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Parasitic and Symbiotic Fungi on Marine Algae

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Abstract

The following new parasitic Ascomycetes on macroalgae are described: *Haloguignardia cystoseirae* Kohlm. et Demoulin sp. nov. (on *Cystoseira balearica* Sauvageau from Corsica), *Mycosphaerella apophlaeae* Kohlm. sp. nov. (on *Apophlaea lyallii* Hook. f. et Harv., New Zealand), *Polystigma apophlaeae* Kohlm. sp. nov. (same host and distribution as the foregoing). *Pontogeneia erikae* Kohlm. sp. nov. lives in association with *Ectocarpus* (?) sp. on the surface of *Egregia menziesii* (Tum.) Aresch. in California. *Sargassum undulatum* J. Ag. is a new host record for *Haloguignardia tumefaciens* (Cribb et Herbert) Cribb et Cribb in New Zealand, and *Sphaceloma cecidii* Kohlm. a hyperparasite on galls caused by *Haloguignardia* spp., is recorded for the first time from the Mediterranean.

Introduction

Knowledge on algalic higher marine fungi is scarce because most research in marine mycology has been conducted on species from other substrates, in particular from wood. Among 32 parasitic higher fungi known to occur on algae there are 31 Ascomycetes and one Deuteromycete, and 9 other Ascomycetes live in symbiotic associations with marine algae (Kohlmeyer and Kohlmeyer 1979). In the following, four new algalic Ascomycetes are described and new records of two other species are listed. Only five algae-inhabiting species of higher fungi were recorded from the Mediterranean thus far [*Chadefaudia corallinarum* (Crouan et Crouan) Müller et von Arx, *C. gymnogongri* (J. Feldmann) Kohlm., *Lulworthia kniepii* Kohlm., *Pharcidia balani* (Winter) Bauch, *Thalassoascus tregubovii* Ollivier]. One new Ascomycete, *Haloguignardia cystoseirae*, and the Deuteromycete, *Sphaceloma cecidii*, are added to this list.

Ascomycetes

Haloguignardia cystoseirae Kohlm. et Demoulin sp. nov.

Gallis, 3–7 mm diam., uviformibus, processibus brevibus, 1.2–1.5 mm longis, 0.8–1.1 mm diam., e centro radiantibus, ascocarpiis vel spermogoniis includentibus, ad basem hospitis; ascocarpiis 320–500 µm altis,

350–600 µm diam., subglobosis vel ellipsoideis, in processibus gallarum apicaliter immersis, ostiolatis, papillatis, coriaceis, hyalinis ad dilute brunneis; peridiis 20–30 µm crassis, e 5–8 stratis cellularum applanatarum, leptodermatarum, brunnearum compositis, in cellulis hyalinis, pseudoparenchymaticis centri transientibus; papillis 150–180 µm altis, 150–180 µm diam., cylindricis; canale ostioli 50–110 µm diam., periphysate, tubulo pseudoparenchymatico, persistente, in cavitate ascocarpii prominente; periphysibus, 2–4 µm diam.; paraphysibus absentibus; centra ascocarporum immaturorum cellulis pseudoparenchymaticis, hyalinis, leptodermis, deliquescentibus; ascis octosporis, primo clavatis, deinde ventricosis, unitunicatis, leptodermis, mox deliquescentibus, sine apparatus apicalibus, in strato ascogeno in pariete interno ascocarpii undique insertis; ascosporis 70–80 (–90) × 13–16 (–19) µm (appendicibus includentibus), elongate ellipsoideis ad fusiformibus, ad apices angustatis, unicellularibus, hyalinis, appendiculatis; appendiculis non-decibus, calyptriformibus, loculatis; loculo apicale poro pertuso; spermogoniis 250–800 µm altis, 340–350 µm diam., subglobosis ad ellipsoideis, in processibus gallarum immersis, ostiolatis, papillatis, coriaceis, hyalinis ad dilute brunneis; papillis circa 160 µm altis, 150 µm diam., breve cylindricis, periphysatis; canale ostioli circa 100 µm diam.; spermatiophoris 20–35 × 2–3 µm, simplicibus, filiformibus, similis