Descr. Cat. Form. Fung. V, p. 20, 1931, excl. pycnidia; HARA, List Jap. Fung. p. 185, 1954.

Coloniis epiphyllis, effusis, tenuissime crustaceis, glabris, fuscis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, dematioides, anastomosantibus, olivaceo-brunneis vel fuscis, mucilaginis, 3.5~6 μ crassis, cellululis ellipsoideis, oblongis vel subcylindraceis et 8~16 μ longis composito; peritheciis subgregariis, depresso-globosis, indistincte ostiolatis, glabris, membranaceis, e atro fuscis, 115~161 μ diam.; ascis clavatis vel clavato-cylindraceis, apice rotundatis et leniter incrassatis, ad basim breviter pedicellatis, octosporis, aparaphysatis, 32~44 \times 10.5~14 μ ; sporidiis obovoideis, raro fusiformibus, apice rotundatis, raro obtusis vel apiculatis, ad basim apiculatis, 1~3-septatis, ad septa non vel leniter constrictis, hyalinis, 12~22 \times 4.5~5.5 μ . (Fig. 59).

Hab. On leaves of *Achras Sapota* L. Prov. Taityu: Nanto (Mar. 20, 1942, W. YAMAMOTO).

11. *Phaeosaccardinula* HENNINGS

Hedw. XLIV, p. 67, 1905; SACCARDO, Syll. Fung. XVII, p. 873, 1905; v. HOEHNEL, Stzb. K. Akad. Wiss. Wien, Math.-Nat. Kl. CXIX, Abt. I, p. 34, 1910; THEISSEN & SYDOW, Ann. Myc. XV, p. 480, 1917; PETRAK, Ann. Myc. XXVII, p. 381, 1927; CLEMENTS & SHEAR, Gen. Fung. p. 254 & 257, 1931; FISHER, Ann. Bot. N. S. III, p. 412, 1939; HANSFORD, Mycol. Pap. No. 15, p. 153, 1946; YAMAMOTO, Jubil. Publ. Commem. Sixt. Birthd. Profs. TOCHINAI & FUKUSHI, p. 55, 1955.

Phaeopeltis CLEMENTS, Gen. Fung. p. 52, 1909.

Limacinula SACCARDO, Syll. Fung. XXII, p. 66, 1913.

Tephrosticta SYDOW, Philip. Jour. Sci. Bot. VIII, p. 271, 1913.

Capnites THEISSEN, Vern. Zool. Bot. Wien, LXVI, p. 365, 1916.

Perithecia subgregaria, depresso-globosa vel hemisphaeoida, indistincte ostiolata, subcoriacea, e atro fusca, glabra. Asci obovoidei, clavati vel subcylindracei, octospori, non vel paraphysati. Sporidia hyalodictyae vel pallide phaeodictyae. Pycnidia vel conidia defecta.

Key to the species of *Phaeosaccardinula*

1. Ascospores ellipsoid, transversally 3-septate*P. Penzigi* (SACC.) YAM.
2. Ascospores long-ovoid or elliptic-cylindrical, transversally 3~9-septate.....
.....*P. javanica* (ZIMM.) YAM.
3. Ascospores clavate-cylindrical, transversally 7~15-septate*P. longispora* YAM.

(18) *Phaeosaccardinula javanica* (ZIMMERMANN) YAMAMOTO

Ann. Phytopath. Soc. Japan, X, p. 262, 1940; HANSFORD, Mycol. Pap. No. 15, p. 157, 1946; Reinw. III, p. 115; 1954; HARA, List Jap. Fung. p. 248, 1954.

Capnodium javanica ZIMMERMANN, Centralb. Bakt. Paras. Infekt. Abt. II, VIII, p. 151, 1902; SACCARDO, Syll. Fung. XVII, p. 558, 1905; BERNARD, Bull. Dept. Agr. Ind. Néerl. XI, p. 19, 1907.

Limacinia javanica (ZIMM.) SACCARDO & D. SACCARDO, Syll. Fung. XVII, p. 558, 1905.

Chaetothyrium javanicum (ZIMM.) BOEDIJN, Bull. Jard. Bot. Buit. Sér. III, XI, p. 225, 1931; MUNDKUR, Fung. Ind. (Suppl. I), p. 12, 1938; YAMAMOTO, loc. cit.

