

***Cercospora* and allied genera from Laos 2**

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Abstract – Comprehensive examination of cercosporoid leaf-spotting hyphomycetes were carried out in the Vientiane capital area of Laos. Twenty-two species of *Cercospora*, *Passalora* and *Pseudocercospora*, including two new species and a new variety are identified, described and illustrated. Taxonomic novelties are the new species *Passalora dipterocarpi*, *P. helictis-viscidae*, and the new variety *Pseudocercospora mannanorensis* var. *paucifasciculata*.

Anamorphic fungi / cercosporoid hyphomycetes / South East Asia / taxonomy / new species / new variety

INTRODUCTION

General information about *Cercospora* and allied genera

The hyphomycetous genus *Cercospora* was established by Fresenius, in Fuckel (1863), based on the type species *Cercospora penicillata* Fres. (= *C. depazeoides* (Desm.) Sacc.), a leaf parasite causing brown spots of *Sambucus* spp. It is characterized by pigmented conidiophores with conspicuous, thickened and darkened conidiogenous loci and hyaline, acicular conidia (Braun, 1995; Crous and Braun, 2003). *Cercospora* species are anamorphs of the ascomycete genus *Mycosphaerella* Johanson [Ascomycota, Pezizomycotina, Dothideomycetidae, Capnodiales, Mycosphaerellaceae (Crous & Braun, 2003; Crous et al. 2009)].

Cercospora sensu lato is one of the largest genera of hyphomycetes, comprising approximately 5,720 published names (Crous & Braun, 2003), which is almost cosmopolitan in distribution, causing leaf-spots and other lesions on a wide

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range of host plants. Species of this genus are important pathogens responsible for severe damage to beneficial plants such as maize, rice, grasses, vegetables, forest trees and ornamentals (Hsieh & Goh, 1990). There has been considerable interest in the cercosporoid genera at both the morphological (Crous *et al.* 2007) and molecular level (Crous, 2009) although a wide range of studies including molecular data is required to distinguish between species within complexes (e.g. *Cercospora apii*, Crous & Braun, 2003).

Background of fungi from Laos

The fungi of Laos are very poorly known, although they have been studied since 1959. Vidal (1959), a French botanist, published a checklist of plant species of Laos, including 33 species of fungi. Comprehensive attempts to examine and document the edible macrofungi and microfungi of Laos have been carried out, especially from the National University of Laos since 1990 and 2003, respectively. Twenty ascomycetes on palms from Laos were recorded by Phengsintham & Hyde (2003a,b); seven genera (*Alternaria*, *Cercospora*, *Cladosporium*, *Chlamydomyces*, *Curvularia*, *Passalora*, *Pseudocercospora*) of dematiaceous hyphomycetes were recorded in the B.Sc. report of Vongphachanh *et al.* (2007) and five new species of *Zasmidium* (*Stenella s. lat.*) of dematiaceous hyphomycetes were recorded by Phengsintham *et al.* (2009). This is basically all that is known concerning Laos fungi and many of the names in the above publications are suspect.

Laos is a tropical country that borders on Cambodia, China, Myanmar, Vietnam and Thailand. The fungi of tropical China (Liang *et al.*, 2009) and Thailand (Jones *et al.*, 2004) are much better known. Studies on the biodiversity of fungi from various habitats in northern Thailand have been carried out (e.g. insects: Aung *et al.*, 2008; leaf litter: Duong *et al.*, 2008, Osono *et al.*, 2009; wood: Kodsueb *et al.*, 2008a, b; monocotyledons: Pinruan *et al.*, 2007; Thongkantha *et al.*, 2008; To-Anun *et al.*, 2009). There is an increasing interest in the cercosporoid fungi of Australasia and Asia reflected in numerous recent publications from this region (Braun & Crous, 2007; Kirschner & Chen, 2007; Nakashima *et al.*, 2007; To-Anun *et al.*, 2009). Therefore, the aim of the present study is to examine cercosporoid fungi in Laos as these are important plant pathogens. The objective of this paper and planned subsequent contributions is to investigate the cercosporoid fungi of Laos and to provide data on Laos fungi in comparison with the diversity of these fungal groups in neighboring countries.

MATERIALS AND METHODS

Sample collections

Leaves of plants with leaf-spots or other lesions were collected during the course of field trips. Photos of symptoms, including the fungal colonies or fruiting bodies, were taken. The specimens were collected in the Vientiane capital area of Laos.

Examination of fungal structures

Macroscopic characters were observed using a stereoscope to check (1) lesions/leaf spots (shape, size, color, margin), and (2) colonies/caespituli (with details, e.g., amphigenous/epiphyllous, punctiform/pustulate/inconspicuous, effuse, loose, dense, brown/blackish, etc.).

Measurements

Where sufficient material was available, 30 measurements of mycelia (internal, external), hyphae (branched or not, width, septation, color, wall thin/thick, smooth/verruculose), stromata (location, e.g., substomatal, intraepidermal; shape, size, color; cells, angular or rounded in outline, size, wall thick/thin), conidiophores (formation, solitary/fasciculate/sporodochial, arising from internal/external hyphae/stromata, erumpent/through stomata; shape; size; septation; color; wall, thin/thick, smooth/verruculose), conidiogenous cells (integrated, terminal/intercalary; length, shape, e.g., cylindrical/geniculate/sinuuous), conidiogenous loci [scars] (shape, size, thickened, darkened/pigmented or unthickened or inconspicuous, etc.), and conidia (formation, solitary/catenate; shape; size; septation; colour; wall, thin/thick, smooth/verruculose, apex; base; hila, size, thickened/unthickened, pigmented or not) have been carried out and the standard variation has been estimated by using the formula:

$$(\bar{x} = \frac{\sum M}{n} \mu\text{m}),$$

Notes: m = is a size of each components
n = is a number of components

Identification of fungi

The species of cercosporoid hyphomycetes from Laos have been determined based on the current relevant taxonomic publications cited in the list of references.

Herbarium specimens

Dried specimens were prepared and stored at the herbaria of the School of Science, Mae Fah Luang University, Chiang Rai, Thailand and the Biology Department, Faculty of Sciences, National University of Laos. Various duplicates are preserved at the herbarium of the Institute of Biology, Geobotany and Botanical Garden, Halle (Saale), Germany (HAL).

RESULTS

Twenty-two cercosporoid hyphomycetes were identified and assigned to species of the genera *Cercospora* (8), *Passalora* (4) and *Pseudocercospora* (10) including two new species and a new variety: *Passalora dipterocarpi* sp. nov.,

Table 1. Summary of cercosporoid species

No	Fungal species	MD	DD	UT	RP	G	U
1	<i>Cercospora apii</i>			x			
2	<i>Cercospora brassicicola</i>					x	
3	<i>Cercospora erechitidis</i>			x			
4	<i>Cercospora ipomoeae</i>			x			
5	<i>Cercospora paederiicola</i>	x		x			
6	<i>Cercospora physalidis</i>					x	
7	<i>Cercospora stahlianthi</i>		x		x		
8	<i>Cercospora volkameriae</i>	x		x			
9	<i>Passalora bougainvilleae</i>						x
10	<i>Passalora dipterocarpi</i> sp. nov.	x		x			
11	<i>Passalora helicteris-viscidae</i> sp. nov.			x			
12	<i>Passalora henningsii</i>					x	x
13	<i>Pseudocercospora cotizensis</i>				x		
14	<i>Pseudocercospora eupatorii-formosani</i>	x	x	x	x		
15	<i>Pseudocercospora jussiaeae</i>				x		
16	<i>Pseudocercospora mannanorensis</i> var. <i>paucifasciculata</i> var. nov.			x			
17	<i>Pseudocercospora melochiae</i>				x		
18	<i>Pseudocercospora puerariicola</i>				x		
19	<i>Pseudocercospora stahlü</i>					x	
20	<i>Pseudocercospora tiliacorae</i>	x		x			
21	<i>Pseudocercospora trichophila</i>						x
22	<i>Pseudocercospora wrightiae</i>	x		x			

Note: MD = Mixed deciduous forest; DD = Dry dipterocarp forest; UT = Unstok forest or fallow forest; RP = Rice paddy; G = Garden; U = Urban area.

Passalora helicteris-viscidae sp. nov. and *Pseudocercospora mannanorensis* var. *paucifasciculata* var. nov.

Table 1 shows cercosporoid species found in the particular agricultural and forest types.

