

SURVEY OF EPIDEMIC DISEASES OF FOREST TREES IN TAIWAN IV*

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Introduction

Studies on the tree diseases in Taiwan are one of the most neglected fields and deserve special attention from the economic as well as academic stand point of view. For this reason, survey of epidemic diseases in forest has been widely carried out under the research project entitled "Important epidemic diseases of forest trees" supported by PL 480 Foreign Agricultural Research Grant since July 15, 1963.

In the present paper, twenty fungal diseases are mentioned in addition to the collections and identifications made in the previous report (Bot. Bull. Acad. Sinica 6: 74-92, 1965; Mem. Agr. Natl. Taiwan Univ. 8: 67-85, 1966; Bot. Bull. Acad. Sinica 8: 67-85 1967). Among the specimens indentified, causal organisms of *Cercospora* leaf spot of *Lathathus odajima*, Leaf brown blight of Taiwan maesa, Leaf blight of Malay catchbird tree, Die-back of Common schefflera, Black mildew of Formosan ormosia, Leaf blight of Weeping willow, Leaf spot of short-spine Evergreen chinkapin, Leaf blight of Red baerk oak., Red leaf-blight of Mabolo persimmon, Leaf blight of Formosan sweetgum, White leaf-blight of Taiwan sweet-leaf, Brown spot (Anthracnose) of Formosan Alder, and Small white spot of Hongkong oak. are new species. Leaf spot of Taiwan Wampee, and Blaster rust of Taiwan red pine are described for the new host and the first time here in Taiwan.

1. Rust of Mayflower glorybower

Aecidium clerodendri P. Henn

Hiratsuka and Hashioka—Bot. Mag. Tokyo 49:25, 1935.

Ito, S.—Mycol. flora Japan II. 2:378, 1950.

Sawada, K.—D. C. F. F. 1:386, 1919. 9:121, 1934.

Spaulding, P.—Foreign Des. Forest Tree of the World. Agr. H. B. No. 197, USDA p. 16, 1961.

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Sydow, H. et. P.—Ann. Mycol. 12:111, 1914.

Symptoms: Lesions appear on the underside of leaves, more or less rounded, 1-4 mm in diameter, embedded with fresh-yellow powdery masses (aecia). The corresponding uperside of the lesions are un conspicuous.

Causal organism: Aecia are more or less round, aggregate on the lesions, disc-like, 169-250 μ in diameter, with whitish margin; peridial cell, polygonal to irregular, hyaline, 19-28.6 \times 14.3-16.7 μ ; coiled mycelid under the aecia, mostrocityous, 11.9 μ width, but mycelia in the tissue, 4.3-7.1 μ width; aeciospores, hyaline to light yellow, globose, ellipsoid, polygonal, or triangle shape, with verrucose, 26.7-30.9 \times 19.5-23.8 μ ; the cell wall of the spores, 1 μ thick.

Suscept: *Clerodendron cyrtophyllum* Turcz.

Specimens: Shaw-gou-tou, Taipei. (430 M), 8/25/1966, C. C. Chen, H. Y. Hsu, & J. S. Chen.

Distribution: India, Java, New Guinea, Philippine, China (Taiwan).

2. Leaf spot of Taiwan Wampee

Cercospora clanseniae Thirumlachar et. Chupp

Thirumalachar M. J. & C. Chupp.—Mycologia Vol. 40, p. 354, 1948.

Chupp C.—Monogr. Fung. Gen. Cercospora p. 503, 1953.

Symptoms: Lesions appear on under surface of leaf at first, light coal color, suborbicular, inconspicuous border; then spread on both side of leaves, light yellow white, inconspicuous border, light brown to greyish brown at last; deep color at out part of lesion, 15 mm, inconspicuous border.

Causal organism: Fruiting body are amphigenous, stroma embedded in tissue, then erumpent, light yellow-brown to dark yellow brown, many types in shape, 35.7-66.6 \times 26.2-50.0 μ submerged in tissue, 23.8-66.6 \times 35.7-64.3 μ erumpent; stroma tissue, suborbicular, ellipsoid to cylindric, 4.8-9.5 \times 3.8-4.8 μ ; conidiophore in synnema, smooth, or unsmooth, light yellow brown, tip hyaline, 1-3 septate, 1-2 hilum on tip, 35.7-54.7 \times 4.3-4.8 μ spores filiiform, pointed at end, tip round, hyaline, or subhyaline, 1-4 septate, 28.6-64.3 \times 4.3-4.8 μ ; mycelia in tissue, hyaline or light yellow brown, 2.1-5.5 μ .

Suscept: *Clausena lunuiata* Hay.

Specimen: Kun-ding 8/15/1966 C. C. Chen.

Distribution: China (Taiwan), India.

Notes: This fungus has been recorded on *Clausena wildenowii* Wight and Arm by Thirumalachar & Chupp in India. Except a few characters, most of the characters of this fungus on *C. wildenowii* are similar to that on *C. lunuiata* Hay. It is first time to be recorded in Taiwan and *C. lunuiata* Hay is a new host.

3. Angular leaf spot of Mayflower glorybower

Cercospora clerodendri Miyake

Chupp, C.—Monogr. Fungi Gen. *Cercospora* p. 589, 1953.

Miyake—Bot. Mag. Tokyo 27(315):53, 1913.

Sawada, K.—D. C. F. F. 11:215, 1959. 8:101, 1943.

Saccardo, P. A.—Syll. Fungi 25:893, 1931.

= *C. clerodendri* Sawada

Sawada, K.—Formosa Agr. Rev. 38:695, 1942.

= *C. clerodendricola* Sawada

Sawada, K.—D. C. F. F. 11:215, 1959. 8:101, 1943.

Symptoms: Lesions are on the leaves, angular to irregular, bounded by veinlets, 2-7 mm in diameter, upperside light green at first, becoming yellowish brown to redish brown gradually, underside greyish brown, coalescing of several spots to larger patches, 30 mm in diameter at later stage.

Causal organism: Conidiophores are hypophyllous, single or clustered, emerged through stomata or through epidermis directly on old lesions, the young conidiophores, $11.9-16.7 \times 4.3-5.2 \mu$, 0-1 septate, but the old ones, $23.8-33.3 \times 4.5-5.4 \mu$, branched, light greyish brown, wall unsmooth, 1-2 septate, with 1-3 hilia and a stock cell, $8.1-9.5 \times 7.1-9.0 \mu$; conidia, filiform, hyaline, $35.7-207.1 \times 2.9-5.2 \mu$, slight curved, base-truncat, 3-13 septate.

Suscept: *Clerodendron cyrtophyllum* Turcz.

Specimens: Shaw-gou-tou, Taipei. (430 M), 8/25/1966, C. C. Chen, H. Y. Hsu, & J. S. Chen.

Distribution: Africa, Japan, China (Taiwan).

4. *Cercospora* leaf spot of *Lasianthus odajima*

Cercospora lasianthicola sp nov.

Maculae amphigenae, angulatus vel irregularis, definitio ab vena, ravidous, 4-20 mm; stromata in epidermide, frequenter, hypophyllis, pallide brunneae ed fusco-brunneae, $19.0-50.0 \times 21.4-48.2 \mu$ diam., conidiophora filiformibus brunneae, 1-2 hilum, $52.3-166.6 \times 4.3-5.3 \mu$, 3-9 septae; conidia filiformibus, hyalina vel sub hyalina erecta vel paullo curvatis 3-5 septa; mycelia gilvous ad pallide brunneae, $42.8-85.7 \times 4.3-5.0 \mu$ diam.

Hab. in foliis *Lasianthus odajima* (Masam.) Masam.

Symptoms: Lesions are on the leaves, 4-20 mm, angular to irregular, bounded by veinlets, border un conspicuous, round to angular brownish red spots appear on the affected leaves, 0.2-1.0 mm, with distinct margin.