Meliola citrivora HARA, Path. Agr. Plant. p. 558, 1930; SHIRAI & HARA, List Jap. Fung. p. 209, 1927; YAMAMOTO, loc. cit.

Meliola citricola HARA, TANAKA, Mycol. XII, p. 332, 1920; STEVENS, Ann. Myc. XXVI, p. 292, 1928.

Meliola Harana TROTTER, SACCARDO, Syll. Fung. XXIV, p. 337, 1926; STEVENS, Ann. Myc. XXVI, p. 292, 1928.

Capnophaeum citrivolum (HARA) SAWADA, Stud. Citrol. III, p. 257, 1929; Descr. Cat. Form. Fung. V, p. 25, 1931; HARA, Path. Agr. Plant. p. 559, 1930; YAMAMOTO, loc. cit.

Phaeosaccardinula citrivora (HARA) HARA, Jap. Phytopath. Fung. p. 153, 1936; YAMAMOTO, Ann. Phytopath. Soc. Japan, X, p. 262, 1940; HARA, List Jap. Fung. p. 248, 1954.

Zukaliopsis Gardeniae SAWADA, Descr. Cat. Form. Fung. V, p. 23, 1931; YAMAMOTO, loc. cit.

Limacinia samoensis v. HOEHNEL, SACCARDO, Syll. Fung. XXII, p. 65, 1913; BOEDIJN, loc. cit.; YAMAMOTO, loc. cit.

Phaeosaccardinula samoensis (v. HOEHNEL) v. HOEHNEL, THEISSEN & SYDOW, Ann. Myc. XV, p. 481, 1917; YAMAMOTO, loc. cit.

Limacinula Theae SYDOW & BUTLER, Ann. Myc. IX, p. 386, 1911; SACCARDO, Syll. Fung. XXIV, p. 386, 1926; YAMAMOTO, loc. cit.

Phaeosaccardinula Theae (SYDOW & BUTLER) THEISSEN & SYDOW, loc. cit.; YAMAMOTO, loc. cit.

Coloniis epiphyllis effusis, tenue crustaceis, brunneo-atris vel brunneis, glabris; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, dematioides, plus minusve anastomosantibus, parum mucilagnis, dilute brunneis, 4~7 μ crassis, cellululis subglobosis, ellipsoideis vel subcylindraceis et 7~23 μ longis composito; peritheciis subgregariis vel sparsis, depresso-globosis, indistincte ostiolatis, subcoriaceis, glabris, atris,

168~266 μ diam.; ascis ellipsoideis, ovoideis vel clavatis, apice rotundatis et incrassatis, ad basim brevissime pedicellatis, 4~8-sporis, aparaphysatis, 57~87 \times 21~37 μ ; sporidiis elongato-ovoideis, ellipsoideo-cylindraceis vel subcylindraceis, utrinque rotundatis vel obtusis, transverse 3~9 (plerumque 5~6)-septatis, ad septa leniter constrictis, longitudinaliter vel oblique 2~8-septatis, e hyalino dilute brunneolis, 23~46 \times 8~14 μ .

Hab. On leaves of *Acacia confusa* MERR. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Achras Sapota* L. Prov. Taihoku: Sirin (Feb. 23, 1941, W. YAMAMOTO).

On *Blechnum orientale* L. Prov. Taihoku: Sinten (Oct. 28, 1938, W. YAMAMOTO).

On *Camellia* sp. Prov. Taihoku: Maruyama (Oct. 16, 1938, W. YAMAMOTO).

On *Cinchona succirubra* PAV. Prov. Takao: Kuwarusu (Apr. 12, 1942, W. YAMAMOTO).

On *Citrus Limon* BURM. f. Prov. Takao: Heito (Nov. 30, 1941, W. YAMAMOTO).

On *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sirin (Jan. 25, 1938, W. YAMAMOTO).

On *Citrus poonensis* HORT. Prov. Taityu: Nanto (Mar. 2, 1942, W. YAMAMOTO).

On *Citrus sinensis* OSBECK, Prov. Taityu: Nanto (Mar. 21, 1942, W. YAMAMOTO).

On *Citrus Tankan* HAY. Prov. Taihoku: Mokusaku (Feb. 28, 1928, W. YAMAMOTO).

On *Clerodendron fragrans* VENT. Prov. Tainan: Kansirei (Dec. 28, 1938, W. YAMAAMOTO).

