

FULL PAPER

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Addition and re-examination of Japanese species belonging to the genus *Cercospora* and allied genera. V. Collections from the Nansei Islands (2)

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Abstract Five species collected in the Nansei Islands are discussed. Of these, one species found on *Gardenia jasminoides* is described as a new species, *Cercosporidium okinawaense* Kobayashi et Nishijima. *Asperisporium caricae* on *Carica papaya*, *Pseudocercospora melastombia* on *Melastoma candidum*, and *P. neoliquidambaris* Nakashima et Kobayashi, nom. nov. on *Liquidambar formosana* are newly added to the Japanese mycoflora. *Cercospora violamaculans* on *Rhaphiolepis umbellata* is transferred to the genus *Pseudocercospora* as *Pseudocercospora violamaculans* (Fukui) Kobayashi et Nakashima, comb. nov., with some additional notes.

Key words *Cercospora* and allied genera · Japanese species · Nansei Islands · Reexamination

Introduction

The purpose of the present study was stated in the introduction of the first paper of this series (Kobayashi et al. 1998b). This article reports the results of taxonomic studies on five species of *Cercospora* and allied genera collected in the Nansei Islands, Japan.

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Taxonomy

1. *Cercosporidium okinawaense* Kobayashi et Nishijima, sp. nov. Figs. 1, 3a, 4a, 4b

Maculis in foliis vivis amphigenis, pallide brunneis vel brunneis; ad marginem atro-brunneis, sub-orbicularibus, 10–20 mm diam; stromatibus praecipue epiphyllis, primo intraepidermatibus, dein erumpentibus, pseudoparenchymaticis, 10–65 µm diam: conidiophoris fasciculatis, pallide brunneis vel atro-brunneis, 0–3-septatis, 10–40 × 2.5–4 µm, cum cicatricatis; conidiis cylindricis vel longeobclavatis, sursum attenuatis, basi truncatis, allide brunneis el olivaceis, hilo distincto, 1–5-septatis, 12–50 × 2–3.5 µm, minute verrucosis.

Holotype: On living leaves of *Gardenia jasminoides* J. Ellis. (Rubiaceae) (Japanese name: kuchinashi), Nashiro, Itoman (Okinawa-Honto), Okinawa Prefecture, 12 Nov., 1994, by Takao Kobayashi (TK) (TFM: FPH-6465, Specimen number registered at the Mycology and Forest Pathology Herbarium in the Forestry and Forest Products Research Institute, Kukisaki-cho, Inashiki-gun, Ibaraki 305-8687, Japan).

Leaf spots are subcircular, pale brown to brown at first, then turn to grayish-brown with dark brown border, 10–20 mm in diameter, and become somewhat irregular in shape. Dark olive to blackish sooty masses of fruitings are produced on the spots mainly as epiphyllous. Diseased leaves gradually turn to yellow and defoliate. Large stromata, 28–65 µm in diameter, are formed on the upper leaf surface. Small stromata, 10–28 µm in diameter, are formed on the lower leaf surface. They are first immersed within the epidermal layer and are then exposed after breaking through the epiderm and cuticle. On the lower leaf surface, both the small compact stromata and the running hyphae, which emerge from stomata and produce conidiophores singly at random distances, are formed. Conidiophores are loosely fasciculate on stromata, pale to dark brown, 0–3-septate, 10–40 × 2.5–4 µm, and have thick conidial scars. Conidia are cylindrical to long obclavate, pale brown to olive, straight or curved, roundly tapered to the tip, truncate

Fig. 1. *Cercosporidium okinawaense* Kobayashi et Nishijima. **a** Stroma and conidiophores. **b** Conidia. Bars **a**, **b** 10 μ m