Causal organism: The cells at the brownish red spots on the lesions are discolored, but no mycelia are found there. Mycelia spread around there, hyaline to light color, smooth, 2.1-3.8 μ width, no fruiting structure formed. Incubating the affected leaves in moist chamber for 6 days, fruiting body

are formed hypophyllously. Conidiophores are filiform, brown color, paler and slender toward the apex, hyaline at the tip, with 1-2 hilia, base-swelled, $52.3-166.6 \times 4.3-5.3 \mu$, 3-9 septate, several in cluster on the stroma; stroma embedded or half embedded in host tissue, $19.0-50.0 \times 21.4-48.2 \mu$, 9.5-33.3 μ depth, yellowish brown to dark brown; the cells of the stroma measured $5.7-14.3 \times 4.8-7.1 \mu$; conidia, filiform, hyaline to light color, truncate at the base and rounded or sharp at the apex, straight or slightly curved, $42.8-85.7 \times 4.3-5.0 \mu$, 3-5 septate; mycelia in the host tissue, light yellow to yellowish brown, 2.4-6.7 μ .

Suscept: *Lasianthus odajima* (Masam.) Masam.

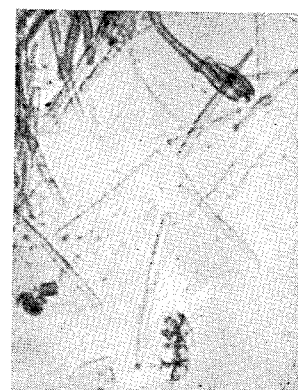
Specimens: Lian-wha-tse, Taichung. 4/13 (720 M), 4/14 1966 (600-640 M). C. C. Chang.

Distribution: China (Taiwan).

Notes: The symptoms of this disease is different from that caused by *C. lasianthi*. The size and shape of the fungus is also different.



Conidiophores and conidia



Conidia

5. Blister rust of Taiwan red pine.

Cronartium ribicola Fish. De Waldh. (I)

Gäumann, E. A. & C. W. Dodge—Comparative Morphology of Fungi p. 677, 1928.

Grove, W. B.—The British Rust Fungi (Uredinales) p. 316, 1913.

Hara, S.—Handbook Forest Tree Diseases p. 110, 1927.

Harshberger, J. W.—A Testbook of Mycology and plant pathology p. 537, 1917.

Hiratsuka, N.—Uredinological studies, pp. 22, 24, 124, 191, 237, 1955.

Ito, S.—Mycological flora of Japan, II. 2:156-158, 1938.

Phytopath. Soc. Jap.—Common names of economic plant disease in Japan. 3:188, 1965.

Stevens, F.—Plant disease fungi. p. 251, 1925.

- = *C. ribicola* Fisch.
Baxter, D. V.—Pathology in forest practice (2nd ed.) pp. 2, 126, 291, 321. 1951.
Boyce, J. S.—Forest pathology. p. 227-240, 1938.
Colley, R. H.—Journ. Agr. Res. 15:619-659, 1918.
Hubert, E. E.—An outline of forest pathology. p. 270, 1931.
Seymour, A. B.—Host. index of the fungi of North America. p. 28-49, 1929.
Spaulding, P.—Agr. H. B. USDA No. 179, p. 76, 1961.
Sydow, H. & P.—Monographia uredininearum 3:567, 1915.
- = *C. ribicola* Diet.
Hiratsuka, N. & Y. Hashioka—Bot. Mag. Tokyo. 49(577):24, 1935.
Ideta, A.—H. B. of plant diseases of Japan. p. 439, 1909-1911.
Rostrup, E.—Danish Fungi. p. 281, 1913.
Sawada, K.—D. C. F. F. 7:61, 1942.
Sydow, H. & P.—Monographic uredinearum. 3:567, 570, 1915.
- = *C. ribicolum* Diet.
Saccardo, P. A.—Sylloge Fungorum 7:598, 1889.
- = *C. ribicola* Rostr.
Sydow, H. & P.—Monographia urediniearum. 3:571 683, 1915.
- = *C. ribicola* Duby
Kitajima, K.—Forest pathology and Wood decay. p. 136, 1933.
- = *Coleosporium ribicola* (E. & E.) Authur.
Long, W. H.—Mycologia 8:309, 1916.
- = *Peridermium ribicola* E. & E.
Long, W. H.—Mycologia. 8:309, 1916.
- = *P. strobii* Kleb.
Hansberger, J. W.—Atextbook Mycology and Plant Pathology. p. 537, 1917.
Ideta, A.—Handbook of the plant diseases of Japan. p. 440, 1909-1911.
Kitajima, K.—Forest pathology and Wood decay. 136, 1933.
Saccardo, P. A.—Sylloge Fungorum. 7:873, 1889.

This pathogen was first found by Hashioka on Aug. 9, 1933, at Mt. Yui in Taiwan. Only urediospores were found on the leaves of *Ribes formosanum* Hay. by him. Since then, no one found this pathogen again. Recently two specimens, forwarded from the Forest Developing Bureau of Cross Island Highway, were identified as the aeciospores of this pathogen, parasitic on pines; this was the first case found in Taiwan. This pathogen was also parasitic on a new host—*Pinus taiwanensis* Hay.

Symptoms: This pathogen generally attacks the stem base of 4- to 5-year old trees, then spreads up to 18 to 25 cm above the soil level; lesions are swelled. The results of the measurement of two infected plants are as follow:

thread-like, straight or curved, 4.8-14.4 (21.4) \times 4.3-7.1 μ , apical swelled, globose to elliptical, 9.5-14.3 \times 4.8-7.1 μ .

Suscept: *Pinus taiwanensis* Hay.

Specimen: Da-jar-shi, Taichung. (1900-2500 M). 5/4/1967.

Distribution: North America, Belgium, England, Scotland, Germany, Norway, Russia Switaerland, Porland, Siberia, Demark, India, Japan, Pakstan, Sweden, Finland, Wales, Kamchatka.

6. Leaf brown blight of Taiwan maesa

Macrophoma maesae sp. nov.

Maculae amphigenae, initio in foliorun apicibus, ampliatae, sub-anguloro-orbicularibus, trianguliris vel recta, fulva, 6 cm diam., pycnidia epiphyllis, cstiole erumpentibus, ellipticis vel globosis, frequenter globose-depressis, pallide-brunneae vel fusco-brunnea, 114.2-273.7 \times 142.8-314.2 μ ; conidiophora, filiformibus, simplicia, 4.8-11.4 \times 2.4-4.1 μ ; conidio hyalina, simplicia, leviter, ellipsoidea ad fusvideis, 14.3-22.4 \times 6.2-7.6 μ diam.; mycelio, hyalina, incanescentis vel pale brunneae, erecta vel paullo, curvatis, 3.3-5.2 μ diam..

Hab. in foliis *Maesa aenera* Mez. in Taiwan.

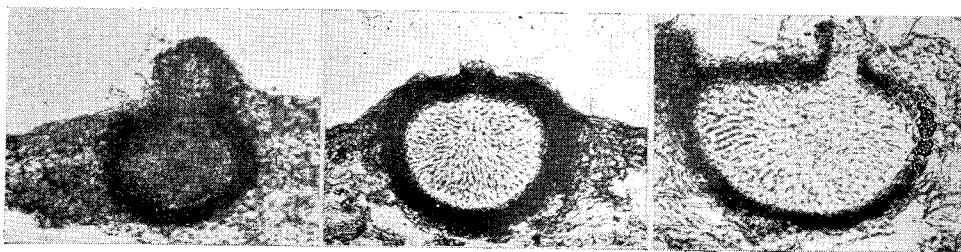
Symptoms: The lesions start from the tip of the leaves, spreaded with sub-circular, or with triangle, or with concentric circular to 6 cm, lesions red brown, not distinguished with healthy part, greyish brown at old leaves, scattered with black dots.

