

all its glossy beauty. It was only in this last year (1879), after very diligent research, that I succeeded in obtaining good fruiting specimens of this plant.

P.S.—Specimens of all the Plants described in this Paper have been forwarded with it to the Manager of the New Zealand Institute, for the Herbarium of the Colonial Museum, Wellington.

ART. LV.—*Contribution to the Lichenographia of New Zealand.*

By CHARLES KNIGHT, F.L.S.

Plates XII. and XIII.

[Read before the Wellington Philosophical Society, 21st February, 1880.]

1. *Sticta amphisticta*, Kn.

Thallus pallido-ochro-fuscescens aut passim hepatico-fuscescens ambitum versus sæpe fuscus mediocris lævis parum rigescens, supra punctis albis sparsis pseudo-cyphelloideis minutis conspersus, laciniato-divisus, laciniis subcaniculatis varie lobatis v. grosse sinuato-crenatis, apice dichotomis v. obtusis; subtus ochro-fuscus aut pallido-fuscescens medio fusco-tomentosus; cyphellæ urceolatæ pallidæ, margine sæpe prominulo; cephalodia concoloria minuta parca. Apothecia sparsa badio-rufa, margine tenui crenulato pallido aliquando integro. Sporæ incolores v. dilute luteolæ oblongo-fusifformes v. oblongæ, 1-3-septatæ, longit. $\cdot 026$, crassit. $\cdot 007$ mm.

Ad cortices.

2. *Sticta episticta*, Nyl.

Thallus ochroleucus v. pallido-ochraceo-fuscescens mediocris vix nitidiusculus, supra punctis albis pseudo-cyphelloideis minutis sparsis conspersus, laciniatus, laciniis varie lobato-divisis subcaniculatis ambitu minute crenatis passim ibi laciniatulo-dissectis v. fere isidiosis; subtus ochraceus puberulus subnudus medio fusco-tomentosus, cyphellis parvis urceolatis perpaucis v. nullis pallidis, cephalodiis concoloris minutis parvis. Apothecia rara v. rarissima badio-rufa margine thallino crenulato v. leviter denticulato-inæquali cincta. Sporæ incolores v. dilute luteolæ oblongo-fusifformes v. oblongæ, 1-3-septatæ, longit. $\cdot 03$, crassit. $\cdot 007$ mm.

Ad cortices.

3. *Pannaria atrofumosa*, Kn.

Thallus cæruleo-olivaceus v. atro-fumosus squamulosus diffracto-areolatus, squamulis minutis concavis crenato-orbiculatis ambitu minutissime granulosus v. furfuribus, hypothallo atro late marginatus. Apothecia innata

v. *immixta* lecanorina intus incoloria, disco plano luteo-rubro v. luteo-fusco in centro plerumque fisso v. depresso v. decolore, margine nonnihil gyrato elevato minutissime granuloso, paraphysibus capillaribus discretis. Sporæ in ascis cylindricis uniseriales ellipsoideæ incolores, longit. ·015, crassit. ·008 mm.

Ad cortices.

Pannaria immixta v. *gyrantha*, Nyl. in litt.

4. *Pannaria apiculata*, Kn.

Thallus sordide fuscus passim fumoso-fuscus v. plumbeo-cinereus minute squamuloso-microphyllinus (squamulis nonnihil laciniato-effiguratis) v. diffracto-areolatus v. detritus tum demum hypothallo nigro passim v. omnino nudo. Apothecia biatorina brunnea v. rufo-nigra plana interdum convexa intus incoloria v. omnino dilute luteola, margine pallidior tenui integro. Sporæ in ascis late cylindricis ellipsoideæ sæpissime utrinque apiculatæ dilute fuscescentes, longit. ·018, crassit. ·009 mm.

Ad cortices.

5. *Pannaria triptophylla*, Ach.

Apothecia biatorina margine erecto. Sporæ ellipsoideæ. *Hypothecium fusco-nigricante*. Hypothallus cæruleo-nigricans.

Ad cortices.

6. *Pannaria subsimilis*, Kn.