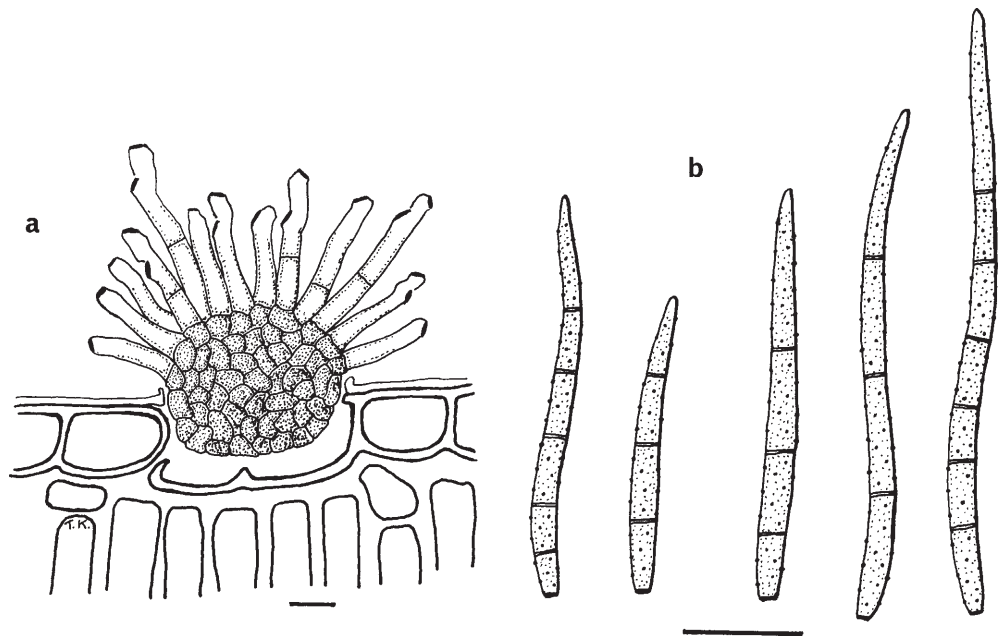
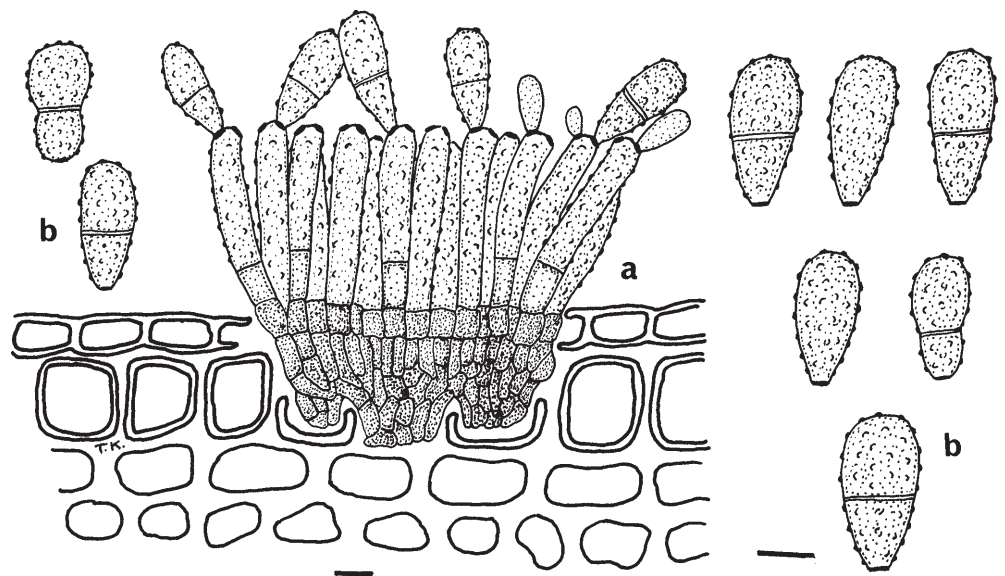


Fig. 2. *Asperisporium caricae* (Speg.) Maubl. **a** Stroma, conidiophores, and conidia. **b** Conidia. Bars **a**, **b** 10 μ m



with the hilum at the basal end, 1–5-septate, 12–50 \times 2–3.5 μ m, and ornamented with minute warts.

Specimen examined: See the Holotype.

Disease name: Sooty leaf spot (Susukabi-byo in Japanese; Kobayashi and Nishijima 1995).

Note: On the *Gardenia* plant, only one species of *Cercospora*, *C. gardeniae* Boedijn (1962), has hitherto been known (Pollack 1987). It was transferred to the genus *Pseudocercospora* and re-combined as *P. gardeniae* (Boedijn) Deighton, based on the rearrangement of *Cercospora* and related genera according to his revised generic concept of these genera (Deighton 1976). In 1980, the teleomorph of *Pseudocercospora gardeniae* was found in the Philippines and named *Mycosphaerella luzonensis* Tak.

Kobay. (1980). It causes yellow leaf spot disease of *Gardenia* (Kobayashi 1980; Kobayashi and de Guzman 1988). In the case of *Pseudocercospora gardeniae*, conidial scars on conidiophores are thin, and the conidia have a smooth surface and thin basal end. These characteristics are typical of the genus *Pseudocercospora*. In contrast, conspicuous conidial scars were recognized on conidiophores of a species of *Cercosporidium* causing sooty leaf spot of *Gardenia* found in Okinawa Island. Moreover, its conidia have a distinct thick hilum on the basal end and their surface is ornamented with quite fine warts. It is clear from these facts that the present *Cercosporidium* is distinctly differentiated from *Pseudocercospora gardeniae*. Recently, Braun (1995) strongly supported the von Arx (1983) treatment including

