

## ***Coleophoma gevuinae* comb. nov., a foliar pathogen on *Gevuina avellana* (Proteaceae)**

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*Gloeosporium gevuinae* Speg., the causal agent of a leaf lesion in living *Gevuina avellana* was studied and is transferred to *Coleophoma* Höhn. The species is characterized by its broad ellipsoidal conidia and host.

Keywords: Patagonia, Coelomycetes

*Gevuina avellana* Molina is the southernmost species in the Macadamieae tribe of the Proteaceae and is native to southern Chile and Argentina from around 35° S to 44° S. This tree is a striking evergreen ornamental and the source of prized wood and edible nuts (Hoffmann, 1995; Rodríguez & al., 1983).

As with other members of Proteaceae in South America, foliar pathogens are still poorly known for *Gevuina* (Bianchinotti & al., 2002). In 2002, disease symptoms were observed on foliage of *G. avellana*. The associated fungus was identified as *Gloeosporium gevuinae* Speg. After re-examination of type material, we determined that it is more properly assigned to *Coleophoma* Höhn. It differs from the known species of *Coleophoma* and we therefore propose a new combination and provide a full description and illustrations.

### **Material and methods**

Free-hand, thin sections of conidiomata were observed microscopically in either 3% KOH or water mounting media. At least 30 measurements of each character were made of material mounted in water.

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## Results

***Coleophoma gevuinae*** (Speg.) Bianchin. & Rajchenb., **comb. nov.** – Figs. 1–2.

Basionym: *Gloeosporium guevinae* Speg. sp. nov. (as “n.f.”). Rev. Chil. Hist. Nat. 27: 59. 1924.

Leaf lesions brown, circular to irregular, sometimes confluent, centre light brown surrounded by a tan zone, a black line and an elevated lighter margin, occurring on all areas of the leaf, 0.1–1.2 cm diam.

Foliicolous, mainly epiphyllous. Mycelium immersed, pale brown. Conidiomata simple, pycnidial, subcuticular, scattered, black, round from above, conical in vertical section, unilocular, up to 250 µm diam. Upper walls poorly developed, composed of one layer of thick-walled, black cells. Lateral and basal walls well-developed, of *textura epidermoidea* in superficial view, *textura angularis* in section, composed of cuboid to irregular pale grey to black cells, relatively thin-walled, in 2–3 layers, 10–15 µm wide. Paraphyses hyaline, non septate, cylindrical, sometimes lateral, developing from the base of the conidiogenous cells, 30–50 × 2–5 µm, frequently collapsing at maturity. Conidiophores absent. Conidiogenous cells discrete, determinate, phialidic, hyaline, with thin and smooth walls, doliiform to cylindrical, 5–10 × 2–8 µm. Conidia holoblastic, hyaline, aseptate, ellipsoidal to obovoidal with rounded apex, guttulate, wall thin and smooth, 17–23 × 4.5–6 (–8) µm.

Host plant. – *Gevuina avellana* Molina.

Known distribution. – Argentina, Chile.

Type. – Chile: Corral, 'sobre hojas vivas viejas de *Gevuina avellana*', Feb. 1910, Hauman (LPS 12198, holotype of *Gloeosporium guevinae*).

Other specimens examined. – Argentina, Chubut, Lago Puelo, track from hanging bridge to national park, in mixed forests of *Nothofagus dombeyi*, *Austrocedrus chilensis*, *Gevuina avellana* and *Lomatia hirsuta*, on living leaves of *G. avellana*, leg. M. Rajchenberg 12104, 12105 and 12106, 6 May 2002 (BBB 178, 179 and 180).

## Discussion

Species of *Coleophoma* are foliicolous coelomycetes. More than 20 species have been described, mainly based on host (Nag Raj, 1978; Sutton, 1980). After examination of many collections from diverse hosts, Sutton (1980) concluded that there are only a few plurivorous species and he provided a key based on size and morphology of conidia.