Causal organism: Pycnidia are subepidermal, ostioles or part of pycnidia erumpent, ellipsoid, globose, or flat globose, yellow brown to dark brown, 114.2-273.7 \times 142.8-314.2 μ ; thickness of pycnidial wall, 23.8-35.7 μ at tip, 16.7-30.9 μ at base, 16.7-42.8 μ at side wall; pycnidial cells sub-circular, or irregular, 5.3-11.0 \times 3.8-6.2 μ ; conidiophore filiform, aseptate, hyaline, 4.8-11.4 \times 2.4-4.1 μ ; spores hyaline, unicellular, smooth, ellipsoid, long-ellipsoid, long-fusiform, or pointed long-fusiform, 14.3-22.4 \times 6.2-7.6 μ ; hyphae in tissue, hyaline, grey, or light greyish brown, upright or curved, 3.3-5.2 μ .

Suscept: *Maesa tenera* Mez.

Specimen: Chi-lung (20-40 m) 3/13/1966 C. C. Chen.

Distribution: China (Taiwan).



Typical pycnidium

Pycnidium and pycniospore

Pycnidium with ostiole

	Size of lesion	Diameter of stem and branch near to the lower part of lesion	Diameter of stem and branch near to the upper part of lesion
Stems	3.40 × 12.5 cm	2.70 cm	2.40 cm
	4.10 × 10.0 cm	3.85 cm	2.70 cm
	average 3.75 × 11.25 cm	3.28 cm	2.55 cm
Branches	1.38 × 8.0 cm	1.12 cm	0.92 cm
	1.12 × 6.0 cm	0.97 cm	0.75 cm
	1.13 × 4.5 cm	1.13 cm	0.54 cm
	average 1.21 × 6.17 cm	1.07 cm	0.74 cm

The lesions are oblongate-elliptical, the base of the affected branches swelled, blister-like, extending to the upper part gradually, and cracked finally. Resinous extrusions from the lesion occur frequently.

Causal organism: Aecia are subglobose, hemisphaerical, rectangular, to various shape, erumpent from the bark, light yellow to orange yellow, 7.0-3.5 μ mm, usually coalescing to 3.0-17.0 mm strips; the underside of the aecia, 119-190 μ thick; aeciospores produced in chain, white at first, then light yellow, subglobose, to angular, 26.2-38.1 × 19.5-23.3 μ ; peridia around the unmaturing aecia, hyaline to light yellow; peridial cells, irregular, 42.8-76.2 × 19.0-42.8 μ ; mycelia, intercellular, smooth, slightly curved, hyaline to whitish yellow or greyish yellow, 2.8-5.3 μ width; haustoria, hyaline to light colored,



Symptom on Taiwan red pine

7. Leaf-blight of Malay catchbird tree

Macrophoma pisoniae sp. nov.

Seymour A. B.—Host index Fungi of North America p. 298 1929.

Maculae initio in foliorum marginibus, nigris, ampliatae, 5 cm diam., demum tabes, ravidous vel griseous in siccus; pycnidia amphigenae, plerumque epiphyllis, in epidermide tectis, globoso-depressis, frequenter sub-globosis vel reb-fusoideis, non ostiole, fuscis-brunnea, 66.6–195.5 × 130.9–202.3 μ diam.; conidiphora hyalina, simplicia, erecta, 7.1–9.5 × 2.4–5.2 μ; conidia simplicia, hyalina, liviter, ellipticis, ellipsoidea ad cylindrica, 11.8–32.8 × 3.3–5.7 μ diam.; mycelia hyalina, prequenter brunneo-grisea vel ravidous, erects vel curvata, 3.3–6.2 μ diam.

Hab. in foliis *Pisonia umbellifera* (Forst) Seem. in Taiwan.

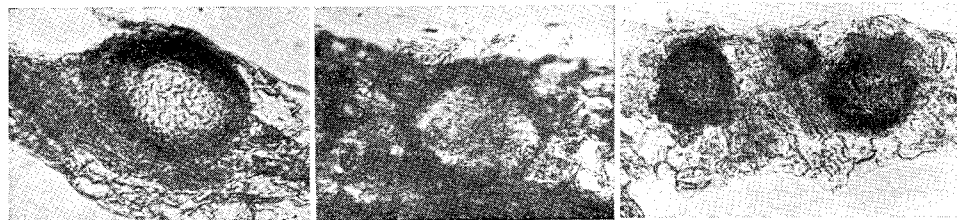
Symptoms: The lesions start from the margin of the leaves, water soaked, spreaded to above 5 cm; mesophyll rotted, hole formed, crinkled as dry, ragged, only 1 cm attached on healthy part, greyish brown to greyish white, distinguished with healthy tissue; concentric zone on the surface, black dots on both side.

Causal organism: Pycnidia are amphigenous, hypoepidermis, more on upper surface of leaves, flat globose, sub-globose, sub-fusiform, ostioles absent, dark brown, 66.6–159.5 × 130.9–202.3 μ; thickness of periderm, 11.9–23.8 μ at the tip, 16.7–28.2 μ at the base, 14.3–23.8 μ at the side wall; pycnidial cells sub-circular, irregular, oblong, 5.7–16.7 × 4.8–9.5 μ; conidiphore hyaline, aseptate, upright, 7.1–9.5 × 2.4–5.2 μ; spores unicellular, hyaline, smooth, ellipsoid, long-ellipsoid, or cylindric, 11.8–23.8 × 3.3–5.7 μ; hyphae in tissue hyaline, some greyish white to greyish brown, upright or curved, 3.3–6.2 μ.

Suscept: *Pisonia umbellifera* (Forst) Seem.

Specimen: Than-lo-tsun, Hong-tsung (140 m) 3/12/1967 C. C. Chen.

Distribution: China (Taiwan).



Typical pycnidium

Pycnidium pycniospores

Pycnidia in tissue

8. Dieback of common schefflera

Macrophoma scheffleri sp. nov.

Maculae malaeneous, in virga, novolla, ad 1.5 cm, diam., foliis corrugo torresco, at attingo 16 cm exstinguo, demumbrunneo-grisea; pycnidia formabilis ad virga vel petiolus, fusco-brunneae, ex nigro, globosis, globoso-depressis vel

ellipticis, $164.2-233.2 \times 157.1-219.0 \mu$; pycnidiophora, minutis, simplicia, hyalina, erecta vel paullo curvatis, $9.5-16.7 \times 1.9-2.9 \mu$; conidia simplicia hyalina fusoides, vel ellipsoides $14.3-19.1 \times 4.8-6.4 \mu$; mycelio brunneo-grisea ex ravidous, $4.6-5.7 \mu$ diam.

Hab. ad virga vel petiobus in *Schefflera octophylla* (Lour.) Harms. in Taiwan.

This disease originally occurred on seedlings on mountain A-lie (2300 M). Fusiform to elliptical lesions, $3-4 \times 1-2$ mm, appeared on the twigs. On March 4, 1966, the specimens were collected and cultivated in pots in our laboratory corridor. The lesion did not change within 2 months. But, in June, the upper leaves wilted suddenly, 1.5 cm of the twig at the portion 5 cm below tip blackened and enlarged. As the lesions reached 16 cm in diameter, the entire shoot were died.

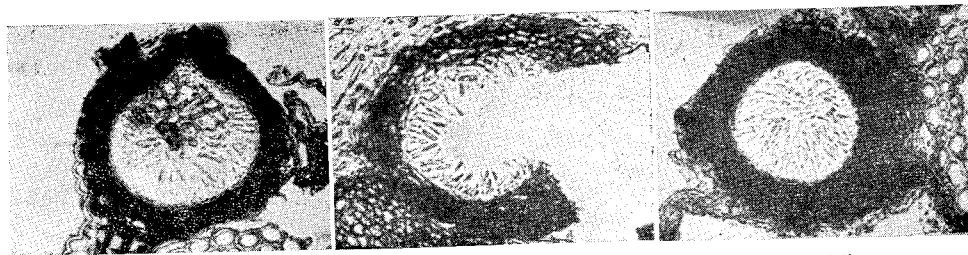
Symptoms: Blacken lesions appear on the twig of young seedlings. The affected shoots wilt as the lesions reached to 1.5 cm in diameter, and die as reached to 16 cm. Black dots are formed on the lesions. Spore ooze is observed in moist condition. The branchlets of the host become whitish grey gradually.

