

**A NEW SPECIES OF LOPHIOTREMA FROM WILD FRUIT
IN HONG KONG**

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Lophiotrema psychotrii spec. nov. is described and illustrated based on specimens occurring on *Psychotria asiatica* and *Rhodomyrtus tomentosa* fruits in Hong Kong. This species is characterized by small, hyaline, guttulate, uniseptate, fusiform ascospores bearing a narrow mucilaginous sheath, which is narrow in the middle and drawn out at both ends to form pad-like appendages. A synoptic table and key to *Lophiotrema* species is provided.

Psychotria asiatica L. (Rubiaceae) is one of the most common native understorey shrubs in Hong Kong and South China (Davis et al., 2001). It occurs widely in shrubland and its fruits are small and fleshy, presumably dispersed by birds (Corlett, 1996). Its abundance and successful colonization in degraded landscapes makes it one of the suitable candidates for studies of fructicolous fungi, due to the potentially conflicting relationship with frugivorous birds and microbes (Herrera, 1982; Cipollini & Stiles, 1993; Cipollini, 2000). The fruits need to attract dispersers after ripening, but repel microbes. In the current study, the mycota of different wild fruits species are being investigated. An ascomycete was found on a decaying fruit of *Psychotria asiatica*, belonging to the genus *Lophiotrema* Ces. & De Not. It is described and illustrated here.

MATERIAL AND METHODS

Decaying fruits of *Psychotria asiatica* were collected from Lung Fu Shan, in Hong Kong. The fruits were returned to the laboratory and incubated at room temperature (~23°C) in 'zip lock' plastic bags with added sterile moist paper at room temperature. Fruits were examined under the stereo-microscope periodically. Squash mounts and sections of fungal fruit-bodies were mounted in water for measurement and photographed with a digital camera. Fungi were isolated and are maintained in the University of Hong Kong Culture Collection (HKUCC) and fruits with fungi were dried and deposited in the University of Hong Kong Herbarium (HKU(M)).

RESULTS

Lophiotrema psychotrii A.M.C. Tang, K.D. Hyde, K.M. Tsui & R.T. Corlett,
spec. nov. — Figs. 1–9

Ascomata 70–110 μm alta, 85–140 μm diam., erumpentes, ostiolo fissuriformi. Asci 64–80 \times 6–7.5 μm , 8-spore, bitunicati, cylindrici. Ascosporae 14–17 \times 4–4.5 μm , fusiformes, bicellulae, uniseptatae, hyalinae, 2–3 guttulis.

Holotypus: Hong Kong, Hong Kong Island, Lung Fu Shan, on fruit of *Psychotria asiatica*, 15.XII.2001, A.M.C. Tang (HKU(M) 16702). Living culture of HKU(M) 16702 in HKUCC 9015.

Etymology: named after the host.

Ascomata 70–110 μm high, 85–140 μm in diameter, erumpent, broadly oblong with flattened neck, developing on a thin black stromatic crust, opening with an elongated slit-like ostiole, carbonaceous, black. Peridium 14–30 μm thick at the sides, 10–14 μm at the base, comprising black-walled *textura angularis*, encrusted with melanin particles, darker in the upper half and lighter at the base. Pseudoparaphyses abundant, cellular, up to 2 μm in diameter. Asci 64–80 \times 6–7.5 μm , cylindrical, thick-walled, bitunicate, fissitunicate, with an ocular chamber and faint ring, arising from the base of the ascoma, 8-spored (Figs. 5, 6). Ascospores 14–17 \times 4–4.5 μm (on average 15.25 \times 4.15 μm , $n = 20$), uniseriate to biseriate, fusiform, hyaline, uniseptate, constricted at the septum, with 2 or 3 lipid guttules in each cell, surrounded by a narrow mucilaginous sheath, 1–2 μm thick; sheath is narrow in the middle and drawn out at the ends to form pad-like appendages (Figs. 7–9).

Habitat — Saprobic on fruits.

