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XXXV.—Notulæ Lichenologicæ. No. XXVII

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to them elementarily, as may be seen in the pages of this periodical, hesitate to come to such a conclusion."

EXPLANATION OF PLATE XVII. figs. 1-9.

N.B. These figures are on the scale of 1-12th to 1-5400th of an inch.

- Fig. 1.* Transparent cell, with rotatory protoplasm, charged with starch-granules. Usual form: *a*, cell-wall, flexible; *b*, rotating protoplasm, of which the current is indicated by the arrows; *c*, nucleus surrounded by starch-granules; *d*, axial cavity.
- Fig. 2.* The same, but a little larger. Cell-wall rigid.
- Fig. 3.* The same, germinating (?): *a*, cell-wall; *b*, rotating protoplasm charged with starch-granules, current indicated by the arrows; *c*, nucleus and starch-granules rotating *in situ* in the direction indicated by the arrows; *d*, axial cavity; *e*, tubular extension, which grew out to 1-70th of an inch in one hour; *f*, starch-granules, more magnified to show their characteristic shape.
- Fig. 4.* The same, with tubular extension less advanced.
- Fig. 5.* The same (but elliptical in form and larger) under the effect of iodine, to show:—*a*, outer cell-wall; *b*, inner cell-wall; *c*, starch-granules, rendered dark blue by the iodine; *d*, nucleus.
- Fig. 6.* The same, of a globular form, to show that state in which the cell-wall was sufficiently plastic to admit of the protrusion of short processes: *aa*, processes.
- Fig. 7.* The same, in which five cysts of an endophyte had developed themselves, and had enclosed nearly all the cell-contents. The reniform starch-granules replaced by oil-globules, some of which still remain outside the cysts. *aa*, cysts; *b*, oil-globules.
- Fig. 8.* The same, in which the cysts (three) of the endophyte had developed themselves, had pierced the cell-wall of their host, according to their custom, and had discharged their progeny into the water: *aa*, empty cysts; *b*, remaining oil-globules.
- Fig. 9.* The same, with three cysts of the endophyte, under iodine: *aa*, cysts containing protoplasm (sarcode?) and oil-globules, all rendered brown by the iodine; *b*, remainder of starch-granules and protoplasm outside the cysts rendered dark blue.

XXXV.—*Notulæ Lichenologicæ*. No. XXVII.

By the Rev. W. A. LEIGHTON, B.A., F.L.S.

DR. NYLANDER makes the following additions to our British Lichens in the 'Flora,' Aug. 30, 1868, and Nov. 8, 1868:—

1. *Pyrenopsis homæopsis*, Nyl.

Similis *P. grumulifera* Nyl. in Flora 1867, p. 369, sed sporis majoribus (longit. 0·011–0·018 millim., crassit. 0·007–0·010 millim.) et thallo intus (præsertim sub apotheciis) pallidiore, gonimiis majoribus (crassit. circiter 0·007 millim.). Thallus fuscus, tenuis, subgranulosus; apothecia in humido statu latit. circiter 0·2 millim.; epithecium incolor; paraphyses graciles. Iodo gelatina hymenea vinose rubens vel vinose fulvescens.

Supra saxa micaceo-schistosa in Ben Lawers Scotiæ (Jac. Crombie).

Observetur etiam, in *P. grumulifera* thalamium esse supra lutescens.

2. *Lecanora leucospirea*, Nyl.

Thallus albus, opacus, e squamulis subcrenatis tenuibus adnatis dispersis (latit. circiter 0·5 millim.) constans, sæpe granuliformibus; apothecia fusca, subopaca, plana (latit. 0·5–0·9 millim.), margine thallino albo integro cincta; sporæ 8^{næ}, incolores, oblongæ vel ovoideo-oblongæ, 1-septatæ, longit. 0·011–0·013 millim., crassit. circiter 0·0035 millim.; paraphyses gracilescentes, clava (haud crassa) luteo-infuscata; (epithecium luteo-fusco-inspersum;) hypothecium incolor. Iodo gelatina hymenialis cærulescens, deinde violacee tincta.

