

# REVUE BRYOLOGIQUE ET LICHÉNOLOGIQUE

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# Lichenes africani novi ab E. A. Vainio recogniti

AUCTORE B. LYNGE.

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## PREFACE

During the later years of his life Dr. E. A. Vainio received a great number of interesting lichens from Dr. P. A. van der Byl, Stellenbosch, Unie van Suid-Afrika. Several of them were found to be undescribed species, and Vainio published a report on them : « Lichenes Africani novi », *Annales Universitatis Fennicae Aboensis*, Ser. A, vol. II, No. 3, p. 1-33, Turku (Åbo) 1926.

There were also some other plants which he had recognized as n. sp., but which were not published in that paper. At the request of Dr. van der Byl I have prepared their diagnoses which are presented to the public in this paper. The types were lent from Herb. Vainio in Åbo.

It should be clearly understood that my task was limited to the preparation of the diagnoses, and that it did not comprise a comparison with other related species, or even to give my opinion on the specific value of these n. sp. from a region, the lichen flora of which is so little known to me.

All the diagnoses are based on the types themselves, all measures are due to me. But after his usual manner Vainio had added a great number of herb. notes. His data on the lichens in question were a great support to me. His notes on the affinities of the lichens have been carefully reproduced, they cannot fail to be of great interest.

Farmasötisk institutt.

Oslo, 15-3-1937.

### **Buellia callisporoides** Vain.

*Thallus crustaceus, uniformis, mollis, modice incrassatus, rimis profundis verrucoso-areolatus, areolae convexae, rotundatae v. magis angulatae, circiter 0,3-0,5 (0,7) mm. latae. Thallus dilute albido-cinerascens, in flavescens vergens, subochroleucus, sorediis isidiisque destitutus.*

*Apothecia numerosa, vulgo dispersa, sed hinc inde approximata, supra thallum bene elevata, rotundata, diam. 0,7-1,0 mm., ab initio depresso convexa, margine indistincto cincta, deinde magis elevate convexa et immarginata. Discus aterrimus, scabrosus, epruinosis,*

*subnitidus. Excipulum fusconigrum, etiam cum hypothecio. Hymenium superne fuscum, guttulis oleosis instructum, altissimum : 125-135  $\mu$ . Paraphyses non cohaerentes, indivisae, apice leviter clavatae et ibi 2,5-3  $\mu$  crassae. Asci angusti, 12-15  $\mu$  crassi, sporas octonas subuniseriales continentes. Sporae cinereo-fuscescentes, in aetate obscuriores, dyblastae, septo non vel haud constrictae, apice satis late rotundatae, episorium in apice sporarum attenuatum.*

*Pycnides non visae.*

*Thallus J —; KOH extus et intus —, vel dilute lutescens, CaCl<sub>2</sub> O<sub>2</sub> — CaCl<sub>2</sub> Hymenium J e caeruleo vinosum, KOH et HNO<sub>3</sub> immutatum.*

Cape Prov. : Riversdale, leg. P. v. d. Bÿl, saxicola.

Vainio's herb. notes :

1. « *L(ecidea) Acunhana* Nyl. in Cromb. Chall., p. 222, differt sporis minoribus, 10-12  $\times$  6-7  $\mu$ , sed habitu subsimilis. »

2. « *L(ecidea) callispora* Kn. (Nyl.) Flora 1886, p. 325, corticola, sed forsán eadem spec. »

The spore wall was almost equally incrassated, but at the apices of the spores it was thinner, the cell lumen pushing a rounded microlumen into the spore wall. It looked like a germination pore. — No margin of the thallus was present.

### **Buellia endorhodina** Vain. n. sp.

*Thallus crustaceus, crassitudine mediocri, rimis profundis areolatus, areolae irregulares, 1-1.5 mm. latae, et rimulis minutis in microareolis, 0.3-0.4 mm. latis, convexis, divisae. Thallus superne albidus, etiam madefactus, sorediis isidiisque destitutus.*

*Apothecia numerosa, sed dispersa, sessilia v. adpressa, rotundata, diam. circ. 0.7 mm. Discus planus, nigricans, epruinosis, margine (persistenti?) integro, crassitudine mediocri circumdatus. Excipulum fusconigrum, etiam cum hypothecio. Hymenium 80-85  $\mu$  altum, superne fuscum, paraphyses arcte cohaerentes, tenues vel tenuissimae, 1-1.5  $\mu$  crassae, apice fusco-capitatae v. clavatae, 2.5  $\mu$  crassae. Asci clavati, octospori, sporaes obscure fuscescentes, triseptatae, membrana aequaliter incrassata, apice rotundata vel leviter apiculata, (14-) 17-22  $\times$  7  $\mu$ . — Pycnides non visae.*

*Cortex KOH flavescens.*

Natal : Durban, ad corticem arboris, leg. P. v.d. Bÿl.