Causal organism: Pycnidia are embeded in the lesions on twig or petiole, dark brown to black, globose, subglobose, or ellipsoid, beneath epidermis at first, and erumpent later, without stroma, $164.2-233.2 \times 157.1-219.0 \mu$; pycnidial wall, $26.2-35.7 \mu$ thick for lateral, $19.0-31.0 \mu$ for bottom; ostiole, $9.5-12.3 \mu$; pycnidial cells, irregular in shape, $7.1-14.3 \times 4.8-9.5 \mu$, yellowish brown to dark brown; conidiophore densely occurred, 1-celled, slender, erect or slightly curved, $9.5-16.7 \times 1.7-2.9 \mu$; pycnidiospores, 1-celled, hyaline, fusiform to elongate-ellipsoid $14.3-19.1 \times 4.8-6.4 \mu$; mycelia in the tissue, light yellowish grey to greyish brown, smooth, $4.6-5.7 \mu$ width.

Suscept: *Callicarpa formosana* Rolfe

Specimens: Ali san Cha-i (430 M), 10/5/1966, C. C. Chen.

Distribution: China (Taiwan), Japan.



Typical pycnidia

Pycniophores and pycnidiospores

Pycnidia

9. Rust of Indian wikstroemia.

Melampsora yashinagai P. Henn.

Hiratsuka, N. et Hashioka, Y.—Bot. Mag. Tokyo, 51:42, 1937.

Ito, S.—Mycological flora of Japan, 2:42, 1938.

Sawada, K.—D. C. F. F. 7:54, 1942. 9:86, 1943.

Saccardo, P. A.—Syll. Fung. 17:264, 1905.

Sydow, P. et H.—Monogr. Uredin 3:391, 1915.

= *M. wikstromiae* P. Henn.

Ideta, A.—Suppl. to Handbook plant pathology in Japan. 2:431, 1926.

Sawada, K.—D. C. F. F. 4:32, 1928.

Symptoms: Uredial sori are hypophyllous on the yellowish white to greenish yellow spots, scattered or several aggregated, more or less rounded, 0.5–1.5 mm, yellow to yellowish brown, powder-like.

Causal organism: Uredial sori are buried in host tissue at first, erumpent at later, $368.7\text{--}1142.4 \times 142.8\text{--}190.4 \mu$; uredospores, globose, subglobose, or obovoid, with verrucose, $18.3\text{--}23.3 \times 17.6\text{--}21.4 \mu$, wall, $2.0\text{--}2.4 \mu$ thick; paraphysis, ovoid to clavate, head, $26.2\text{--}30.9 \mu$ in diameter, wall thick, $2.4\text{--}5.0 \mu$, hyaline, pedicel, $3.8\text{--}5.7 \mu$ in diameter, $42.9\text{--}90.4 \mu$ in length, hyaline; intercellular mycelia in host tissue hyaline, smooth, not frequently with knot. $4.8\text{--}7.1 \times 3.6\text{--}4.8 \mu$ in diam.

Suscept: *Wikstroemia indica* C. A. Mey.

Specimen: Mat. Kuan-yin, Taipei. (60 M), 4/9/1967, C. C. Chen.

Distribution: India, Japan, China (Taiwan).

10. Black mildew of Formosan Ormosia

Meliola ormosiae sp. nov.

Coloniis amphigenis, sparis, orbicularibus vel suborbicularibus, 2–9 mm., crassis, plus minusve velutinis, pullous ex furvovis; mycelio plus minusve densiuscule, ravidous, plus curvatis, $3.8\text{--}6.8 \mu$ diam.; Hyphopodiis unilateralibus vel alternis, orbicularibus vel oblonga, $7.1\text{--}14.3 \times 5.7\text{--}9.5 \mu$, inferioris berevi, $3.1\text{--}5.3 \times 6.7\text{--}7.1 \mu$ longa, minusve unicelluli; peritheciis sparsis globosis ex oblonga, papillatis, minusve, ravidous vel nigrius atris $228.5\text{--}295.1 \times 221.3\text{--}281.6 \mu$ diam.; ascis Hyalina, globosis ex ellipsoideis, bisporis, atris $47.6\text{--}57.1 \times 30.9\text{--}38.1 \mu$; sporidiis globo-oblongis vel globo-ellipsoideis, utrinque ratundatis, 4 septatis constrictis inferiorie ex ravidous $33.8\text{--}42.8 \times 15.0\text{--}16.7 \mu$, Setis mycelialibus copiosis praecipue circa perithecia, imus opacis $280.8\text{--}357.0 \times 8.1\text{--}9.8 \mu$.

Hab. in foliis *Ormosia formosana* Kaneh in Taiwan (China)

Symptoms: Coloneis are amphigenous, orbicular, or suborbicular, greyish black to black, velvet, 2–9 mm in diameter; colony with black dots, mycelia sparse, more light in color.

Causal organism: Mycelia are epiphyllous, light brown to greyish brown, curved, dense, $3.8\text{--}6.8 \mu$ in width; hyphopodia lateral or alternate, globose, or long-globose, $7.1\text{--}14.3 \times 5.7\text{--}9.5 \mu$, stipe cell small, $3.8\text{--}5.3 \times 6.7\text{--}7.1 \mu$, some

hyphopodia single cell, color as in hyphae; perithecia on lesion, globose to long-globose, some papilate, greyish brown to dark brown, $228.5-295.1 \times 221.3-281.6 \mu$; cells of perithecia globose to subglobose, $7.1-14.8 \times 4.8-11.9 \mu$; asci hyaline, subglobose, tapering toward the base, two ascospores, $47.6-57.1 \times 30.9-38.1 \mu$; ascospores long-globose or globose-fusiform, 4-septate, constricted at septa, light brown to greyish brown, $33.8-42.8 \times 15.0-16.7 \mu$, mycelial setae bearing at the bottom of perithecia, tapering towards the apex, dark brown to black, hyaline at apex, thus hardly to detect the septae, $280.8-35.7 \times 8.1-9.8 \mu$, bulbous at base, $11.9-12.6 \mu$.

Suscept: *Ormosia formosana* Kaneh.

Specimen: Lian-hwah-tsi, Taichung (640-740 m) 4/14/1966, C. C. Chen.

Distribution: China (Taiwan).

Notes: According to W. Yamamoto (Sci. Rep. Hyogo Univ. Agr. Ser. Agr. Biol. 111, 2, p. 28, 1956) *Lembosia ormosiae* Yam (Microthyriaceae) are also found on the same host and in the same location.

11. Leaf blight of Weeping Willow

Phyllosticta babylonica sp. nov.

Maculae amphigenae, orbicularibus vel suborbicularibus, initio in foliorum apicibus vel marginibus, primo, melaeneo-brunneae, demum brunneae, 2-5 mm diam.; pycnidia plerumque epiphyllis, orbicularibus, ellipticis vel globose-depressis, pallide brunneae vel fusco-brunneae, $71.4-130.9 \times 95.2-154.7 \mu$ diam.; conidiophora cylindrica simplicia, hyalina, $8.1-9.5 \times 2.9-3.3 \mu$, conidia ellipticis vel oval, basis cuspidata, simplicia, hyalina, $10.5-12.8 \times 5.7-6.7 \mu$; mycelia gilvous vel ravidous, leviter ad knot, $5.0-9.0 \mu$ (knot $9.5-11.9 \mu$).

Hab. in foliis *Salix babylonica* Linn. in Taiwan.

