

CANARIOMYCES NOTABILIS, A PECULIAR ASCOMYCETE FROM
THE CANARY ISLANDS

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The Canary Islands are famous not only for the climate, but also for the flora. Many endemic plants are found, mainly succulents or woody shrubs belonging to the Euphorbiaceae, Fabaceae, Crassulaceae, Boraginaceae and Asteraceae. Monocotyledons are inconspicuous, except for *Phoenix canariensis* and the famous *Dracaena draco*.

Over the last few years I collected on Gran Canaria parasitic and saprophytic fungi on plants and plant debris. These included Ascomycetes belonging to genera such as *Chaetomium*, *Chaetomidium*, *Achaetomium*, *Emericella*, *Ceratocystis* and *Thielavia*. A peculiar ascomycete, found on litter of *Phoenix canariensis* could not be identified. It was isolated by using viable ascospores and the following description is based on agar cultures.

Canariomyces notabilis v. Arx, gen. & spec. nov. — Fig. 1

Ascomata superficialia, sphaerica, glabra, non ostiolata, nigrescentia, 120–180 μm ; pariete e cellulis angularibus applanatis, fuscotunicatis composito; asci numerosi, sphaerici, 8-spori, tenui-tunicati, evanescentes, 20–26 μm ; ascosporae ellipsoideae vel late fusiformes, primum hyalinae et dextrinoidae, maturitate brunneae, striatae, 11–14 \times 7–8.5 μm , poro germinationis apicali vel subapicali praeditae; conidia breviter cylindracea vel ellipsoidea, hyalina, singulares vel catenata, successione basipetali fragmentatione formata, 10–16 \times 5–7 μm .

Typus vivus et exsiccatus: CBS 548.83, isolatus e radicibus *Phoenix canariensis*, Gran Canaria, Maspalomas, 1982.

Colonies on corn meal agar at 28°C with a daily growth rate of 2.5–3.5 mm, with a floccose or fasciculate, grey aerial mycelium and with an orange or ochraceous exudate; hyphae at first hyaline, partly becoming brown especially in advancing regions, often closely septate, 2–5 μm broad; ascomata maturing within 20 days, superficial, formed from coils of aerial hyphae, spherical, non ostiolate, smooth, with some rhizoidal hyphae at base, dark brown or black, 120–180 μm ; ascomatal wall thin, dark brown, composed of angular or irregular, flattened, 4–8 μm wide cells; asci irregularly arranged, formed on branched ascogenous hyphae, botryose, occasionally catenate, sessile, spherical or broadly obovate, thin-walled, 8-spored, evanescent, 20–26 μm ; ascospores ellipsoidal or broadly fusiform, with attenuated ends, hyaline and dextrinoid when young, containing numerous droplets, brown and often with 2 or 3 darker, longitudinal striae (bands) when mature, 11–14 \times 7–8.5 μm , with an apical or subapical, not protuberant, 1 μm wide germ pore; conidia formed from erect, hyaline conidiogenous hyphae, often in basipetal chains, occasionally solitary, cylindrical, ellipsoidal or clavate, at base or at both ends truncate, hyaline, 1-celled or 1-septate, 9–16 \times 5–7 μm (form genus *Chrysonilia*); hyphae often with lateral, spherical, clavate or lobate, hyaline or pale brown, 3–5 μm long, appressorium-like cells (form genus *Trichosporiella*).

Some characters of *C. notabilis* indicate a relationship with the Sordariaceae or Chaetomiaceae, others agree with those of the Microascaceae. Mature ascospores are similar

