

## Short Communication

## Materials for the fungus flora of Japan (54). *Stenella persicae*, a new species from peach

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A new species, *Stenella persicae*, isolated from peach is described and illustrated. The fungus, pathogenic to peach fruits, is distinguished from other known species in the genus by its morphological characteristics. A stroma is absent, and conidia, verruculose and usually catenate in appearance, are produced blastically on simple and smooth conidiophores.

Key Words—Dematiaceae; Deuteromycotina; peach fungus; *Stenella persicae*.

Fruits of peach (*Prunus persica* Batsch var. *vulgaris* Maxim.) were found at harvest to be severely damaged by a species of fungus in Wakayama and Okayama Prefectures in Japan in 1984 and 1985, respectively. The fruits were covered with dark to almost blackish brown fungal mycelium, showing the symptom of the "fruit mold disease" of Nasu and Yokoyama (1996). The causal fungus was found to be a new species of the genus *Stenella* Syd., Dematiaceae, Deuteromycotina, in which a stroma is absent and conidia, verruculose in appearance and usually catenate, are produced blastically on simple and smooth conidiophores. These morphological characteristics are clearly distinct from those of other species in the genus. The pathogenicity of the fungus on peach fruits is also unique to the genus.

More than 20 species have been described in the genus *Stenella* (Deighton, 1979; Ellis, 1976). The genus, originally described by Sydow (1930) and authorized by

Ellis (1971), differs morphologically from the related genera *Mycovellosiella* Rangel and *Cladosporium* Link. In the latter two genera, hyphal walls are rough in appearance, and conidia, brown in color and catenate, are sub-cylindric or narrowly obclavate-cylindric in shape.

The morphology of the new species is compared with that of related species in *Stenella*: *S. cynanchi*, *S. constricta*, *S. crotalariicola*, *S. shoreae* and *S. osyridina* (Table 1). Conidia with 0–1 septum in *S. cynanchi* are shorter than those with 0–5 septa in the new species (Yen et al., 1982). Conidiophores and conidia of *S. constricta* are longer and thicker, and thicker, respectively, than those of the new species (Mulder, 1982). Conidiophores and conidia in *S. crotalariicola* are longer and thicker, and thicker, respectively, than those of the new species (Chaudhary et al., 1991). The number of septa (3–6) and color (pinkish to olive brown) of conidia of *S. crotalariicola* are different from those of the new species,

Table 1. Morphological comparison of *Stenella persicae* with other *Stenella* species.

Fungus	Conidiophore ( $\mu\text{m}$ )	Conidium ( $\mu\text{m}$ ) Number of septa	Host plant	Author
<i>Stenella persicae</i>	28–113 × 2.5–3.1	5–55 × 1.9–3.1 0–5	<i>Prunus persica</i>	Yokoyama & Nasu
<i>S. cynanchi</i>	15–135 × 3–3.5	7–23 × 2.5–3.5 0–1	<i>Cynanchi callitatae</i>	Yen, Kar & Das
<i>S. constricta</i>	< 350 × 4–7	13.5–45 × 4.5–7 0–6	<i>Artocarpus heterophyllus</i>	Mulder
<i>S. crotalariicola</i>	80–140 × 4.0–5.5	22–75 × 3.5–6 3–6	<i>Crotalariae</i> sp.	Chaudhary, Gupta & Kamal
<i>S. shoreae</i>	60–270 × 3.5–6.5	16.5–47 × 4.5–7.5 1–5	<i>Shorea robusta</i>	Khan & Kamal
<i>S. osyridina</i>	40–126 × 3–7.5	15–48 × 2.5–6 1–6	<i>Osyris wightiana</i>	Chaudhary & Singh

of which conidia are pale yellowish-brown to ochraceous in color (Chaudhary et al., 1991). Conidiophores and conidia of *S. shoreae* are longer and thicker, and thicker, respectively, than those of the new species. Conidial chains of *S. shoreae* are more simple than those of the new species (Khan et al., 1995). Conidiophores of *S. osyridina* are thicker than those of the new species and, unlike the new species, conidia of *S. osyridina* are catenate but usually unbranched (Chaudhary et al., 1996).

### Description

*Stenella persicae* T. Yokoyama & Nasu, sp. nov. Figs. 1, 2

Coloniae in WA restrictae, moderate effusae, floccosae, Atrobrunneum. Mycelium superficiale, hyalinum vel pallide flavo-brunneum, ex hyphis septatis levibus vel raro verrucosis ramosis circiter 1.0–2.5  $\mu\text{m}$  crassis compositum. Conidiophora simplicia, pallideochraceo-brunnea, crassiparietalia, erecta, recta vel leviter curvata, levia, 28–113  $\times$  2.5–3.1 (av. 51  $\times$  2.8)  $\mu\text{m}$  crassa. Cellulae conidiogenae in conidiophoris terminales, polyblasticae. Cicatrices conidiales conspicuae, incrassatae.