Supra terram sabulosam in insula Cæsarea (Jersey), legit Ch. Larbalestier.

Affinis *L. holophææ* (Mnt.), et varietati ejus *glaucoptora*, Nyl. in Flora, 1868, p. 164 (ubi errore typographico legitur "glaucoptora"); convenit arthrosterigmatibus, spermatius et plurimis notis analyticis, sed differt thallo albo disperso et minus evolutio; forsitan modo tanquam subspecies consideranda sit. Habemus hic adhuc exemplum typi (*L. holophææ*), qui in certa habitatione facile in typos secundarios dissimiles abit.

3. *Lecidea suburgidula*, Nyl.

Thallus albidus vel virescens, tenuissimus, effusus; apothecia livida vel pallide sordide livida, opaca, convexa (latit. circiter 0·5 millim. vel paulo majora), immarginata, sectione hypothecium fuscum et pars supera sectionis stratum albicans sistencia; sporæ 8^{næ}, incolores, oblongæ, simplices aut tenuiter 1–3-septatæ, longit. 0·008–0·014 millim., crassit. 0·003–0·004 millim.; paraphyses non discretæ; epithecium album (vel versus lucem visum flavescens); hypothecium fuscescens. Iodo gelatina hymenea cærulescens (dein sæpe fulvescens).

Ad lignum *Ilicis* vetustum in Anglia, New Forest (Crombie).

Tangere videtur *L. apochræcellam* Nyl. in 'Flora,' 1865, p. 6, et 1867, p. 373, sed differt præsertim sporis majoribus et demum 3-septatis, hypothecio fusco vel fuscescente (nec luteo-fuscescente).

4. *Lecidea mæstula*, Nyl.

Thallus obscure cinerascens, tenuis, depresso-subgranulatus vel evanescens; apothecia nigra, minuta (latit. 0·2–0·4 millim.)
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lim.), planiuscula vel convexiuscula, immarginata (interdum margine obsoleto), intus incoloria; sporæ 8^{næ}, incolores, ellipsoideæ, simplices, longit. 0·007–0·008, crassit. 0·0025–0·0035 millim.; paraphyses non discretæ; epithecium incolor (vel passim vage nonnihil obscuratum); hypothecium totum fusco-obscuratum. Iodo gelatina hymenea vinose rubens (præcedente cærulescentia levi).

Supra ligna fabrefacta vetusta prope vicum Lyndhurst in New Forest (Crombie).

Apothecia sat conferta. Maxime accedere videtur ad *L. myriocarpoidem* Nyl. (cf. 'Flora,' 1866, p. 86), quæ vero apothecia habet magis sparsa laminaque tenui visa epithecio distincte luteo-fuscescente, hypothecio fusco infra (et perithecio) pallidiore, gelatinam hymeniale iodo cærulescentem (dein lutescentem), etc. Accedit quoque versus *L. dispansam* Nyl. (cf. Lich. Lapp. Or. p. 186) et versus *L. turgidulam* Fr. Spermatia oblonga (longit. 0·0040–0·0045 millim., crassit. 0·0015 millim.), sterigmatibus brevibus.

5. *Lecidea leptostigma*, Nyl.

Apothecia (parasitica verisimiliter in thallo albedo mediocri rimuloso) fusco-nigricantia, plane innata (latit. circ. 0·4 millim. vel minora), tenuia, gregaria; sporæ 8^{næ}, globosæ vel globoso-ellipsoideæ (diam. 0·005–0·009 millim.), in thecis cylindræis uniseriatæ; paraphyses mediocres, sursum sensim crassiores (et versus apicem sordide lutescentes); hypothecium vix lutescens. Iodo gelatina hymenialis non tincta.

Supra saxa micacea in Scotia (Crombie).

Forte sit fungillus.

6. *Lecidea Crombiei*, Jones.

