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TWO UNDESCRIBED FUNGI ON ORCHIDS

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DURING a study of fungal diseases of ornamental plants, an unusual leaf spot disease was noted on two beautiful orchids, *Cymbidium* sp. and *Dendrobium* sp., incited by two coelomycetous fungi, species of *Haplosporella* Speg. and *Phomopsis* Sacc. A detailed study revealed that these two fungi are undescribed from the above two hosts or others in the family Orchidaceae so far[1–4]. Hence, these are being described here as new taxa on the basis of comparative morphology and host relationship[5].

Haplosporella cymbidii sp. nov. (figure 1)

Area necroticae irregulares, in strias longus depositae, laevis margo, hypophyllae, bulbalinus in medio et marginibus, stromurimus, coalitus. Pycnidia dispersis, punctiformae, fuscabrunnoea vel nigris, sub-erumpentia, 191–245.5 μm diam., paraphysoides inter-mixtus; pycnidiosporae brunneae, incrassatus, elliptica vel obovata, laevia, magnit 18–23 × 10–13 μm.

Pycnidia scattered, hypophyllous, punctiform, dark brown to black, sub-erumpent, wall composed of few layers, inner wall lined with narrow elongated sterile threads, measure 191–245.5 μm; pycnidiospores pale brown, thick-walled, oval to obovate with truncate base, measure 18–23 × 10–13 μm.

On living leaves of *Cymbidium* sp. Leg. B.R.D.Y., June 1977, at Pune, AMH-4135 (holotype).

Phomopsis dendrobii sp. nov. (figure 2)

Area necroticae, sub-circulares vel angulosae, dispersae, in centro expallescentes, 2–3 perfolium,

