Sydowia, Annales Mycologici Ser. II.
Vol. 38: 263–266 (1985)
Verlag Ferdinand Berger & Söhne Gesellschaft m.b.H., 3580 Horn, Austria

A New Species of *Phyllachora* – Forming Concentric Bands on Living Leaves – "Sapi Garda"

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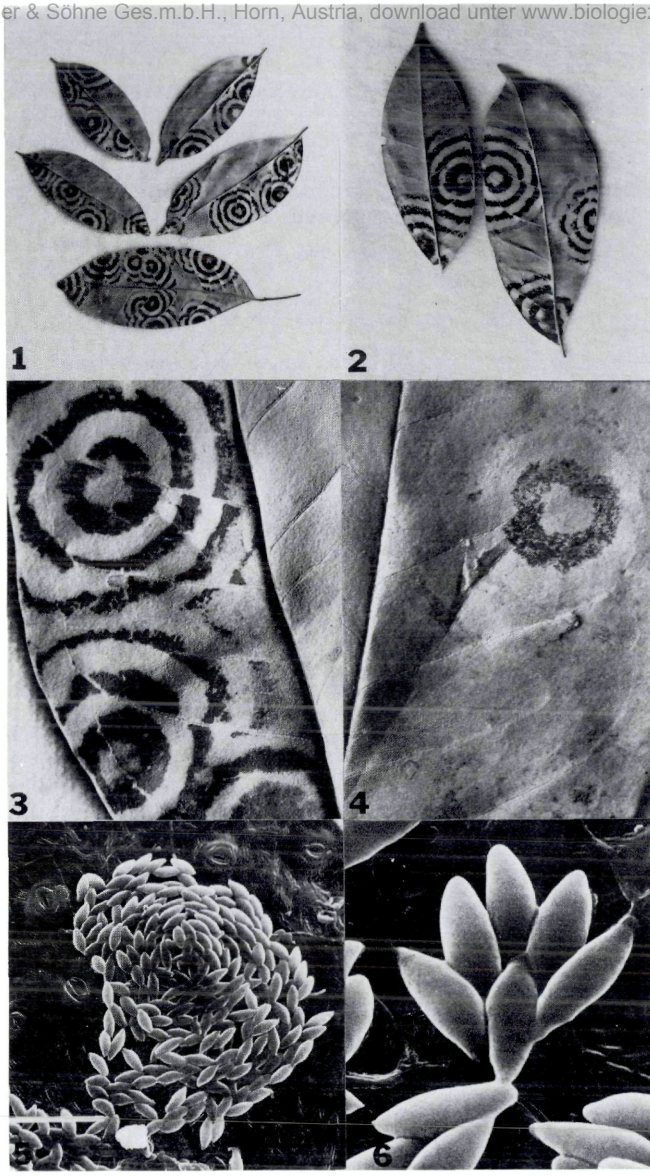
In September 1984, a peculiar fungus on leaves was sent to me from Panama by Greg de NEVERS. This fungus forms regularly-spaced concentric bands on the living leaves of a tree belonging to the genus *Simaba* AUBL. (Simaroubaceae). Mr. de NEVERS is working among the Kuna Indians in San Blas, Panama, who call the tree or its leaves with this distinctive fungus "sapi garda" or "painted leaves". It is highly prized as a medicine which is supposed to augment intelligence (CHAPIN, 1983). This fungus represents a new species in the genus *Phyllachora* NITSCHKE EX FUCKEL and it is described below.

Phyllachora concentrica ROSSMAN, spec. nov. – Figs. 1–9.

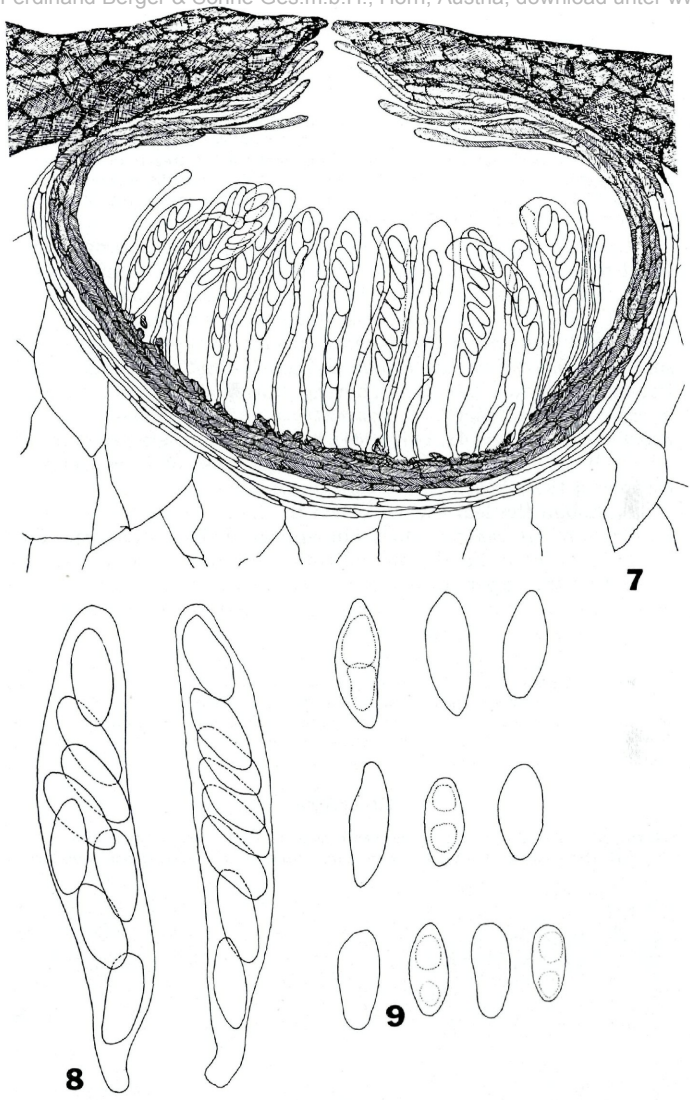
Inter omnes generis *Phyllachorae* species hucusque descriptas his notis praestans: coloniae e clypeis numerosis in annulos concentricos 2 mm latos et inter se 4–5 mm semotos dispositis constantes. Holotypus BPI, de NEVERS 4247.