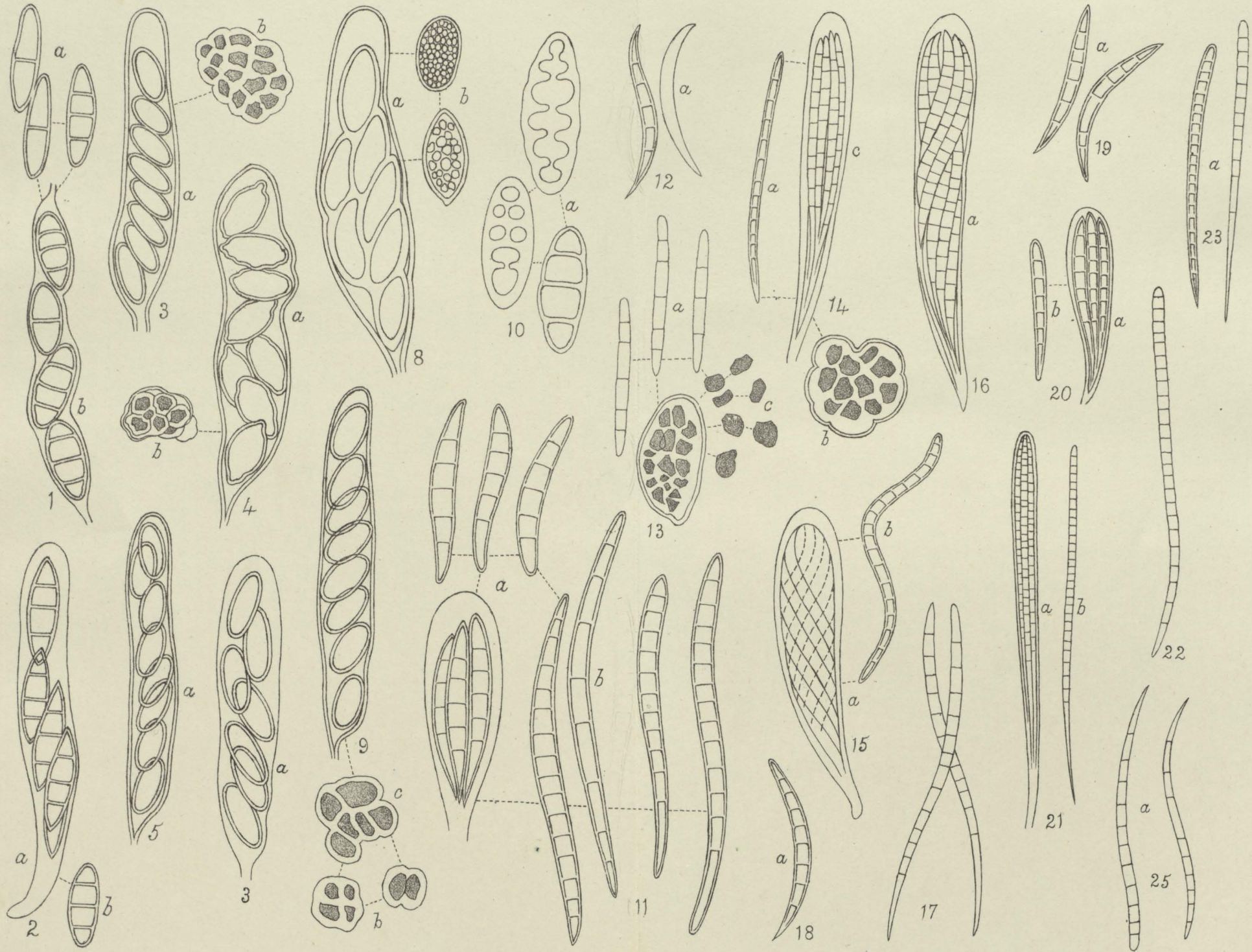
Thallus glauco-cervinus squamulosus v. microphylo-squamulosus, squamulis membranaceis contiguis adpressis rotundato-incisis singulis e centro radiantibus, granulis gonimis cærulescentibus, hypothallo cærulescenti-nigro limitatus. Apothecia rubra v. croceo-rubra biatorina plana marginata, margine pallido integro tenui discum æquante, excipulo proprio luteo-fusco, hypothecio concolore, paraphysibus gracilibus non bene discretis (apice non dilatis et vix incoloratis). Sporæ in ascis cylindræis ellipsoideæ incolores v. dilute luteolæ, longit. ·015, crass. ·006 mm.

Ad cortices.

The colour of thin sections of the apothecia seen by reflected light is a delicate rufous yellow.

Syn.: *Pannaria nigro-cincta*, Nyl., Handbook New Zealand Flora, fol. 575.

There is some confusion in respect of Montagne's lichen. Both Babington and Nylander consider the New Zealand lichen to be the *Psoroma nigro-cincta* of Montagne. But in fact Montagne's plant, of which there is an authentic specimen in the Kew Museum (probably contributed by Montagne himself), is a true *Psoroma*; the thallus with large green gonidia, apothecia biatorine, excipulum of a pale brown or "Indian pink," and agreeing closely with the description in "Sylloge Plant. Crypt." On the other hand No. 51 of Leighton's Ceylon Lichens, "*Pannaria nigro-cincta*, Mont," is a true *Pan-*



C Knight del.

LICHENES.

J.B. lith.



naria; apothecia *lecanorine* with "granulæ gonimæ" in place of gonidia, the granules large, cæruleo-glaucous, margin prominent, crenulate. Again, No. 142, Spruce's Lich. Amaz. et And., is a true *Psoroma*: apothecia *biatorine* symphy carpous, margin obscure, spores smaller, and the thallus with well defined layer of gonidial masses.

7. *Pannaria amphibola*, Kn.

Thallus e glauco-rufescente helvolus microphyllinus, phyllis subimbricatis planiusculis lobulatis, lobis crenatis ambitu albo-furfuraceis, granulis gonimis glauco-cærulescentibus, hypothallo rubro-fusco v. nullo. Apothecia luteo-rufa biatorina plana marginata intus luteo-fusca, margine concolore integro, paraphysibus crassis adglutinatis. Sporæ ellipsoideæ interdum utrinque attenuatæ simplices incolores, longit. $\cdot 012$, crass. $\cdot 006$ mm.

Ad cortices.

P. amphibola, Nyl. in litt.

8. *Pannaria biatorina*, Kn.