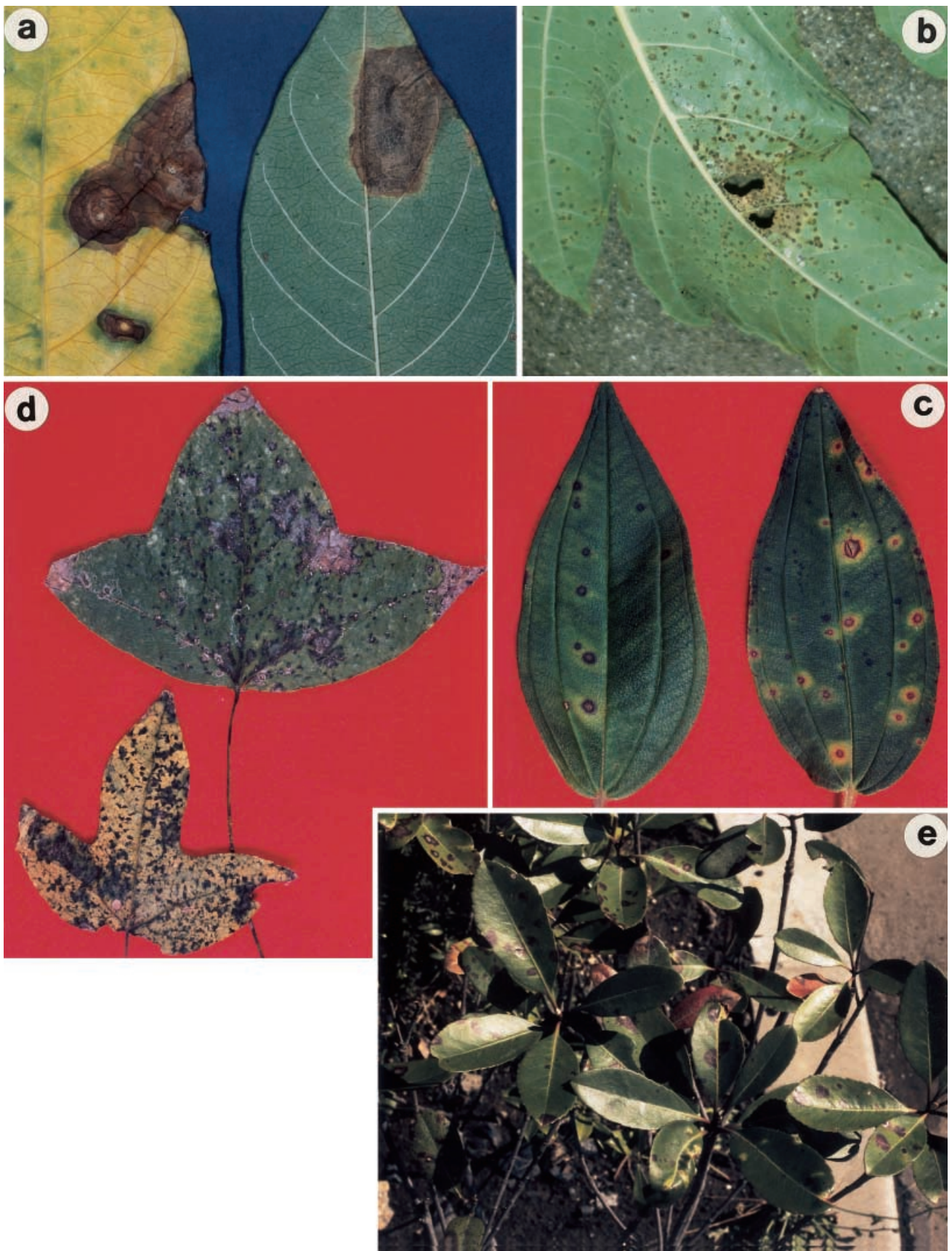


Fig. 3. Symptoms of diseases on *Gardenia jasminoides* caused by *Cercosporidium okinawaense* (a), on *Carica papaya* by *Asperisporium caricae* (b), on *Melastoma candidum* by *Pseudocercospora melastomobia* (c), on *Liquidambar formosana* by *P. neoliquidambaris* (d), and on *Rhapsiotelepis umbellata* by *P. violamaculans* (e)

the genus *Cercosporidium* in a synonym of the genus *Passalora*, which has typically catenate and few-septated conidia. However, Baker et al. (2000) again divided the genus *Cercosporidium* Earle from the genus *Passalora sensu* Arx and Braun. The authors agreed with the latter concept of maintaining the genus *Cercosporidium* as an independent genus. No species of the genus *Cercosporidium* has been found either on *Gardenia* or on other rubiaceous plants. Therefore, a new name, *Cercosporidium okinawaense*, was given for the present fungus as described here.

2. *Asperisporium caricae* (Speg.) Maubl.

Figs. 2, 3b, 4c, 4d
Lavoura 16:212, 1913; Bull. Soc. Mycol. Fr. 29:357, 1913; Dennis, Fungus flora of Venezuela and adjacent countries: 396, 1970; Ellis, Dematiaceous Hyphomycetes: 274, 1971; Ellis & Holliday, Descr. pathog. fungi & bact. Set 35, No. 347:1, 1972; Huang, Bull. Taitung DAIS I:III, 1987; Kobayashi & de Guzman, Bull. For. & For. Prod. Res. Inst. 351:121, 1988; Kobayashi et al., Trans. For. Soc. Jpn 109:375, 1998.

Basionym: *Cercospora caricae* Speg., Anal. Soc. Cient. Argent. 1:168, 1883; Saccardo, Syll. Fung. 10:649, 1892.

Synonyms: *Fusicladium caricae* (Speg.) Sacc., Atti Congr. Bot. Palermo: 58, 1902; Syll. Fung. 18:580, 1906.

Epiclinium cumminsii Masee, Kew Bull. 1898:133; Saccardo, Syll. Fung. 16:1105, 1902.

Pucciniopsis caricae Earle, Bull. N.Y. Bot. Gard. 1902:340; Saccardo, Syll. Fung. 18:684, 1906.

Scolecotrichum caricae Ellis et Everh., J. Mycol. 7:134, 1894; Saccardo, Syll. Fung. 11:619, 1895.

Pale brown spots surrounded by yellowish haloes, 2–3 mm in diameter, appear on the lower surface of leaves; these can be recognized as small yellow points from the upper surface. Then, black powdery masses composed of sporodochia and conidia are produced on the spots of the lower surface. Seriously diseased leaves become yellowish and droop down. Finally, diseased leaves are killed and turn brownish. Sporodochia are subcuticular or intraepidermal, olive-brown to dark brown, 40–120 µm in diameter. Conidiophores are densely fasciculate, simple, straight or slightly curved, greenish-brown to olive-brown, 1–2-septate, 20–33 × 4–6.5 µm, with prominent conidial scars, bearing conidia polyblastic or sympodial. Conidia are terminal, elliptic to ovoid, rounded at the top, truncate at the basal end, hyaline and one-celled at first, then turn to greenish-brown to brown and become two-celled, 12–28 × 7–14 µm, with many rough warts.