Cercospora apii Fresen., Beitr. Mykol. 3: 91. 1863

Notes: This is the first record of a cercosporoid hyphomycete on a host of the genus *Byttneria*. This leaf-spotting taxon is morphologically indistinguishable from *Cercospora apii* s. lat. (*C. apii* complex) as defined and circumscribed by Crous & Braun (2003). The Indian *Cercospora sterculiae* Lall & H.S. Gillis is another member of the *Cercospora apii* complex on hosts of the

Sterculiaceae (see Crous & Braun 2003). Within this complex, the morphology and cultures are not sufficient to indicate if taxa on new hosts are different species or new hosts for the species. Biological data (inoculation experiments) and/or molecular sequence analyses are necessary. The whole taxonomy and biology within this complex is complicated. Therefore, we follow the advice of Crous & Braun (2003) to simply assign such collections to *C. apii* s. lat.

The size of conidiophores and conidia of *Cercospora apii* on *Byttneria andamensis* from Laos (conidiophores $14\text{--}81 \times 4\text{--}6 \mu\text{m}$, conidia $9\text{--}154 \times 2\text{--}7 \mu\text{m}$) falls within the range of conidiophores and conidia of *Cercospora apii* described in Crous and Braun (2003) [conidiophores $10\text{--}450 \times 2\text{--}8 \mu\text{m}$, conidia $10\text{--}380 \times 1.5\text{--}5.5 \mu\text{m}$].

Known on a wide range of hosts belonging to various plant families, cosmopolitan (see Crous & Braun 2003).

Material examined: Laos, Vientiane Capital, Xaythany District, Nong Viengkham village, on leaves of *Byttneria andamensis* (Sterculiaceae), 22 April 2006 (NUOL P18); 12 Sept.06, Houay Den Meuang (NUOL P167).

Cercospora brassicicola Henn., Bot. Jahrb. Syst. 37: 166. 1905

Notes: The collection from Laos has conidiophores up to $232 \mu\text{m}$ long, which are shorter than the conidiophores of *Cercospora brassicicola* described in the monograph of Chupp (1954) which are up to $500 \mu\text{m}$. However, the length of conidiophores in *Cercospora* spp. is often extremely variable and depends on external ecological conditions (Crous & Braun 2003).

Known on a wide range of *Brassica* spp. and some hosts of other genera of the Brassicaceae, cosmopolitan (see Crous & Braun 2003).

Material examined: Laos, Vientiane Capital, Xaythany District, Xay Village, on leaf of genus *Brassica juncea* (= *B. integrifolia*) (Brassicaceae), 21 April 2006 (NUOL P 14); 9 June 2007, Houay Den Meuang (NUOL P281).

Cercospora erectitis G.F. Atk., J. Elisha Mitchell Sci. Soc. 8: 66. 1892

Notes: Morphologically *Cercospora erectitis* is indistinguishable from *C. apii* s. lat. Therefore, Crous & Braun (2003) referred this species to *C. apii* s. lat. However, inoculation results (biological specialization) and molecular sequence analyses are not yet available. Hence, the taxonomic status of this species remains unclear. The conidiophores and conidia of the *Cercospora* collection from Laos (conidiophores $4\text{--}35 \times 5\text{--}8 \mu\text{m}$, conidia $28\text{--}83 \times 2\text{--}3 \mu\text{m}$) are shorter than *Cercopsora erectitis* described in Hieh & Goh (1990) [conidiophores $30\text{--}300 \times 4\text{--}6 \mu\text{m}$, conidia $40\text{--}120 \times 2\text{--}4.5 \mu\text{m}$]. The length of conidiophores and conidia in *Cercospora* species is, however, often variable, depending on age and external conditions (Crous & Braun 2003).

Known distribution: North and South America, Columbia, West Indies, Laos (this paper) and Taiwan.

Material examined: Laos, Vientiane Capital, Xaythany District, Xay village, on leaf of genus *Erechtites valerianifolia* (Asteraceae), 8 May 2006 (NUOL P35); 9 June 2007, Xay village (NUOL P282); 28 May 2008, Thailand, Chiang Rai, Pamoung Village (NUOL P312); 10 August 2008, Bolikhamxay Province, Khamkeud District, Nonxong Village (NUOL P350); 6 October 2008, Oudomxay Province, Houn District, Nam Phaongai Village (NUOL P377).

Cercospora ipomoeae G. Winter, Hedwigia 26: 34. 1887

Notes: The collection from Laos (conidiophores $20\text{--}70 \times 4\text{--}6 \mu\text{m}$, conidia $12\text{--}152 \times 2\text{--}5 \mu\text{m}$) agrees well with *C. ipomoeae* as circumscribed by Chupp (1954),

Hsieh & Goh (1990) and other authors. *C. ipomoeae* is part of the *C. apii* Fesen. complex (Crous & Braun 2003) from which it is morphologically barely distinguishable.

Known on a wide range of hosts belonging to *Ipomoea* and some other hosts of the Convolvulaceae, cosmopolitan (see Crous & Braun 2003).

Material examined: Laos, Vientiane Capital, Xaythany District, Dong Makhai village, on leaf of genus *Ipomoea pileata* (= *I. involucrata*) (Convolvulaceae), 5 May 2006 (NUOL P34); 9 August 2006, Houay Den Meuang Village (NUOL P132).

Cercospora paederiicola Y.L. Guo, Mycosystema 4: 119. 1991

Notes: The collection from Laos differs from the Chinese type material of *Cercospora paederiicola* in having well-developed stromata, up to 60 µm diam. (versus small or almost lacking stromata, reduced to a few brown cells). Morphologically this species belongs to the *Cercospora apii* complex, characterized by having long, brown conidiophores and long, acicular, pluriseptate, hyaline conidia (Crous & Braun 2003).

Known host: *Paederia scandens*.

Known distribution: China and Laos (this paper).

Material examined: Laos, Vientiane Capital, Xaythany District, Dong Makhai village, on leaf of *Paederia scandens* (Rubiaceae), 29 March 2006 (NUOL P01); 28 June 2007, Dong Makhai (NUOL P213).

Cercospora physalidis Ellis, Amer. Naturalist 16: 810. 1882, *emend.*
Braun & Melnik, Trudy. Bot. Inst. Im. V.L. Komarova 20: 79. 1997

Notes: The *Cercospora* collection from Laos has conidiophores (10-56 × 3-6 µm) and conidia (52-59 × 3-4 µm) with a similar size as *Cercospora physalidis*. They are however, rather short, probably due to a relatively immature stage in which the fungus has been collected. The taxonomy of *Cercospora* on *Physalis* spp. and other hosts of the Solanaceae is still confused and unclear. Various *Cercospora* species described from different solanaceous hosts are morphologically indistinguishable, so that Braun & Melnik (1997) merged them in a single compound species under the oldest epithet "*physalidis*". Since *C. physalidis* *emend.* U. Braun & Melnik is morphologically also indistinguishable from *C. apii*, Crous & Braun (2003) reduced the whole *C. physalidis* complex to synonym with *C. apii* s. lat. However, detailed inoculation experiments and molecular sequence analyses of this complex of fungi are not yet available. Hence, we prefer to use the traditional name.

Known on a wide range of hosts belonging to the Solanaceae, cosmopolitan (see Crous & Braun 2003).

Material examined: Laos, Vientiane Capital, Sisathanak District, Had Donchanh, on leaf of *Physalis angulata* (Solanaceae), 3 May 2006 (NUOL P33); 18 July 2006, Luang Prabang Province, Phoukhoun District, Phadeng Noi Village (NUOL P104); on leaf of *Capsicum annuum* (= *C. chinense*), 17 July 2007 (NUOL P289); 18 August 2008, Bolikha, Xay Province, Kham Keud District, Nongxong village (NUOL P337).

Cercospora stahlianthi Z.D. Jiang & P.K. Chi, in Chi, Fungal diseases of medicinal plants in Guangdong province: 162. 1994

Notes: This species was previously only known from China. It is new to Laos on a new host species. The collection from Laos (conidiophores 20-240 ×

4-6 µm, conidia 30-240 × 2-4 µm) agrees well with the original description of *C. stahlianthi*, a species which is morphologically very close to *C. apii* s. lat. (see Crous & Braun 2003).

Known hosts: *Stahlianthus involucratus* and *S. thorelii*.

Known distribution: China and Laos (this paper).

Material examined: Laos, Vientiane Capital, Xaythany District, Dong Makhai village, on leaf of *Stahlianthus thorelii* (Zingiberaceae), 20 May 2006 (NUOL P51); 12 August 2006, Xaythany District, Dong Dok village (NUOL P141).

Cercospora volkameriae Speg., Revista Mus. La Plata 15: 47. 1908

Notes: Chupp (1954), based on the examination of type material, described *Cercospora volkameriae* with lacking stromata. In the collections from Laos, well-developed stromata are, however, present. Morphologically this species belongs to the *Cercospora apii* complex, characterized by having long, brown conidiophores and long, acicular, pluriseptate, hyaline conidia (Crous & Braun 2003).

Known hosts: on numerous species of *Clerodendrum* and *Gmelina arborea* (see Crous & Braun 2003).