Thallus sulphureus vel albedo-sulphureus (hydrate kalico flavo-tinctus), mediocris, inæqualis, rimoso-diffractus vel passim subareolatus, hypothallo nigro limitatus; apothecia nigra, mediocria (latit. circiter 1 millim.), innata, convexiuscula, immarginata, intus cinerascenti-obscurata; sporæ 8^{næ}, incolores, ellipsoideæ, longit. 0·010–0·012 millim., crassit. 0·006–0·007 millim., thalamium cærulescens; epithecium cæruleo-nigricans; paraphyses non bene discretæ; hypothecium incolor (vel dilute rufescens). Iodo gelatina hymenialis cærulescens (thecæ apice magis tinctæ).

Supra saxa in monte Scotiæ Glen Callaben (Crombie).

Hypothallus niger passim inter areolas thalli visibilis. Species hæc, a beato Jones distincta, prope *L. theiodem* Smmr. locum habet.

7. *Lecidea postuma*, Nyl.

Thallus cinerascens, evanescens; apothecia nigra, minutula (latit. 0·2–0·3 millim.), planiuscula, marginata, intus concoloria; sporæ 6–8^{næ}, incolores (vel fuscuscentes), ellipsoideo-oblongæ, 3-septatæ (additis sæpius septulis obliquis vel longitudinalibus parcis), longit. 0·015–0·016 millim., crassit. 0·006–0·007 millim.; epithecium et hypothecium fuscuscentia.

Ad rupes maritimas in Scotia (Crombie).

Vix est nisi varietas depauperata, deminuta *Lecideæ petrææ*, etiam sporis minoribus.

8. *Lecidea lithophiliza*, Nyl.

Thallus cinerascens, firmus, inæquali-deplanatus, areolato-diffractus vel areolato-rimosus, sat tenuis (crassit. circiter 0·3 millim.); apothecia fusco-nigra, innata (latit. 0·5–0·8 millim.), planiuscula vel convexuscula, immarginata, intus alba (linea tenui nigra infra limitata); sporæ 8^{næ}, incolores, oblongæ, simplices, longit. 0·009–0·017 millim., crassit. 0·0035–0·0045 millim.; paraphyses mediocres, apice lurido-fuscuscentes; hypothecium strato medio cretaceo-albo opaco (non hyalino), strato infero conceptaculari tenui nigro. Iodo gelatina hymenea bene cærulescens.

In Scotia prope Abredoniam supra saxa micaceo-schistosa maritima (Crombie).

Notis datis facile distincta a *L. lithophila* et satius inter *Biatoras* locum tenens prope *L. phæopem*. Spermogonia non vidi. Thallus rhagadiosus hydrate kalico nonnihil flavescens.

9. *Lecidea subviridescens*, Nyl.

Thallus virescens vel sordide virescens, tenuissimus, opacus, vel obsoletus; apothecia fusca, opaca vel fusco-livescentia, convexa (latit. 0·3–0·6 millim.), immarginata, intus sordide tincta; sporæ 8^{næ}, incolores, oblongæ, simplices aut 1–3-septatæ, longit. 0·011–0·018 millim., crassit. 0·004–0·006 millim.; paraphyses non distinctæ; epithecium et hypothecium sordida. Iodo gelatina hymenialis cærulescens, dein vinose rubens.

Supra terram in insula Cæsarea (Larbalestier).

Accedit ad stirpem *L. vernali-sphæroidis*, sed facie est fere *L. viridescensis*.

10. *Lecidea infidula*, Nyl.

Thallus albidus, tenuis vel tenuissimus, opacus, interdum subleprosus, passim rimulosus; apothecia livido-nigricantia, minuta (latit. 0·5 millim. vel minora), convexula, immar-

ginata, intus cinerascens; sporæ 8^{næ}, incolores, ellipsoideæ, simplices, longit. 0·008–0·011 millim., crassit. 0·0035–0·0045 millim.; paraphyses non discretæ; epithecium vage et hypothecium dilute sordida. Iodo gelatina hymenialis vinose rubens.