On *Codiaeum variegatum* (L.) BL. Prov. Taihoku: Taihoku (Feb. 19, 1941, W. YAMAMOTO).

On *coffea liberica* HIERN. Prov. Tainan: Kagi (Oct. 19, 1938, W. YAMAMOTO). Prov. Taihoku: Taihoku (Jan. 12, 1939, W. YAMAMOTO).

On *Dendrocalamus latiflorus* MUNRO. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Diospyros Kaki* L. f. Prov. Taihoku: Taihoku (Jan. 15, 1939, W. YAMAMOTO); Sozan (Nov. 6, 1938, W. YAMAMOTO).

On *Elaeocarpus serratus* L. Prov. Taihoku: Taihoku (Nov. 16, 1938, W. YAMAMOTO).

On *Eugenia malaccensis* L. Prov. Taihoku: Taihoku (Oct. 1, 1938, W. YAMAMOTO).

On *Eugenia uniflora* L. Prov. Tainan: Kagi (Oct. 19, 1938, W. YAMAMOTO).

On *Euphorbia Longana* LAM. Prov. Taihoku: Sinten (Oct. 28, 1938, W. YAMAMOTO).

On *Ficus bengalensis* L. Prov. Taihoku: Taihoku (Jan. 13, 1939, W. YAMAMOTO).

On *Ficus retusa* L. Prov. Takao: Heito (Nov. 30, 1941, W. YAMAMOTO).

On *Ficus septica* BURM. f. Prov. Taihoku: Taihoku (Jan. 12, 1939, W. YAMAMOTO).

On *Gardenia angustifolia* LODD. Prov. Taihoku: Taihoku (Nov. 21, 1938, W. YAMAMOTO).

On *Gardenia angusta* (L.) MERR. var. *ovalifolia* (CURT.) HORT. Prov. Taihoku: Taihoku (Jan. 12, 1939, W. YAMAMOTO).

On *Glochidion hongkonense* MUELL.-ARG. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Hiptage benghalensis* KURZ. Prov. Taihoku: Sinten (Oct. 28, 1938, W. YAMAMOTO).

On *Holarrhena antidysenterica* WALL. Prov. Taihoku: Taihoku (Jan. 13, 1939, W. YAMAMOTO).

On *Itea chinensis* HOOK. & ARN. var. *subserrata* MAX. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Leleba dolichoclada* (HAY.) KANEH. Prov. Taihoku: Sinten (Jan. 14, 1930, W. YAMAMOTO).

On *Litchi chinensis* SONN. Prov. Taihoku: Taihoku (Oct. 8, 1938, W. YAMAMOTO).

On *Machilus zuihoensis* HAY. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Maesa formosana* MEZ. Prov. Taihoku: Sinten (Oct. 20, 1938, W. YAMAMOTO). Prov. Tainan: Kansirei (Dec. 28, 1938, W. YAMAMOTO).

On *Mallotus paniculatus* MUELL.-ARG. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Melastoma candidum* DON. var. *Nobotan* MAK. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Miscanthus japonicus* (THUNB.) ANDR. Prov. Taihoku: Sinten (Oct. 23, 1938, W. YAMAMOTO).

On *Myrica rubra* SIEB. & ZUCC. Prov. Taihoku: Taihoku (Feb. 19, 1941, W. YAMAMOTO).

On *Photinia taiwanensis* HAY. Prov. Taihoku: Taihoku (Jan. 12, 1938, W. YAMAMOTO).

On *Phyllostachys Makinoi* HAY. Prov. Takao: Kuwarusu (Apr. 12, 1942, W. YAMAMOTO).

On *Pourthiaea Benthamina* NAK. Prov. Taihoku: Taihoku (Nov. 25, 1938, W. YAMAMOTO).

On *Psidium Guajava* L. Prov. Taihoku (Jan. 13, 1941, W. YAMAMOTO).

On *Rourea volubilis* MERR. Prov. Taihoku: Taihoku (Nov. 16, 1938, W. YAMAMOTO).

On *Schefflera octophylla* (LOUR.) HARMS. Prov. Taihoku: Sinten (Oct. 28, 1938, W. YAMAMOTO).

On *Styrax suberifolius* HOOK. & ARN. Prov. Taihoku: Taihoku (Nov. 26, 1938, W. YAMAMOTO).