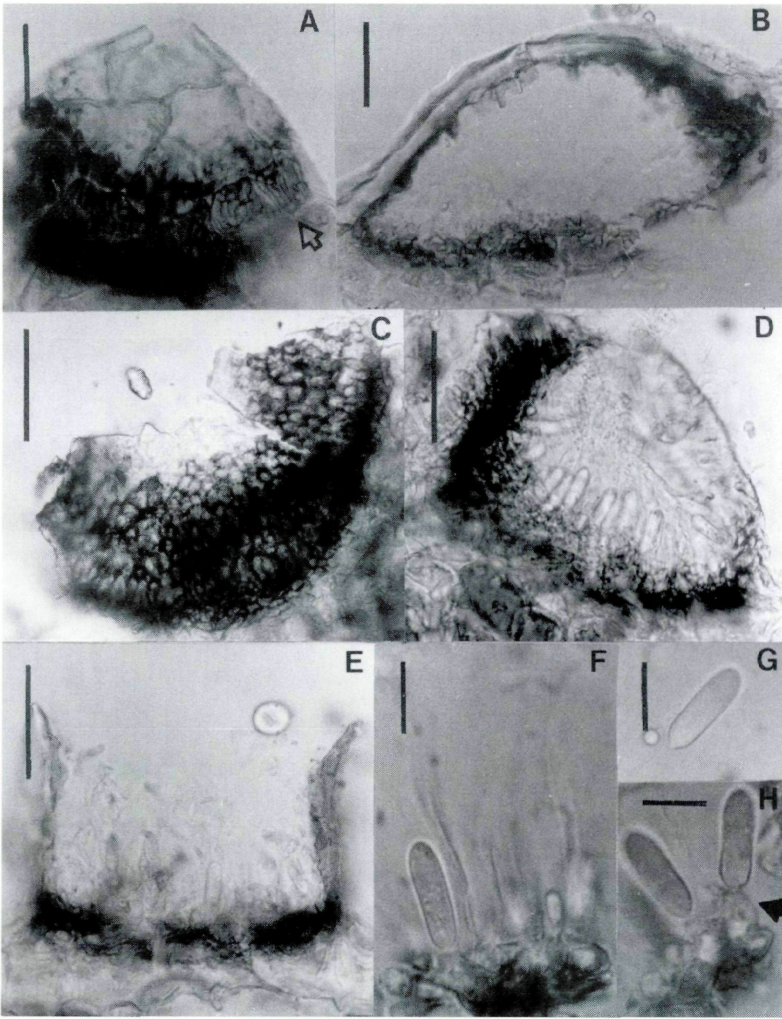


Fig. 1. *Coleophoma gevuinae* (as *Gloesporium gevuinae* LPS 12198). – A. Superficial view of a conidioma showing *textura epidermoidea* (arrow). – B. Vertical median section of a conidioma. *Coleophoma gevuinae* (BBB 178). – C–D. Superficial view of conidioma. – E. Vertical median section of a mature conidioma. – F. Conidiogenous cells, paraphyses and developing conidia. – G. Mature conidium. – H. Detail of phialidic conidiogenous cells (arrow). Bars: A–B: 25  $\mu$ m. C–D: 50  $\mu$ m. E–H: 10  $\mu$ m.

*Coleophoma gevuinae* clearly differs from all other accepted species by its ellipsoidal conidia which are 4.5–6 (–8)  $\mu$ m wide. Most species in the genus have conidia less than 3  $\mu$ m wide, with the exception of *C. fusiformis* W. Wu, B. Sutton & Gange (Wu & al., 1996)

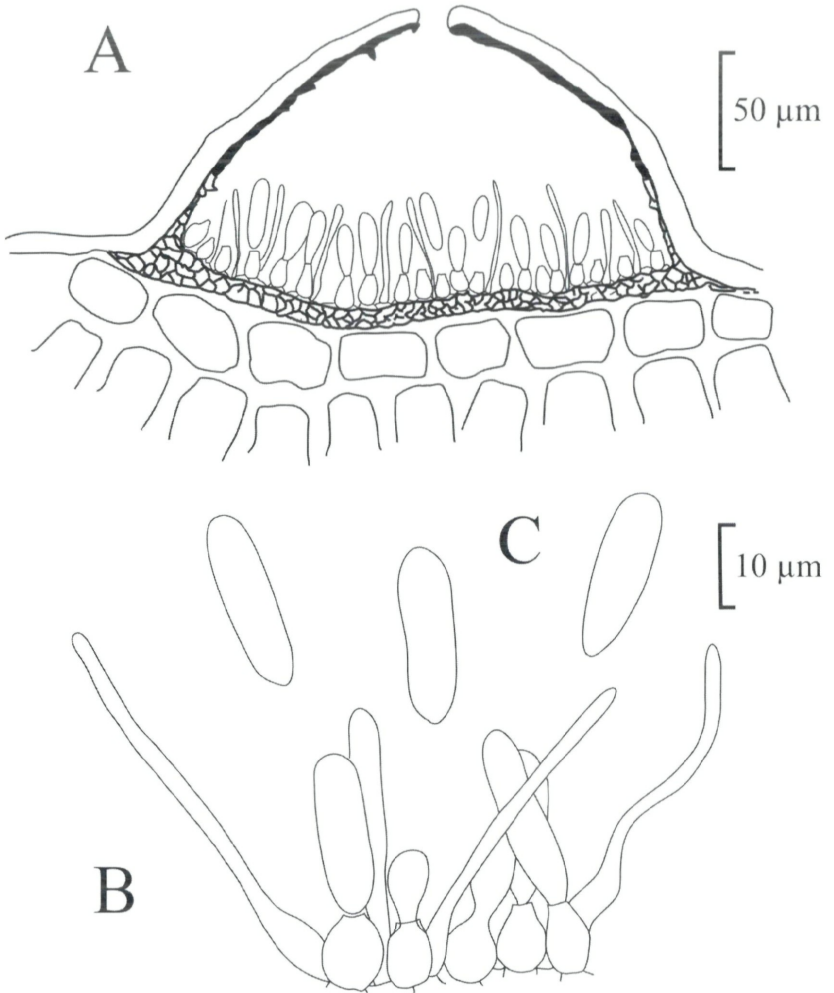


Fig. 2. *Coleophoma gevuinae* (BBB 178). – A. Vertical section of a conidioma. – B. Developing conidia, paraphyses and conidiogenous cells. – C. Mature conidia.

and *C. oleae* (DC. ex Mont.) Petr. & Syd. (Petrak & Sydow, 1926). *Coleophoma fusiformis* is parasitic on *Rhododendrum ponticum* L. and has fusiform, 4–4.5 μm wide, conidia that taper towards both ends (Wu & al., 1996). *Coleophoma oleae* is a saprobe described from leaves of *Olea europea* L., has larger conidiomata (up to 300 μm diam.) than *C. gevuinae* and cylindrical conidia that are 3–4.5 μm wide (Petrak & Sydow, 1926).

The species name has been corrected as 'gevuinae', not 'guevinae', which is an orthographic error (Art. 60.12 ICBN).

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