Specimens examined: *Carica papaya* L. (Caricaceae) (Japanese name: papaiya). Japan: Yuwan, Uken-son, Oshima-gun (Amami-Oshima), Kagoshima Prefecture, 11 June 1992, by TK and Masahiro Muramoto (MM); Oshima Branch Stn., Kagoshima Agric. Exp. Stn., Urakami, Naze-shi (Amami-Oshima), Kagoshima Prefecture, 15 April 1998, by Hidenobu Nojima. The Philippines: Debt Forest Nursery, Parcel III of RP-Japan Project, Pantabangan, Nueva Ecija, Luzon, 22 Jan. 1985, by TK (TFM: FPH-5863); Camanggahan Forest Nursery, NIA, Carranglan, Nueva Ecija, Luzon, 6 Feb. 1985, by TK and E.D. de Guzman

(TFM:FPH-5864). Indonesia: Tanah Sareal, Bogor, West Java, June 1991, by TK; March 1992; Jan. 1993; Glagah, Banyuwangi, East Java, 14 Sept. 1992, by TK and Masaomi Oniki (Oni); Exp. Farm, P.T. EISAI-Indonesia, Desa Gekbrong, Cianjur, West Java, 4 Feb. 1993, by TK and Oni.

Disease name: Black powdery spot (Kokufun-byo in Japanese; Kobayashi & de Guzman 1986a).

Note: The fungus was first described from Paraguay under the name *Cercospora caricae* Speg. (Pollack 1987; Saccardo 1892). Thereafter, it has been known from most nations of the Americas, namely the United States, Bermuda, Cuba, Costa Rica, Dominica, Jamaica, Nicaragua, Panama, Puerto Rico, Trinidad, Brazil, Columbia, Paraguay, and Venezuela (Cardin 1915; Ciferri 1961; Dennis 1970; Ellis 1971; Ellis & Holliday 1972; Farr et al. 1989; Kraisel 1971; Litzenberger and Stevenson 1957; Saccardo 1895, 1902a,b, 1906; Seaver & Chardon 1926; Stevens 1927; Uphof 1925).

Since 1977, when Liu first recorded this papaya disease from Taiwan in Asia, it was recorded widely from other Southeast Asian countries, such as India, Indonesia, Philippines, Sri Lanka, and Taiwan (Adikaram & Wijepala 1995; Bilgrami et al. 1991; Huang 1987; Ilag 1991; Kobayashi 1994; Kobayashi & de Guzman 1986a,b, 1988; Tangonan & Quebral 1994; Tsai 1991; Ullasa et al. 1978). The disease caused by *A. caricae* was also recorded from Oceania, such as Hawaii and Solomon Islands (Mckenzie and Jackson 1986; Ogata and Heu 2001). In Japan, the disease was first found in 1992 on one tree in the southern part of Amami-Oshima Island (Kobayashi et al. 1998a, 2001). Thereafter, the disease spread to the central to north part of the island in 1998 (personal communication from Mr. Hidenobu Nojima, with one specimen listed above).

3. *Pseudocercospora melastombia* (W. Yamam.)

Deighton Figs. 3c, 4e, 4f, 5
Trans. Br. Mycol. Soc. 88:388, 1987 (April); Hsieh & Goh, *Cercospora* and similar fungi in Taiwan: 223, 1990; Tsai, List of plant diseases in Taiwan: 266, 1991; Kobayashi et al., For. Pests 43:46, 1994; Guo & Hsieh, The genus *Pseudocercospora* in China: 195, 1995.

Basionym: *Cercospora melastombia* W. Yamam., Trans. Nat. Hist. Soc. Formosa 26:283, 1936; Sawada, Descriptive catalogue of the Formosan fungi (DCFF) 8:114, 1943; Chupp, Monograph of *Cercospora*: 380, 1953; Tai, Sylloge fungorum Sinicolum: 889, 1979; Kobayashi et al., Ann. Phytopathol Soc. Jpn. 56:378; 1990; Kobayashi et al., For. Pests 39:139, 1990.

Synonym: *Pseudocercospora melastombia* (W. Yamam.) Goh et W.H. Hsieh, Trans. Mycol. Soc. R.O.C. 2:116, 1987 (December).

Leaf spots are circular, yellowish at first, later brown, with purplish border and haloes, 2–3 mm in diameter. Stromata are amphigenous, mainly epiphyllous, brown, pseudo-parenchymatous, 20–40 µm in diameter. Conidiophores are fasciculate bearing from the uppermost cells of stroma or singly from the free running hyphae on leaf surface, pale brown, geniculate, with thin conidial scars, 15–50 × 2–4 µm. Conidia are pale brown, acicular to long-obclavate, tapering