Known distribution: Barbados, Brazil, Brunei, China, Cuba, Ghana, Guinea, India, Indonesia, Jamaica, Java, Laos (this paper), Korea, Malawi, Malaysia, Nepal, Nigeria, Sierra Leone, Singapore, Sudan, Taiwan, Tanzania and Togo.

Material examined: Laos, Vientiane Capital, Xaythany District, Nong Viengkham village, on leaf of genus *Clerodendrum schmidtii* (Verbenaceae), 22 April 2006 (NUOL P17); 29 July 2006, Nong Viengkham Village (NUOL P121); 9 August 2006, Houay Den Meuang Village (NUOL P136); 28 August 2008, Bolikhamxay Province, Khamkeud District, Nongxong Village (NUOL P363).

Passalora bougainvilleae (Munt.-Cvetk.) R.F. Castañeda & U. Braun, Cryptog. Bot. 2: 291, 1991

Notes: On account of conspicuous, slightly thickened and somewhat darkened conidiogenous loci and conidial hila, the collection from Laos clearly belongs to *Passalora bougainvilleae*. In the collection from Laos, the conidia are quite smooth-walled, differing from Ellis (1976) who described minutely verruculose conidia. However, conidia of this species are at first smooth and may turn asperulate with age.

Known hosts: *Bougainvillea glabra*, *B. spectabilis*, *B. stipitata*.

Known distribution: Argentina, Brazil, Brunei, China, Cuba, El Salvador, India, Indonesia, Laos (this paper), Jamaica, Japan, USA (FL, HI) and Venezuela.

Material examined: Laos, Vientiane Capital, Xaythany District, Dong Dok Village, on leaf of *Bougainvillea spectabilis* (Nyctaginaceae), 15 April 2006 (NUOL P05); 27 May 2009, Vientiane Province, Saisomboune District, Houay Xay Village (NUOL P411).

Passalora dipterocarpi P. Phengsintham, E. Chukeatirote, K.D. Hyde. & U.

Braun, **sp. nov.** MB 518042.

Figs 1(1-2)

Maculae circulares vel leniter irregulares, 2-7 mm diam., primo rubicundae, deinde in centro atro-brunneae, ultimo griseae, margine rubicundo

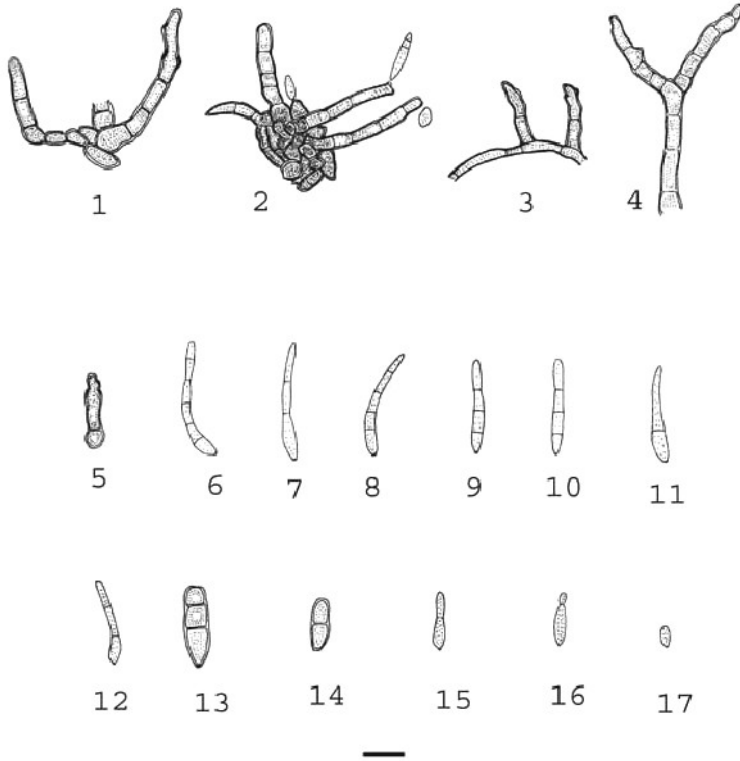


Fig. 1(1), 1-17. *Passalora dipterocarpi* sp. nov. on *Dipterocarpus alatus*: 1. Conidiophore. 2. Stroma with attached conidiophores. 3. Stroma with attached conidiophores and conidia. 4. External hypha with attached young conidiophores. 5. Conidiophore. 6-17. Conidia. Bar: 1-17 = 10 μ m.

cinctae. *Caespituli amphigeni, inconspicui*. *Mycelium immersum et externum*. *Hyphae immersae ramosae, 1-3 μ m latae, septatae, ad septa constrictae, septis remotis, 4-10 μ m, subhyalinae, tenuitunicatae, 0.5-0.8 μ m latae, leviae*. *Hyphae externae ramosae, 2-5 μ m latae, septatae, ad septa constrictae, septis remotis, 4-19 μ m, brunneae vel atro-brunneae, tenuitunicatae, 0.3-0.9 μ m latae, leviae*. *Stromata substomatalia, intraepidermalia, ellipsoidea, 15-45 μ m diam., brunnea, ex cellulis 3-7 μ m latis, tenuitunicatis, 0.5-0.8 μ m latis, levibus composita*. *Conidiophora fasciculata (1-12), ex cellulis stromatibus oriunda, vel solitaria, ex hyphis superficialibus oriunda, simplicia vel ramosa, 0-1 geniculata, cylindrica, recta vel curvata, (9-)14-48(-67) \times (2-)3-4 μ m, 1-9-septata, septis remotis, 4-10 μ m, pallide brunnea vel olivaceo-brunnea, tenuitunicata, 0.3-0.9 μ m lata, levia*. *Cellulae conidiogenae integratae, terminales, cylindricae vel apicem versus attenuatae, 5-10 \times 2-4 μ m*. *Cicatrices conidiales minutae, leviter incrassatae et fuscatae, 1-2 μ m latae et 0.8 μ m crassae*. *Conidia solitaria vel catenata, cylindrica vel anguste obclavata, recta vel curvata, (4-)5-30(-36) \times (1-)2-4(-5) μ m, 0-5-septata, ad septa leviter constricta, subhyalina vel olivaceo-brunnea, tenuitunicata, 0.25-1 μ m, apice subobtusum, basi oblonge obconice truncata, hila 0.8-2 μ m lata, fuscata*.