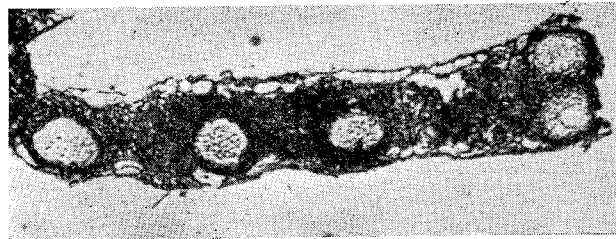
Symptoms: Lesions on the leaves are starting from the tip or margin, occasionally, more or less round spots form on the middle part, brown to dark brown color. Black dots are aggregated or scattered on the lesions.

Causal organism: Pycnidia are amphigenous, globose, subglobose or ellipsoid, yellowish brown to dark brown, $71.4-130.9 \times 95.2-154.7 \mu$; pycnidial wall made from 4-6 layers of cells; lateral pycnidial wall, $14.3-23.8 \mu$ thick, bottom wall, $14.3-26.2 \mu$ thick; conidiophores, cylindrical, 1-celled, hyaline, $8.1-9.5 \times 2.9-3.3 \mu$; pycnidiospores, ellipsoid, base-fusoid, 1-celled, hyaline, $10.5-12.8 \times 5.7-6.7 \mu$; mycelia in the host tissue, broad, usually with knots, light yellow or dark grey, smooth, $5.0-9.0 \mu$ width, broader part, $9.5-11.9 \mu$ width.

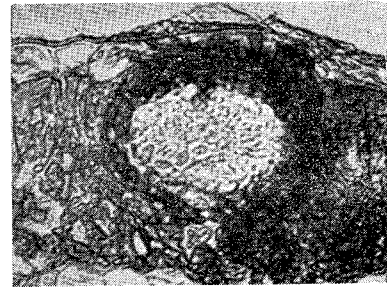
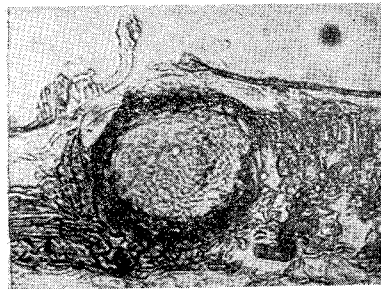
Suscept: *Salix babylonica* Linn.

Specimen: Yang-ming-shan, Taipei. (700 M), 10/5/1966, C. C. Chen.

Distribution: China (Taiwan).



Pycnidia in tissue



Pycnidium

12. Leaf-spot of Short-spine Evergreen Chinkapin

Phyllosticta castenopsisidis sp. nov.

Maculae initio in foliorum apicibus vel marginibus, in omnis marginalis demum, griseons 1.5-8.0 mm diam.; pycnidia epiphyllis, sparsis, globosis vel ovel, nigricant, 121.4-200.0 \times 100.0-171.4 μ diam.; conidiophora hyalina simplicia, erecta vel paullo curvatis 8.1-11.9 \times 3.3-3.6 μ diam.; conidia ellipticis vel ellipsoider, simplicia, hyalina vel subhyaline, leviter, 10.5-15.7 \times 5.2-6.7 μ (16.7 \times 7.1); in macula figura plectenchymae, plerique, ellipticis vel rotundo basis quadratus, 133.3-190.0 \times 128.5-214.2 μ diam., mycelio hyalina vel incanescent recta vel paullo curvatis 3.3-5.2 μ diam.

Hab. in foliis *Castanopsis stellatospina* Hay in Taiwan.

Symptoms: The lesions start from the tip or the margin of leaves, spreaded with orbicular shape; lesions at the central part, orbicular, or sub-orbicular; red brown zonated at border; margin of lesions greyish white; lesions 1.5-8 mm scattered with unclear greyish dark dots or cicular (see photo).

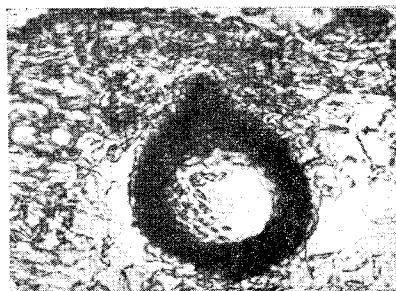
Causal organism: Pycnidia are hypoepidermous, or only ostioles erumpent, globose or ellipsoid, black, 121.4-200.0 \times 100.0-171.4 μ ; thickness of periderm, 19.0-33.3 μ at the tip, 19.0-31.0 μ at the base, 16.7-33.5 μ at the side wall; pycnidial cells sub-round, polyangular, or long shape, single cell light yellow brown, 5.2-14.3 \times 3.3-9.5 μ ; conidiophore hyaline, aseptate, upright, or curved, pointed at the tip, 8.1-11.9 \times 3.3-3.6 μ ; spores ellipsoid or long ellipsoid, unicellular, hyaline, or light yellow, smooth, 10.5-15.7 \times 5.2-6.7 μ ; plectenchyma

in tissue ellipsoid, rectangular, or round shape at the base of rectangle, or cup shape cells tissue (see photo), hyaline or grey, upright or curved, 3.3-5.3 μ .

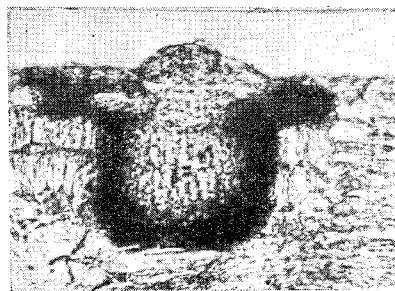
Suscept: *Castanopsis stellatospine* Hay.

Specimen: Tuan-lo-tsun, Ta-ping-shan (370-400 m) 3/11/1967 C. C. Chen.

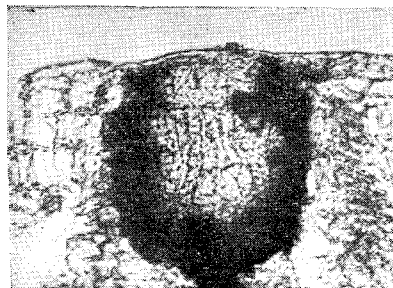
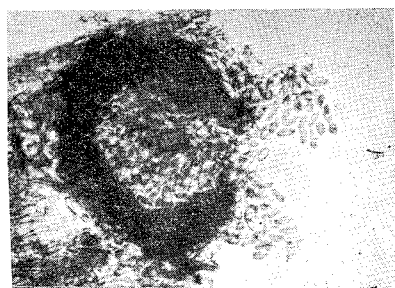
Distribution: China (Taiwan).



Typical pycnidium



Shape of plectenchyma



Pycnidium and pycniospores

13. Leaf-blight of Red bark oak

Phyllosticta cylobalanopsidis sp nov.

Macule amphigenae circulares vel subcirculares, initio, in foliorum marginibus vel apicibus, primo palebrunneae vel rubellous, denique griseo-brunneae, linea hyaline 0.5-1.0 mm diam., et in conspectu manifestae; pycnidia amphigenae, sparris, globoso-depressis, globosis, ellipticis, ostiole, pallide brunneae vel fuscous, 142.8-204.9 \times 95.2-214.2 μ diam.; pycnidiophora, filiform simplicia erecta vel paulo curvatis, 8.3-14.3 \times 1.2-2.4 μ diam.; conidia simplicia, hyalina, fusoides, utrinque vel simplicia acutiusculis, 5.7-7.6 \times 2.1-2.8 μ diam.; mycelia intercellularia vel intracellularia, hyalina vel pallide brunnea, erecta vel curvate, 3.6-4.8 μ crasis.

Hab. in foliis *Cyclobalanopsis gilva* (Bl.) Corst. in Taiwan.