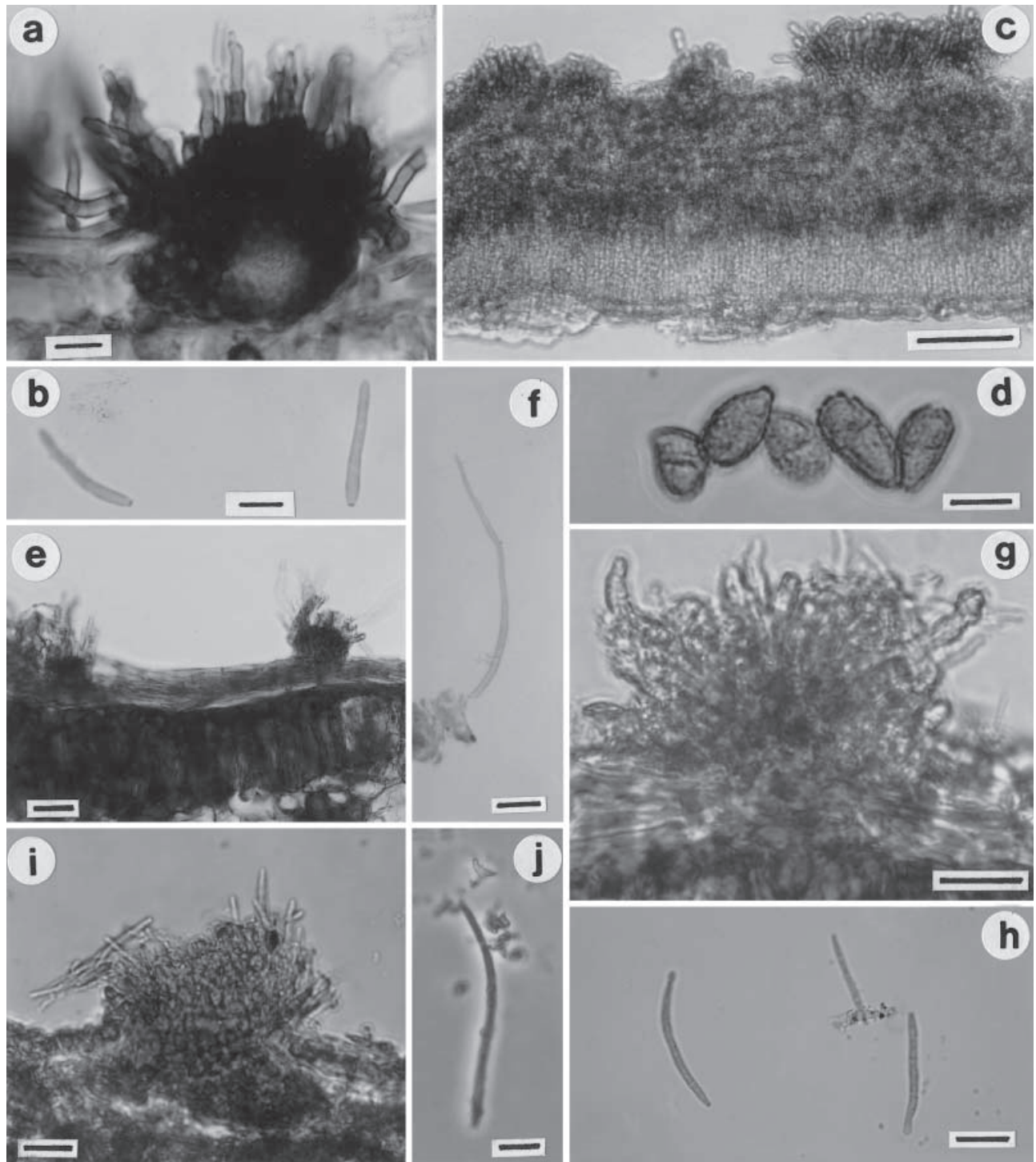


Fig. 4. Stroma, conidiophores and conidia of *Cercosporidium okinawaense* (a,b), *Asperisporium caricae* (c,d), *Pseudocercospora melastombia* (e,f), *P. neoliqidambaris* (g,h), and *P. violamaculans* (i,j). Bars a, b, d, g, j 10 μ m; e, f, h, i 20 μ m; c 100 μ m

to the tip, with thin truncate basal end, 3–12-septate, 72–120 \times 2–3.8 μ m, smooth.

Specimens examined: Japan: On living leaves of *Melastoma candidum* D.Don (Melastomataceae) (Japanese name: nobotan), Otomi, Taketomi-cho, Yaeyama-gun (Iriomote-jima), Okinawa Prefecture, 1 Nov. 1988, by TK and Masatoshi Onuki (MOnu) (TFM: FPH-7024); 4 March 1997, by TK & CN. Indonesia: *M. malabathricum* L.,

Balittro Exp. Gard., Cimanggu, Bogor, West Java Prov., 20 Sept. 1989, by TK; Nov. 1990, by TK and Letno S. Djiwanti (Letno); *M. sanguinea*, P.T. Eisai Exp. Farm, Desa Gebrong, Cianjur, West Java Proc., by TK and Letno.

Disease name: Circular leaf spot (Maruhoshi-byo in Japanese; Kobayashi et al. 1990a).

Note: The present species was first described as *Cercospora melastombia* by Yamamoto (1936) and known

Fig. 5. *Pseudocercospora melastomobia* (W. Yamam.) Deighton. **a** Stroma and conidiophores. **b** Conidia. Bars **a**, **b** 10 µm