Thallus albo-virescens squamulosus, squamulis adpressis minutis crenulatis, granulis gonimis glauco-virescentibus, hypothallo nigro. Apothecia biatorina sparsa aurantiaca (diam. $0\cdot 4$ mm. v. minora) superficialia intus pallida marginem pallidiorem demum æquantia, margine primo elevato integro, paraphysibus capillaribus adglutinatis. Sporæ in ascis clavatis ellipsoideæ subhyalinæ demum dilute luteolæ granulosæ, longit. $\cdot 02$ mm., crassit. $\cdot 01$ mm.

Supra Jungermannias.

9. *Pannaria subimmixta*, Kn.

Thallus glauco-albescens squamulosus, squamulis parvis rotundis crenatis confertis v. imbricatis, hypothallo nigro, granulis gonimis glaucoviridis v. glauco-brunneis 1-4 in nodulo singulo (microscopii area granulæ gonima obsita). Apothecia lecanorina fusca v. brunnea plana, margine crenato. Sporæ uniseriales simplices ellipsoideæ, longit. $\cdot 014$, crass. $\cdot 008$ mm.

Supra terram et lapides.

10. *Physcia plinthiza*, Nyl.

Thallus albo-glaucescens corrugatus rotundato-lobato-incisus in centro granulatus, laciniis arete adpressis ambitu obscure crenatis. Apothecia madefacta diam. $1\cdot 7$ mm. intus incolorata v. dilute glaucescentia, disco fusco v. atro-fusco plano, margine subinflexo tumido crenulato, excipulo thallino celluloso gonimico, gonimia magna numerosa, excipulo proprio (hypothecio) ex utroque latere evanescente, paraphysibus discretis apicibus elliptico-dilatatis. Sporæ in ascis cylindræo-saccatis ellipsoideæ fuscæ 4-6-loculares, oculis tubulo junctis et mediis sæpe didymis (ita medio series 2 adsunt transversæ biloculares), longit. $\cdot 08$, crassit. $\cdot 012$ mm.

Ad cortices.

11. *Lecanora babingtonii*, Mass.

Thallus tenuis albo-cinereus granulosus v. minutissime squamulosus, squamulis arcte adpressis. Apothecia rosea v. luteo-coccinea (diam. 1.5 v. minora) marginata, margine granulato tandem flexuoso, excipulo thallino albido v. dilutissime colorato gonidia continente, excipulo proprio fibrato supra evanescente, paraphysibus non bene discretis apice minute granulosis non dilatis. Sporæ in ascis saccatis subarcuatæ v. leviter curvatæ aciculari-fusiformes 5-septatæ, longit. .035, crassit. .004 mm.

Ad cortices.

Probably Babington's *L. punicea*, Ach. (Flora N.Z., p. 292). Comparing our lichen with Leighton's *L. punicea* (Ceylon Lichens, No. 62), it is seen that the thallus of the latter is fusco-cinereous, while the spores are .07 mm. in length, and the septæ from 7–15 in number (v. fig. No. 11, b.), and these measurements agree with Nylander's figure, v. Nylander's *Lichenes Novo-Granatenses*, p. 32, fig. 7, tab. 1, reproduced here to the same scale as all the other figures are drawn, v. fig. No. 11, c.

12. *Bacidia subscripta*, Kn.

Thallus sordide cinerascens v. sordide cinereo-albidus tenuis continuus v. minute areolatus v. fissus indeterminatus. Apothecia superficialia atro-fuscescentia nuda plana v. concava marginata (diam. 1 mm.)—raro in juniore pallide fusca—margine concolore tenui, excipulo dilute fuscescente a lateribus v. a basi et lateribus per lineam tenuem fuscam contento, strato subhymeniale e pseudo-gonidiis liberis sphaericis incoloratis—aliis minutis aliis sat grandibus—formato, paraphysibus brevibus subcrassis adglutinatis grumosis. Sporæ in ascis clavatis fusiformi-aciculares subspiraliter contortæ v. in arcum curvatæ 3–7 septatæ v. simplices (septis invisis?), longit. .04, crassit. .0035 mm.

Ad cortices arborum.

13. *Bacidia glomerulosa*, Kn.

Thallus sordide ochraceo-cinerascens byssaceo-pulverulens ubique diffractus v. dehiscens granulas gonimas virides in nodulis magnis receptas continens. Apothecia adnata v. innata (diam. 0.5 mm.) atro-fusca, margine evanido, excipulo dilute colorato, hymenio fusco, paraphysibus gracilibus non bene discretis apicibus fuscis. Sporæ rectæ aciculares 3–7 septatæ, longit. .035, crassit. .0025 mm.

Ad cortices arborum.

14. *Bacidia eucoccodes*, Kn.

Thallus cinereo-viridescens granulosus v. microphyllino-granulosus effusus granulas gonimas virides in nodulis receptas continens. Apothecia innata v. adnata fusco-atra plana v. convexa marginata (diam. 1.3 mm.); margine concolore obscuro demum tenui, excipulo dilutissime colorato ab

linea atro-fusca cincto, paraphysibus gracilibus discretis. Sporæ in ascis clavatis aciculares gracillimæ infra attenuatæ rectæ sat 14-septatæ, longit. $\cdot 06$, crassit. $\cdot 0015$ mm.

Ad cortices arborum.

15. *Bacidia spirospora*, Kn.

