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1875
V. 14

XIII. Enumeration of the Lichens collected by H. N. MOSELEY, M.A., Naturalist to H.M.S. 'Challenger,' in the Islands of the Atlantic Ocean. By Dr. J. STIRTON.

[Read June 4, 1874.]

Cape Verde.

GONIONEMA VELUTINUM (Nyl.).

Ad saxa, Bird Island.

ENDOCARPISCUM ATERRIMUM, sp. nov.

Thallus ater, e squamis crassiusculis segregatis vel fere conjunctis compositus; apothecia endocarpea albida; thecæ fusiformes myriosporæ, sporæ ellipsoideæ, incolores, circa $\cdot 0035 \times \cdot 002$ millim.; paraphyses graciles et sat confertæ; gelatina hymenialis iodo cærulescens dein vinose rubescens; pars media thecarum flavens, apicibus persistenter cærulescentibus.

Ad saxa.

The thallus is composed of gelatinous globules containing several cærulescent gonimia.

PYRENOPSIS PELIA, sp. nov.

Thallus nigricans, tenuis, granuloso-furfuraceus, crustam formans furfuraceam; apothecia concoloria lecanorina, minuta, concava, margine thallino prominulo cincta, intus purpurascens præsertim hypothecium; sporæ 8næ, incolores, ellipsoideæ, 1-septatæ vel spurie 1-septatæ, $\cdot 0085 - \cdot 009 \times \cdot 005 - \cdot 006$ millim.; paraphyses parvæ graciles. Gelatina hymenialis iodo flavescens, ea intra thecas, sporas et gonimia vinose rubens.

Ad saxa, supra thallum *Lecanoræ pyraccæ* (Ach.).

ROCCELLA TINCTORIA, DC.

When the epidermic layer of the cortex is complete, the reaction is K—C—; but when this is removed, K gives a yellow, and C an evanescent red, also C (soredia) red evanescent.

ROCCELLA PATELLATA, sp. nov.

Thallus (K—C—) teres (latit. circa 1 millim.) rigidus parce ramosus, pollicaris (raro ultra), pallidus vel frequentius glauco-fuscescens sorediosa; apothecia nigra lecideina, sessilia, terminalia vel subterminalia, albu-pruinosa, plana, majuscula (latit. usque interdum 3 millim.), margine acuto undulato cincta; sporæ 8næ, incolores, fusiformes 3-7-septatæ, $\cdot 022 - \cdot 032 \times \cdot 004$ millim. Gelatina hymenialis iodo vinose rubens.

Ad saxa. Bird Island.

I cannot without further evidence identify this with *R. intricata* (Mont.) or *R. Gayana* (Mont.).

Although there is no visible reaction with either K or C on the external amorphous layer of the cortex, when this is removed K gives a yellow reaction and C an evanescent red. C applied to the soredia gives the same reaction.

ALECTORIA SULCATA (Lév.), thallo omnino sulcato-fisso.

Supra terram.

K imparts a yellow colour to the thallus as well as medulla, merging at times into a ferruginous red.

ALECTORIA EPICHRYSA, sp. nov.

Thallus (K purpurascens) sulphureo-virens vel aurantiacus, gracilis erectus, alt. 3- vel 4-pollicaris, divaricato-ramosus, ramulis apicalibus brevibus deflexis, sorediis minutis albidis inspersus et pulvere ochraceo crebre suffusus sed non sulcato-fissus; apothecia et spermogonia ignota.

Supra terram.

Forte forma *A. virentis* (Tayl.).

The cortical layer is thin; the medullary white, and composed of branching fibres .004 millim. in diameter, pretty closely arranged, but still free, not agglutinated.

RAMALINA SCOPULORUM, var. *TENUIOR* (Strtn.).

Thallus (K flavens dein rufo-ferrugineus) teres, fere filiformis, intricato cæspitosus et divaricato-ramosus, alt. vix pollicaris.

Supra terram.

RAMALINA POLYMORPHA (Ach.).

Supra saxa maritima.

Various forms, as var. *ligulata* and other intermediate varieties.

RAMALINA FARINACEA (Fr.).

Supra terram.

PARMELIA TILIACEA, var. *SCORTEA* (Ach.).

Ad saxa.

PARMELIA LÆVIGATA (Ach.).

Ad saxa.

PARMELIA CONSPERSA (Ach.).

Ad saxa.

PLACODIUM ELEGANS (Link).

Ad saxa.

PLACODIUM FLAVO-RUBENS (*Nyl.*).

Ad saxa.