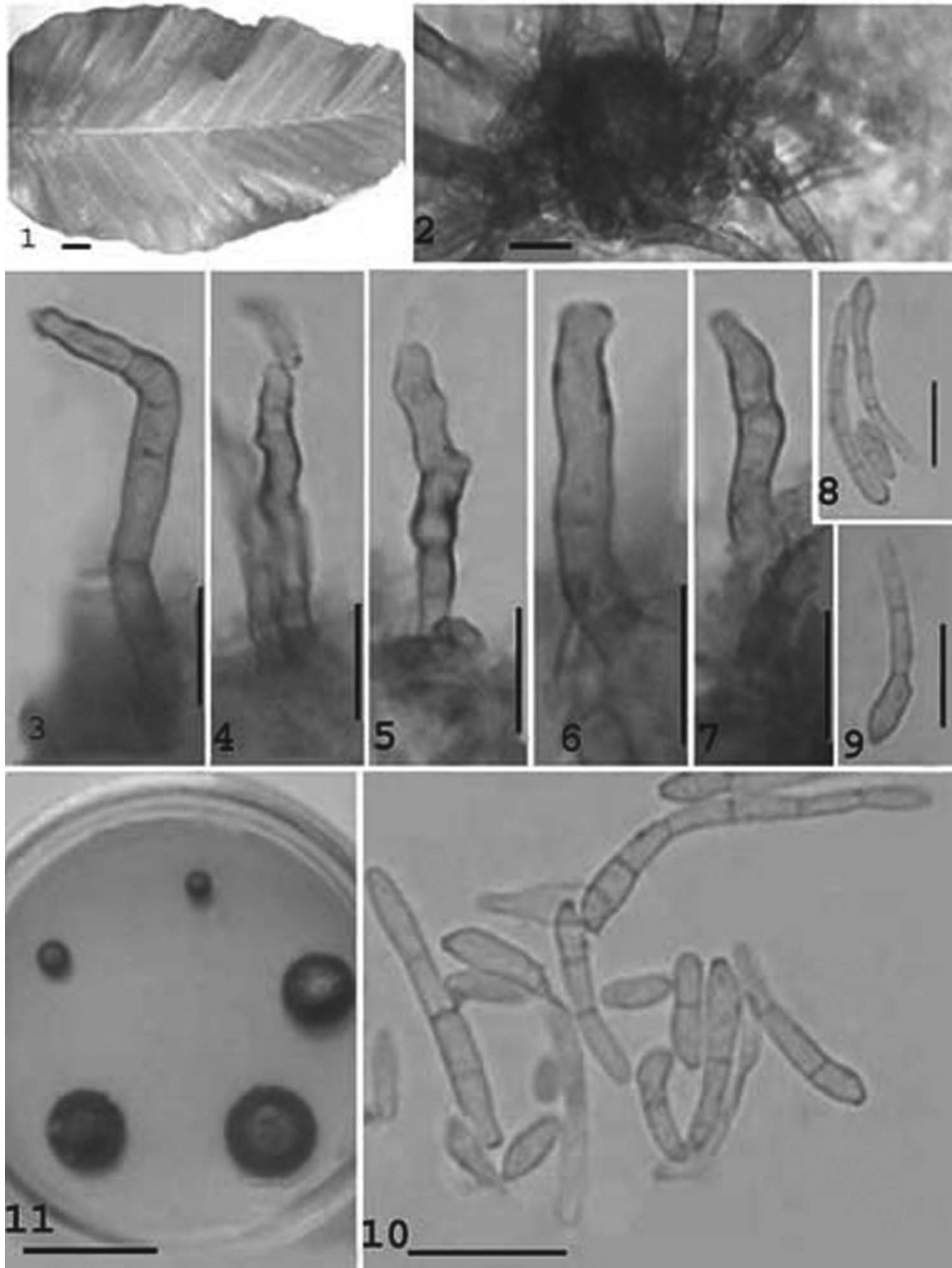


Fig. 1(2), 1-11. *Passalora diperocarpi* sp. nov. on *Dipterocarpus alatus* on host leaf: 1. Lesions on host leaf (upper surface). 2. Stroma with attached conidiophores. 3-7. Conidiophores. 8-10. Conidia. 11. Culture. Bar: 1 = 10 mm, 3-6 = 10 μ m, 11 = 10 mm.

Description: **Leaf spots/Lesions** circular to slightly irregular, 2-7 mm diam., at first reddish, later becoming dark brown in the centre, the oldest leaf spots having a gray to reddish margin. **Caespituli/colonies** amphigenous, inconspicuous. **Mycelium** internal and external. **Internal hyphae** branched, 1-3 μm wide (\bar{x} = 2 μm , n = 17), septate, constricted at the septa, distances between septa 4-10 μm (\bar{x} = 6.47 μm , n = 17), subhyaline, wall 0.5-0.8 μm wide (\bar{x} = 0.63 μm , n = 17), smooth; **external hyphae**, branched, 2-5 μm wide (\bar{x} = 2.60 μm , n = 30), septate, constricted at the septa, distances between septa 4-19 μm (\bar{x} = 10.1 μm , n = 30), brownish to dark brown, wall 0.3-0.9 μm wide (\bar{x} = 0.63 μm , n = 30), smooth. **Stromata** substomatal, intraepidermal, ellipsoidal, 15-45 μm diam. (\bar{x} = 27.27 μm , n = 15), brown, stromatal cells 3-7 μm diam. (\bar{x} = 4.9 μm , n = 30), wall 0.5-0.8 μm wide (\bar{x} = 0.69 μm , n = 30), smooth. **Conidiophores** single or fasciculate, arising from stromata (1-12 per fascicle), or born on external mycelium, unbranched or branched, 0-1 geniculate, cylindrical, straight to curved, (9-)14-48(-67) \times (2-)3-4 μm (\bar{x} = 27 \times 3.3 μm , n = 30), 1-9-septate, distances between septa 4-10 μm (\bar{x} = 6.7 μm , n = 30), pale brown or olivaceous-brown; wall 0.3-0.9 μm wide (\bar{x} = 0.70 μm , n = 25), smooth. **Conidiogenous cells** integrated, terminal, cylindrical, tapering to the apex, 5-10 \times 2-4 μm (\bar{x} = 6.55 \times 2.95 μm , n = 22); **conidiogenous loci** (scars) small, slightly thickened and darkened, 1-2 μm diam., wall of the loci approximately 0.80 μm thick. **Conidia** solitary or catenate, cylindrical or narrowly obclavate, straight to curved, 4-30(-36) \times (1-)2-5 μm (\bar{x} = 15.33 \times 2.71 μm , n = 30), 0-5-septate, slightly constricted at the septa, subhyaline or olivaceous-brown, wall 0.25-1 μm thick (\bar{x} = 0.57 μm , n = 30), apex subobtuse, based long obconically truncate, hila 0.8-2 μm wide (\bar{x} = 1.2 μm , n = 14), wall of the hila 0.6-1 μm wide (\bar{x} = 0.86 μm , n = 14), darkened.

Known hosts: *Dipterocarpus alatus* and *D. obtusifolius*.

Known distribution: Laos (this paper).

Material examined: Laos, Vientiane Capital, Xaythany District, Xay Village, on leaf of *Dipterocarpus alatus* (Dipterocarpaceae), 19 April 2006 (NUOL P11, **holotype**), The same locality and collector, on *D. obtusifolius*, 8 August 2006 (NUOL P129, **paratype**).

Cultural characteristics: **Mycelial colonies** on PDA after three weeks at 25°C white to gray in the centre, margin dark gray, reaching 3-6 mm diam., hyphae 1-4(-5) μm wide (\bar{x} = 1.9 μm , n = 30), septate, distances between septa 5-19 μm (\bar{x} = 12.37 μm , n = 30), primary mycelium brownish, but the second and following ones hyaline, wall smooth. **Conidiophores** and **conidia** not formed in the culture.

Remarks: Several cercosporoid hyphomycete species are known from hosts of the Dipterocarpaceae, but all of them have been described from *Shorea* spp. and belong in the genera *Pseudocercospora* (conidiogenous loci inconspicuous, unthickened, not darkened) and *Stenella*, respectively (with verruculose superficial mycelium), viz., *Pseudocercospora shoreae-robustae* U. Braun (Braun 1995) [\equiv *Pseudocercospora shoreae* A.N. Rai, B. Rai & Kamal], *Stenella shoreae* M.K. Khan & Kamal (Khan et al. 1995) and *S. shoreicola* Crous & U. Braun (Crous & Braun 2003) [\equiv *Cercospora shoreae* Thirum. & Chupp, *Pseudocercospora shoreae* (Thirum. & Chupp) Deighton, *Stenella shoreae* Thirum. & Chupp) Crous & U. Braun, non M.K. Khan & Kamal 1995]. The new species on *Dipterocarpus* spp. from Laos belongs, however, in *Passalora*, characterized by having smooth mycelium, conspicuous conidiogenous loci and pigmented conidia.

Passalora helicteris-viscidae P. Phengsintham, E. Chukeatirote, K.D. Hyde. & U. Braun, **sp. nov.** MB 518043. Figs 2(1-2)

Passalorae sterculiacearum similis, sed conidiophoris semper fasciculatis, non solitariis, latioribus (4-6 μ m) et conidiis brevioribus, (8-)10-44 μ m longis, 0-4-septatis, pallide olivaceis.

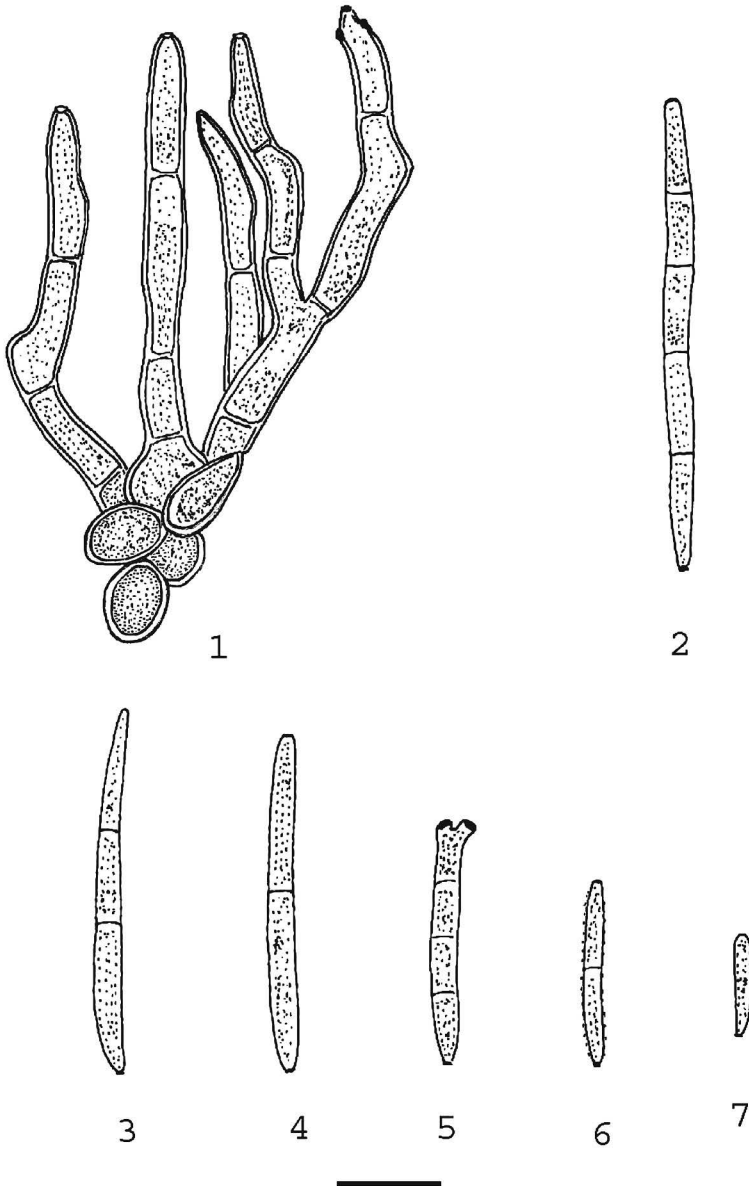


Fig. 2(1), 1-7. *Passalora helicteris-viscidae* on *Helicteres viscida*: 1. Stroma with attached conidiophores. 2-7. Conidia. Bar: 1-7 = 10 μ m.