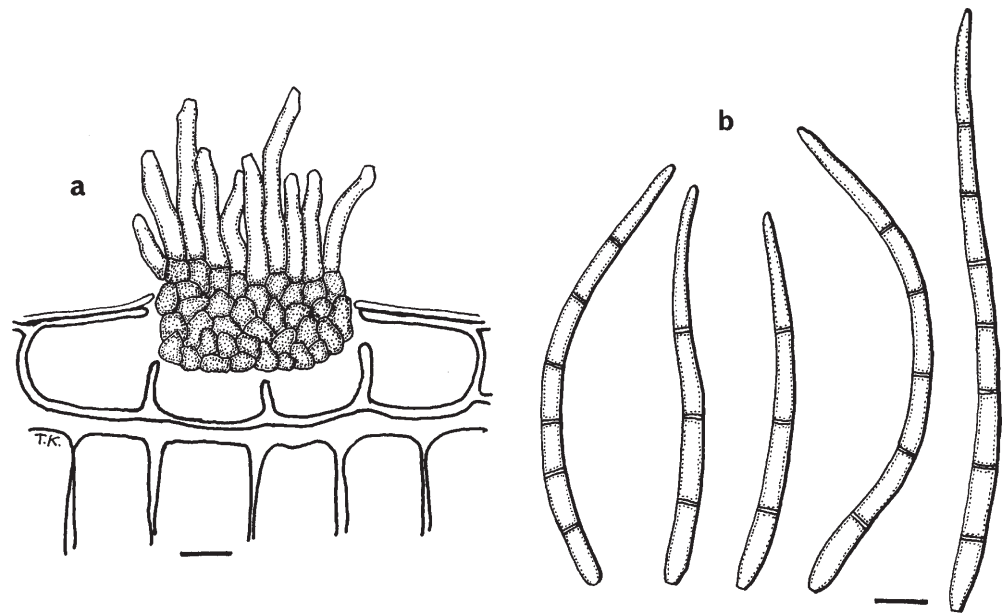
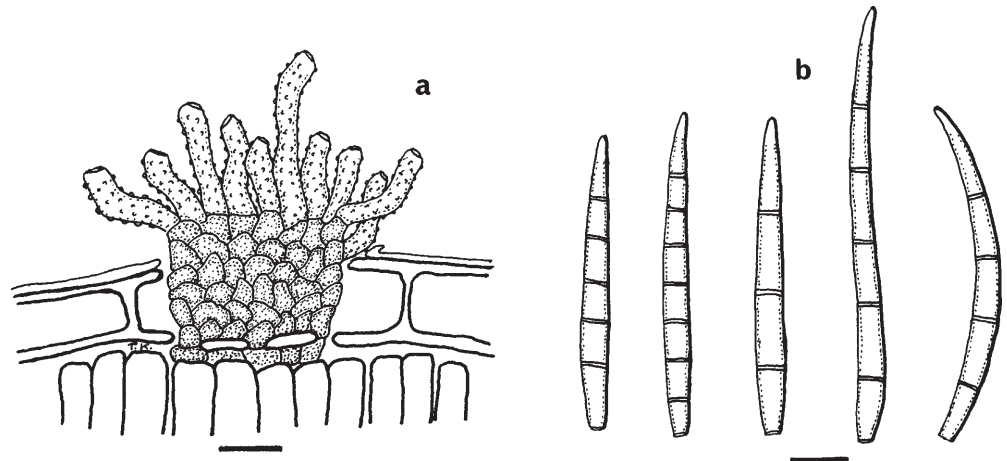


Fig. 6. *Pseudocercospora neoliquidambaris* Nakashima et Kobayashi comb. nov. **a** Stroma and conidiophores. **b** Conidia. Bars **a**, **b** 10 µm



only from Taiwan (Chupp 1953; Hsieh & Goh 1990; Tai 1979; Tsai 1991). Recently, it was, however, reported from China (Guo & Hsieh 1995) and Indonesia (Kobayashi et al. 1994). This species was transferred to the genus *Pseudocercospora* by Deighton and by Goh and Hsieh, both in 1987, independently. Deighton's treatment was published in April, but Goh and Hsieh's publication was in December. Therefore, *Pseudocercospora melastomobia* (W. Yamam.) Deighton has priority to *P. melastomobia* (W. Yamam.) Goh et W.H. Hsieh. It is easily distinguished from another species on *Melastoma*, *Cercospora melastomatis* Pat., which has large conidiophores (50–200 × 4–5 µm) and thicker conidia (4.5–6 µm). This is the first record of the present species from Japan.

4. *Pseudocercospora neoliquidambaris* Nakashima et Kobayashi, nom. nov. Figs. 3d, 4g, 4h, 6
Basionym: *Cercospora liquidambaris* Cooke et Ellis in Atkinson, J. Elisha Mitschel Sci. Soc. 8: 48, 1892 non *Pseudocercospora liquidambaris* Goh et W. H. Hsieh 1990 –

nom. illegit.; Chupp, Monogr. *Cercospora*: 259, 1953; Hsieh, Q. J. Chin. For. 16(4): 388, 1983; Kobayashi et al., Ann. Phytopath. Soc. Jpn. 56: 378, 1990a.

Synonyms: *Cercospora liquidambaris* Sawada, nom. invalid, Rep. Taiwan Agric. Exp. Stn. 85 (DCFF 8): 112, 1943.

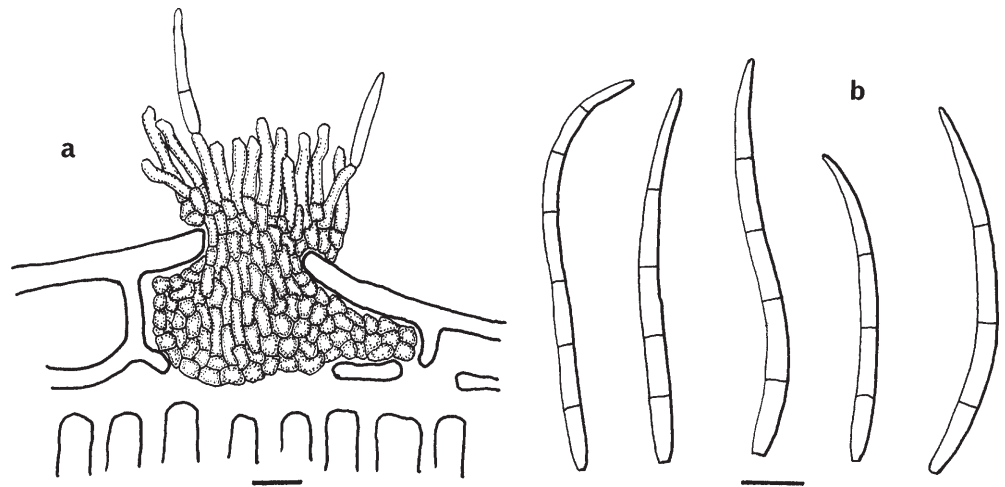
Pseudocercospora liquidambaris Goh et Hsieh, in Hsieh et Goh, *Cercospora* and similar fungi in Taiwan: 150; Guo et Liu, Mycosystema 4: 105, 1991; Guo and Hsieh, *Pseudocercospora* in China: 123, 1995; Liu et Guo, Flora Fung. Sinic. 9: 138, 1998.