LECANORA PYRACEA (*Ach.*).

Ad saxa.

LECANORA SUBFUSCA, var. **ATRYNEA** (*Ach.*).

Ad saxa.

PERTUSARIA LEIOPLACA (*Ach.*).

Ad saxa.

LECIDEA THYRSODES, sp. nov.

Thallus (K - C -) cinereus vel cinereo-fuscescens rugulosus rimuloso-areolatus, sat tenuis; apothecia nigra mediocria, sessilia vel elevato-sessilia, primum coarctata, demum plana obtuse marginata, intus pallida; sporæ 8næ incolores, 6-8- pluriseptatæ fere cylindraceæ, $0.07-0.09 \times 0.0035-0.004$ millim.; paraphyses satis confertæ, graciles, filiformes, apicibus ramosis et articulatis leviter fuscescentibus; hypothecium incolor. Gelatina hymenialis iodo non tincta, sed hypothecium violacee tinctum.

Ad saxa. Bird Island.

LECIDEA TEICHIODES, sp. nov.

Thallus murinus vel fusco-cinerascens, crassus (1.5 millim.), tessellato-areolatus (quaque areola spermogonia multa innata depressa foveate); apothecia parva, innata, plana vel nonnihil concava, fusca, albido-pruinosa, leviter marginata, intus cinerascens; sporæ 8næ, elongato-ellipsoideæ, incolores, 3?-septatæ, interdum curvulæ, $0.024-0.03 \times 0.003-0.0045$ millim.; paraphyses crassæ (circa 0.002 millim.), graciles, irregulares, interdum ramosæ et articulatæ; hypothecium fusco-nigrum. Gonidia flaventia, majuscula. Gelatina hymenialis iodo vinose rubescens vel fulvescens.

Thallus C erythrinus, reactione lente evanescente.

Spermogonia fuscescentia: spermatia curvata, longit. 0.012-0.015, crassit. haud 0.001 millim.; sterigmata simplicia gracilia.

Ad saxa.

LECIDEA MYRIOCARPA, DC.

Ad saxa.

LECIDEA EPIPASTA, sp. nov.

Parasitica supra thallum *Lecanora flavo-rubentis*; apothecia nigra parva plana et leviter marginata, demum convexa et immarginata rugulosa; sporæ 8næ, incolores, 1-3-septatæ cylindraceæ vel elongato-ellipsoideæ, sæpe curvata et nucleatæ, $0.018-0.028 \times 0.004-0.0055$ millim.; paraphyses satis distinctæ, apicibus incrassatis, conglutinatis nigro-purpurascenti-

bus et granulis inspersis; hypothecium incolor. Gelatina hymenialis iodo cærulescens, præsertim ea circa apices thecarum, dein vinoso rubens.

Ad saxa.

OPEGRAPHA UNDULATA, sp. nov.

Thallus (K - C-) crassus pallidus vel pallide flavidus, rimoso-areolatus, subfarinaceus; apothecia nigra pulvere albido suffusa, radiato-ramosa, subinnata, explanata, apicibus rotundata, margine proprio tumidulo undulato cincta; perithecium laterale; sporæ 8næ incolores fusiformi-ellipsoideæ, 7-9- (plerumque 8-)septatæ, $\cdot 028\text{-}\cdot 035 \times \cdot 0045\text{-}\cdot 0055$ millim., halone cinctæ; paraphyses satis distinctæ irregulares, interdum ramosæ; hypothecium pallide rufescens. Gelatina hymenialis iodo vinoso rubescens, ea circa thecas intensius tincta.

Ad saxa.

Contiguous to the preceding is the barren thallus of another, and having much its external aspect, with, however, a different chemical reaction.

LECIDEA — ?

Thallus pallidus vel pallide cervinus, crassiusculus, rimoso-areolatus, non nihil rugulosus, C primum erythrinus, dein persistenter rufulo tinctus.

The barren thallus of another lichen, belonging in all likelihood to the genus *Lecidea*, covers several pieces of stone.

LECIDEA ?

Thallus cervinus vel pallide rufescens, crassiusculus, glebuloso-congestus, glebulis spermogonia multa depressa livida foventibus; spermatia recta acicularia, circa $\cdot 01 \times \cdot 0005$ millim., sterigmatibus simplicibus.

Ad saxa. Bird Island.

Bermuda.

LEPTOGIUM TREMELLOIDES (Fr.), var. *MESOTOMUM* (Strtn.).

Thallus pallide plumbeo-glaucescens, subfarinaceus, varie dissectus, lobis crispatis reflexis, subtus pallidus.

