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Microthyriales of Tierra del Fuego I: The Genus *Parasterinella* SPEGAZZINI

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Abstract. – The genus *Parasterinella* SPEGAZZINI is a good genus, situated in the fam. Asterinaceae, with two species: *Parasterinella drymidis* (LÉV.) SPEG. p. part. and *P. compacta* (LÉV.) SPEG. p. part. as type species.

Introduction

Parasterinella drymidis (LÉV.) SPEG., collected by C. SPEGAZZINI in Southern Argentina (Tierra del Fuego) and Chile, occurs on leaves of *Drymis winteri* and is a species difficult to delimitate within the Microthyriales. Five specimens were found in the SPEGAZZINI Herbarium (LPS) from various localities.

These collections, although assigned to only one species, have not the same characteristics. This problem was studied with more detail and also LÉVEILLÉ's material from the Herbarium in Paris was examined. In 1845 this author described two new species on *Drymis*, assigned to different genera: *Asterina compacta* and *Lembosia drymidis*. Later, WINTER (1887) examined the material originally studied by LÉVEILLÉ and showed that the specimens of *Asterina compacta* were immature (without asci, probably collected before completion of their development). WINTER concluded that *Asterina compacta* and *Lembosia drymidis* must be synonyms.

During his travels in Southern Argentina and Chile SPEGAZZINI made several collections of this fungus on *Drymis* considering them to belong to the same species as suggested by WINTER.

We conclude that there are two distinct species of the same genus occurring on the same host, and the two fungi must belong to *Parasterinella* SPEG. None of them are similar to species of the genera *Lembosia* or *Asterinella* as these have superficial mycelia bearing lateral hyphopodia. The three genera, however, are correctly belonging to the fam. *Asterinaceae* (Microthyriales).

Taxonomy

Parasterinella SPEG. (1924)
Bol. Acad. Cienc. Córdoba 27: 382

Superficial mycelium dark-brown, without hyphopodia. – Internal mycelium abundant, especially in the epidermic cells, usually between the cells,

sometimes intracellular, producing hyperplasia of the parenchymatic cells. – Ascoma shield-shaped, more or less circular with a central pore at first, opening by an irregular line at maturity, at this moment apothecioid and of discoid, triangular or oblong appearance, in dense groups that look like circular spots. – Ascoma wall dark-brown to blackish, cells thick-walled ("textura prismatica"), without subiculum. – Asci bitunicate, globose-obclavate, parallel in the hymenium. – Pseudoparaphyses very abundant, hyaline, pluriseptate. – Ascospores hyaline at first, becoming fuligineous, bicellular.

Type species: *Asterina compacta* LÉV.

1. *Parasterinella compacta* (LÉV.) SPEG. p. part. – Pl. 1, 1–4
Bol. Acad. Cien. Córdoba. 27: 382 (1924)

Bas.: *Asterina compacta* LÉVEILLÉ, Ann. Sci. Nat., Bot. Ser. 3, 3: 58 (1845).
Syn.: *Seynesia drymidis* SPEG., Fungi Chilensis. Rev. Fac. Agronomía 6: 108 (1910)

Superficial mycelium dark-brown, branched, pluriseptate, without hyphopodia. – Internal mycelium abundant, especially between the epidermic cells, that may be completely destroyed. – Ascoma forming orbicular spots on the surface of the leaves, 3–5 mm diam., distinctly cushion-shaped, black, margin thick, opening by an irregular line at maturity, leaving the asci outside, 200–300 × 80–150 µm; ascoma wall formed by thick-walled, dark brown cells ("textura prismatica"). – Asci bitunicate, obovoid, thick-walled, short-stalked, 8-spored, 28–38 × 15–20 µm. – Pseudoparaphyses abundant, hyaline, pluriseptate. – Ascospores elliptic, bicellular, constricted at the single median septum, hyaline at first becoming fuligineous, 15–18 × 7–8 µm.

Lectotype: ARGENTINA: Tierra del Fuego, Staten Island, 1923, leg. SPEGAZZINI, on leaves of *Drymis winteri*, LPS 1512.

Note: The spots that bear the pseudothecia appear raised on the surface because the internal mycelium produces an outgrowth of the leaf. Besides, the cells of the spot are more pigmentated and look reddish-brown on the dead leaves; for this reason, mycologists sometimes have thought that it could be a subiculum.