Thallus cinerascens tenuis lævis continuus v. subtiliter fissus, gonidia vera offerens, per lineam atram determinatus. Apothecia nigro-fusca (diam. 1 mm.) plana demum convexa marginata, margine concolore, paraphysibus gracilibus non bene discretis, apicibus fuscis subincrassatis. Sporæ in ascis clavatis aciculares infra attenuatæ circiter 18-septatæ, septis distinctis, maxime spiraliter curvatæ, longit. $\cdot 06$, crassit. $\cdot 003$ mm.

Ad cortices arborum.

16. *Bacidia melastegia*, Kn.

Thallus sordide albo-ochraceus tenuis continuus. Apothecia minuta (diam. 0.4 mm.) atro-fusca plana adnata, margine pallidiore—intus fuliginoso,—excipulo dilute colorato, strato subhymeniale fuscescente, paraphysibus gracilibus apice anthracinis. Sporæ in ascis clavatis aciculares utrinque attenuato-acutæ 13–20 septatæ spiraliter curvatæ, longit. $\cdot 075$, crassit. $\cdot 002$.

Lecidea melastegia, Nyl. in litt.

Ad cortices arborum.

17. *Bacidia anceps*, Kn.

Thallus cinerascens tenuis minute albo-granulosus continuus. Apothecia rufo-fusca v. nigro-fusca (diam. 1 mm.) marginata, disco plano, margine crasso fusco (intus fusco), excipulo crasso dilute luteo cellulari (cella quadrata) in granulis comminatur, strato subhymeniale dilute succineo, paraphysibus discretis. Sporæ aciculares utrinque acutæ infra attenuatæ circiter 16-septatæ, septis distinctis, longit. $\cdot 07$, crassit. $\cdot 002$ mm.

Ad cortices arborum.

18. *Bacidia cerasentera*, Kn.

Thallus albo-cinereus areolatus tenuissimus v. macula alba indicatus. Apothecia atra minuta (diam. 0.4 mm.) innata v. adnata, in juvenis sæpe e thallo albo marginata, intus fusca v. purpureo-fusca, excipulo atro, margine concolore obscuro, paraphysibus crassis brevis excipulo atro enatis apice bulbosis purpureo-atris non bene discretis. Sporæ in ascis clavatis fusiformi-aciculares in arcum curvatæ 7–9 septatæ v. minus clare septatæ, longit. $\cdot 045$, crassit. $\cdot 004$ mm.

Lecidea cerasentera, Nyl. in litt.

Ad cortices arborum.

19. *Bacidia melasema*, Kn.

Thallus ochraceo-cinerascens tenuissimus squamulosus, squamulis minutis arcte adpressis, continuus linea atra limitatus. Apothecia ad-

nata atra convexa (diam. 0·8 mm.) intus colorata immarginata, excipulo glauco-nigricante v. nigro, strato subhymeniale (in sectione subtilissima) viridulo e pseudo-gonidiis liberis sphaericis oleaceis dilute viridis (aliis minutissimis aliis sat grandibus) formato, paraphysibus non discretis. Sporæ fusiformi-aciculares curvatæ circiter 7-septatæ, longit. ·032, crassit. ·004 mm.

Lecidea melasema, Nyl. in litt.

Ad cortices arborum.

20. *Bacidia mesospora*, Kn.

Thallus tenuis sordide fuscus effusus leproso-pulverulens. Apothecia luteo-rubella plana demum convexa (diam. 0·4), margine concolore demum obscuro, excipulo incolore, paraphysibus gracillimis adglutinatis. Sporæ in ascis clavatis bacillares rectæ non supra 8-septatæ, interdum septis obscuris, longit. ·024, crassit. ·003 mm.

Ad cortices arborum.

21. *Bacidia stenospora*, Kn.

Thallus sordide ochraceus tenuis subtilissime areolo-granulosus (farinosus) indeterminatus. Apothecia pallido-livida ceracea plana adnata appressa (diam. 0·7 mm.) immarginata, excipulo luteo-fusco textura radiatim disposita, paraphysibus adglutinatis obscuris apice incoloratis non dilatatis. Sporæ in ascis (longit. ·085, crassit. ·005 mm.) bacilliformibus aciculares rectæ gracillimæ circiter 30-septatæ, septis parum obscuris, longit. ·075, crassit. ·0015 mm.

Ad cortices arborum.

22. *Bacidia pedicellata*, Kn.

Thallus cinerascens tenuissimus continuus. Apothecia superficialia (diam. 1·1 mm.) rufa v. fusco-rufa convexa nonnihil subglobosa unde quasi pedicellata intus dilute fusco-lutea, margine obtuso concolore demum obscuro, strato subhymeniale fusco, paraphysibus concretis gracilibus apice non dilatatis. Sporæ aciculares rectæ circiter 28-septatæ, septis distinctis, longit. ·085, crassit. ·003 mm.

Supra Jungermannias.

23. *Bacidia rimosa*, Kn.

Thallus cinerascens tenuissimus effusus diffractus rimosus. Apothecia e strato thallose gonidiale enata rufa tandem rufo-fusca (diam. 0·6 mm.) plana marginata, margine concolore v. dilute concolore demum obscuro, excipulo dilute luteo, strato subhymeniale fusco, paraphysibus gracilis non bene discretis apice grumosis. Sporæ aciculares infra attenuatæ, supra obtusæ, rectæ circiter 20-septatæ, longit. ·054, crassit. ·0025 mm.