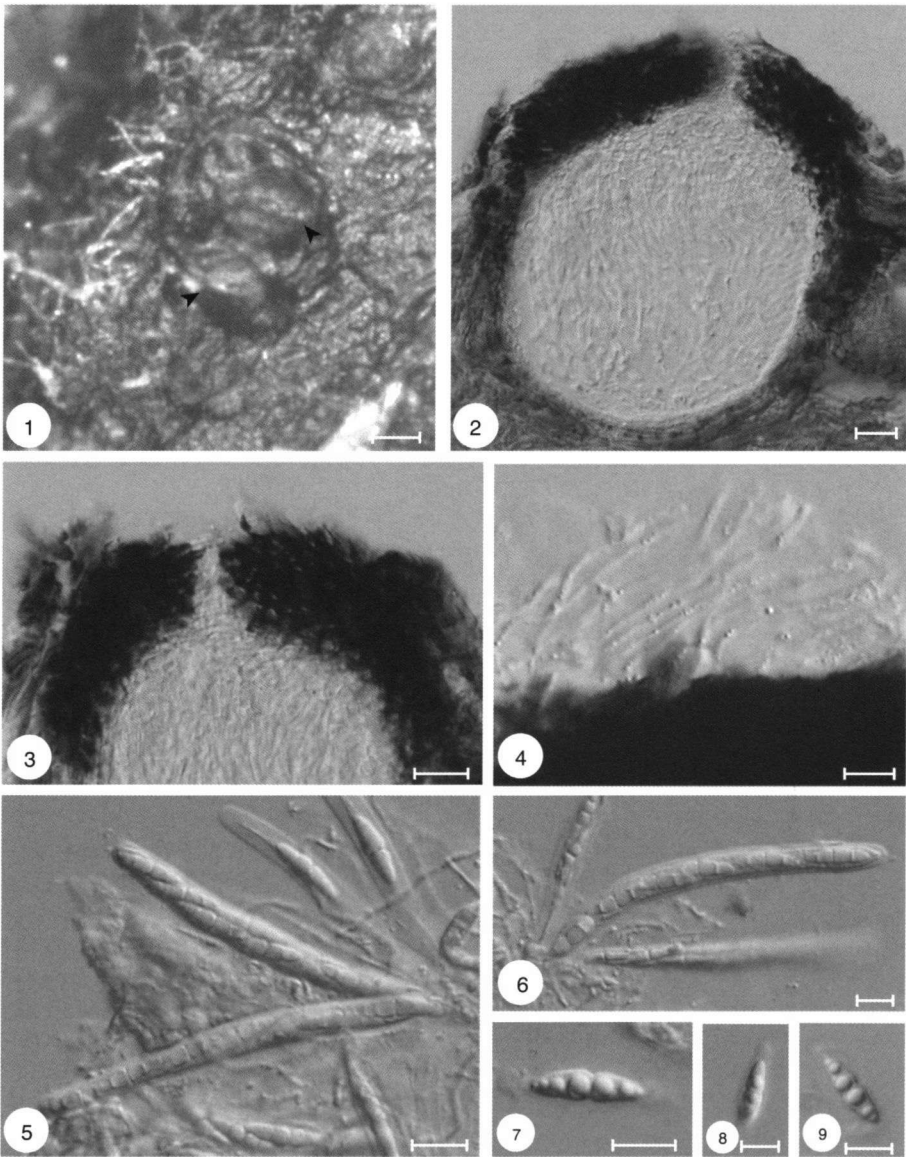
Known distribution — Hong Kong.

Other material examined. HONG KONG: New Territories, Pat Sin Leng, on decaying fruit of *Rhodomyrtus tomentosa* (Myrtaceae), 22.XII.2001, A.M.C. Tang, (HKU(M) 16731, living culture in HKUCC 9045).