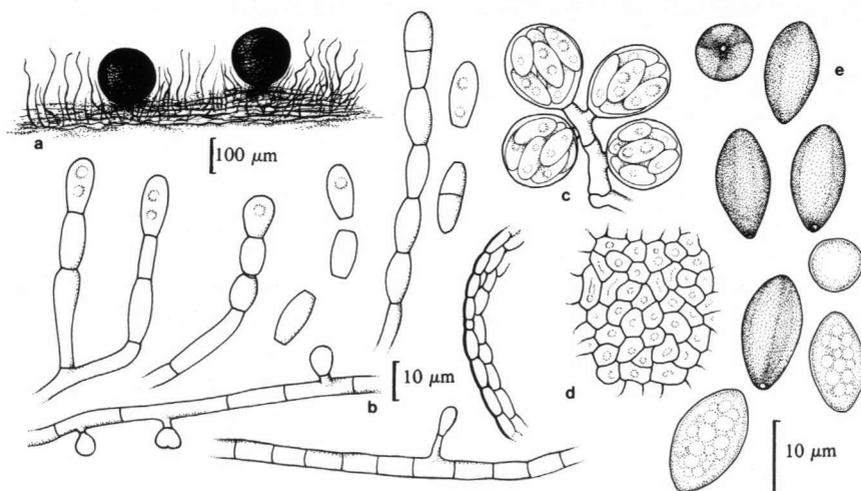


Fig. 1. *Canariomyces notabilis*. — a. Ascomata and aerial mycelium. — b. Conidiogenous hyphae and conidia. — c. Asci. — d. Ascumatal wall. — e. Ascospores.

to those of *Chaetomium murorum* or of some *Chaetomidium* species in size, shape, symmetry, structure and pigmentation. However, they differ in that they are dextrinoid when young and formed in sessile, spherical asci. The asci of *Chaetomium murorum* are clavate or obovate, stalked and often fasciculate. The structure of the ascumatal wall of *C. notabilis* is similar to that of some Microascaceae, classified in *Microascus* and *Kernia*. *Kernia macrospora* Locquin-Linard (1977) also has ascospores with the same size and shape as *C. notabilis*, but they are pale and biporate and no anamorph is present. The anamorph of *C. notabilis* and the orange exudate are reminiscent of the *Chrysonilia* anamorph of *Neurospora sitophila* and other of *Neurospora* species (von Arx, 1981). It also shows similarities with the form genera *Arthrographis* Cochet ex Sigler & Carmichael and *Mauginiella* Cavara (Sigler & Carmichael, 1976).

The anamorph of *Petriellidium desertorum* v. Arx & Moustafa (= *Pseudallescheria desertorum* (v. Arx & Moustafa) McGinnis & al.) depicted by Locquin-Linard (1977) is also rather similar. In this species the catenate, apparently basipetal conidia are smaller ($4-8 \times 3-4 \mu\text{m}$), the ascumata have a wall of hyphal cells (textura intricata), the asci are broadly clavate or obovate and the ascospores are copper-coloured and biporate at maturity.

Anamorphs, similar to that of *Canariomyces notabilis* are also known in *Pithoascus langeronii* v. Arx (1978) and *Faurelina indica* v. Arx & al. (1981). In the latter species the catenate conidia are often 2-celled and measure $15-30 \times 4-6 \mu\text{m}$. The ascumata are cleistothecial and the asci catenate. The ascospores are furrowed and striate and have no visible germ pore. The genera *Pithoascus* and *Faurelina* have been classified by Benny & Kimbrough (1980) in a new family Pithoascaceae, which was distinguished from the

Microascaceae only by the absence of germ pores in the ascospores. The anamorph of *Pithoascus langeronii* is known as *Arthrographis langeronii* Cochet (nom. inval.) = *Arthrographis kalrai* (Tewari & Mc Phearson) Sigler & Carmichael = *Arthrographis sulphurea* (Grev.) Stalpers & van Oorschot.

Canariomyces notabilis may represent an ancestral fungus from which at least some Sordariaceae (Neurosporaceae), Chaetomiaceae, Microascaceae and Pithoascaceae may be derived. Its classification in a known family of the Sphaeriales is not possible.

REFERENCES

- ARX, J. A. VON (1978). Notes on Microascaceae with the description of two new species. In *Per-soonia* 10: 23–31.
- (1981). On *Monilia sitophila* and some families of the Ascomycetes. In *Sydowia* 34: 13–29 (publ. 1982).
- ARX, J. A. VON, MUKERJI, K. G. & SING, N. (1981). *Faurelina indica* spec. nov. In *Sydowia* 34: 39–41 (publ. 1982).
- BENNY, G. L. & KIMBROUGH, J. W. (1980). A synopsis of the orders and families of the Plectomycetes with keys to genera. In *Mycotaxon* 12: 1–91.
- SIGLER, L. & CARMICHAEL, J. W. (1976). Taxonomy of *Malbranchea* and some other Hyphomycetes with arthroconidia. In *Mycotaxon* 4: 349–488.