Ad cortices arborum.

24. *Bacidia carneo-rufa*, Kn.

Thallus olivaceo-fuscus tenuis leprosus effusus. Apothecia carneo-rufa (diam. 1 mm.) plana, margine concolore, excipulo pallido, strato subhymeniale fusco, paraphysibus adglutinatis apice non dilatatis. Sporæ aciculares supra obtusæ infra attenuatæ rectæ circiter 15-septatæ, longit. ·065, crassit. ·002 mm.

Ad cortices arborum.

25. *Bacidia rosello-carnea*, Kn.

Thallus ochro-cinerascens v. ochro-fuscescens leproso-granulatus tenuis continuus v. minute areolatus interdum subrugulosus indeterminatus. Apothecia (diam. 0·5 mm.) adnata plana v. convexa sordide rosello-carnea tandem fuscescentia sæpius in parte decolorata intus luteo-fusca, margine concolore v. pallidiore demum evanescente, paraphysibus adglutinatis obscuris grumosis apice non dilatatis. Sporæ vermiformi-aciculares subspiraliter curvatæ circiter 10-septatæ, longit. ·05, crassit. ·002 mm.

Ad cortices arborum.

Lecidea rosello-carnea, Nyl. in litt.

26. *Bacidia pseudo-pyræ*, Kn.

Thallus olivaceo-fuscus tenuissimus (pellucidus? unde matrice perlucente thallus coloratus). Apothecia luteo-alba minuta (diam. 0·3 mm.) convexa, margine concolore obscuro, excipulo incolore v. strato subhymeniale dilute fusco, paraphysibus adglutinatis obscuris non grumosis. Sporæ in ascis clavatis bacillares subcurvatæ circiter 8-septatæ, longit. ·04, crassit. ·0025 mm.

Ad cortices arborum.

Closely allied to *B. albescens*, Hepp.

27. *Bacidia leuco-carpa*, Kn.

Thallus albido-cinerascens leproso-granulosus tenuissimus indeterminatus. Apothecia albida v. carneo-alba adnata plana v. convexa immarginata (diam. 0·8 mm.), strato subhymeniale luteo-fusco, paraphysibus adglutinatis obscuris grumosis. Sporæ vermiformi-aciculares subspiraliter curvatæ sat 10-septatæ, longit. ·06, crassit. ·002 mm.

Ad cortices arborum.

28. *Bacidia spodoelæina*, Kn.

Thallus cinereo-olivaceus tenuis sublævis continuus indeterminatus. Apothecia fusca v. fusco-nigra (diam. 0·6 mm.) convexa, margine concolore, disco in juvenis aliquando pruinosa, excipulo albo, strato subhymeniale incolorato, paraphysibus gracilibus non bene discretis apice non dilatatis. Sporæ bacillares circiter 18-septatæ rectæ v. leviter curvatæ, longit. ·06, crassit. ·003 mm.

Ad cortices arborum.

29. *Bacidia chryso-carpa*, Kn.

Thallus albus v. sordide albescens tenuissimus subleprosus v. leproso-granulatus v. pulverulens indeterminatus. Apothecia flavescens convexa (diam. 0.8 mm.), margine concolore indistincto demum excluso, excipulo (viso per reflectam lucem) albo, strato subhymeniale dilute luteo-fusco, paraphysibus adglutinatis gracilibus non grumosis apice non dilatatis. Sporæ aciculares gracillimæ, septis invisis, longit. .06, crassit. .002 mm.

Ad cortices arborum.

30. *Bacidia nanospora*, Kn.

Thallus cinereus tenuis subleprosus, granulas gonimas virides in nodulis magnis receptas continens. Apothecia e thallo oriunda (in juniore biatorina urceolata, disco sordide fusco, margine pallidiore ceraceo prominente erecto, strato subhymeniale dilute luteo-fusco) tandem convexa (diam. .6 mm.) fusca, margine obscurato, excipulo fusco, paraphysibus adglutinatis brevibus. Sporæ in ascis clavatis vermiformi-aciculares, septis invisis, longit. .02 mm., crassit. .0013 mm.

Ad cortices arborum.

31. *Bacidia pannaroidea*, Kn.

Thallus sordide ochraceo-cinereus carroso-leprosus spongiosus diffractus, granulas gonimas virides in nodulis magnis receptas offerens. Apothecia rufa v. rufo-fusca (diam. 1.2 mm.) margine concolore obtuso demum tenui, excipulo fusco, strato subhymeniale atro-fusco, paraphysibus non bene discretis gracilibus apice non dilatatis. Sporæ aciculares infra attenuatæ gracillimæ rectæ sat 16-septatæ, longit. .06 ad .09, crassit. .0015 ad .002 mm.

Ad cortices arborum.

32. *Bacidia rhodocarpa*, Kn.

Thallus sordide ochraceus v. cinerascens pulverescens continuus, granulas gonimas in nodulis magnis receptas continens. Apothecia luteo-rufescens v. rubra v. demum fuscensens planis marginata (diam. 0.8 mm.) margine concolore demum obscuro, excipulo luteo-fusco, strato subhymeniale atro-luteo-fusco, paraphysibus capillaribus discretis, apicibus non dilatatis. Sporæ aciculares rectæ circiter 20-septatæ, longit. .06, crassit. .002 mm.