Conidia holoblastica, simplicia, solitaria vel 2(–3) catenulata, elongato-clavata vel cylindrica, recta vel interdum leviter curvata, tenuiparietalia, pallide ochraceo-brunnea vel ochracea, 0–5 septata, minute verruculosa, 5.0–55  $\times$  1.9–3.1 (av. 23  $\times$  2.5)  $\mu\text{m}$ . Stroma nullum.

Holotypus: S-1, colonia exsiccata e cultura ex epicarpio *Pruni persicae* isolata, ea Tamashima, Kurashiki, Okayama Pref. in Japonia, 13/VIII/1985, H. Nasu leg. et in Herb. in "Agric. Exp. Sta., Okayama Pref. General Agric. Center", conservata.

Etymology: the Latin *persicae*; referring to the epithet of the scientific name of the peach, *Prunus persica*.

Habitat. Epicarpium of fruits of peach (*P. persica*), Momoyama-cho, Naga-gun, Wakayama Pref., and Tamashima, Kurashiki, Okayama Pref., Japan.

Material examined. Japan, Okayama and Wakayama, cultures from affected peach fruits, 29 Aug. 1984, collected by H. Komatsu, and 13 Aug. 1985, collected by H. Nasu. Holotype specimen and living cultures deposited at the Agricultural Experiment Station, Okayama Prefectural General Agriculture Center, Japan.

Colonies on water agar media restricted, moderately effuse, floccose, blackish brown to dark grayish brown;

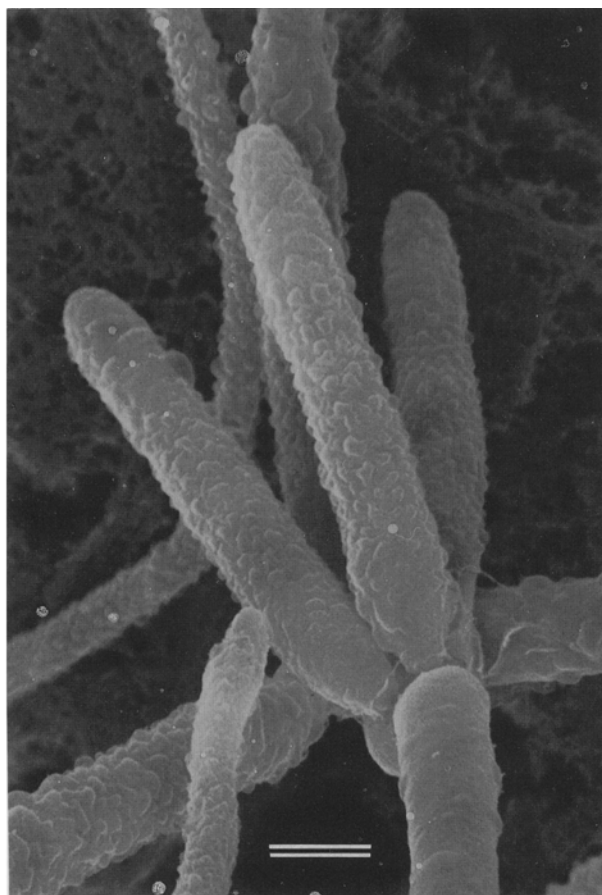


Fig. 1. Light and scanning electron micrographs of *Stenella persicae*.

Left: Conidiogenesis. Conidiophores and conidia are seen. Bar: 20  $\mu\text{m}$ . Right: Conidia, produced on a conidiophore. Bar: 2  $\mu\text{m}$ .