**Buellia pachysporoides Vain.**

*Thallus satis crassus, crustaceus, uniformis, areolatus, areolae pal-  
lide cinereo-ochroleucae, nitidae, irregulares, subangulatae, 0.15-  
0.35 mm. latae, ab initio subplanae, deinde vulgo varie rugulosae vel  
convexae, sorediis isidiisque destitutae, fissuris profundis separatae.*

*Apothecia numerosa, dispersa, arcte adpressa, disco thallum levi-  
ter superanti vel rarius thallum subaequanti, magnitudine mediocria,  
diam. 0.3-0.4 mm. Discus e plano mox convexus, ater, epruinus,  
subnitidus, margine indistincto deinde excluso. Excipulum fusco-  
nigricans, etiam cum hypothecio. Hymenium 75-80  $\mu$  altum, epithe-  
cium smaragdulo-fuliginium, non granulosum. Paraphyses cohae-  
rentes, tenues, apice leviter capitatae, circ. 2  $\mu$ . Sporae octonae, dis-  
tichae, obscuratae, dyblastae, medio non constrictae, apice late ro-  
tundatae, 12-15.5  $\times$  7-8  $\mu$ , septum crassum, 2.5-8  $\mu$ , poro distincto  
perforatum, epispodium quam septum tenuius, circ. 1  $\mu$ , aequaliter  
incrassatum.*

*Medulla J non caerulescens, KOH flavescens, hymenium J caeru-  
leo-nigricans, KOH si addito ex excipulo solutio fusco-rubescens ef-  
fundit.*

Cape Province : Langbaan, 1924, leg. P. A. van der Bÿl, saxicola.

Vainio had added the following herb. notes :

1. « *L. viridiatra* Flk., thallo verrucoso, verrucis convexis, laevi-  
gatis differt. — Diversa est *L. viridiatra* Stiz. Lich. Afr. II, 184,  
(sporae) 26-33  $\times$  10-12 ( $\mu$ ). »

2. « *L. callaina* Stiz. l. c. p. 184, (sporae) 16-18  $\times$  7-9 ( $\mu$ ), apo-  
thecia leviter pruinosa, thallus K (C) rubescens. »

3. « *L. ambusta* Stiz. l.c. p. 186, K + lutescens, K (C) aurantiaca,  
tenuis, (sporae) 16-20  $\times$  7-9 ( $\mu$ ). »

4. « *L. nesiotis* Stiz. l.c. p. 187, thallus insularis. »

5. « Diversa : *L. Africana* Tuck. (Stiz. L. Afr. p. 189), thallus lu-  
teus, sec. specim. ex Africa in hb. Stiz. (hb. Nyl. No. 9532), orig.  
Tuck. 5879 (hb. Nyl.). »

6. « *Buellia pachyspora* Mass. Cap. p. 33, sp. 18  $\times$  7-9, epithecium  
fuscidulum, areolis thalli sordide luteo-viridulis, disco concavius-  
culo. »



**Heppia azurea** Vain.

An syn. *Heppia caesia* Hue, Heppiarum nonnullae species, in Mem. Soc. Nat. Scient. Nat. Cherb., vol. XXXVI, 1907, p. 84 (vel sep. p. 34) ?

*Thallus squamosus, squamae caesiae, subdiscretae vel magis approximatae, rotundatae vel subangulatae, diam. 1-1.5 mm. raro superantes, squamae maximae tamen usque ad 2 mm. latae, circiter 0.25 mm. crassae, ambitu subintegrae, superne planae, leviter pruinosaе, subtus brunneae, gompho adfixae. Nec hypothallus, nec rhizinae evolutae.*

*Thallus plectenchymaticus, in parte inferiori late (60-75  $\mu$ ) plectenchymaticus, flavescens vel rubescens, deinde medulla tenuis non plectenchymatica, et deinde a superficiem superiorem late plectenchymaticus (70-90  $\mu$ ) et satis dilute cyanescens. Cortec inferior 20-25  $\mu$  altus.*

*Apothecia rarissima, a me non visa, sec. annot. Vain. : « Apothecia thallo immersa, punctis nigris minutis indicata. Epithecium pallidum, paraphyses arcte cohaerentes. Sporae in ascis numerosissimae, globosae, simplices, decolores, diam. 5  $\mu$ . »*

*Thallus KOH superne rubricoso-rubescens. Hymenium J dilute caerulescens.*

Rhodesia : Matoppas 1920, leg. P. van der Bÿl, saxicola.