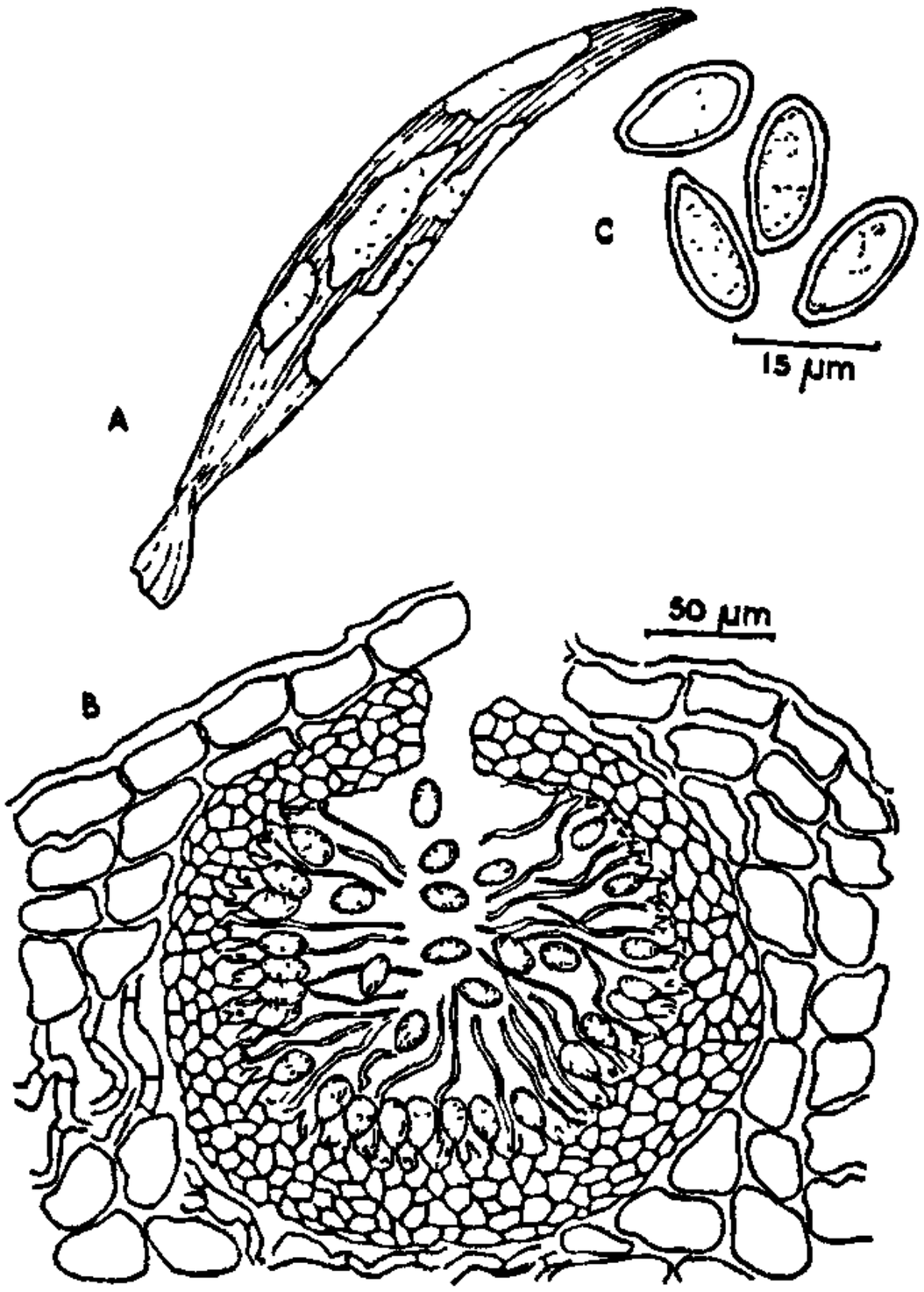

Figure 1. *Haplosporella cymbidii.* **A**, Habit; **B**, VS of pycnidium; **C**, pycnidiospores.