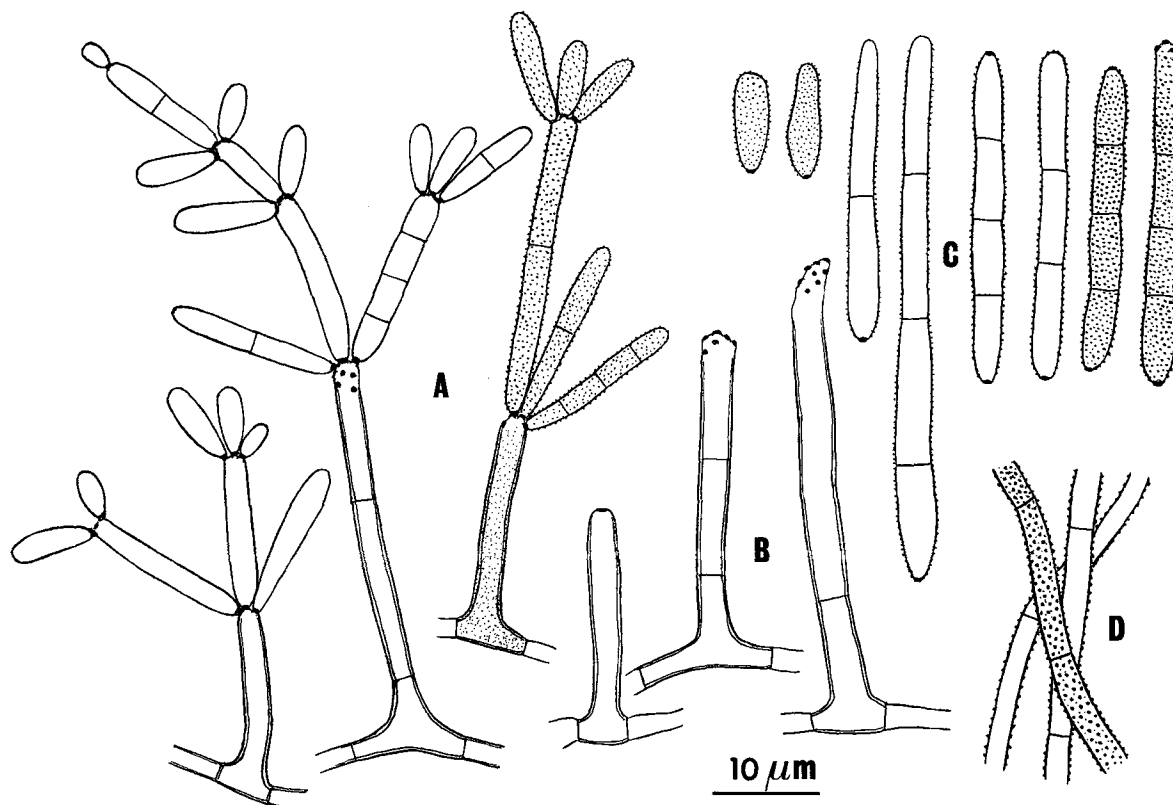


Fig. 2. *Stenella persicae*.  
 A. Conidia on conidiophores. B. Conidiophores after liberation of conidia. C. Conidia. D. Mycelium.

mycelium hyaline to pale yellowish brown, thin-walled, minutely verruculose, 1.0–2.5  $\mu\text{m}$  wide. Conidiophores simple, straight to slightly curved, thick-walled, smooth, pale brown, 28–113  $\times$  2.5–3.1 (av. 51  $\times$  2.8)  $\mu\text{m}$ . Conidia holoblastic, single to catenate [2(–3)] in branched chains, cylindrical to narrowly ovoidal, pale yellowish brown to ochraceous, straight to slightly curved, finely verruculose, thin-walled, 0–5-septated, 5.0–55  $\times$  1.9–3.1 (av. 23  $\times$  2.5)  $\mu\text{m}$ . Stroma none.

**Literature cited**

Chaudhary, R., Gupta, C. and Kamal. 1991. New species of *Heteroconium*, *Pseudocercospora* and *Stenella* from India. *Mycol. Res.* **95**: 1070–1073.  
 Chaudhary, R. K., Singh, S. K. and Morgan-Jones, G. 1996. Notes on Hyphomycetes. LXXI. New species of *Stenella*, *Stenellopsis* and *Tretospora* from Nepal. *Mycotaxon* **57**: 201–209.

Deighton, F. C. 1979. Studies on *Cercospora* and allied genera. VII. New species and Redispositions. *Mycol. Pap.* **144**: 52–55.  
 Ellis, M. B. 1971. Dematiaceous Hyphomycetes. CMI, Kew, England, pp. 305–306.  
 Ellis, M. B. 1976. More Dematiaceous Hyphomycetes. CMI, Kew, England, pp. 307–314.  
 Khan, M. K., Kamal and Morgan-Jones, G. 1995. Notes on Hyphomycetes. LXIV. New species of *Mycovellosiella*, *Phaeoisariopsis*, *Sirosporium* and *Stenella* from India. *Mycotaxon* **54**: 27–36.  
 Mulder, J. L. 1982. New species and combinations in *Stenella*. *Trans. Br. Mycol. Soc.* **79**: 469–478.  
 Nasu, H. and Yokoyama, T. 1996. Fruit mold disease of peach caused by a *Stenella* species. *Ann. Phytopathol. Soc. Jpn.* **62**: 587–592. (In Japanese.)  
 Yen, J. M., Kar, A. K. and Das, B. K. 1982. Studies on hyphomycetes from West Bengal, India, III. *Cercospora* and allied genera of West Bengal, 3. *Mycotaxon* **16**: 80–95.