On *Thea sinensis* L. Prov. Taihoku: Sinten (Oct. 28, 1938, W. YAMAMOTO).

On *Urena lobata* L. Prov. Taihoku: Sinten (Oct. 28, 1928, W. YAMAMOTO).

On *Vitis shifunensis* HAY. Prov. Taihoku: Sinten (Oct. 28, 1938, W. YAMAMOTO).

On *Wendlandia glabrata* DC. Prov. Takao: Kuwarusu (Apr. 12, 1942, W. YAMAMOTO).

(19) *Phaeosaccardinula longispora* YAMAMOTO

Ann. Phytopath. Soc. Japan, XXI, p. 169, 1956.

Coloniis epiphyllis, effusis, tenuissime crustaceis, glabris, fuscis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, anastomosantibus, vix mucilaginis, e subhyalino cinereo-brunneis, 2.5~3.5 μ crassis, cellulis subcylindraceis et 9~16 μ longis composito; peritheciis sparsis, depresso-globosis, indistincte ostiolatis, plus minusve verruculosis, glabris, atris, 196~252 μ diam.; parietis 34~46 μ crassis, pseudoparenchymaticis, ex cellulis superficialis, plus minusve mamillatis, 14~18 μ longis, 7~11 μ crassis composito; ascis copiosis, clavatis vel ovoideo-clavatis, apice rotundatis et incrassatis, ad basim brevissime pedicellatis, octosporis, aparaphysatis, 83~101 \times 23~30 μ ; sporidiis parallele stipatis, clavato-cylindraceis, apice late rotundatis, ad basim leniter attenuatis et obtusis, saepe leniter curvatis, transverse 7~15-septatis, longitudinaliter vel oblique 1~3-septatis, ad transverse septa leniter constrictis, hyalinis, 44~76 \times 8~12 μ . (Fig. 60).

Hab. On leaves of *Citrus maxima* (BURM. f.) MERR. Prov. Sintiku: Sansyuko (Mar. 19, 1942, W. YAMAMOTO).

(20). *Phaeosaccardinula Penzigi* (SACCARDO) YAMAMOTO comb. nov.

Meliola Penzigi SACCARDO, Syll. Fung. I, p. 70, 1882.

Limacinia Penzigi SACCARDO, Hedw. XXXVI, p. xx, 1897; Syll. Fung. XIV, p. 474, 1899; NISHIDA, Citr. Dis. Cont. p. 12, 1921.

Limacinula Penzigi (SACCARDO) SAWADA, Stud. Citrol. III, p. 259, 1929; HARA, Path. Agr. Plant. p. 562, 1930; List Jap. Fung. p. 185, 1954.

Coloniis epiphyllis, effusis, tenuissime crustaceis, glabris, fuscis; mycelio dense intertexto, ex hyphis dense irregulariterque ramosis, plus minusve dematioideis, parum mucilaginis, e brunneo dilute brunneis, 3~5 μ crassis, cellulis oblongis vel subcylindraceis, 9~14 μ longis composito; peritheciis sparsis, depresso-globosis vel hemisphaeroideis, indistincte ostiolatis, glabris, subcoriaceis, fuscis, 168~238 μ diam., 84~140 μ altis; ascis copiosis, obovoideis vel elliptico-clavatis, apice late rotundatis et incrassatis, ad basim breviter pedicellatis, 6~8-sporis, aparaphysatis, 32~46 \times 18.5~25 μ ; sporidiis ellipsoideis, utrinque obtusis, transverse 3-septatis, saepe longitudinaliter vel oblique 1~2-septatis, ad transverse septa leniter constrictis, hyalinis, 11.5~18 \times 5.5~7 μ . (Figs. 61~62).

Hab. On leaves of *Citrus maxima* (BURM. f.) MERR. Prov. Taihoku: Sirin (Sept. 11, 1938, W. YAMAMOTO).

On *Psidium Guajava* L. Prov. Taihoku: Taihoku (Jan. 13, 1939, W. YAMAMOTO).

On *Euphoria Longana* LAM. Prov. Taihoku: Sinten (Oct. 30, 1939, W. YAMAMOTO).

On *Bischoffia javanica* L. Prov. Taihoku: Taihoku (Feb. 6, 1942, W. YAMAMOTO).

(Laboratory of Plant Pathology and Mycology, Received Aug. 29, 1957.)