Studied material: ARGENTINA: Tierra del Fuego, Orange Bay, August 1883, leg. HARIOT, P.C. – Tierra del Fuego, Staten Island, 1923, leg. SPEGAZZINI, LPS 1512. – CHILE: Valdivia, I-1909, leg. SPEGAZZINI, on leaves of *Drymis winteri*, LPS 1514.

2. *Parasterinella drymidis* (LÉV.) SPEG. p. part. (1921) – Pl. 1, 5; 2, 1–6
Bol. Acad. Cien. Córdoba. 25: 92

Bas.: *Lembosia drymidis* LÉVEILLÉ, Ann. Sci. Nat., Bot. Ser. 3, 3: 58 (1945)
Syn.: *Asterinella drymidis* (LÉV.) SPEG., Bol. Acad. Cienc. Córdoba 25: 92 (1921)
Seynesia australis (SPEG.) SPEG., Bol. Acad. Cienc. Córdoba 11: 239 (1887)

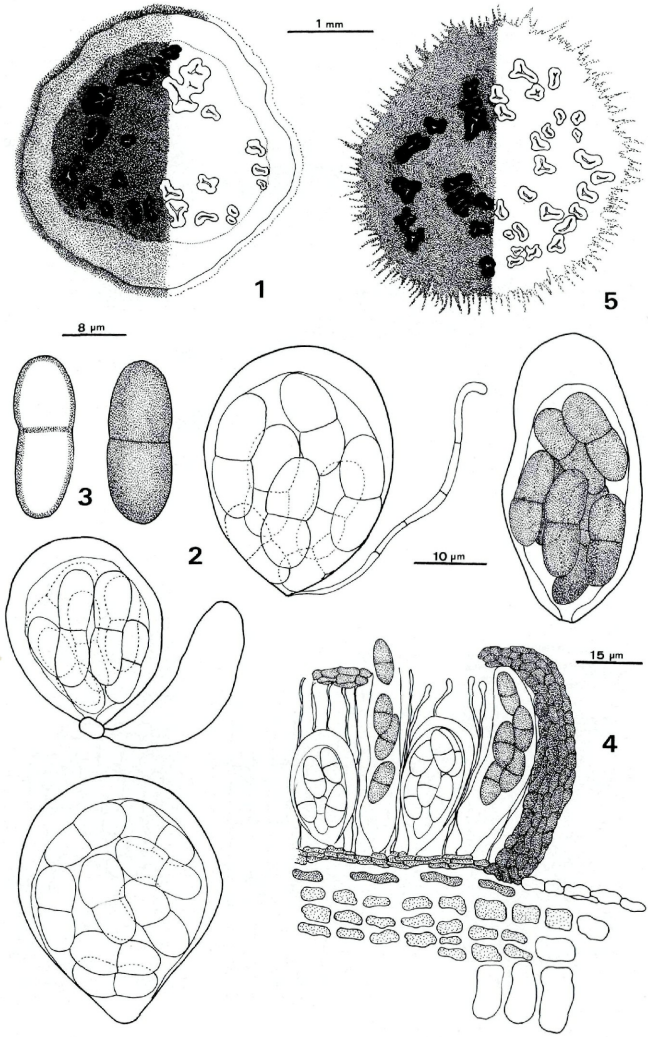

Plate 1: *Parasterinella compacta:* 1. Detail of the spot on the leaf surface. – 2. Asci. – 3. Ascospores. – 4. Detail of a mature ascoma. – *Parasterinella drymidis:* 5. Detail of the spot on the leaf surface.