Ad cortices arborum.

33. *Bacidia albido-prasina*, Kn.

Thallus glauco-albidus v. albo-smaragdinus tenuis lævis continuus linea nigra limitatus. Apothecia carneo-alba adnata plana v. convexa (diam. 0.4 mm.) margine pallidiore demum obscuro, excipulo luteo-fusco, paraphysibus adglutinatis apice non dilatatis. Sporæ aciculares simplices (septis invisis) gracillimæ, longit. .05, crassit. .002 mm.

Ad cortices arborum.

34. *Lecidea cerinocarpa*, Kn.

Thallus cinereo-viridis tenuis pulverescenti-granulatus, gonidiis veris flavo-virescentibus, interdum granulis gonimis in nodulis magnis receptis. Apothecia ceraceo-carneo-lutea convexa interdum discolorata marginata (diam. 0·8 mm.) intus incolorata, margine exacte concolore ex quo obscurato, paraphysibus capillaribus discretis. Sporæ in ascis cylindraceutis uniserialibus ellipsoideæ simplices incolores, longit. 0·13 mm., crassit. 0·06 mm.

Ad cortices.

35. *Lecidea rhypoderma*, Kn.

Thallus sordide fusco-virescens congesto-isidioso-farinosus friabilis diffractus, gonidiis veris flavo-virescentibus in massis magnis glomeratis. Apothecia fusca v. fusco-rufescentia adnata (diam. 1 mm. v. minora) convexa immarginata intus luteo-fusca, strato subhymeniale fusco, paraphysibus brevibus (circiter 0·04 mm.) adglutinatis apice non dilatis. Sporæ cylindraceuto-oblongæ incolores, longit. 0·08 ad 0·01, crassit. 0·02 mm.

Ad cortices.

The spores sometimes show a faint trace of a septum.

36. *Lecidea parvifolia* v. *corallina*, Tuck.

Thallus cinereo-glaucus squamuloso-microphyllinus continuus, squamulis corallinis v. lobato-palmatis, gonidiis veris flavo-virescentibus, hypothallo pallide fibrilloso passim conspicuo. Apothecia biatorina luteo-rubella plana immersa v. superficialia marginata intus pallida, margine concolore, disco plano interdum in centro depresso, paraphysibus hand bene discretis. Sporæ in ascis parvis obovodeis ellipsoideæ simplices incolores, longit. 0·1, crassit. 0·03 mm.

Ad cortices.

Agrees with Leighton's Ceylon Lichens No. 109, except that the spores are somewhat smaller (0·015 × 0·004 mm.); but differs widely from No. 110, in which the thallus is thin, powdery, and hypothecium black.

37. *Lecidea microdactyla*, Kn.

Thallus pallide cinereo-viridescens flocculoso-corallinus v. flocculoso-granulosus continuus, hypothallo pallido byssoideo, gonidiis veris flavo-virescentibus. Apothecia biatorina luteo-rubella intus incolorata strato gonimico enata, margine evanescente, paraphysibus non discretis. Sporæ cylindraceuto-ellipsoideæ simplices, longit. 0·15, crassit. 0·025.

Ad cortices.

38. *Lecidea conisalea*, Kn.

Thallus albo-viridescens pulverulentus tenuis continuus, gonidiis veris flavo-virescentibus. Apothecia biatorina luteo-rubella plana v. convexa marginata intus incolorata (diam. 1 mm. v. minora), margine tenui vulgo

pallidiore demum tenuissimo v. evanescente, paraphysibus capillaribus distinctis. Sporæ ovoideæ simplices incolores, longit. $\cdot 015$, crassit. $\cdot 006$ mm.

Ad cortices.

39. *Lecidea semipallida*, Kn.

Thallus cinerascens tenuissimus v. evanescens v. nihil nisi matrix pulvere conspersa. Apothecia rufa minuta biatorina (diam $0\cdot 15$ mm.) intus rufo-pallida immarginata, paraphysibus grumosis. Sporæ minutæ incolores simplices oblongo-ellipsoideæ, longit. $\cdot 01$ mm., crassit. $\cdot 003$ mm.

Ad cortices.

Lecidea semipallida, Nyl. in litt.

40. *Lecidea albiprætexta*, Kn.

Thallus albidus v. cinereo-albidus minute granulatus tenuis continuus (matricibus diffractis) indeterminatus. Apothecia superficialia parum urceolata parva (diam. $0\cdot 35$ mm.) rosea v. incarnata intus tota albida margine albescente prominulo integro cincta, paraphysibus capillaribus subglutinatis. Sporæ in ascis clavato-ventricosus simplices ovoideæ oleosæ v. granulosa, longit. $\cdot 017$, crassit. $\cdot 01$ mm.

Ad cortices.

41. *Lecidea glandulosa*, Kn.

Thallus albo-cinereus tenuis leprosus v. leproso-squamulosus granulas gonimas virides in nodulis magnis receptis continens. Apothecia rufo-fusca v. luteo-fusca plana demum convexa intus incolorata, margine concolore demum evanescente, hymenio supra fusco, excipulo proprio incolorato structuram radiatam offerente, paraphysibus capillaribus non bene discretis apice coloratis nonnihil granosis. Sporæ in ascis oblongis simplices ovoideæ nonnihil oleosæ v. granulosa, longit. $\cdot 015$, crassit. $\cdot 008$ mm.