Symptoms: Lesions on the leaves are starting from the tip or margin, or rounded spots on the middle of lesions, 0.4-1.5 cm in diameter, greyish

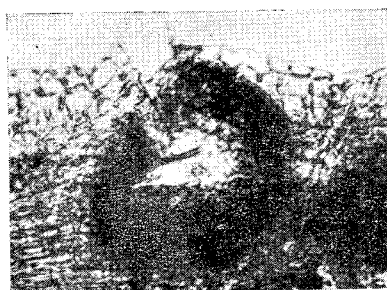
brown to red at first, becoming greyish white to brown color gradually, with 0.5-1.0 mm wide redish brown border around the lesions. Scattered black dots amphigenously appear on the lesions. Defoliation do not occur even as the lesions spread over the most part of the leaves.

Causal organism: Pycnidia are amphigenous, subglobose, globose to elliptical, yellowish brown color, upper part dark brown to black, $142.8-204.9 \times 95.2-214.2 \mu$; pycnidial wall, $16.7-35.7 \mu$ (upper), $14.3-35.6 \mu$ (under), $11.9-47.6 \mu$ lateral); ostiole, distinct, $28.2-47.6 \times 33.3-47.6 \mu$; pycnidial cells, irregular, $4.3-11.9 \times 3.3-7.6 \mu$; conidiophores, densely occured, filiform, single hyaline, straight or slightly curved, $8.3-14.3 \times 1.0-2.4 \mu$; pycnidiospores, fusiform, 1-celled, hyaline, $5.7-7.6 \times 2.1-2.8 \mu$; mycelia in the host tissue straight or curved, hyaline to light greyish brown, $3.6-4.8 \mu$.

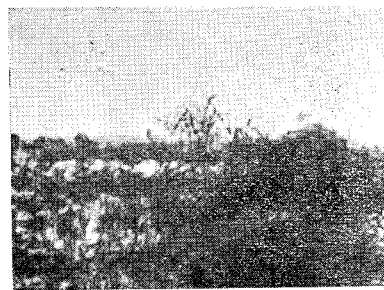
Suscept: *Cyclobalanopsis gilva* (Bl.) Oerst.

Specimen: Heng-chun, Tuan lo tsun, Nan-san-lu, (120 M). 3/12/1967, C. C. Chen.

Distribution: China (Taiwan).



Pycnidium



Pycnidiospores

14. Red leaf-blight of Mabalo persimmon

Phyllosticta diospyri sp. nov.

Maculae initio generaliter in foliorum apicibus vel marginibus, demum ampliata 12 cm longus, rufous, non-dofoliate, linea fuscobrunneae, 0.5-1.0 mm diam., et in conspectu manifestae, denique ravidous; pycnidia epiphylla, sparsis, fusco-brunneae, globo-oval, ellipsoider, ovate, frequenter contextu, $166.6-226.1 \times 166.6-214.2 \mu$ diam., ostiole non manifertae; pycniophora cuspidata in apice, cylindrica, hyalina, simplicia $4.8-7.1 \times 1.7-2.8 \mu$ diam.; conidia ellipticis ex cylindrica, ratundo utrinque, frequenter simplicio-cuspidata, hyalina, leviter, $9.5-14.3 \times 3.3-5.2 \mu$ diam.; mycelia gilvous ex ravidous, plus minusve curvata $3.3-5.7 \mu$ diam.

Hab. in foliis Diospyros discolor Willd in Taiwan

Symptoms: The lesions start from the tip or the margin of leaves, red brown, no defoliation occurs as spreaded to half part of leaf; zonated at the

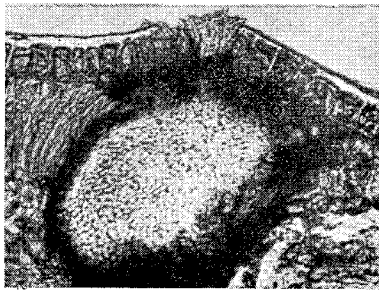
margin of healthy tissue, dark brown, wave shape; old ones turn greyish brown, and scattered with black dots on the surface.

Causal organism: Pycnidia are hypoeperidermous, then erumpent, brown, globos, ellipsoid, long-ellipsoid, ovate; two pycnidia fused some times (see photo), $166.2-226.1 \times 166.6-214.2 \mu$; thickness of periderm, $23.8-30.9 \mu$ at side wall, $16.7-23.8 \mu$ at the base, $14.3-26.2 \mu$ at the tip; ostioles not clear; pycnidial cells irregular, greyish brown to dark brown, $7.1-11.9 \times 4.8-10.5 \mu$; spores ellipsoid, round at both ends, pointed at one end some times, hyaline, smooth, $9.5-14.3 \times 3.3-5.2 \mu$; hyphae in tissue greyish yellow to greyish brown, curved, $3.3-5.7 \mu$.

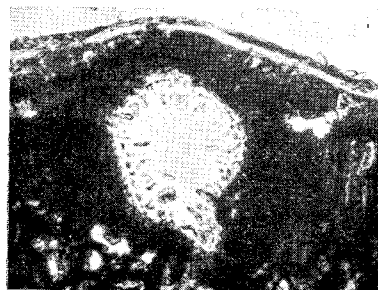
Suscept: *Diospyros discolor* willd.

Specimen: Hong-tsen Tuan lo tsun (Ta-ping-shan) (370-400 m) 3/10/1967, C. C. Chen.

Distribution: Taiwan (China).



Pycnidium with ostiole



Pycnidophores in pycnidium



Fused pycnidia



Pycniospores in pycnidium

15. Brown spot of *Glochiolion fortunei* Hance

Phyllosticta gliochidinis Saw.

Sawada, K.—Trans. Nat. Hist Soc. Formosa XXXV:3, 1918.

Sawada, K.—D. C. F. F. 1:526, 1919.

Symptoms: Lesions on leaves are brown color, rounded, ovoid, elliptical, coalescing to form large irregular spots, 1.5-15 mm in diameter, becoming blighted and greyish color, shot hole, black dots appeared gradually.

Causal organism: Pycnidia are amphigenous, subglobose, globose, or elliptical, scattered or aggregated, dark brown, paler base, $76.2-142.8 \times 71.4-147.6 \mu$; pycnidial wall, $19.0-33.3 \mu$, (upper), $11.9-23.8 \mu$ (under), $11.9-28.2 \mu$ (lateral); pycnidial cells, irregular, $5.2-13.3 \times 4.8-8.1 \mu$; conidiophores hyaline, 1-celled, filiform, $7.1-11.9 \times 1.7-2.8 \mu$; pycnidiospores, hyaline, 1-celled, smooth, elliptical to fusiform, $5.4-11.0 \times 3.3-5.7 \mu$; mycelia in host tissue, hyaline to light yellowish grey, straight or curved, $3.3-5.7 \mu$.

Suscept: *Glochion fortunei* Hance.

Specimen: Heng-chun, Tuan lo tsun, Mat. Tai-pin, (350-370 M), 3/10/1967, C. C. Chen.

Distribution: China (Taiwan).

16. Leaf blight of Formosan sweetgum

Phyllosticta liquidambari sp. nov.

Sawada, K.—D. C. F. F. 8:64, 1943.

Maculae, amphigenae, initio in foliorum apicibus, prime fulva, dein brunneo-grisea, 0.6-3.5 cm. diam.; pycnidia, amphigenae, plerumque epiphyllis, diu epidermide tectis, vel papillis erumpentibus, nigro-brunneae, globosis ellipticis, vel globoso depresso, $161.8-202.3 \times 154.3-209.4 \mu$; conidiophora filiformibus, hyalina, simplicia, $7.1-18.6 \times 2.1-3.3 \mu$; conidio, ellipticis, do obovate, erecta, hyalina, simplicia, $14.3-17.1 \times 6.6-7.6 \mu$; mycelio erecta vel paullocurvatis, hyalina vel subhyalinae, $2.4-5.5 \mu$ diam.

Hab. in foliis *Liquidamber formosana* Hance in Taiwan.