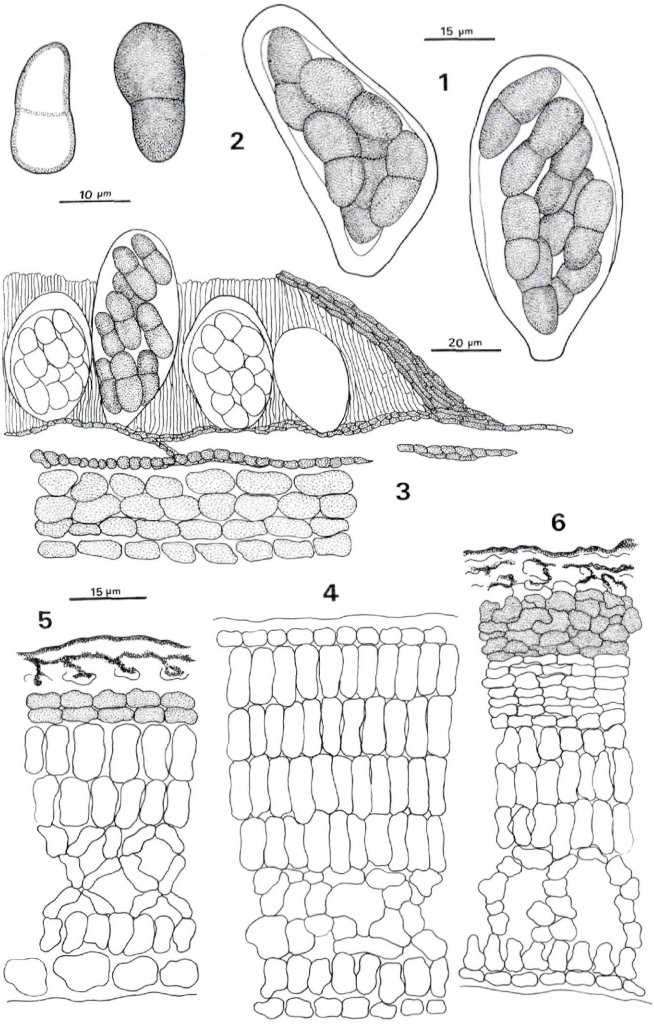

Plate 2: *Parasterinella drymidis:* 1. Asci. – 2. Ascospores. – 3. Detail of a cross section of a mature ascoma. – *Drymis winteri:* 4. Cross section of a leaf. – 5. Cross section of a leaf with *P. drymidis*. – 6. Cross section of a leaf with *P. compacta*.

Superficial mycelium very abundant, dark brown, without hyphopodia. – Internal mycelium abundant, especially between the epidermic cells. – Ascoma thyriothecioid at the beginning, opening by an irregular line at maturity, leaving the hymenium outside and becoming apothecioid, circular-trigonal, 150–200 µm, forming orbicular spots on the surface of the leaves, 2–4 mm diameter, sometimes confluent, with diffuse margin, surrounded by superficial, radiating, brown hyphae; ascoma wall formed by thick-walled cells, dark brown ("textura prismatica"). – Asci bitunicate, obovoid, thick-walled, short-stalked, 8-spored, 25–30 × 67–75 µm. – Pseudoparaphyses abundant, hyaline, pluriseptate. – Ascospores elliptical, round apex, constricted at the single median septum, hyaline at first, becoming fuligineous, 22–26 × 10–11 µm.

Lectotype: CHILE: Los Perales, 1919, leg. SPEGAZZINI, on leaves of *Drymis winteri*, LPS 1399.

Note: The spots that bear the pseudothecia appear flat, with diffuse margin and very abundant superficial mycelium. The internal mycelium does not produce an outgrowth on the leaf and remains flat.

Studied material: *Lembosia drymidis* LÉV., PC. – CHILE: Los Perales, 1918, leg. SPEGAZZINI, LPS 1398. – Los Perales, 1919, leg. SPEGAZZINI, on leaves of *Drymis winteri*, LPS 1399.

Conclusions

Parasterinella compacta causes obvious stimulation of the growth in the parenchymatic cells; for this reason the spots are raised on the surface and are very conspicuous. On the other hand, *Parasterinella drymidis* produces only one or two divisions in the parenchymatic cells and thus the spot is flat with diffuse margin. Based upon these characters the two taxa can be readily distinguished. Besides, the asci and the ascospores of *P. drymidis* are larger than those of *P. compacta*. To my opinion both species can be perfectly delimitated even though they grow on the same host; *P. compacta* can not be the immature *P. drymidis* as WINTER suggested.

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Bibliography

LÉVEILLÉ, D. H. (1945). Champignons exotiques. – Ann. Scien. Nat. Bot. Ser. 3, 3: 38–71.

SPEGAZZINI, C. (1887). Fungi Fuegiani. – Bol. Acad. Cien. Córdoba XI: 135–308.

— (1910). Fungi Chilenses. – Rev. Fac. Agronomía 6: 108–109.

— (1921). Mycetes Chilenses. – Bol. Acad. Cien. Córdoba XXV: 1–124.

— (1924). Relación de un paseo hasta el cabo de Hoorn. – Bol. Acad. Cien. Córdoba, XXVII: 321–404.

WINTER, G. (1887). Exotische Pilze. IV. A. Pilze von Chile. – Hedwigia 26: 6–18.