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V. On a new species of *Melanospora* from Otago, New Zealand

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thrown up on the beach, are frequently found coated with various zoophytes analogous to our *Flustreæ* and *Sertulariæ*.

The genus *Hormosira* was formerly well designated by its name *Moniliiformia*. Its species have a rosary-like character, the stem and branches consisting of a series of blackish, sub-spherical or oblong balls or vesicles, which separate from each other like beads, when the plant decays on the shore.

The species of *Cystophora* are among the commonest algæ of the Otago east coast. Their globular air-vesicles, which are about the size of a boy's marble, become detached in the course of the decay of the plant when cast ashore. When dry they are hard externally, and being very light, they run freely before the wind on the sands and sand-dunes.

At the Industrial Exhibition in Dunedin during November 1862, what is reported to have been "Carrageen" or "Irish moss" was shown from the coast near the mouth of the Tokomairiro; and in the New Zealand Exhibition of 1865,* also at Dunedin, a specimen labelled "*Chondrus crispus*, or Edible Sea-weed," from the island of Waiheke, Auckland, was also displayed. There is at present, however, no proper proof that the true "carrageen," or, indeed, any true species of *Chondrus*, occurs in New Zealand; and it is probable, until the contrary is established, that the Otago and Auckland "carrageen" is some species of *Gigartina* or *Gymnogongrus*, especially the former. Our British *Gigartina mammillosa* (J. Ag.), grows on our own shores, along with *Chondrus crispus*, and is collected and used for the same purposes, being frequently, indeed, preferred to the latter from its asserted superior gelatinosity.

V. *On a new species of Melanospora from Otago, New Zealand.* By W. LAUDER LINDSAY, M.D., F.R.S.E., &c.
(Plate V. figs. 7-12.)

Fam. XYLOGRAPHIDEI, *Nyl.*

Gen. *Melanospora*, *Mudd.*

Sp. *Otagensis*, *new sp.* (Plate V.)

The *thallus* (fig. 7) is sub-determinate, tartareous, thick (a), of cretaceous texture, and chalk-white colour; sub-

* Catalogue, p. 11.

farinose or sub-pulverulent; smoothish, but sub-rimose or sub-areolate. It resembles in thickness, colour, and texture the thallus of a sterile condition of *Pertusaria velata* (Turn.), with which it is associated in the only specimen which occurs in my herbarium; but it is much smoother, more continuous, less rimose; and free of the verrucosities which characterise the thallus of the *Pertusaria*.

The *apothecia* (fig. 7) to the naked eye are minute, black, and punctiform, studding the white thallus, on which they are somewhat prominent from the contrast of colour. Under the lens (fig. 8) they are found to vary in form from lirelloid (*bc*) to angulose or difform-lecidine (*a*); though, for the most part, they are short, sub-oblong, broadish, pseudo-lirellæ (*b*), generally straight, sometimes slightly wavy; pitch-black—disk and margin or exciple alike (figs. 10, 11); solitary or scattered, never confluent; simple; sub-sessile or adnate, scarcely immersed (by the base only, fig. 11, *c*). In the mature or old state, the disk (figs. 9, 10, 11) is flat or concave (fig. 11, *a*), with a distinct prominent margin (*b*), which varies in thickness; is generally entire, though sometimes slightly wavy or sinuous; and is usually more or less involute (fig. 9, *adb*) on the disk. In the young state, and in the lirelloid condition, the apothecia are marked by a central longitudinal chink, which is the line of opening up of the margins from the disk in process of maturation (fig. 8, *c*; 9, *a b*). In general external characters these apothecia have considerable resemblance to those of *Opegrapha cerebrina* (DC.), *O. tessellata* (DC.), and *O. varia* (Pers.), as figured in the English Botany, plates 2632 and 1890.

The *spores* (fig. 12) are abundant and distinct, brown, 1-septate, about '0006" long and '0003" broad, oval-oblong, constricted or not, opposite or at the septum (*ab*), sometimes figure-8 shaped (*a*), or solæform (upper half broader and shorter than the lower).

The elements constituting the *hymenium* are, however, indistinct; no thecæ or paraphyses are visible, and the reaction with iodine is sometimes pale blue, sometimes none. The apothecia, indeed, in my solitary small specimen do not appear to be normally or fully developed; my specimen cannot be regarded as a typical or satisfactory one, and it remains, therefore, for the local botanist to determine the

characters of the thecæ and paraphyses, and how far my foregoing description applies to more normal or typical conditions of the plant.

Habitat.—On columnar basalt; Greenisland Bluff, near Dunedin, in the province of Otago, New Zealand, October 1861; associated with sterile conditions of *Pertusaria velata* (Turn.)

Family, genus, and species are alike new to the New Zealand flora.

The spores of *M. Otagensis* bear considerable resemblance to some forms or conditions of those of *Opegrapha subeffigurans* (Nyl. *Lich. N.Z.*, 258);* but the latter is a corticolous species, the thallus is obsolete, and the apothecia are compound and stellate-*Arthonioid*.

In regard to its apothecia, *M. Otagensis* resembles some forms of *Opegrapha spodopolia* (Nyl. *L. N.Z.*, 257),† which is a saxicolous species; but the apothecia of the latter are generally distinctly *Opegraphoid*, and frequently elongated and sinuous. The spores, moreover, at once distinguish the two plants, being in the *Opegrapha* colourless, fusiform, and polyseptate.‡

M. Otagensis appears to be closely allied to the British *M. cerebrina* (DC., Mudd, *Manual*, 226; *E. Bot.*, pl. 2632, fig. 1). It is distinguished, however, by its solitary, scattered apothecia; their more generally lirellæform character; the more frequently solæform aspect of the spores, which differ also in size, and which never exhibit the bluish or blackish colour described by Leighton.§

I have here adopted Mudd's genus *Melanospora* provisionally, for reasons of convenience, and because his classification and nomenclature are, for the present at least, those which are most familiar to British lichenologists. I do not, however, profess to agree with him in considering such a genus necessary or well established.||

* "Lichenes Novæ Zelandiæ quos ibi legit anno 1861 Dr Lauder Lindsay."—"Journal of Linnean Society," *Botany*, vol. ix. p. 244. Lindsay, "Observations on new Lichens and Fungi from Otago, New Zealand."—*Trans. Royal Society of Edinburgh*, vol. xxiv. p. 415, plate xxix. fig. 18.

† Lindsay, "Obs. New Zeal. Lich. and Fungi," p. 416.

‡ Ibid. p. 416, plate xxix. fig. 20.

§ Monograph of British Graphidæ, 1854, p. 8.

|| It must be borne in mind, that Corda had previously given the same