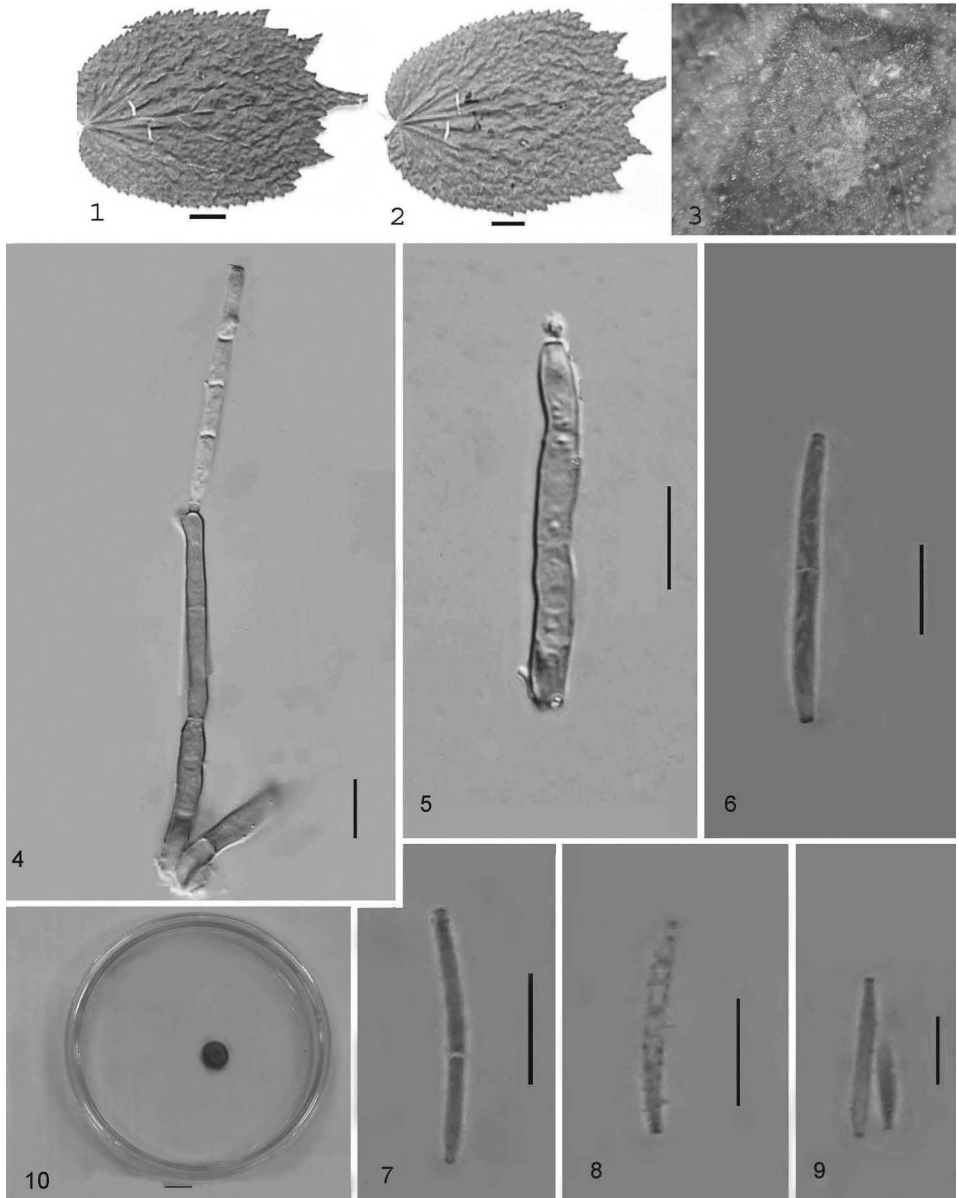


Fig. 2(2), 1-10. *Passalora helictis-viscidae* on *Helictes viscida* from leaf spots: 1-2. Lesions on host leaf (1. Upper surface, 2. Lower surface). 3. Caespituli. 4-5. Stroma with attached conidiophores and conidium. 6. Conidiophore; 6-9. Conidia. 10. Culture. Bar: 1-2 = 10 mm. 3. Not to scale. 4-9 = 10 μ m. 10 = 10 mm.

Description: **Leaf spots/lesions** circular to irregular, 1-5 mm diam., reddish brown to medium brown in the centre, and with a brown to dark brown margin. **Caespituli/colonies** amphigenous, scattered. **Mycelium** internal, inconspicuous. **Stromata** lacking or moderately developed, substomatal, subglobular, 8-24 μm diam. (\bar{x} = 15 μm , n = 4), brown to dark brown, stroma cells oval, ellipsoidal to angular in outline, 5-10 μm wide (\bar{x} = 7.14 μm , n = 7), dark brown, wall approximately 0.8-1 μm wide (\bar{x} = 0.93 μm , n = 7), smooth. **Conidiophores** fasciculate, arising from stromata (2-6 per fascicle), erect, straight or curved, unbranched or branched, 22-58 \times 4-6 μm (\bar{x} = 43.7 \times 4.75 μm , n = 12), 0-4-septate, distances between septa 5-23 μm (\bar{x} = 14.9 μm , n = 18), pale to moderately olivaceous-brown, wall approximately 0.5-0.8 μm wide (\bar{x} = 0.55 μm , n = 12), smooth. **Conidiogenous cells** integrated, 12-20 \times 3-4 μm (\bar{x} = 15.4 \times 3.5 μm , n = 8), apex 1-2 μm wide, wall approximately 0.8 μm thick, subtruncate, cicatrized, pale olivaceous or brown; **conidiogenous loci** conspicuous, 1-2 μm wide (\bar{x} = 1.5 μm , n = 8), wall approximately 0.3-0.8 μm wide (\bar{x} = 0.52 μm , n = 8), smooth. **Conidia** solitary or catenate, cylindrical, straight to moderately curved, (8-)10-44 \times 1-3 μm (\bar{x} = 21.7 \times 1.93 μm , n = 30), 0-4-septate, slightly constricted at the septa, pale olivaceous, wall 0.2-0.3 μm wide (\bar{x} = 0.25 μm , n = 30), smooth or finely verruculose, both ends subtruncate when catenulate, bluntly rounded at the apex in solitary and primary conidia, apical hila 1-1.5 μm wide (\bar{x} = 1.76 μm , n = 22), wall approximately 0.3-0.5 μm (\bar{x} = 0.32 μm , n = 15) thick, with subtruncate base, basal hila 0.5-1 μm wide (\bar{x} = 1.87 μm , n = 22), wall approximately 0.3-0.5 μm (\bar{x} = 0.32 μm , n = 22) thick.

Material examined: Laos, Vientiane Capital, Xaythany District, Nongviengkham Village, on leaf of *Helicteres viscida* (Sterculiaceae), 14 May 2006 (NUOL P47, **holotype**); 17 July 2009, Houay Ngang (NUOL P414).

Cultural characteristics: **Mycelial colonies** on PDA after three weeks at 25°C black in the centre and margin, reaching 2-6 mm diam., hyphae 2-7 μm wide (\bar{x} = 3.3 μm , n = 30), septate, distances between septa 4-32 μm (\bar{x} = 13.8 μm , n = 30), primary mycelium brownish, but the second and following ones hyaline, wall smooth. **Conidiophores** and **conidia** not formed in the culture.

