DESCRIPTIONS OF NEW AUSTRALIAN FUNGI.

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No. I.

(Communicated by J. H. Maiden, F.L.S.)

Meliola funerea, n.sp.

(Plate x., figs. 1-6.)

Amphigenous, but most developed on upper surface of leaf. Spots velvety, funereal black, with hair-like pile, orbicular or irregular, usually confluent, $\frac{1}{8}$-$1\frac{3}{6}$ inch or in a continuous mass $\frac{1}{2}$ inch or more, and very conspicuous.

Mycelium of dark brown, thick-walled, septate, branched interwoven threads, about $8\frac{1}{2}$ μ dia., springing from deeper-seated, delicate, colourless hyphae, about 2 μ dia. Bristles on surface looking like masses of black hairs, rigid, sooty-brown, septate, curved, tapering to a point, generally about 11 μ broad.

Perithecia globose, apparently black but with a distinct purple tint, slightly warted, 310-350 μ diameter.

Asci generally 4-spored, ovate to fusoid, up to 90 × 45 μ. Sporidia brown or yellowish, sausage-shaped or elliptic, 3-septate, constricted, 54-62 × 18-20 μ.

On leaves of *Grevillea robusta*, Cunn., in March. Lismore, N.S.W. (Maiden).

The spots and patches are very conspicuous, often almost covering the pinnæ of the fern-like leaf, as well as the leaf-stalk. The sporidia are seen in the same perithecium at different stages of development, varying in colour from hyaline to grey, then yellowish, and finally brown.

Cyathus plumbagineus, n.sp.

(Plate x., figs. 7-12.)

Peridium cartilaginous, campanulate, narrowing towards base, externally colour of substratum of dried cow-dung, rough,

internally steel-gray, smooth, up to 9 mm. high, and 8 mm. across mouth, rigid when dry, flexible when moist; margin slightly revolute at maturity.

Peridiola or sporangia black-lead-like, discoid, irregularly oval in shape, surface slightly wrinkled, with distinct umbilicus, about 2 mm. dia., with white elastic cord stretching to 7 mm., and attaching it to inner wall of peridium. Sometimes the sporangia are attached to outside wall of peridium.

Spores colourless, globose or sub-globose, 24 μ dia., or 24-27 × 21-24 μ, wall sometimes 3 μ broad.

Gregarious, in clusters on cow-dung in March. Near Mercey-road, Homebush, Sydney, N.S.W. (Maiden).

The generic nature of this fungus is seen in the three-layered peridium shown in fig. 2, and in the sporangia being umbilicate in the centre of one side. The wall of the peridium is composed of three layers as seen in microscopic section, an outer dark brown layer about 56 μ thick, an inner paler brown layer about 34 μ thick, and a central layer comparatively transparent and loose in texture like a central medulla or pith about 112 μ thick The average thickness of the entire wall is about 200 μ.

Several species of this genus have been found on dung in Australia, but differ from this one in various respects.

C. baileyi, Mass., is externally tomentose and cinnamon colour, and the spores are only 18-20 × 15-16 μ.

C. fimicola, Berk., is minutely velvety and umber-coloured, and sporangia are of the same colour, while *C. fimetarius*, DC., is tawny-rufous and externally velvety.

The specific name is given from the appearance of the sporangia

Phoma stenospora, n.sp.

(Plate xi., figs. 13-15.)

Spots small to largish, roughly oval, grey, with distinct reddish-brown margin.

Perithecia on upper surface, minute, black, punctiform, semi-immersed, globular to oval, opening by pore, 112-280 μ diameter.

Sporules hyaline, cylindrical, rounded at both ends, on short straight hyaline stalk, with 3 guttules, one at each end and another central or eccentric, 4 × 1 μ.

On living leaves of *Notelæa longifolia*, Vent., in October. New South Wales (J. H. Maiden).

Before the sporules are expelled a yellow plug of matter is extruded, and then the sporules imbedded in a glairy substance.

EXPLANATION OF PLATES.

Plate x.

Meliola funerea, n.sp.

Fig. 1.—Portion of upper and under surface of leaf, showing spots and blotches (nat. size).

Fig. 2.—*a*, bristle (× 115); *b*, portion of bristle showing septum (× 600).

Fig. 3.—Perithecium split and unsplit (352 μ and 310 μ in diameter), with stiff pointed bristles (× 65).

Fig. 4.—Asci with sporidia (× 600). The sporidia were still pale in colour, and comparatively thin-walled.

Fig. 5.—Asci with sporidia (× 265). *a*, four sporidia dark brown in colour; *b*, pale yellow; *c*, greyish; *d*, *e*, hyaline.

Fig. 6.—Two groups of four fully developed sporidia (× 265).

Cyathus plumbagineus, n.sp.

Fig. 7.—Peridium (nat. size).

Fig. 8.—Section of wall of peridium (× 65).

Fig. 9.—Portion of middle layer of wall (× 600).

Fig. 10.—Sporangia (enlarged).

Fig. 11.—Section of sporangium (enlarged).

Fig. 12.—Spores (× 600).

Plate xi.

Phoma stenospora, n.sp.

Fig. 13.—Upper surface of leaf with perithecia (nat. size).

Fig. 14.—Perithecium with projecting yellow matter (× 115).

Fig. 15.—Sporules (× 1000).