

Studies in Indian Phyllachoraceae X. *)

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This is the tenth contribution in the series of papers published from this Laboratory on Indian Phyllachoraceae and presents two more new species of *Phyllachora* collected at high altitudes (3000—4000 ft.)

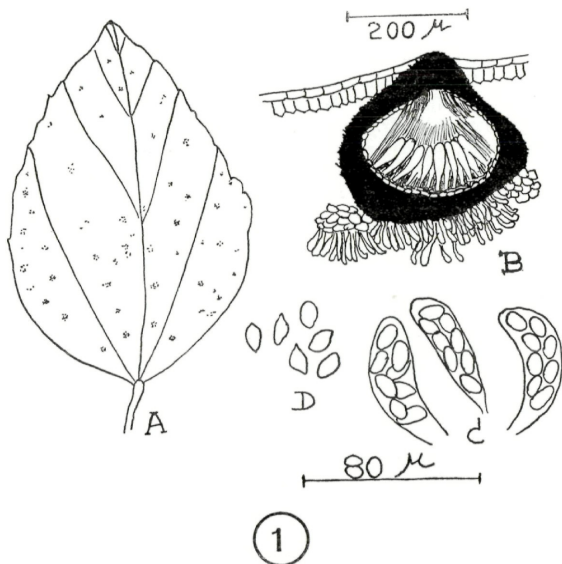


Fig. 1. *Phyllachora mallotica* Seshadri — A. Habit, B. Section through the infection spot, C. Asci, D. Ascospores.

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parasitizing the leaves of *Terminalia belerica* Roxb. and *Mallotus philippinensis*.

1. *Phyllachora mallotica* Seshadri sp. nov. (Fig. 1).

Maculae amphigenae; stromata epiphylla, unilocularia, pulvinata; perithecia singularia, late ovoidea superne in ostiolum crassiuscule papillatum contracta, $177.6-236.8 \times 208.2-266.4 \mu$; asci clavati, crassiuscule et breviter stipitati, tenuiter tunicati, 8-spori, $46.8-65.12 \times 18.31-20.35 \mu$; sporae distichae, interdum subirregulares, hyalinae, continuae, $10-17-14.24 \times 8.14 \mu$; paraphyses numerosae, tenuiter filiformes.

Infection spots amphigenous, aggregated to form necrotic spots. Stroma epiphyllous, uniloculate and cushion-like. Perithecia isolated, flask-shaped, ostiolate, innate, $177.6-236.8 \times 208.2-266.4 \mu$. Asci club-shaped, thin-walled, octosporous, apical apparatus lacking, in peripheral layers, $36.80-65.12 \times 18.31-20.35 \mu$. Paraphyses and periphyses numerous, slender, filiform and thin. Ascospores single celled, hyaline, ovoid and sometimes irregular in shape, biseriata, $10-17-14.24 \times 8.14 \mu$.

Causes tar-spots on the living leaves of *Mallotus philippinensis* collected by the writer at Coorg, Mysore State, India, on 7th May 1966. M. A. C. S. Herb. Acc. No. 444 (Type).

Ramakrishnan (1963) has reported *Phyllachora malloti* on an unidentified species of *Mallotus* from Bihar, India. The Coorg collection was tritically compared with the Bihar species with the following results.

Table

Comparison between the species of *Phyllachora* affecting host genus *Mallotus*

Species	Host	Perithecia	Asci	Ascospores
<i>P. malloti</i> Ramakrishnan, T. S.	<i>Mallotus</i> sp.	Amphigenous multiloculate	Cylindrical $100-125 \times$ $8-10 \mu$	Monostichus, oval to spindle shaped $9-12 \times 4.5-6 \mu$
<i>Phyllachora</i> species	<i>Mallotus</i> <i>philippinensis</i>	Epiphyllous, Uniloculate	Club-shaped $46.8-65.12 \mu$ $18.31-20.35 \mu$	Bistichus, ovoid to irregular $10.17-14.24 \times$ 8.14μ

The above table shows that the Coorg species is significantly distinct from *Phyllachora malloti* in respect of habit, nature of stroma, morphological characters as well as dimensions of asci besides having been collected on a hitherto unreported host.

2. *Phyllachora terminaliae* Seshadri & Patwardhan sp. nov. (Fig. 2).

Maculae epiphyllae, dispersae, zonula necrotica circumscriptae; stromata nigra, nitida, plurilocularia; perithecia depresso-globosa, interdum

plus minusve irregularia, erumpentia, ostiolata, $220.5-441 \times 294-382 \mu$; asci cylindranei, longiuscule stipitati, 8-sporei, tenuiter tunicati, $122.1-150.1 \times 18.31-20.35 \mu$; sporeae monostichae, ellipsoideae, hyalinae, continuae medio leniter contractae, $16.28 \times 8.14 \mu$; episporio crassiusculo praeditae; paraphyses numerosae, tenuiter filiformes.