Remarks: Several species of *Passalora* on *Sterculia* spp. are known. *P. sterculiacearum* U. Braun & Crous (\equiv *Cercospora helicteris* Syd. & P. Syd., *Cercosporina helicteris* (Syd. & P. Syd.) Sacc., *Passalora helicteris* (Syd. & P. Syd.) U. Braun & Crous, 2003, nom. illeg., non *Passalora helicteris* (Soni, Dadwal & Jamaluddin) Poonam Srivast., 1994) differs from the new species described from Laos in having well-developed superficial hyphae with solitary narrower conidiophores (mycovellose-like) and longer subhyaline conidia, up to 120 μm in length, with up to six septa (Chupp 1954, Crous & Braun 2003, Braun & Crous 2007). *Passalora meridiniana* (Chupp) U. Braun & Crous is a phaeoramularia-like species with densely fasciculate conidiophores in coremioid conidiomata and much longer conidia, up to 125 μm in length (Chupp 1954, Crous & Braun 2003). *Passalora helicteris* (Soni, Dadwal & Jamaluddin) Poonam Srivast. is easily distinguishable from the new species by its much longer conidiophores, up to 450 μm , and much wider conidia, 20-50 \times 7.5-12.5 μm , formed singly (Soni *et al.* 1984, Crous & Braun 2003).

Passalora henningsii (Allesch.) R.F. Castañeda & U. Braun, Cryptog. Bot. 1(1): 46. 1989

Notes: The collection from Laos has been compared with cercosporoid species described from *Manihot* and proved to be conspecific with *Passalora henningsii* as redescribed by Castañeda and Braun (1989), based on material from

Cuba, but differs in having 0-7-septate conidia (*versus* 1-3-septate in the Cuban specimens).

Known hosts: *Manihot caerulescens* (= *M. piauhyensis*), *M. glaziovii*, *M. esculenta* (= *M. manihot*, *M. utilissima*) (Euphorbiaceae).

Known distribution: widespread (see Crous & Braun 2003).

Material examined: Laos, Vientiane Capital, Xaythany District, Xay Village, on leaf of *Manihot esculenta* (Euphorbiaceae), 27 April 2006 (NUOL P26); 30 April 2008, Luang Namtha Province, Viengphoukha District, Mai Village (NUOL P306); 27 July 2008, Bolikhamxay Province, Khamkeud District, Nongxong Village (NUOL P327); 28 December 2008, Vientiane Capital, Xaythany District, Xay Village (NUOL P396).

Pseudocercospora cotizensis (A.S. Mull. & Chupp) Deighton, Mycol. Pap. 140: 142, 1976

Notes: The collection from Laos differs from the descriptions of this species in Chupp (1954) and Hsieh & Goh (1990) by forming well-developed, brown to dark brown stromata and lacking external mycelium.

Known hosts: *Crotalaria incana*, *C. juncea*, *C. micans* (= *C. anagyroides*), *C. pallida* (= *C. mucronata*, *C. striata*), *C. retusa*, *C. sericea* (= *C. spectabilis*), *C. uncinella* subsp. *elliptica* and *C. verrucosa*.

Known distribution: China, Cook Island, Cuba, Guatemala, Guinea, Hong Kong, India, Laos (this paper), Malaysia, Micronesia, New Caledonia, Niue, Papua New Guinea, Philippines, Puerto Rico, Sabah, Singapore, Samoa, Solomon Islands, Sri Lanka, Taiwan, USA (FL), Venezuela and Virgin Islands.

Material examined: Laos, Vientiane Capital, Xaythany District, Xay Village, on leaf of *Crotalaria uncinella* subsp. *elliptica* (Leguminosae), 15 April 2006 (NUOL P06); 10 August 2008, Bolikhamxay Province, Khamkeud District, Nongxong Village (NUOL P334); 28 December 2008, Vientiane Capital, Xaythany District, Xay Village (NUOL P407).

Pseudocercospora eupatorii-formosani U. Braun & Bagyan., Sydowia 51: 8. 1999

Notes: The determination of the collection from Laos was rather difficult due to problems in distinguishing *Pseudocercospora eupatorii* (Peck) U. Braun & R.F. Castañeda and *P. eupatorii-formosani*. The two species are morphologically very similar. The true *P. eupatorii* is only known from North America (U. Braun, *in litt.*). Based on its type material, it is characterized by having short, broad conidiophores, about 5-30 × 3-8 µm, and consistently lacking superficial hyphae. The collection from Cuba on *Eupatorium* sp., which was referred to as *P. eupatorii* by Braun & Castañeda (1991), rather belongs to *P. eupatorii-formosani*. The latter species differs from *P. eupatorii* in having short but much narrower conidiophores, ca. 2-4.5 µm wide. Furthermore, superficial hyphae with solitary conidiophores are often present *in vivo*, but they can also be absent. Hsieh & Goh (1990), based on type material of *P. eupatorii-formosani*, as well as Yen & Lim (1980), based on material from Malaysia on *Chromolaena odorata*, did not find any superficial mycelium, whereas Guo & Hsieh (1995) described and illustrated superficial hyphae with solitary conidiophores. U. Braun (*in litt.*) examined material on *Chromolaena odorata* and *Eupatorium* spp. from Brunei, Cuba and India, occasionally also without, but mostly with superficial hyphae. All collections from Asia have narrow conidiophores and seem to belong to *P. eupatorii-formosani*. The collection from Laos agrees well with the descriptions of Yen & Lim (1980) as well as Hsieh & Goh (1990). *Pseudocercospora eupatorii* and *P. eupatorii-*

formosani are tentatively maintained as two different species. The true affinity of the two species and a possible identity can only be proven on the base of inoculation experiments or molecular sequence analyses.

Known hosts: *Ageratina adenophora*, *Ayapana triplinervis* (= *Eupatorium ayapana*), *Chromolaena odorata* (\equiv *Eupatorium odoratum*), *Conochinum coelestinum* (\equiv *Eupatorium coelestinum*), *Eupatorium formosanum*, *Eupatorium* sp.

Known distribution: Australia, Brazil, Brunei, Cambodia, China, Cuba, India, Indonesia, Ivory Coast, Laos (this paper), Nepal, New Zealand, Malaysia, Taiwan.

Material examined: Laos, Vientiane Capital, Xaythany District, Dong Makhai Village, on leaf of *Chromolaena odorata* (Compositae), 19 April 2006 (NUOL P09); 10 August 2008, Bolikhamxay Province, Khamkeud District, Nongxong Village (NUOL P354).

Pseudocercospora jussiaeae (G. F. Atk.) Deighton, Mycol. Pap. 140: 146. 1976

Notes: *Ludwigia prostrata* is the type host of *Pseudocercospora yoshinagiana* (Chupp) U. Braun & Crous, but the collection from Laos has much shorter conidiophores and conidia than those of the latter species described from Japan (conidiophores, 20-125 \times 3-4 μ m and conidia, 30-100 \times 3-4 μ m). However, the fungus collected in Laos agrees well with *P. jussiaeae*, which is widespread on numerous *Jussiaea* and *Ludwigia* species.

Known hosts: *Jussiaea decurrens*, *J. diffusa*, *J. erecta*, *J. peruviana*, *J. pilosa*, *J. repens*, *J. suffruticosa*, *Ludwigia alternifolia*, *L. hyssopifolia*, *L. lithospermifolia*, *L. octovalvis*, *L. parviflora*, *L. peploides*, *L. polycarpa* and *L. prostrata*.

Known distribution: China, Cuba, Fiji, India, Laos (this paper), Myanmar, Puerto Rico, South Africa, Taiwan, USA (AL, FL, OK, TX, WI), Venezuela, Virgin Islands.

Material examined: Laos, Vientiane Capital, Xaythany District, Xay Village, on leaf of *Ludwigia prostrata* (Onagraceae), 2 April 2006 (NUOL P03); 12 June 2008, Donnoune Village (NUOL P320); 11 July 2009, Xay Village (NUOL P422).

Pseudocercospora mannanorensis Bagyan., U. Braun & Jagad. var. ***paucifasciculata*** Phengsintham, E. Chukeatirote, K.D. Hyde & U. Braun var. nov. MB 518044 Figs 3(1-2)

Differt a varietate typica conidiophoris brevioribus (6-10 μ m longis), non septatis, paucifasciculatis (5-10).