Ad saxa in insula Cæsarea (Larbalestier).

Facie est *L. turgidula*, sed notis datis et præsertim reactione iodica differt. *Spermogonia* extus nigra verrucariiformia; *spermatia* recta, longit. 0·006 millim., crassit. 0·001 millim.

11. *Lecidea mesoidea*, Nyl.

Thallus cinerascens, sat tenuis, subopacus, inæqualis, subareolato-rimosus; apothecia nigra, mediocria (latit. fere 1 millim. vel minora), juniora marginata, demum convexiuscula margine evanescente, intus concoloria; sporæ 8^{næ}, incolores, oblongæ, 3-septatæ, longit. 0·014–0·017 millim., crassit. circiter 0·006 millim.; paraphyses mediocres, clava nigricante; hypothecium nigrum, strato medio luteo-rubricoso (vel cerasino-rufescente). Iodo gelatina hymenialis cærulescens, dein violaceæ tincta.

Supra lapides micaceo-schistosos in insula Sargia (Sark), legit Larbalestier.

Accedit ad *L. acclinem*, sed hypothecio differt; etiam thallo et hypothecii strato supero distincto nigro differt a *L. squamulosa* Deak.

12. *Lecidea sarcogyniza*, Nyl.

Thallus obscure cinereo-virescens vel subolivaceus, opacus, tenuis, indeterminatus; apothecia nigra, plana (latit. circiter 1 millim.), marginata, margine sæpe flexuoso, intus obscura; sporæ 8^{næ}, incolores, oblongæ, longit. 0·007–0·011 millim., crassit. circiter 0·003 millim., thalamium incolor; paraphyses mediocres, apice nigricanti-clavatæ (inde epithecium crassiuscule nigrum); hypothecium subhymeniale distincte fuscescens, stratum ejus medium subincolor; perithecium (cum strato infero conceptaculi) nigricans vel nigrum. Iodo gelatina hymenialis intense cærulescens.

In Scotia prope Abredoniam ad saxa quartzosa maritima (Crombie), rimulas saxi potissime sequens.

Accedit ad *L. sarcogynoidem* Krb., sed differt jam thalamio incolori, præter notas alias allatas.

13. *Lecidea commaculans*, Nyl.

Thallus fusco-niger vel nigricans, tenuis, opacus, subareolatus, depressus, sæpius dispersus, indeterminatus; apothecia atra (latit. fere 1 millim. vel nonnihil minora), convexula, mar-

gine vix ullo, intus concoloria; sporæ 8^{næ}, incolores, oblongæ, longit. 0·008–0·011 millim., crassit. 0·003–0·004 millim.; paraphyses non discretæ; epithecium nigricans; hypothecium crassiusculum rubricose fuscum (colore hoc superne vage in thalamium transeunte). Iodo gelatina hymenea cærulescens.

In Scotia, ad saxa calcarea montium Braemar (Crombie).

Accedere videtur ad *L. kajanitam*, cui vero sporæ aliæ nec thalamium rubricose tinctum; magis affinis sit *L. dispansæ*, sed variæ notæ divergunt. Hypothecium in thalamium omnino sensim transit absque limite distinguendo. Spermatia cylindrica, recta, longit. 0·009–0·011 millim., crassit. 0·001 millim.

14. *Lecidea aphanoides*, Nyl.

Thallus obscure olivaceo-cinereus, tenuis, subverrucose vel subgranulose inæqualis, indeterminatus vel subevanescent; apothecia nigra, parvula (latit. 0·3 millim. vel minora), convexula, immarginata, nuda, intus albida; sporæ 8^{næ}, incolores, ellipsoideæ, simplices, longit. 0·009–0·013 millim., crassit. 0·0045–0·0055 millim.; paraphyses non discretæ; thalamium (cum epithecio) cærulescens; hypothecium incolor (vel nonnihil infra vage rubricose rufescens). Iodo gelatina hymenialis cærulescens, dein violacee rubescens.