Ad cortices.

42. *Lecidea coccodes*, Kn.

Thallus ochro-olivaceus tenuis granulatus indeterminatus. Apothecia rufo-fusca v. atro-fusca (diam. $0\cdot 6$ mm.) marginata, disco plano, margine concolore tumido, intus dilutissime fulva, paraphysibus capillaribus non bene discretis apice dilatis. Sporæ in ascis oblongo-clavatis ovoideæ nonnihil granulosa simplices incolores, longit. $\cdot 015$, crassit. $\cdot 009$ mm.

43. *Platygrapha macrospora*, Kn.

Thallus ochroleucus granulatus tenuis indeterminatus. Apothecia atra innata (diam. $0\cdot 7$ mm.) plana difformia a thallo granuloso prætexta immarginata; hymenium coloratum hypothecio crasso fusco-nigro enatum; excipulum nullum; paraphyses adglutinata subgrumosa. Sporæ aciculares rectæ circiter 18-septata incolores, longit. $\cdot 065$, crassit. $\cdot 0025$ mm.

Ad cortices arborum.

Lecidea interponens, Nyl. in litt.



C. Knight. del.

LICHENES

J.B. lith.



44. *Platygrapha myriommata*, Kn.

Thallus albido-viridi-cinereus v. albo-cinereus minute areolato-granulosus sub-indeterminatus. Apothecia prominentia a thallo albo ocellato prætexta—in initio alia abortiva, disco atro sæpe in centro albo intus carbonaceo, partim fecunda tum plana v. convexa ferruginosa demum tenuiter a thallo prætexta; hymenium fusco-rubicundum hypothecio nigro enatum; excipulum proprium nullum; paraphyses breves ambigue implicatæ non-discretæ. Sporæ in ascis clavatis aciculares utrinque attenuatæ rectæ v. subcurvatæ 3–5 septatæ v. simplices, longit. $\cdot 04$, crassit. $\cdot 0025$ mm.

Ad cortices arborum.

45. *Platygrapha mecistospora*, Kn.

Thallus albo-cinereus v. albo-glaucescens rimuloso-areolatus v. continuus. Apothecia lecedeiformia (diam. $0\cdot 7$ v. minora) nigra intus fuscetia v. rubro-fuscescentia, juniora innato-emergentia concava dein adnata plana v. convexa excipulo proprio (perithecio) atro-fusco integro marginata, epithecio fusco grumoso indurato (excipulo proprio continuato), paraphysibus discretis subtilissimis ramosis apice grumosis excipulo atro enatis. Sporæ in ascis elongato-cylindræis aciculari-cylindræis 16–35-septatæ, longit. $0\cdot 13$, crassit. $\cdot 0035$.

Ad cortices.

Lecidea pleistophragma, Nyl. in litt.

46. *Verrucaria leptostegia*, Kn.

Thallus cinereus areolato-diffractus indeterminatus. Apothecia semi-immersa minuta globosa; perithecium nudum atrum convexum v. hemisphericum; paraphyses graciles discretæ amphithecio tenui dilute fusco oriundæ. Sporæ in ascis cylindræis oblongæ v. fusiformi-oblongæ v. obovatæ dilute luteolæ, longit. $\cdot 02$, crassit. $\cdot 006$ mm.

Spermagonia immersa minuta globosa; spermatia oblonga v. linearia 4-septata, longit. $\cdot 013$, crassit. $\cdot 004$ mm., conceptaculo tenui oriunda.

It is not absolutely certain that the spermagones, described above, belong to *V. leptostegia*. Hitherto I have failed to find apothecia and spermagones on the same thallus, except in the specimen from which the above description is drawn, and even in this instance they are not thoroughly mixed together, while the thallus on which the spermagones were found is certainly of a somewhat lighter tint than the portion bearing apothecia, although in every other respect it is uniform. This scarcely perceptible difference in depth of tint is not of itself important. The spermatia, it will be seen, resemble in every respect those of *Verrucaria byssacea (vera)*, Schær. (vide Leighton's figure No. 4, Plate XVI., Angiocarpous Lichens); but differ widely from the simple spermatia found on Schærer's own specimen, No. 286, Lich. Helv. Exsicc.

47. *Megalospora dispersa*, Kn.

Thallus cinereus granulatus continuus. Apothecia atro-fusca superficialia convexa (diam. 0·6 mm.) immarginata; excipulum proprium dilute ochraceum; hymenium grumosum fuscidulum paraphysibus væris destitutum hypothecio crasso dilute luteo enatum. Sporæ in ascis pyriformibus binæ ellipsoideæ simplices incolores, longit. ·042, crassit. ·02 mm.; episporium et endosporium corio crasso disjuncta.

Ad cortices.

48. *Lecanora homologa*, Nyl.

Thallus sordide albo-cinereus sublævis indeterminatus. Apothecia (made-facta diam. ·1 mm.) disco rufo plano, margine tumido subgranuloso albo, paraphysibus non bene discretis apice granosis fusciscentibus, excipulo thal-lode pallido gonimico calluloso, gonimia magna. Sporæ ovoideæ 3-loculares, loculis tubulo tenui junctis, incolores, longit. ·024, crassit. ·012 mm.