DISCUSSION

The genus *Lophiotrema* has been treated as a synonym of *Lophiostoma* by several authors (Chesters & Bell, 1970; Hawksworth et al., 1983; Eriksson & Hawksworth, 1987). Holm & Holm (1988) separated *Lophiotrema* from *Lophiostoma* by the differences of peridium and ascospore morphology and five species were described. Barr (1992) accepted this classification, with three additional species. The new fungus found in the current survey shares characters which are typical of *Lophiotrema* species. *Lophiotrema psychotrii* is characterized by having typically small ascomata (85–140 μm), a peridium composed of *textura angularis*, up to 15 μm wide, cylindrical asci, and hyaline ascospores with a mucilaginous sheath. These characteristics differ from typical *Lophiostoma* species, where the ascomata are generally larger (200–700 μm), the peridium comprises several layers of parallel, long, prismatic cells, asci are mostly clavate and ascospores often have terminal appendages rather than a mucilaginous sheath (Holm & Holm, 1988; Liew et al., 2002; Hyde et al., 2002).

Presently, there are 8 species of *Lophiotrema* (Holm & Holm, 1988; Barr, 1992). Holm & Holm (1988) provided a key to five species, but two of these were not formally described (named only as *Lophiotrema* sp. 1 and 2). Therefore a key to the six named species is provided here. *Lophiotrema psychotrii* is similar to *L. alpinum* in spore morphology. However, the former differs in having smaller ascospores (14–17 \times 4–4.5 μm vs. (15–)18–20 \times 4–4.5 μm), asci (64–80 \times 6–7.5 μm vs. 80–100 \times 7–11 μm), and a different type of mucilaginous sheath (Barr, 1992). The sheath in *L. psychotrii* is narrow in the middle and drawn out to form pad-like appendages at both ends, while ascospores of *L. alpinum* are surrounded by a condensed sheath. *Lophiotrema neohysterioides* should also be compared with *L. psychotrii*; they have fusiform spores with a similar size range,



Figs. 1–9. 1. Ascomata of *Lophiotrema psychotrii* on host surface, with slit-like ostiole; 2. vertical section through ascoma; 3. vertical section through ostiole; 4. pseudoparaphyses; 5, 6. asci; 7–9. ascospores, surrounded by mucilaginous sheath, narrow in the middle and drawn out to form pad-like structures at both ends. Scale bars: 1 = 100 μm ; 2–9 = 10 μm .

but in the former ascospores are three-septate at maturity and each ascospore has two lipid guttules per cell. The mucilaginous sheath, if present, is narrow and condensed, and does not form pads as in *L. psychotrii* (Chesters & Bell, 1970; Barr, 1992).

Table 1. Synopsis of characters of *Lophiotrema* species

	<i>L. alpinum</i>	<i>L. boreale</i>	<i>L. neohysterioides</i>	<i>L. nucula</i>	<i>L. psychotrii</i>	<i>L. vagabundum</i>	<i>L. velatum</i>
Ascospores	500 μ m diam.	Not available	Not available	200–300 μ m diam.	85–140 μ m diam.	200–300 μ m diam.	200–300 μ m diam.
Asci	80–100 x 7–11 μ m	80–90 x 7–8 μ m	60–80 x 5–7 μ m	120–130 x 8–11 μ m	64–80 x 6–7.5 μ m	100–110 x 7–8 μ m	80–90 x 8–10 μ m
Ascospores	(15–)18–20 x 4–4.5 μ m	14–16 x 3 μ m	14–17 x 3–4 μ m	18–21(–24) x 5–6(–7) μ m	14–17 x 4–4.5 μ m	24–30 x 6–7 μ m	18–24 x 4–5 μ m
Shape	Fusiform	Oblong	Fusiform	Ellipsoid	Fusiform	Fusiform	Oblong
Guttules/ cell	2	0	0 or 2	2	2 or 3	3	2 or 3
Septation	1	1	3	1	1	1	1
Mucilaginous sheath	Narrow and condensed	Absent	Narrow and condensed or absent	Absent	Narrow in the middle and drawn out at both ends as pad-like appendages	Wide and distinct	Absent
Host	Conifer wood and cone scales	<i>Salix</i> wood	<i>Kalmia</i> , <i>Quercus</i> , <i>Hicoria</i> , <i>Abies</i> and <i>Rubus idaeus</i>	Frondose wood	Wild fruit	Herbaceous stems and <i>Rubus idaeus</i>	<i>Quercus</i> wood