Ad cortices.

This lichen approaches *L. diaphanum* (Mnt.) in various aspects, and *L. callithamnion* (Tayl.) in the paler under surface; but the large-celled cortical layer &c. warrant a nearer affinity to *L. tremelloides*.

LEPTOGIUM MARGINELLUM (Ach.).

Ad cortices.

CLADONIA TURGIDA (*Hffm.*).

Var. CONSPICUA (*Del.*),

Var. ELEGANS (*Del.*),

As well as one or two others, which can scarcely be characterized.

Supra terram.

CLADONIA BOTRYTES (*Hffm.*).

Supra terram.

In this and in one of the forms of the preceding, the thallus is congested beneath into a continuous firm white crust, from which the squamæ arise, more closely disposed than in Scandinavian specimens; there is, however, little or nothing in other respects to warrant a separation.

RAMULINA BERMUDIANA, sp. nov.

Thallus (K e flavo rufo-ferrugineus) pallidus aut stramineo-pallidus aut stramineo-rufescens, subnitidus, depresso-cæspitosus sat late expansus rigesens, totus e laciniis linearibus dichotome multifidis compositus, tuberculis parvis concoloribus inæqualis, marginibus tuberculis et nonnihil reflexis; apothecia cervina vel pallide rufescentia, marginalia subpedicellata concava majuscula marginibus integris; sporæ 8næ oblongo-ellipsoideæ, sæpe curvulæ, 1-septatæ, $\cdot 01 - \cdot 016 \times \cdot 005$ millim. Gelatina hymenialis iodo cærulescens, dein vinose rufescens.

Ad ramulos arborum.

The differences indicated above warrant a separation from any of the states of *R. scopulorum* (*Ach.*) that have come under my notice. Apart from the colour, it bears a considerable resemblance to *Physcia chrysophthalma*.

PARMELIA TILIACEA, var. SCORTEA (*Ach.*).

Ad truncos putridos.

PARMELIA PHYSODES, var. LABROSA (*Ach.*).

Ad ligna vetusta.

PHYSCIA SPECIOSA (*Fr.*).

Ad corticem.

PHYSCIA STELLARIS (*Fr.*).

Ad corticem.

LECANORA VARIA, var. SYMMICTA (*Ach.*).

Ad corticem.

LECANORA SUBFUSCA, var. ARGENTATA (*Ach.*).

Ad corticem.

LECANORA ANGULOSA (*Ach.*), var. ALBO-PRUINOSA (*St.*).

Thallus albus (K flavens, C -); apothecia pallida, albo-pruinosa margine firmo prominulo flexuoso.

Ad corticem.

PERTUSARIA LEIOPLACA (*Ach.*).

Ad corticem.

PERTUSARIA MELALEUCA (*Sm.*).

Ad corticem.

The specimens are not matured; and the ostiola scarcely show black.

LECIDEA CALIGINOSA, sp. nov.

Thallus (K - C -) cinereus vel fusco-cinereus, adpresso-squamulosus, tenuis; apothecia elevato-sessilia fusco-nigra, primo plana leviter et obtuse marginata, dein convexa et rugosa; sporæ 8næ, simplices, incolores, ellipsoideæ vel fusiformi-ellipsoideæ, $\cdot 01 - \cdot 012 \times \cdot 006$ millim.; paraphyses haud discretæ vel fere conglutinatæ, apicibus iucoloribus; hypothecium crassum, fusco-nigrum. Gelatina hymenialis iodo dilute cærulescens, dein vinose fulvescens sed in cærulescentiam cito revertens.

Ad cortices.

Forte nimium arcte affinis *L. mæstulæ* (*Nyl.*).

LECIDEA EUPORIZA, sp. nov.

Thallus pallidus vel pallide cinereus, tenuis; apothecia parva, flavida, demum fusca pellucida plana, margine obscuriore, sessilia vel elevato-sessilia, intus nonnihil purpurascens, cæteroquin incoloria; sporæ 8næ, incolores, simplices, cylindræ, $\cdot 02 - \cdot 032 \times \cdot 0035$ millim., rectæ vel interdum curvulæ; paraphyses conglutinatæ et indistinctæ. Gelatina hymenialis iodo cærulescens, dein fulvescens.

Ad corticem.

The thallus is nearly concealed by an imperfectly developed and barren collema.

LECIDEA SEMIUSTA, sp. nov.