Symptoms: Lesions on the leaves are at first starting from tip, enlarged gradually, border unobvious, first reddish brown, then greyish white, 0.6-3.5 cm. in diameter, defoliation occurred finally. Scattered black dots appear on old lesions.

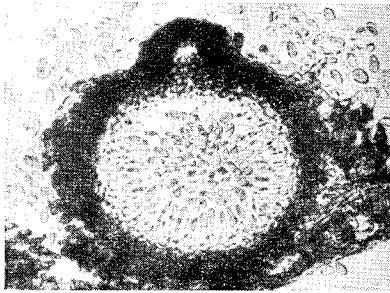
Causal organism: Pycnidia are amphigenous, frequently on upper side, embedded in host tissue, erumpent with ostiole, blackish brown to black, globose, subglobose or elliptical, $161.8-202.3 \times 154.3-209.4 \mu$; lateral pycnidial wall, $16.7-21.4 \mu$, bottom wall, $16.7-28.6 \mu$, ostiole, $16.7-21.4 \mu$; pycnidial cell, irregular, globose to cylindrical, brown to dark brown, $10.0-16.7 \times 4.3-9.5 \mu$; conidiophores, densely occurred, filiform, 1-celled, hyaline, $7.1-18.6 \times 2.1-3.3 \mu$; pycnidiospores, globose, elliptical, or cylindrical, straight, hyaline, 1-celled, $14.3-17.1 \times 6.6-7.6 \mu$, no oil drops; mycelia in host tissue, light yellow to yellow, smooth, occasionally with broad knots, $2.4-5.5 \mu$.

Suscept: *Liquidamba formosana* Hance.

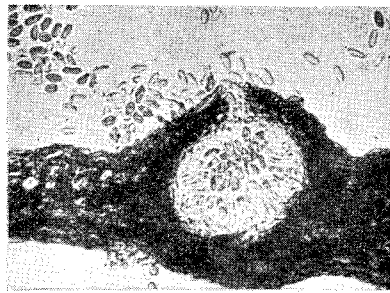
Specimens: Taipei 1st Girl Middle School, Taipei. (10 M), 7/11/1966, C. C. Chen.

Distribution: China (Taiwan).

Notes: *Phyllosticta liquidamdesicola* Saw. has known to cause lesions, 2-8 mm in diameter and the pycnidia are measured $57-65 \times 57-65 \mu$ spores, $6.5-9.0 \times 5.0-6.5 \mu$, with oil drops. It is quite different the present fungus.



Pycnidium and pycniosphores



Typical pycnidium

17. White leaf-blight of Taiwan sweet-leaf

Phyllosticta symplocosii sp. nov.

Maculae initio generaliter, in foliorum apicibus vel marginibus, primo fuscous demum ampliatae, griseous, poroabidis 2-8 mm, diam., linea ravidous, 0.5-2.0 mm diam., et in conspectu manifestae.; pycnidia amphigenae, sparsis, globoso-depressis ex ellipticis, 50.0-81.0 \times 66.6-104.7 μ diam., papillio 11.9-16.7 \times 16.7-35.7 μ diam.; conidiophora hyalina, simplicia, erecta 3.8-7.1 \times 1.0-1.4 μ diam.; conidia simplicia, hyalina, leviter, ellipticis ex ellipsoider 2.4-4.1 \times 1.0-2.1 μ diam.; mycelia hyalina velgilvous ex ravidous, erecta vel curvalata 2.4-4.3 μ diam.

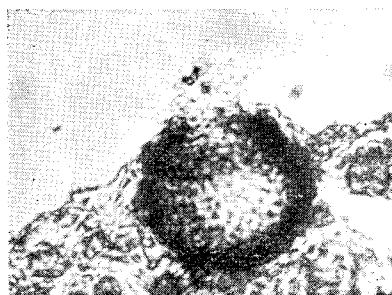
Hab. in faliis *Symplocos modesta* Brand, in Taiwan.

Symptoms: The lesions start from the tip or margin of the leaves, dark brown at first, greyish white to white as lesion spreaded to 3-4 mm; zonated on the margin of lesion, greyish brown, 0.5-2.0 mm no defoliation as lesions spreaded to 8 mm; some lesions scattered on central part of leaf, orbicular or suborbicular, 2-3 mm, white; border line 0.5 mm greyish brown; black dots scattered on both sides of lesions.

Causal organism: Pycnidia are amphigenous, hypoeperidermous, then erumpent, yellow brown to dark brown, globose, flat globose, or ellipsoid, papillate, 50.0-81.0 \times 66.6-107.4 μ ; thickness of periderm, 7.1-16.7 μ at the tip, 9.5-19.0 μ at the base, 9.5-16.7 μ at side wall; cells of periderm irregular or long shape, 3.3-4.3 \times 3.8-9.5 μ ; papilla, 11.9-16.7 \times 16.7-35.7 μ ; spores unicellular,



Pycnidium and pycniosphores



Typical pycnidium

hyaline, smooth, elliptical, a long-elliptical $2.4-4.1 \times 1.0-2.1 \mu$; conidiophore hyaline, single, upright, $3.8-7.1 \times 1.0-1.4 \mu$; hyphae in tissue, hyaline, or light yellow to greyish brown, curved, or upright, $2.4-4.3 \mu$.

Suscept: *Symplocos modesta* Brand.

= *S. eriostroma* Hay.

= *Bobua eriostroma* (Hay) Kaneh. et Sasak.

Specimen: Ping tung, Tuan-lo-tsun (120-160 m) 3/12/1967 (type) C. C. Chen.

Distribution: Taiwan.

18. Brown Spot (anthracnose) of Formosan Alder

Sphaceloma alni sp. nov.

Maculae, amphigenae, circulares ex anguloso-circulares, pale brunneae, denique brunneo-grisea, 8-15 mm diam.; acervulis hypophyllis, minutis, paullo prominentibus, din epidermide tectis, dein erumpentibus, pallide brunneae, $154.7-257.0 \times 26.2-47.6 \mu$; conidiophora minutis; conidio, cylindrica vel obfusoides, basis cuspidata, hyalinis, $5.7-7.1 \times 1.4-1.9 \mu$ diam.; mycelio hyalinis vel subhyalinis, $1.9-2.9 \mu$.

Hab. in foliis *Alnus formosana* (Burkill.) Makino. in Taiwan.

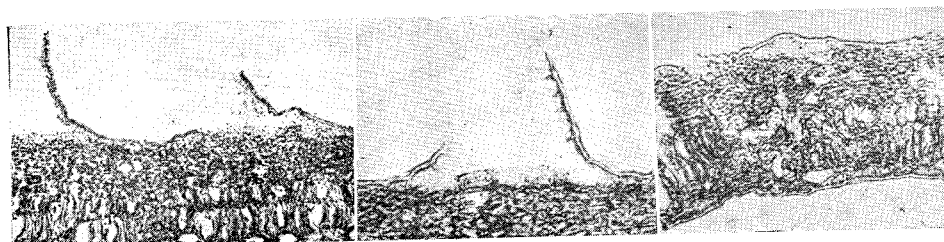
Symptoms: Lesions on the leaves are not scab-like, more or less rounded to irregular, light brown, margin unobvious, 1-3 cm, middle part of the lesions change to yellowish white, with distinct border, 0.8-1.5 cm at later stage. The underside of the white spots appear to be unobvious zonation with black dots.

Causal organism: Acervuli on the under side of lesions are buried first, erumpent later, parallel in tissue, $54.7-257.0 \times 26.2-47.6 \mu$; stroma, light color, $7.1-14.3 \mu$ depth; conidiophores densely occurred, short and undistinct; conidia, cylindrical to oblongate-fusiform, narrow base, hyaline, 1-celled, $5.7-7.1 \times 1.4-1.9 \mu$; mycelia in host tissue sparsely developed, hyaline or light colored, smooth, $1.9-2.9 \mu$.