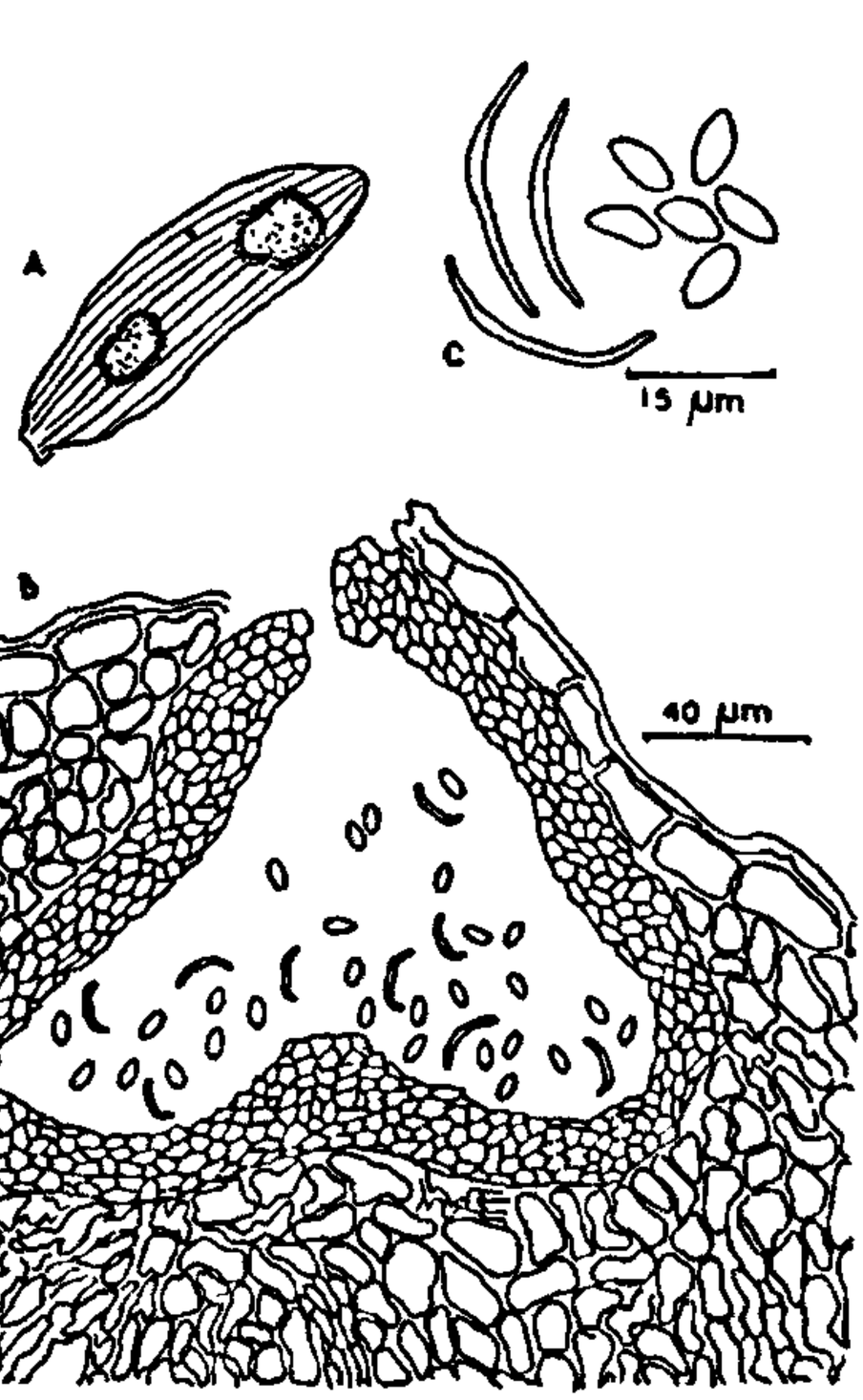

Figure 2. *Phomopsis dendrobii.* **A**, Habit; **B**, VS of pycnidium; **C**, the two types of pycnidiospores.

laevis margo, non-coalitus, salmoneus in medio et castaneus ad marginem fusco-brunnea. Pycnidia punctiformae, sub-globosa vel ampuliformae et irregularlis, immersa, ostiolata, magnit 130–290 μm diam; pycnidiosporae, bi-typus: (a) sporae simplicia, hyalina unicellularia, laevia, elliptica, 6.7–9.5 × 4 μm; (b) sporae hyalina, unicellularia, laevia, fulcata vel allantoidea, apicibus, subulate, 26.5–39.5 × 3.3 μm.

Pycnidia subglobose to irregular, ampulliform, immersed, later becoming erumpent; ostiole opening widely measure 130–290 μm diam., pycnidiospores two types: (a) spores simple, one-celled, hyaline, smooth, elliptical 6.7–9.5 × 4 μm; (b) spores hyaline, one-celled, falcate to allantoid with subulate ends, measure 26.5–39.5 × 3.3 μm.

On living leaves of *Dendrobium* sp. Leg. B.R.D.Y., July 1978, at Pune, AMH 4136 (holotype).

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CULTIVATION TRIALS OF *PLEUROTUS OPUNTIAE* (DUR. AND LEV.) SACC.

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SPECIES of *Pleurotus* are well-known edible mushrooms in different parts of the world. Unlike *Agaricus bisporus*, which is generally used fresh or canned, *Pleurotus* can be dried and stored for long periods without deterioration in culinary properties. In European countries and Japan *Pleurotus ostreatus* (Jacq. ex. Fr.) Kummer[1] and in Taiwan *P. cystidiosus* Miller[2] have been cultivated for a long time. Cultivation of various other species has also been reported in the literature[3–6]. The present paper reports cultivation of a wild species which was found growing on dead, decaying stumps of *Opuntia* sp. during the rainy season in 1984 in forests of Garhwal (Himalayas). This mushroom was obtained in pure culture by transferring tissue from the pileus on to yeastal PDA slants. The mycelium grew well between 25 and 28°C. Growth of the colony was fast and vigorous, and aerial growth of hyphae was also seen. The spawn was made by the usual method on wheat grains. The cultivation was carried out on rice straw substrate in polybags of size 75 × 45 cm holding 4 kg wetted straw (one kg dry). One hundred grams of grain spawn was mixed with the substrate prior to filling in the bags, which were perforated all over for ventilation. The mouths of the prepared bags were tied and the bags were placed on a shelf in a mushroom house maintained at 25–28°C. The substrate was completely colonized by the mycelium in 10–12 days. At this stage the polythene was torn off and removed completely, leaving a compact mass of mycelium-covered straw. Watering was done twice a day by gentle spray. Humidity of the growing room was kept at 80–90% and temperature at 20–25°C.

After 15–20 days of spawning fruit bodies started to appear and matured in another 2–3 days. Mushrooms continuously appeared at intervals; total yield after the cropping period of 25–30 days was 750 g net (in 1 kg dry rice straw). These mushrooms were graded as fair to good in culinary properties by qualified persons. Compared to *P. sajor-caju*, these mushrooms are more fleshy and tasty. Their snow white colour is an added advantage as this increases commercial acceptability. The description of the mushroom is given below.

Basidiocarp pleurotoid, imbricate, single or in clusters (figure 1). Pileus fleshy, 6–12 cm in diameter, depressed at the point of attachment to the stalk, colour white, paler towards margin, surface tomentose or glabrous, margin irregular, lobed and upcurved at maturity. Stipe eccentric, rarely central, 3–5.3 cm long and 4–9 mm across, cylindric, white, tomentose. Gills decurrent, white to cream-coloured, crowded, 2 mm broad, partial veil absent,