Thallus niger, rimoso-diffractus, squamulosus, squamulis marginibus recurvis; apothecia nigra, sessilia, plana, marginata; sporæ 8næ, incolores, elongato-ellipsoideæ rectæ vel curvulæ, normaliter 3-septatæ, interdum 1-septatæ vel simplices, $\cdot 008 - \cdot 01 \times \cdot 003$ millim.; paraphyses indistinctæ, apicibus incoloribus; hypothecium leviter fuscescens. Gelatina hymenialis iodo dilute cærulescens, dein obscure violaceæ tincta.

Ad saxa.

Only one apothecium was detected; and so far the diagnosis is defective.

LECIDEA REVERTENS, sp. nov.

Thallus (K—C—) albidus, continuus, tenuis, subfarinaceus; apothecia subinnata, minuta, fusco-nigra, humida fusca pellucida, margine obscuriore fere nigro, intus incoloria; sporæ 8næ, incolores, simplices, fere cylindraceæ, $\cdot007 \times \cdot0025$ millim. non rite evolutæ; hypothecium incolor. Gelatina hymenialis iodo leviter cærulescens, dein obscure violacea.

Ad saxa.

GRAPHIS AFZELII (Ach.).

Ad cortices.

GRAPHIS PUNCTIFORMIS (Eschw.).

Ad cortices.

GRAPHIS NEMATODES, sp. nov.

Thallus albidus vel pallide cinereus, tenuissimus, dilatatus; apothecia nigra, innata, elongata, flexuosa, fere simplicia, apicibus obtusis, epithecio rimiformi; sporæ 8næ, incolores, oblongo-ellipsoideæ (utrovis apice acutiusculo), 10–12-loculares, $\cdot06\text{--}\cdot085 \times \cdot01\text{--}\cdot014$ millim.; paraphyses non bene discretæ et granuloso-inspersæ; hypothecium fere incolor. Gelatina hymenialis iodo haud tincta; sporæ violacee tinctæ.

Ad corticem.

The spores are colourless, but when old and shrivelled have a brownish appearance. Allied to *G. comma* and *G. assimilis*.

ARTHONIA INTERVENIENS (Nyl.) Nov. Gran. i. p. 68.

Ad corticem.

ARTHONIA VELATA, sp. nov.

Thallus (an proprius?) albidus vel pallidus, crassiusculus, farinaceus, fere spongiosus rimoso-diffractus; apothecia nigra, innata, minutissima (latit. circa $\cdot05$ millim.), sparsa vel seriatim disposita; sporæ 8næ (in thecis saccatis), primum incolores, demum fuscae vel potius obscure violaceæ, obovatae (uno alterove apice attenuatae), 3–4-septatae, $\cdot02\text{--}\cdot03 \times \cdot01\text{--}\cdot014$ millim.; paraphyses nullæ distinctæ. Gelatina hymenialis iodo dilute cærulescens.

Ad cortices.

As the thallus is abundantly supplied with gonidia as well as crystals of oxalate of lime, a presumption is afforded that the *Arthonia* is parasitic. I possess a similar instance from the Bony river, Western Africa.

TRYPETHELIUM CRUENTUM (Mnt.).

Ad cortices.

Azores, Furnas.

CLADONIA PYXIDATA, var.

Ad saxa.

CLADONIA SQUAMOSA (*Hffm.*)?

Supra terram.

Barren.

ROCCELLA PHYCOPSIS (*Mnt.*).

The reactions of this lichen, as stated by Leighton in his 'Lichen Flora,' are at variance with those observed in the present instance; accordingly I think it right to state them here.

Thallus K yellow; medulla K—C—, soredia C red evanescent. Medulla assumes a deep blue with iodine; and under the microscope the fibres of which it is composed assume, by the same reagent, a violet tint, merging ultimately into fulvescent. The structure of a section of the thallus agrees with that figured by Nylander in his Synopsis.

Ad saxa.

STICTA DAMÆCORNIS (*Ach.*); etiamqueSTICTA DAMÆCORNIS, var. CANARIENSIS (*Del.*).

Ad truncos arborum.

PARMELIA PERLATA (*L.*).

Ad truncos arborum.

PARMELIA CAPERATA (*L.*).

Ad truncos arborum.

PARMELIA PERFORATA (*Wulf.*).

Ad ligna vetusta.

LECIDEA CYANOCHROA, sp. nov.