Infection spots epiphyllous, scattered, with a necrotic area around the spot, stroma black, shining, raised, multiloculate (1 to 4). Perithecia

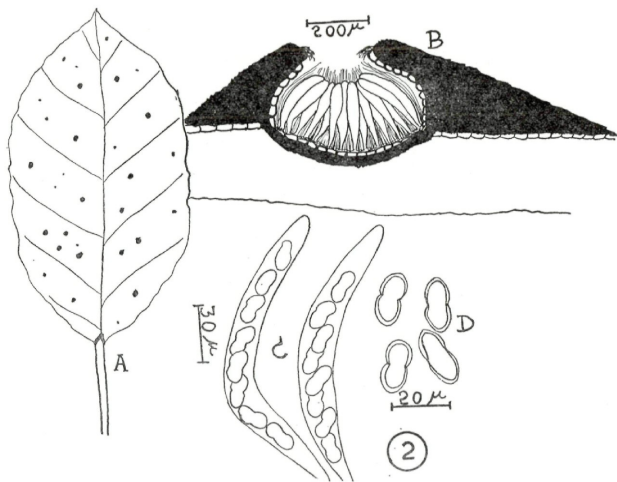


Fig. 2. *Phyllachora terminalia* Seshadri & Patwardhan — A. Habit, B. Section through the infection spot, C. Asci, D. Ascospores.

irregular, flask-shaped to bowl-shaped, erumpent, ostiolate, $220.5-441 \times 294-382.0 \mu$. Asci cylindrical with a long pedicel, eight-spored, thin-walled, apical apparatus lacking, $122.1-150.6 \times 18.31-20.35 \mu$. Paraphyses and periphyses numerous, thin, filiform and slender. Ascospores uniseriate, hyaline, 1-celled, thick-walled, dumb-bell shaped (with constrictions at the centre) $16.28 \times 8.14 \mu$.

Incites tar-spots on the living leaves of *Terminalia belerica* Roxb. collected by P. G. Patwardhan at Mahabaleshwar, Bombay — Maharashtra, India on 19th December 1965. M. A. C. S. Herb. Acc. No. 445 (Type).

This is the first report of a *Phyllachora* species on the host genus *Terminalia*. The spores are dumb-bell shaped with a constriction at the centre which is a rare character in this tropical genus.

Conidial Status

Besides the two species described above the author also collected *Phyllachora pongamiae* (B. et Br.) P. Henn. and *Phyllachora andropogonis* (Schw.) Karst & Harr. on living leaves of *Pongamia glabra* and *Cymbopogon flexuosus* respectively with close association in the same stroma of conidial fungi. Such associations have not been previously reported in the two species of *Phyllachora*.

Several conidial fungi such a species of *Hendersonia*, *Stagonospora* and *Hendersonula* have been reported to be in association with species of *Phyllachora*, by previous workers without definite proof of the nature of their relationship. Recently Parberry et. al. (1963) reported an undetermined pycnial fungus as the asexual stage of *Phyllachora quadrispora* Tehon.

The conidial fungi found in the stromatic locules of *Phyllachora pongamiae* and *Phyllachora andropogonis* were identified as species of *Hendersonia* and *Stagonospora* respectively. It would be interesting to note that these conidial fungi were exclusively confined to infection spots with a halo around them, and was entirely absent from spots which were not so surrounded and were made up of only the ascigerous stage indicating that these fungi may be in the nature of hyperparasites on the respective species of *Phyllachora* *).

The two type materials of the new species described have been deposited in Mycological Institute, Kew, England and in Herb. Orientalis, New Delhi, India besides M. A. C. S.

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Literature Cited

1. Ananthanarayanan, S. 1964. *Sydowia*, Ann. Mycol. Ser. II, XVII; 1. 6.
2. — 1964. *Mycopath. et. Mycol. Appl.* XXII; 1—14.
3. — 1964. *Ibid.* XXIII; 346—353.
4. Parberry, D. G. & R. F. N. Langdon. 1963. *Austr. Jour. Sci.* XXV, No. XI, 469.

*) Die in Gesellschaft von *Phyllachora*-Arten auftretenden *Stagonospora*- und *Hendersonia*-Nebenfruchtformen gehören sicher nicht in den Entwicklungskreis der betreffenden Phyllachoraceen. Es sind das die Konidienformen von Pleosporaceen, vor allem von *Leptosphaeria*-Arten, die gelegentlich im Phyllachora-Stroma parasitieren oder in der unmittelbaren Nähe derselben zur Entwicklung gelangen. Die Konidienformen der typischen *Phyllachora*-Arten sind Vertreter der Gattung *Linochora* v. H. — Cfr. dazu *Stagonospora phyllachorivora* Petr. in *Annal. Mycol.* XX. p. 303 (1922).

F. Petrak.

5. Ramakrishnan, T. S. 1953. Proc. Indian Acad. Sci. Sect. B, XXXVIII, 121.
6. Seshadri, V. S. 1964. Jour. Univ. Poona Sci. & Tech. No. XXVIII, 121—123.
7. — 1965. Sydowia, Ann. Mycol. Ser. II, XIX, 123—134.
8. — 1965. Mycopath. et Mycol. appl. (in Press).
9. — Tilak, S. T. 1958. Sydowia, Ann. Mycol. Ser. II, XII, 185—188.
10. — 1959. Ibid. XIII, 34—36.

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Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Sydowia](#)

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