Supra saxa calcarea in Scotia, Braemar (Crombie).

Species accedens ad *L. aphanam* Nyl. in 'Flora,' 1867, p. 327, sed thalamio aliter tincto, sporis paullo tenuioribus, etc.

15. *Opegrapha Cæsareensis*, Nyl.

Thallus albus, tenuis, rimulosus, indeterminatus; apothecia nigra, cylindræa, prominula (latit. 0·20–0·25 millim.), simplicia, subflexuosa (longit. circiter 1 millim.); epithecio rimiformi-constricto; sporæ 8^{næ}, incolores, oblongæ, 5-septatæ, longit. 0·016–0·022 millim., crassit. 0·004–0·005 millim.; hypothecium atrum. Iodo gelatina hymenialis vinose rubescenti-fulvescens.

Supra saxa quartzosa in insula Cæsarea (Larbalestier).

Differt jam sporis quinque-septatis a comparanda *O. atra* f. *Chevalieri*. Differt etiam ab *O. vulgatæ* formis saxicolis mox sporis crassioribus. Spermatia recta, longit. 0·006–0·007 millim., crassitiem haud 0·001 millim. adtingentia.

16. *Rimularia limborina*, Nyl.

Thallus cinereus, tenuis, rimulosus vel subareolatus; apothecia nigra vel fusco-nigra, opaca, rugulosa, depresso-convexiuscula (latit. 0·2–0·4 millim.), rotundata vel oblongo-rotun-

data, medio depressiuscula et rimula subtili (sæpe subradiante) fissa, intus cinerascens; sporæ 8^{næ}, incolores (demum fuscæ vel fuscæ), ellipsoideæ, simplices, longit. 0.018–0.025 millim., crassit. 0.011–0.016 millim.; paraphyses gracilescentes, irregulares et sæpe ramosæ; perithecium (peridium) etiam supra nigrum, infra (hypothecium) fusco-nigricans. Iodo gelatina hymenialis fulvo-rubens (præcedente cærulescentia levi).

Supra saxa granitosa in Gallia, Haute Vienne (Ripart, 1865), socia *Lecanora gibbosæ*. Etiam supra saxa calcarea in Scotia, Braemar (Crombie).

Genus peculiare novum, *Mycoporo* quodam modo affine, sed apotheciis supra demum rimula subradiosa vel simpliciore dehiscentibus. Inter Pyrenocarpeos hic Lichen locum obtinere non potest, nam nullum habet ostiolum punctiforme. Ceteroquin *Mycoporum* et *Rimularia* apothecii typum offerunt proprium, qui nec apothecium discocarpum nec pyrenocarpum sistit; ab illo scilicet differt perithecio supra continuato totumque hymenium involvente; ab hoc (pyrenio) differt ostiolo non regulari contractoque nec anaphysibus intus munito, sed rimula vel varie dehiscente. Adest hic *peridium*, fere sicut in Fungis variis. Distinguenda est duobus generibus allatis, tribus propria, quæ dicatur *Peridiei*.

XXXVI.—*Notes on the Dragonflies of the Seychelles.* By E. PERCEVAL WRIGHT, M.D., F.L.S., Professor of Botany and Zoology in Trinity College, Dublin. *With a List of the Species and Descriptions of a new Genus and some new Species*; by the Baron E. DE SELYS-LONGCHAMPS.

DURING my six months' residence at the Seychelles I was very much struck by the apparent absence of insect-life. Ants and musquitoes, indeed, abounded: the former were busy everywhere, and nothing that could be carried off was left very long alone by them; the latter were a constant source of discomfort. To all appearance they contrived to live happily while often rendering human life miserable. But there were no butterflies to be seen flying by day; and the cocoanut-oil lamps were let burn uninterruptedly by night, there being no big moths to flap over and extinguish them. This was especially the case during the months from June to September. Towards October insects began to appear, the Cicadæ were heard in the trees, and I have little doubt that if I had stayed at the islands for the whole of the rainy season I should have collected or seen a fair proportion of species. A large