Thallus pallide cinerascens, tenuis; apothecia nigra, sessilia, mediocria, plana, marginata, demum nonnihil convexa, intus purpurascens; sporæ 6-8næ, incolores, rectæ, bacillares, 6-12 (et ultra)-septatæ, septis indistinctis, $\cdot 06$ - $\cdot 08 \times \cdot 004$ - $\cdot 0045$ millim.; paraphyses graciles apicibus clavatis purpurascens; hypothecium fere incolor; stratum infra hypothecium purpurascens. Gelatina hymenialis iodo leviter cærulescens, dein vinose rubens.

Ad corticem.

Teneriffe.

RAMALINA AULOTA, sp. nov.

Thallus ochroleuco-pallidus, compressiusculus, lævis, sparsim lacunose impressus, parce ramosus, erectus, brevis, subinanis; apothecia terminalia vel subterminalia, plana, majuscula, receptaculo subpedicellato, margine integro; sporæ 8næ, ellipsoideæ, 8-septatæ, rectæ, $\cdot 009$ - $\cdot 012 \times \cdot 0055$ - $\cdot 0065$ millim.; paraphyses non bene distinctæ. Gelatina hymenialis iodo cærulescens. Spermogonia nigra, majuscula, innata. Supra saxa.

This lichen comes near *R. inanis* (Mnt.), inasmuch as the medullary part of the stem is nearly empty, being traversed only by a few scattered branching fibres; but the spores are much smaller and of a different shape, &c.

STICTA AURATA (Ach.).

A form approaching var. *pallens* (Nyl.).

Ad truncos arborum.

PARMELIA OLIVACEA, var. STYGIA (Ach.).

Supra rupes.

SQUAMARIA SAXICOLA (Poll.).

Ad saxa.

SQUAMARIA MELANOPHTHALMA (Ram.).

Ad saxa.

PLACODIUM MURORUM, var. MINIATUM (Hffm.).

Ad saxa.

LECANORA PALLESCENS (Ach.).

Ad saxa.

LECANORA NOSERIZA sp. nov.

Thallus (K—C—) albus, e glebulis sparsis compositus; apothecia primum coarctata, demum expansa, concava, pallida, margine prominulo irregulari cincta; sporæ 8næ, simplices, incolores, ellipsoideæ, $\cdot 012$ - $\cdot 014 \times \cdot 0085$ - $\cdot 009$ millim.; paraphyses non bene discretæ, irregulares apicibus pallide fuscis conglutinatis. Gelatina hymenialis iodo intense cærulescens.

Ad corticem.

Forte nonnisi varietas *L. variæ*.

URCEOLARIA SCRUPOSA (L.).

Supra terram.

LECIDEA GEOGRAPHICA (L.).

Ad saxa.

LECIDEA ATROBRUNNEA (DC.)

Ad saxa.

This lichen is barren ; but its thallus resembles in many respects that of the species under which it is placed.

Fernando de Noronha.

LECANORA RECUBANS, sp. nov.

Thallus (K fl., C fl.) albidus vel pallide cervinus crassiusculus rimoso-areolatus rugulosus albo determinatus ; apothecia minuta innata concoloria concava marginata ; sporæ 8næ simplices incolores ellipsoideæ $\cdot 009\text{--}\cdot 012 \times \cdot 006\text{--}\cdot 007$ millim., non rite evolutæ ; paraphyses non bene distinctæ, apicibus citrinis granuloso-inspersis ; hypothecium incolor. Gelatina hymenialis iodo dilute cærulescens, dein pallide fulvescens.

Ad saxa.

The spermogonia have not been determined. On one occasion spermatia, or what might have been considered such, were detected in the field of the microscope, oval in outline, and about $\cdot 015 \times \cdot 001$ millim.

XIV. Enumeration of Algæ from 30 fathoms, at Barra Grande, near Pernambuco, Brazil, collected by H. N. MOSELEY, M.A., Naturalist to H.M.S. 'Challenger' (Sept. 10th, 1873). By G. DICKIE, M.D., F.L.S.

[Read April 16, 1874.]

FUCACEÆ.

SARGASSUM VULGARE, Ag.

Specimens large, abundant, and in every respect the same as it occurs in shallower water.

Geogr. distr. Tropical and subtropical Atlantic ; Spain ; Portugal ; Manila ; Mauritius.

DICTYOTACEÆ.

HALISERIS PLAGIOGRAMMA, Mont.

Geogr. distr. Brazil ; Sandwich Islands.

ZONARIA LOBATA, Ag.

Geogr. distr. Florida ; Canaries ; Brazil ; Cape G. Hope.

Z. VARIEGATA, Lamx.

Geogr. distr. Canaries ; W. Indies ; Brazil.