Description: **Leaf spots/lesions** suborbicular to angular, 1-3 mm diam., gray-brown to medium brown in the centre, and with brown to dark brown margin. **Caespituli/colonies** amphigenous, scattered. **Mycelium** internal, inconspicuous. **Stromata** developed, substomatal, subglobular, 15-23 μ m diam. (\bar{x} = 18.5 μ m, n = 4), brown to dark brown, stroma cells oval, ellipsoidal to angular in outline, 3-6 μ m wide (\bar{x} = 4.53 μ m, n = 17), dark brown, wall approximately 0.3-0.5 μ m wide (\bar{x} = 0.39 μ m, n = 17), smooth. **Conidiophores** fasciculate, arising from stromata (5-10 per fascicle), erect, straight or curved, not branched, aseptate, i.e. conidiophores reduced to conidiogenous cells. **Conidiogenous cells** 6-10 \times 1.5-3 μ m (\bar{x} = 7.75 \times 2.13 μ m, n = 8), aseptate, wall approximately 0.3-0.5 μ m wide (\bar{x} = 0.33 μ m, n = 8), smooth, apex obtuse, pale olivaceous or brown; **conidiogenous loci** inconspicuous. **Conidia** solitary, subcylindrical to narrowly obclavate, straight to moderately curved, 27-69 \times 1-3 μ m (\bar{x} = 49.38 \times 1.95 μ m, n = 13), 1-5-septate, occasionally slightly constricted at the septa, pale olivaceous, wall

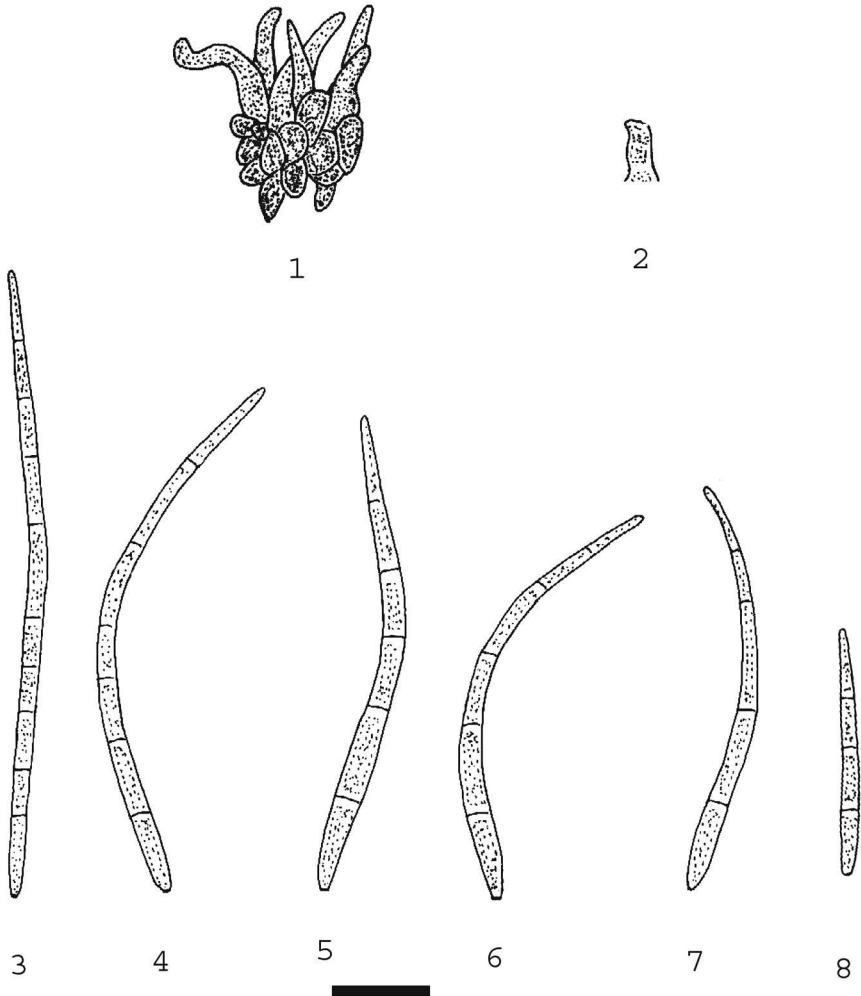


Fig. 3(1), 1-8. *Pseudocercospora mannanorensis* var. *paucifasciculata* on *Microcos paniculata*: 1. Stroma with attached conidiophores. 2. Conidiophore. 3-8. Conidia. Bar: 1-8 = 10 μ m.

0.2-0.3 μ m wide (\bar{x} = 0.28 μ m, n = 13), smooth, subacute to obtuse at the apex, with truncate base, 1-1.5 μ m wide (\bar{x} = 1.3 μ m, n = 5), wall approximately 0.2-0.3 μ m (\bar{x} = 0.28 μ m, n = 5) thick.

Known hosts: *Microcos paniculata* (\equiv *Grewia microcos*).

Known distribution: Laos (this paper).

Material examined: Laos, Vientiane Capital, Xaythany District, Nong Viengkham Village, on leaf of *Microcos paniculata* (Tiliaceae), 13 May 2006 (NUOL P45, **holotype**); 20 December 2009, Nong Viengkham Village (NOUL P488).

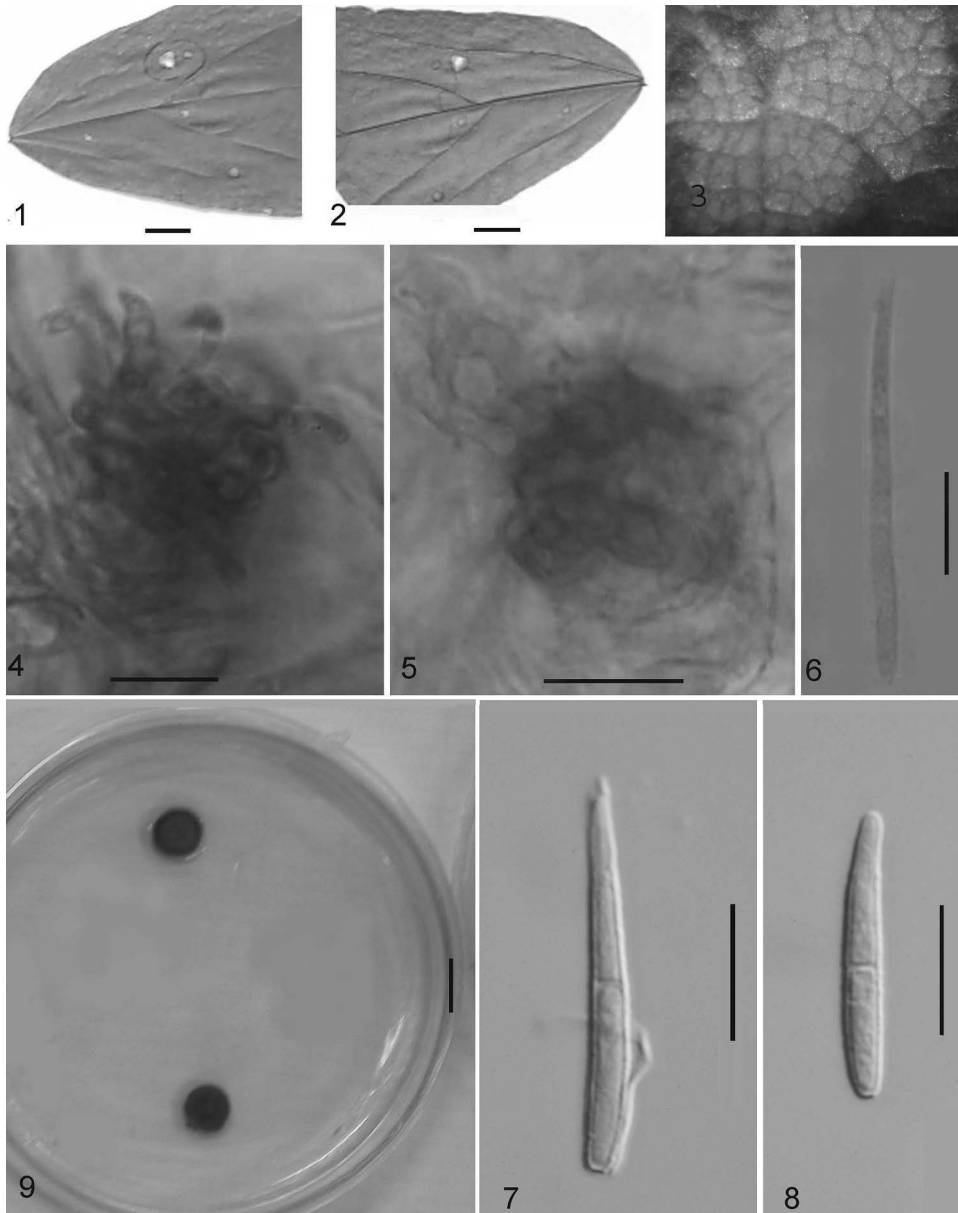


Fig. 3(2), 1-9. *Pseudocercospora mannanorensis* var. *paucifasciculata* on *Microcos paniculata*: 1-2. Lesions on host leaf (1. Upper surface, 2. Lower surface). 3. Caespituli. 4. Stromata with attached conidiophores. 5. Stroma. 6-8. Conidia. 9. Culture. Bar: 1-2 = 10 mm. 3. Not to scale. 4-8 = 10 μ m. 9 = 10 mm.