The thallus is not plectenchymatous all through, just inside the very distinct lower plectenchyma there are common hyphae in a thin stratum, and in the inner part of the gomphus this non-plectenchymatous tissue is fairly thick. In the upper part of the thallus the cells are much smaller than deeper down.

Gonidia are hardly to be detected in an unstained section. But if the section is cleared with chlorale hydrate, or with HNO<sub>3</sub>, and washed, the gonidia stain with chlorzinkjodide. They are blue-green, much deformed, small, 5-6  $\mu$  in diam., more or less glomerated, but not in distinct chains, possibly *Nostoc*, but I am unable to warrant the determination. After Hue, l.c., the gonidia of *Heppia caesia* belong to *Scytonema* (« gonidia scytonemea »). Zahlbruckner writes (Engler-Prantl, 1926, p. 129) : « *Nostoc*-gonidien geknäuel, ... miteinander scheinbar *Scytonema*-artig. »

Vainio suggested *Heppia azurea* to be a synonym of Hue's *Heppia caesia*. After Hue's diagnosis this is quite probable, but I am unable to check the suggestion, having no access to Hue's plant.

**Lecanora atraeformis** Vain.

*Thallus crustaceus, satis crassus, fissuris profundis verrucoso-vel granulato-areolatus, areolae inaequales, pure cinereae.*

*Apothecia dispersa, parva, diam. 0.3-0.35 (-0.5) mm., sessilia, supra thallum bene elevata. Discus planus, epruinosis, ater, margine crasso, subintegro vel crenulato elevato persistenti circumdatus. Hymenium violaceum, superne subfuliginium, 65  $\mu$  altum, in hypothecium dilutius coloratum transiens. Paraphyses arcte cohaerentes, satis validae, obscure clavatae et apice 4-4.5  $\mu$  crassae, indivisae. Ascle male evoluti, circ. 50  $\times$  10  $\mu$  (ob maturi?), membrana superne valde incrassata. Sporae anguste ellipsoideae, leptodermaticae, 10-13  $\times$  4.5-5  $\mu$ .*

*Thallus KOH flavescens, hymenium HNO<sub>3</sub> subimmutatum, KOH intense roseo-violascens.*

Natal : Hovuk, supra corticem *Acaciae mollissimae*, leg. P. van der Bÿl 1920.

It has a purely ash-grey thallus, darker than *Lecanora atra*, as seen in Europe, and, perhaps, slightly smaller apothecia and narrower spores than the said species. Whether these differences justify a specific distinction, is another question. — If the section is not cleared the spores are difficult of observation.

**Lecanora caesiopallens** Vain.

*Thallus tenuis, valde mollis, rimis tenuibus undulatis in areolis irregularibus divisus, areolae minutae, usque ad 0.2 mm. latae, subconvexae, sub lente ( $\times$  64) superne fere arachnoideae vel ( $\times$  16) minute granulosa. Thallus albidus vel albido-cinereus, leviter in flavescens vel flavido-virescens vel (morbose?) hinc inde dilutissime in rosaceum vergens, secundum marginem hypothallo penicillatim dissoluto, albido, cinctus.*

*Apothecia numerosa vel numerosissima, supra thallum bene elevata, rotundata, diam. usque ad 1.5 mm. Discus planus vel subplanus, carneus, sed valde albido-pruinosis, margine tumidulo, albido-subrosaceo, integro, cinctus. Hypothecium albidum, hymenium 70-75  $\mu$  altum, superne pallidum, paraphyses sat arcte conglutinatae. Sporae simplices, incoloratae, ellipsoideae-subglobosae, 10-14  $\times$  9-11  $\mu$ . — Pycnides non visae.*

*Thallus* KOH *lutescens*,  $\text{CaCl}_2\text{O}_2$  —, KOH +  $\text{CaCl}_2\text{O}_2$  *lutescens*.  
*Margo apothecii* KOH +  $\text{CaCl}_2\text{O}_2$  *rubescens*.

Africa australis : Knysna, supra corticem *Ocoteae bullatae*, leg. P. v. d. Býl, 1921.

Vainio had firstly named this plant *Lecanora rubella* Ach. var. *caesiopallens* Vain.

### **Lecanora prosecha** Ach.

Lich. Univ., 1810, p. 346, Vain. Addit. Lich. Antill., 1915, p. 30,  
 var. **homaloplaca** (Nyl.) Vain.

Cat. Welw. Afric. Plants II, 1901, p. 404.

*Thallus crassitudine mediocri*, 0.7-1.2 mm., *albidus vel leviter in glaucescentem vergens*, *rimis undulatis areolatus*, *areolae 0.5-0.6 (0.8) mm. latae, superne typice planae, laevigatae, sorediis isidiisque destitutae, subopacae*.