Cercospora liquidambaricola J.M. Yen, Bull. Soc. Mycol. Fr. 94:52, 1978.

Cercoseptoria liquidambaricola (J.M. Yen) J.M. Yen, Bull. Soc. Mycol. Fr. 97:92, 1981; Hsieh et Goh, *Cercospora* and similar fungi in Taiwan: 149, 1990.

Leaf spots are angular, delimited by nervis to irregular in shape, brown to grayish-brown in color, 5–10 mm in size. Stromata are amphigenous, breaking through epidermis, brown to olive-brown in color, 17–33 µm in diameter, with-

Fig. 7. *Pseudocercospora violamaculans* (Fukui) Kobayashi et Nakashima.
a Stroma and conidiophores.
b Conidia. Bars **a, b** 10 μm



out external mycelia. Conidiophores bear from the uppermost cells of stroma, fascicular, geniculate, simple, finely verrucose, brown to pale olive-brown at the basal part, hyaline to pale at the tip, with thin and indistinct conidial scars, $10\text{--}35 \times 2\text{--}2.5 \mu\text{m}$. Conidia are narrowly obclavate, subhyaline to pale olive-brown, straight or slightly curved, with thin and truncate basal end and tapered to the tip, 3–9-septate, $32\text{--}78 \times 2\text{--}3 \mu\text{m}$, mostly $40\text{--}50 \times 2\text{--}3 \mu\text{m}$, smooth.

Specimens examined: on living leaves of *Liquidambar formosana* Hance (Hamamelidaceae) (Japanese name: fuh), Ishigaki 1st. Nursery, Maesato, Ishigaki-shi (Ishigaki-jima), Okinawa Prefecture, 18 Nov. 1988, by TK and Masaichi Tsurumachi (MT) (TFM: FPH-7026); Ishigaki, Ishigaki-shi (Ishigaki-jima), Okinawa Prefecture, Nov. 1988, by TK and MT (TFM: FPH-7027).

Disease name: Sooty leaf spot (Susuiro-hanten-byo in Japanese; Sawada 1943).

Note: Four species of *Cercospora*, namely *C. tuberculans* Ellis et Everh. (1888), *C. liquidambaris* Cooke et Ellis (1892), *C. liquidambaris* Sawada (1943, illegitimate and invalid name without Latin description), and *C. liquidambaricola* J.M. Yen (1978), have been described on *Liquidambar*. Among them, *Cercospora tuberculans* was described in the United States on *L. styraciflua* L. This species clearly differs from the Japanese liquidambar fungus in its thicker conidia and production of fruit-bodies on symptomless leaves (Chupp 1953).

Cercospora liquidambaris Cooke et Ellis was originally described in the United States on *L. styraciflua* and additionally reported on *L. formosana* Hance from Taiwan (Hsieh 1983). *C. liquidambaris* Sawada, the later homonym of *C. liquidambaris* Cooke et Ellis and an invalid name without Latin description, was recorded from Taiwan on *L. formosana*. These two species were quite similar in their morphological characteristics and symptoms on leaves. Chupp (1953) treated *Cercospora liquidambaris* Sawada as a synonym of *C. liquidambaris* Cooke et Ellis. Kobayashi et al. (1990a) preliminarily reported a *Cercospora* species on *L. formosana* from Ishigaki Island of Japan as *C. liquidambaris* Cooke et Ellis. In 1990, Hsieh and Goh established a new species, *Pseudocercospora liquidambaris* Goh et W.H. Hsieh, with Latin description, based on reexamina-

tion of the type specimen of *C. liquidambaris* Sawada. At that time, they did not unite *C. liquidambaris* Cooke et Ellis and *C. liquidambaris* Sawada into one species. Thereafter, Guo and W.H. Hsieh (1995) and Liu and Guo (1998) treated *C. liquidambaris* Cooke et Ellis as a synonym of *Pseudocercospora liquidambaris* Goh et W.H. Hsieh. However, if *Cercospora liquidambaris* Cooke et Ellis (1892) and *C. liquidambaris* Sawada (1943) are the same species, the redescribed name, *Pseudocercospora liquidambaris* Goh et W.H. Hsieh (1990) based on Sawada's type specimen, is illegitimate name under the nomenclatural rule (ICBN Art 52. 1 & 2). Reexamination of Japanese *Cercospora* materials on *Liquidambar* showed that the fungus belongs to the genus *Pseudocercospora* and is identical with *C. liquidambaris* Cooke et Ellis and with *C. liquidambaris* Sawada. Therefore, the new species name *Pseudocercospora neoliquidambaris* is given for this cercosporoid fungus causing sooty leaf spot of *Liquidambar* spp. This is the first detailed record of *P. liquidambaris* from Japan.

Guo and Hsieh (1995) and Liu and Guo (1998) also treated *Cercospora liquidambaricola* J.M. Yen (1978), which was another Formosan *Cercospora* species on *Liquidambar* and was later transferred as *Cercoseptoria liquidambaricola* (J.M. Yen) J.M. Yen (1981), as a synonym of *Pseudocercospora liquidambaris* Goh et W.H. Hsieh, after reexamination of Yen's specimens. They added a new host plant, *Loropetalum chinense* (R. Br.) Oliv., other than *Liquidambar*.