Cultural characteristics: **Mycelial colonies** on PDA after three weeks at 25°C dark brown in the centre and brown-green margin, reaching 4-10 mm diam., hyphae 2-5 µm wide (\bar{x} = 3.6 µm, n = 30), septate, distances between septa 7-40 µm (\bar{x} = 19.21 µm, n = 30), primary mycelium brownish, but the second and following ones hyaline, wall smooth or verruculose. **Conidiophores** and **conidia** not formed in the culture.

Remarks: The collection from Laos is similar to *Pseudocercospora mannanorensis* described by Bagyanarayana et al. (1995) on *Grewia* sp. from India, but can only tentatively be assigned to this species since obvious differences in the size and length of conidiophores are evident. *Pseudocercospora mannanorensis* has much longer, 0-2-septate, subhyaline, pale greenish to olivaceous conidiophores, 15-50 × 1.5-3 µm, arranged in dense, very rich fascicles (up to more than 100). The conidia are solitary, subcylindrical to narrowly obclavate, straight to somewhat curved, 40-80 × 2-4 µm, subhyaline to pale greenish or olivaceous, i.e. they agree well the fungus on *M. paniculata*. The status of the fungus from Laos is, however, uncertain. The features of the lesions and conidia agree well with *P. mannanorensis*, but the conidiophores are much shorter and only formed in small fascicles. It is unclear if two distinct species are involved or if these differences have been caused by the host plant or a possible immaturity of the sample. Additional collections are necessary to prove the consistency of the conidiophore characters on *Microcos paniculata*, but due to the obvious differences we prefer to introduce a new variety for this fungus.

Pseudocercospora melochiae (Henn.) Deighton, Mycol. Pap. 140: 147, 1976

Notes: The new collection from Laos (conidiophores 8-25 × 3-4 µm, conidia 49-132 × 3-5 µm) agrees well with the characters of *Pseudocercospora melochiae* (conidiophores pale to medium in color, 3-5 µm in width, conidia 40-150 × 2-4.5 µm) as described by Chupp (1954).

Known hosts: *Melochia corchorifolia*, *M. lupulina*, *M. melissifolia*, *M. odorata*, *Waltheria indica* (= *W. americana*).

Known distribution: Brazil, Columbia, Dominican Republ., El Salvador, Gabon, Ghana, Guinea, India, Laos (this paper), Jamaica, Papua New Guinea, Sierra Leone, Sudan, USA (GA).

Material examined: Laos, Vientiane Capital, Xaythany District, Xay Village, on leaf of *Melochia corchorifolia* (Sterculiaceae), 3 May 2006 (NUOL P30); 28 January 2007, Houay Ngang (NUOL P209).

Pseudocercospora puerariicola (W. Yamam.) Deighton, Mycol. Pap. 140: 151. 1976

Notes: The collection from Laos (conidiophores 9-30 × 3-5 µm, conidia 6-82 × 2-3 µm) is close to *Pseudocercospora puerariicola* (conidiophores 20-70 × 3-4.5 µm, conidia 20-85 × 3-6 µm) as described by Chupp (1954), Hsieh & Goh (1990) and Guo & Hsieh (1995), except for somewhat narrower conidia.

Known hosts: *Pueraria lobata* (= *P. thungergiana*), *P. lobata* var. *javanica* (≡ *P. javanica*), *P. lobata* var. *montana* (= *P. tonkinensis*), *P. phaseoloides*.

Known distribution: Cambodia, China, Hong Kong, Indonesia, Japan, Korea, Laos (this paper), Malaysia, Philippines, Singapore, Taiwan, USA (AL, FL, GA, MS, NC).

Material examined: Laos, Vientiane Capital, Xaythany District, Nakhae Village, on leaf of *Pueraria phaseoloides* (Leguminosae), 11 May 2006 (NUOL P44); 12 September 2006, Xay Village (NUOL P171); 28 December 2008, Xay Village (NUOL P404).

Pseudocercospora stahlia (F. Stevens) Deighton, Mycol. Pap. 140: 82. 1976

Notes: There is no difference in the size of conidia formed *in vivo* as well as *in vitro*. The size of conidiophores and conidia (conidiophores 23-157 × 3-6 µm, conidia 14-46 × 3-7 µm) agrees with *Pseudocercospora stahlia* described in Deighton (1976) [conidiophores 50-150 × 4-7, conidia 20-60 × 4-7 µm].

Known hosts: *Passiflora foetida* and *P. quadrangularis*.

Known distribution: American Samoa, Australia, Brunei, Fiji, Gabon, India, Ivory Coast, Laos (this paper), Malaysia, Micronesia, Myanmar, Palau, Papua New Guinea, Puerto Rico, Sabah, Samoa, Singapore, Solomon Islands, Taiwan, Tonga, Trinidad, Tobago and Vanuatu.

Material examined: Laos, Vientiane Capital, Xaythany District, Nakhae Village, on leaf of *Passiflora foetida* (Passifloraceae), 23 April 2006 (NUOL P20); 12 June 2008, Donnoune Village (NUOL P315); 10 August 2008, Bolikhamxay Province, Khamkeud District, Nongxong Village (NUOL P335); 17 September 2008, Bokeo Province, Houay Xay District, Khonkeo Village (NUOL P373).

Pseudocercospora tiliacora (A.K. Kar & M. Mandal) Deighton, Trans. Brit. Mycol. Soc. 88: 388. 1987

Notes: The collection from Laos differs from the Indian type material in having shorter conidiophores (conidiophores 9-20 × 2-3 µm, conidia 15-79 × 2-3 µm) and in being indistinctly 0-1-septate (conidiophores 13.3-83.2 × 3.3-4.9 µm, conidia 19.9-123.2 × 1.9-3.6 µm, distinctly 0-8-septate in the Indian collection).

Known hosts: *Tiliacora acuminata*, *T. triandra*.

Known distribution: India and Laos (this paper).

Material examined: Laos, Vientiane Capital, Xaythany District, Nong Viengkham Village, on leaf of *Tiliacora triandra* (Menispermaceae), 22 April 2006 (NUOL P16); 5 May 2007, Dong Makkhai Village (NUOL P270).

Pseudocercospora trichophila (F. Stevens) Deighton, Mycol. Pap. 140: 106. 1976

Notes: Deighton (1976) did not describe any stromata, but in the collection of *Pseudocercospora trichophila* from Laos small stromatic hyphal aggregations are developed. The size of conidiophores and conidia (conidiophores 6-50 × 3-4 µm, conidia 30-60 × 3-5 µm) agree with *Pseudocercospora trichophilla* (conidiophores 4-120 × 2.5-5 µm, conidia 15-90 × 4-5 µm) as described in Deighton (1976).

Known hosts: *Solanum capsicoides* (= *S. aculeatissimum*), *S. biflorum* (≡ *Lycianthes biflora*), *S. donianum* (= *S. verbascifolium*), *S. ferox*, *S. granuloso-leprosum* (= *S. erianthum*), *S. hirtum*, *S. jamaicense*, *S. melongena*, *S. nigrum*, *S. rudepanum* (= *S. torvum*), *S. umbellatum*, and *S. undatum*.

Known distribution: Brazil, Brunei, China, Colombia, Costa Rica, Cuba, Dominican Republ., Guyana, India, Jamaica, Laos (this paper), Malaysia, Panama, Papua New Guinea, Puerto Rico, Sabah, Solomon Islands, USA (FL), Taiwan, Trinidad and Tobago, Venezuela and Virgin Islands.

Material examined: Laos, Vientiane Capital, Xaythany District, Xay Village, on leaf of *Solanum undatum* (Solanaceae), 15 April 2006 (NUOL P07); 8 July 2006, Luang Prabang Province, Xiengngeun District, Tadkacham (NUOL P69); 28 April 2008, Luang Namtha Province, Viengphoukha District, Mai Village (NUOL P303).

Pseudocercospora wrightiae (Thirum. & Chupp) Deighton, Mycol. Pap. 140: 156. 1976

Notes: The collection from Laos is similar to the original description of this species, based on material from India, but there are slight differences in the

size of the conidiophores and conidia. Collections from China and India have densely fasciculate conidiophores, 15-45 × 3-6.5 µm, subhyaline to pale brown and obclavate conidia, straight to moderately curved, 25-105 × 4-6.5 µm, medium olivaceous (according to Guo & Hsieh, 1995).

Known hosts: *Himatanthus obovatus* (≡ *Plumeria obovata*), *Wrightia pubescens* and *W. tintoria*.

Known distribution: Brazil, China, India and Laos (this paper).

Material examined: Laos, Vientiane Capital, Xaythany District, Xay Village, on leaf of *Wrightia pubescens* (Apocynaceae), 11 May 2006 (NUOL P40), 12 August 2007 (NUOL P300).

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