Colonies hypogenous, subepidermal, composed of numerous, confluent clypei forming concentric bands evenly spaced 4–5 mm apart, bands 2 mm wide. – Clypei black, 15 µm thick at margins, becoming 35–45 µm thick above ascocarps, cell structure of clypeus not discernible, ascocarps evenly distributed beneath clypeus, visible as small raised areas, often with discharged ascospores extruding from ostiole. – Stroma not developed. – Ascocarps globose to subglobose, 160–200 µm tall × 190–265 µm wide, each with an apical ostiole lined with periphyses, immersed in mesophyll. – Ascocarp wall brown, fleshy, 15–25 µm wide, forming two regions: inner region 8–10 µm thick, brown, of elongated, thin-walled cells 4.5–6 µm long × 1.5–2 µm wide; outer region 8–15 µm wide, hyaline, of elongated, thin-walled cells 4.5–6 µm long × 1.5–2 µm wide.

Paraphyses cylindrical, straight, septate, occasionally branched at base, 2–3 µm wide, originating from sides and base of ascocarp. – Asci unitunicate, cylindric to obclavate, 60–77 × 14–15 µm, eight-spored, arising from sides and base of ascocarp, walls slightly thickened when young. – Ascospores



Figures 1–6. *Phyllachora concentrica:* 1. Living leaves of *Simaba* cfr. *quianensis* with concentric bands, ¼×. – 1. As for fig. 1, ½×. – 3. Concentric bands, 2×. – 4. Upper surface of living leaves, pale bands indicating presence of *P. concentrica* on lower surface, 2×. – 5. Ascospores, 400×. – 6. Ascospores. 2000×.



Figures 7–9. *Phyllachora concentrica:* 7 Ascocarp within living leaf, 400×. – 8. Asci, 1300×. – 9. Ascospores, 1300×.

ellipsoid with rounded ends, 15–18 × 6–7 µm, hyaline, one-celled, smooth, irregularly biseriate in the asci.

Material examined. – PANAMA: Comarca de San Blas, El Llano-Carti Rd., 19.1 km from Interamerican Hwy, 9'19" N, 78'56" W, elev. 350 m, on living leaves of *Simaba* cfr. *quianensis* AUBL. (Simaroubaceae), a tree 15 m tall, coll. de NEVERS 4247, 9 Nov 1984 (BPI, HOLOTYPE). – 23 km from Interamerican Hwy, 9'19" N, 78'55" W, elev. 350 m, on living leaves of tree as above, coll. de NEVERS, PARATYPE 3722, 13 Aug. 1984 (BPI PEREZ & VESPUSIO).

Clypeus morphology in species of *Phyllachora* ranges from small to large, circular to linear spots covering one to many ascocarps. The peculiar bands of *P. concentrica* are formed from the partial confluence of numerous clypei and are unlike the spots produced by any other *Phyllachora* species. Two other *Phyllachora* species are known on this host genus namely *Phyllachora simabicola* PETRAK (Sydowia 1: 296. 1947), having solitary clypei and ascospores in the same size range as *P. concentrica,* and *P. simaba-cedronis* P. HENNINGS (Hedwigia 43: 147. 1904), having stellate-effused or multilobed clypei and ascospores smaller than those of *P. concentrica.* Neither of these species form concentric bands on their host.

Although the leaf area between the bands is slightly necrotic, *Phyllachora concentrica* does not appear to be pathogenic. Pale brown concentric bands, an indication of the fungus below, are present on the upper surface of the leaf. No spermatial or anamorphic state was found on the specimens. Attempts to culture the fungus were unsuccessful.

I am gratefully indebeted to G. DE NEVERS for sending this interesting fungus and for his persistence in locating R. FOSTER to identify the host. W. THOMAS confirmed and refined this determination. Both R. FOSTER and W. THOMAS are gratefully acknowledged. In addition, the willing assistance of the following people is deeply appreciated: J. PLASKOWITZ provided the photographic work, M. GREENLEAF drafted the line drawings, and R. BARNEBY composed the Latin description.

References

CHAPIN, N. (1983). Curing among the San Blas Kuna of Panama. – Univ. Arizona, Ph. D. Dissertation, University Microfilms International, Ann Arbor, Michigan.