Suscept: *Alnus formosana* (Burkill.) Makino.

Specimens: Pu-lee, Nan-tou, (470 M), 7/9/1965. P. H. Chen.

Distribution: China (Taiwan).



Acervuli

Acervulus
(conidia and conidiophores)

Yang acervulus

19. Small white spot of Hongkong oak

Sphaceloma cyclobalanopsidis sp. nov.

Maculae epiphyllis, solus, in foliis plerumque atque 150 spots, primo ravidorubellis, dein brunneo-grisea, 0.5–1.5 mm, dram; acervulis, sparsis vel gregariis, minutis, paullo prominentibus, diu epidermide tectis, dein erumpentibus, pallide brunneae, globoso-depressis, vel fusoides, $133.3\text{--}166.6 \times 33.3\text{--}71.4 \mu$; conidiophora, filiformibus, hyalinis, simplicis, erecta vel paullo curvatis, $12.9\text{--}20.0 \times 1.9\text{--}3.3 \mu$, conidiis hyalinis, simplicis, ellipsoidis vel oblong $6.2\text{--}9.5 \times 3.3\text{--}4.3 \mu$; mycelio hyalinis, leviter $2.1\text{--}4.5 \mu$ diam.

Hab. in foliis *Cyclobalanopsis championii* (Benth.) Oerst ex Schott. in Taiwan.

Symptoms: The fungus usually attacks only on the upper surface of leaves; numerous lesions (above 150) occurred on each leaf, lesions very small, 0.5–1.5 mm; red grey at first, then greyish white to white; tissue collapsed and small holl formed as lesion turn to white; red brown zonated between lesion and healthy tissue.

Causal organism: Acervuli are subepidermal at first, finally erumpent; epidermis dark brown, stroma yellow brown; flat globose or fusiform, $133.3\text{--}166.6 \times 33.3\text{--}71.4 \mu$; stroma formed by proplectenchyma, $2.4\text{--}4.8 \times 3.8\text{--}9.5 \mu$; conidiophore dense, hyaline, aseptate, upright or curved, pointed at the tip, $12.9\text{--}20.0 \times 1.9\text{--}3.3 \mu$; spores hyaline, unicellular, oblong, or tapering at one end, $6.2\text{--}9.5 \times 3.3\text{--}4.3 \mu$; mycelia in tissue, hyaline, smooth, upright, $2.1\text{--}4.5 \mu$.

Suscept: *Cyclobalanopsis championii* (Benth.) Oerst. ex Schott

= *Quercus championii* Benth.

Specimen: Tuan lo tsun Ta-ping-shan, (370–400 m) 3/11/1967 C. C. Chen.

Distribution: China (Taiwan).



Typical acervulus

Acervuli and conidia

20. Rust of Formosan beauty-berry

Uromyces callicarpae (Petch) Fujik.

Ideta, A.—Supplement to H. B. of the plant disease in Japan. 2:483, 1926.

Ito, S.—Journ. of Coll. of Agr. Hokkaido Imp. Univ. Sapporo, Japan. 11:278, 1922.

Ito, S.—Mycol. Flora of Japan. 2:117, 1950.

Sawada, K.—D. C. F. F. 4:36, 1928, 9:22, 1943.

Uredo callicarpae Petch.

Sawada, K.—D. C. F. F. 1:339-340, 1919. Ann. Mycol. 7:110, 1914.

Symptoms: Lesions appear at first on the underside of leaves, angular shape, 1-2 mm in diameter, blackish brown to violet, corresponding upperside appear greyish brown to yellowish brown spots, enlarge gradually to 2-4 mm in diameter, yellowish brown to brown patches (uredial sori), several spots coalescing to 7 mm in diameter patches, become powdery gradually.

Causal organism: Uredial sori are mostly hypophyllous, seldom epiphyllous, rounded, 0.2-1.0 mm, scattered or aggregated, yellowish brown to greyish brown; urediospores, subglobose to obovoid, yellowish brown to greyish brown, echinulated, $19.0-33.3 \times 15.2-30.0 \mu$; cell wall, $2.1-3.1 \mu$ thick; paraphysis, filiform or cylindrical, around the uredia, 1-2 septate, yellowish to greyish brown, $52.4-71.4 \times 9.5-15.2 \mu$; telial sori, hypophyllously on the uredial sori, brown to dark brown; teleutospores, ellipsoid to subglobose, apical part rounded, with thick wall, $2.6-4.8 \mu$, 1-celled, hyaline to light yellow, smooth, $26.2-38.1 \times 14.3-19.0 \mu$; pedicel, hyaline, $14.3-16.7 \times 4.8-5.2 \mu$; mycelia in the host tissue, hyaline or light yellow, $1.9-3.8 \mu$ width.

Suscept: *Callicarpa formosana* Rolfe.

Specimens: Yang-ming-shan, Taipei. (700 M), 10/5/1966, C. C. Chen.

Distribution: China (Taiwan), Japan.

臺灣森林之傳染性病害調查 (第四報)

陳 其 昌

菌類區系之調查工作為對農作物防疫上或經濟上不可忽略之資料，尤其臺灣之森林病害，一向未曾有系統的研究調查。自民國52年6月起承美國農部 (U. S. D. A.) 補助，已查悉重要病害發表於第一報 (中央研究院植物研究所報告第六卷第一號)，第二報 (國立臺灣大學農學院研究報告第八卷二期)，第三報 (中央研究院植物研究所第八卷二號)，而後繼續調查之一部份有20種，茲列記其病名及病原菌如下：

大青腫銹病 (*Aecidium clerodendri* P. Henn.)，遇山香葉背煤紋病 (*Cercospora clauseniae* Thirumalachar et Chupp.)，大青角斑病 (*Cercospora clerodendri* Miyake) 大葉鷄屎樹斑紋病 (*Cercospora lasianthicola* sp. nov.)，臺灣二葉松毛銹病 (*Cronartium ribicola* Fisch. De Waldh.) 臺灣山桂花葉褐枯病 (*Macrophoma maesae* sp. nov.)，皮孫木葉枯病 (*Macrophoma prsoniae* sp. nov.)，鵝掌柴枝枯病 (*Macrophoma scheffleri* sp. nov.)，南嶺蕘花銹病 (*Melampsora yashingai* P. Henn.)，臺灣紅豆樹小煤煙病 (*Meliola ormosiae* sp. nov.)，水柳葉枯病 (*Phyllosticta babylo-nicae* sp. nov.)，短刺錐栗葉斑病 (*Phyllosticta castanopsidis* sp. nov.)，赤皮葉枯病

(*Phyllosticta cyclobanopsidis* sp. nov.), 毛柿葉赤枯病 (*Phyllosticta diospyri* sp. nov.), 銀頭呆褐斑病 (*Phyllosticta glochidinis* Saw.), 楓樹葉枯病 (*Phyllosticta liquidambari* sp. nov.), 小葉白筆白枯病 (*Phyllosticta symplocosii* sp. nov.), 臺灣赤楊褐斑病 (炭疽病) (*Sphaceloma Alni* sp. nov.), 嶺南青剛櫟小白點病 (*Sphaceloma cyclobalanopsidis* sp. nov.), 粗糠仔 (杜紅花) 銹病 (*Uromyces callicarpae* (Petch.) Fujik.) 等。其中大葉鵝屎樹斑紋病, 臺灣山桂花葉褐枯病, 皮孫木葉枯病, 鵝掌柴枝枯病, 臺灣紅豆樹小煤煙病, 水柳綠枯病, 短刺錐栗葉斑病, 赤皮葉枯病, 毛柿葉赤枯病, 楓樹葉枯病, 小葉白筆白枯病, 臺灣赤楊褐斑病及嶺南青剛櫟小白點病等均為新種, 遇山香葉背煤紋病為新發現, 及臺灣二葉松毛銹病係新寄主及新記錄