Ad cortices.

DESCRIPTION OF PLATES XII. AND XIII.

- | | |
|---|---|
| <p>Fig.</p> <ol style="list-style-type: none"> 1. <i>Sticta amphisticta</i>, Kn.
a, spores.
b, ascus with spores. 2. <i>Sticta episticta</i>, Nyl.
a, ascus with spores. 3. <i>Pannaria atro-fumosa</i>, Kn.
a, ascus with spores.
b, granulæ gonimæ. 4. <i>Pannaria apiculata</i>, Kn.
a, ascus with spores.
b, granulæ gonimæ. 5. <i>Pannaria triptophylla</i>, Ach.
a, ascus with spores. 6. <i>Pannaria subsimilis</i>, Kn.
a, ascus with spores. 8. <i>Pannaria biatorina</i>, Kn.
a, ascus with spores.
b, two spores.
c, granulæ gonimæ. 9. <i>Pannaria subimixta</i>, Kn.
a, spores in ascus.
b, two nodules with granulæ gonimæ. 10. <i>Physcia plinthiza</i>, Nyl.
a, three spores. 11. <i>Lecanora babingtonii</i>, Mass.
a, ascus with spores and three separate spores.
b, <i>Lecanora punicea</i>, Ach., two spores.
c, " " two spores. | <p>Fig.</p> <ol style="list-style-type: none"> 12. <i>Bacidia subscripta</i>, Kn.
a, two spores. 13. <i>Bacidia glomerulosa</i>, Kn.
a, three spores.
b, granulæ gonimæ in nodule.
c, granulæ gonimæ. 14. <i>Bacidia eucoccodes</i>, Kn.
a, a separate spore.
b, granulæ gonimæ in nodule.
c, ascus with spores. 15. <i>Bacidia spirospora</i>, Kn.
a, ascus with spores.
b, spore separate. 16. <i>Bacidia melastegia</i>, Kn.
a, ascus with spores. 17. <i>Bacidia anceps</i>, Kn.
a, two spores. 18. <i>Bacidia cerasentera</i>, Kn.
a, spore. 19. <i>Bacidia melasema</i>, Kn.
a, two spores. 20. <i>Bacidia mesospora</i>, Kn.
a, ascus with spores.
b, spore. 21. <i>Bacidia stenospora</i>, Kn.
a, ascus with spores.
b, spore. 22. <i>Bacidia pedicellata</i>, Kn.
a, spore. |
|---|---|

(Description of Plates XII. and XIII.—continued.)

Fig.

23. *Bacidia rimosa*, Kn.
a, two spores.
24. *Bacidia carneo-rufa*, Kn.
a, spore.
25. *Bacidia rosello-carnea*, Kn.
a, two spores.
26. *Bacidia pseudo-pyrra*, Kn.
a, ascus with spores.
b, spore.
27. *Bacidia leuco-carpa*, Kn.
a, spore.
28. *Bacidia spodoelæina*, Kn.
a, spore.
29. *Bacidia chryso-carpa*, Kn.
a, spore.
30. *Bacidia nanospora*, Kn.
a, spore.
b, granulæ gonimæ in nodule.
31. *Bacidia pannaroidea*, Kn.
a, granulæ gonimæ in nodule.
b, spore.
32. *Bacidia rhodocarpa*, Kn.
a, ascus with spores.
b, granulæ gonimæ in nodule.
33. *Bacidia albido-prasina*, Kn.
a, spore.
34. *Lecidea cerino-carpa*, Kn.
a, ascus with spores.
b, granulæ gonimæ in nodule.
35. *Lecidea rhyppoderma*, Kn.
Ascus with spores.
36. *Lecidea parvifolia* v. *corallina*, Tuck.
Ascus with spores.
37. *Lecidea microdactyla*, Kn.
Ascus with spores.
38. *Lecidea conisalea*, Kn.
Ascus with spores.
39. *Lecidea semipallida*, Kn.
Three spores.

Fig.

40. *Lecidea albiprætexta*, Kn.
Ascus with spores.
41. *Lecidea glandulosa*, Kn.
a, ascus with spores.
b, granulæ gonimæ in nodule.
c, ascus with spores.
42. *Lecidea coccodes*, Kn.
a, ascus with spores.
b, paraphysis.
43. *Platygrapha macrospora*, Kn.
a, apothecium, magnified about 40 diameters.
b, two spores.
44. *Platygrapha myriommata*, Kn.
a, apothecium, magnified about 40 diameters.
b, three spores.
45. *Platygrapha mecistospora*, Kn.
a, ascus, with spores.
b, apothecium, magnified about 40 diameters.
46. *Verrucaria leptostegia*, Kn.
a, apothecia, magnified about 40 diameters.
b, spores in ascus.
c, spermagonium, magnified about 40 diameters.
d, spermatia.
47. *Megalospora dispora*, Kn.
a, apothecium, magnified about 40 diameters.
b, spore.
c, ascus with two spores, less highly magnified.
48. *Lecanora homologa*, Nyl.
a, spores in ascus.
b, spore.

NOTE.—The figures magnified about 900 diameters, except where otherwise noted.