5. *Pseudocercospora violamaculans* (Fukui) Kobayashi et Nakashima, comb. nov.

Figs. 3e, 4i, 4j, 7

Basionym: *Cercospora violamaculans* Fukui, Bull. Mie Imp. Coll. Agr. & For. 3:15, 1933; Chupp, Monogr. *Cercospora*: 490, 1953; Yamamoto & Maeda, Sci. Rept. Hyogo Univ. Agr., Agr. Biol. 4:78, 1960; Katsuki, Trans. Mycol. Soc. Jpn. Extra Issue 1:56, 1965; Kobayashi, For. Pests 23:112, 1974; Horie & Kobayashi, Bull. Tokyo Metrop. Agr. Exp. Sta. 16:210, 1983; Alfieri et al., Bull. Div. Plant Ind., Fla. Dept. Agr. & Cons. Serv., 11, 1984; Farr et al., Fungi on plants & Plant products in the United States: 483, 1989.

Leaf spots are circular to subcircular in shape, brown to purple-brown with purplish border on the upper leaf surface, and are dark brown on the lower leaf surface. Fruit-bodies are amphigenous. Stromata are brown to blackish brown in color, 45–70 µm in diameter. External hyphae are rarely found. Conidiophores are densely fasciculate from the uppermost cells of stroma, geniculate, pale brown, with thin conidial scars, 13–53 × 3–5 µm. Conidia are pale brown to pale olive-brown, obclavate, straight to slightly curved, with truncate and unthickened basal end, tapered to the tip, 3–8-septate, 30–78 × 2.5–4 µm, smooth.

Specimens examined: On living leaves of *Rhaphiolepis umbellata* Makino (Rosaceae) (Japanese name: sharinbai), Kanoya, Kagoshima Prefecture, 24 Dec. 1973, by Zenko Katsu (TFM: FPH-4072); Nagasaki, Nagasaki Prefecture, 1 March 1974, by Yukio Takizawa (TFM: FPH-4065); Jindai Bot. Gard., Chofu, Tokyo, 11 May 1974, by Hiromichi Horie (HH) (TFM: FPH-4214); 25 Sept. 1974, by TK and HH (TFM: FPH-4340); 21 Oct. 1976, by TK (TFM: FPH-4726); Ichihara, Chiba Prefecture, 5 Oct. 1976, by Eiji Ishitani (TFM: FPH-4433); FFPRI, Kukisaki, Inashiki, Ibaraki Prefecture, 15 Oct. 1981, by TK (TFM: FPH-5481); Higashi-Matsuyama For. Park, Higashi-matsuyama, Saitama Prefecture, 22 Oct. 1982, by Manabu Kusunoki (TFM: FPH-5871); Tohnan Bot. Park, Chibana, Okinawa-shi, Okinawa Prefecture (Okinawa-honto), 12 Feb. 1990, by TK & Choei Ogimi; Amagi-cho, Tokunoshima, Kagoshima Prefecture, 9 Nov. 1993, by TK & Masahiro Muramoto (MM); Toyama Chuo Bot. Park, Fuchu, Nei-gun, Toyama Prefecture, 25 Sept. 1998, by TK & Erica Imaizumi (EI) Jogasaki, Higashiizu, Kamo-gun, Shizuoka Prefecture, 28 Sept. 1999, by TK & CN; Hijiyama, Hiroshima-shi, Hiroshima Prefecture, 5 April 2000, by TK & CN.

Disease name: Violet leaf spot (Shihan-byo in Japanese; Fukui 1933).

Note: The present species was first recorded on *Rhaphiolepis umbellata* from Mie Prefecture, Honshu, Japan (Fukui 1933). Katsuki (1949) listed this fungus from Fukuoka Prefecture. Thereafter, Chupp (1953) included this species in his world monograph of the genus *Cercospora*, based on a Japanese specimen of *R. umbellata* that was collected by S. Katsuki. Katsuki (1965) recorded it from Kyoto, western Honshu, and Fukuoka and Kagoshima Prefectures, Kyushu, in his Japanese monograph of the genus *Cercospora* and allied genera. Then, the disease as having this fungus was observed from various areas where the host plants had spread, from Kyushu to northern Kanto of Honshu Island (Horie & Kobayashi 1983, 1984; Horie et al. 1975; Ieiri & Sanui 1976; Kakishima et al. 1979; Katsu 1974; Kobayashi 1974; Matsuda 1974; Ogawa 1976, 1984; Ogawa & Hagiwara 1975; Ohno 1975; Suto 1987; Takizawa 1974; Taniguchi & Katsu 1975; Taniguchi & Muramoto 1977). In the Nansei Islands, Katsuki (1955) first recorded this species on *R. umbellata* var. *integerrima* Rehd. (in Japanese: maruba-sharinbai) from Yaku Island, Kagoshima Prefecture. Recently, the senior author and his collaborators observed the violet leaf spot of *R. umbellata* in Tokunoshima Island, Kagoshima Prefecture, and Okinawa Island, Okinawa Prefecture, as listed earlier.

The disease of *Rhaphiolepis umbellata* caused by this species has been reported only from Florida, USA, other than Japan (Alfieri et al. 1984; Farr et al. 1989).

Another species, *Cercospora ariae* Fuckel, has been listed on *Rhaphiolepis umbellata* from Florida, USA (Alfieri et al. 1984; Farr et al. 1989), without any details. However, this record is quite doubtful, because *Cercospora ariae* had been recorded as parasitic to *Sorbus* spp. in Europe. It is necessary to clarify the pathogenicities of *Pseudocercospora violamaculans* and of *Cercospora ariae* through cross-inoculations.

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