*Apothecia in centro areolarum innata, numerosissima, thallum aequantia, parva, rotundata, diam. 0.2-0.3 mm. Discus ater. Hypothecium omnino incoloratum, ex hyphis erectis formatum. Hymenium 50-55  $\mu$  altum, strato amorpho tenui tectum, superne olivaceo-fuliginenum. Paraphyses arcte cohaerentes, in KOH facilius discretae, tenuissimae, 1-1.5  $\mu$  crassae (in  $\text{HNO}_3$ ), distincte septatae, apice haud incrassatae (in KOH). Asci rari, sporae octonae, distichae, incoloratae, ellipsoidae, circ.  $10 \times 5 \mu$ . — Pycnides non visae.*

*Thallus (intus albescens) J —, KOH flavescens, hymenium J caeruleo-olivaceo, epithecium KOH dilute violascens.*

Natal : Howick Gonstone 1920, ad rupes duriores leg. P. van der Býl.

Vainio had firstly given this plant a new name (*Lecanora (Lecania) polytypa* Vain. in herb.), on the supposition that it should be a *Lecania*, with septated spores. But an examination with a better lens had convinced him that the spores were undivided (the writer fully agrees in this), after which he named it *Lecanora (Aspicilia) homaloplaca* Nyl. He had himself united that species with *Lecanora prosecha* Ach. (not seen by the writer).

**Lecidea achristella** Vain.

*Thallus crassitudine mediocri, granulis mollibus, sed corticatis, circ. 100  $\mu$  latis, et hinc inde fissuris irregularibus in areolis majoribus divisus. Thallus pure cinereus, madefactus in virescentem vergens. Hypothallus haud visus.*

*Apothecia numerosa vel numerosissima, sed dispersa, parva, diam. 0.3-0.35 mm., sessilia. Discus supra thallum elevatus, ater, madefactus fuscescens, planus, epruinosis, margine atro (etiam madefacto), integro, crassitudine mediocri, persistenti circumdatus. Hypothecium dilutissime flavescens, hymenium 65-70  $\mu$  altum, superne haud intense fuliginium vel fusco-nigrescens. Paraphyses facile discretas, indivisas, 1-1.5  $\mu$  crassae, apice levissime solum incrassatae. Asci numerosissimi, 15-17  $\mu$  lati, octospori. Sporae simplices, incoloratae, late ellipsoideae, 11-13  $\times$  7-8 (-9)  $\mu$ . — Pycnides non visae.*

*Thallus KOH —, CaCl<sub>2</sub>O<sub>2</sub> —, KOH + CaCl<sub>2</sub>O<sub>2</sub> —. Hymenium J caerulescens.*

Natal : Howick, ad corticem *Acaciae mollissimae*, leg. P. van der Bÿl, 1920.

Vainio wrote « affinis *Lecideae glomerulosae* ». — It differs from « *Lecidea elaeochroma*  $\beta$ . *achrista* Somrft ». Plant. Crypt. Norv., 1826, No. 46 in its considerably thicker, more granulose, grey thallus, the *achrista* is « *Cinerascens* v. *albida* » (Th. Fr. Lich. Scand. p. 544), not purely ash-grey as the South African plant.

Vainio had added the following herb. notes :

1. « *Lecidea exilis* (Flk.) Nyl. Prodr. 136, specim. Arn. Eichstätt ad *Populi* thallo cinereo tenui verruculoso-inaequali. »

2. « *Lecidea parasemiza* Nyl. Nov. Zel. thallo crassiori (modice), albido-glaucis, verruculoso-inaequali differt, sporae 12-14  $\times$  6-8  $\mu$ .

**Lecidea griseofuscuscula** Vain.

*Thallus crustaceus, tenuis vel tenuissimus, minute irregulariter granulosus vel granuloso-subarachnoideus, cinereo-albidus vel in cinereo-virescentem vergens.*

*Apothecia numerosa, sed dispersa (interdum morbosa), rotundata, diam. 0.2-0.35 (-0.4) mm., supra thallum bene elevata, basi constricta. Discus planus vel subplanus, fuscus, madefactus dilute fusco-*

*rubescens, opacus, epruinosis, margine obscuriori, madefacto fusconigricanti, integro, crasso vel tumidulo, persistenti, circumdatus. Cortex excipuli incoloratus, hyphae adeo dense contextae ut subplectenchymaticae videntur. Excipulum saltem in parte exteriori albidum (vel morbose fuscorubescens), subplectenchymaticum. Hymenium altum-altissimum, superne strato amorpho incolorato granulato-rupto tectum, in parte superiori flavo-fuscescens, praeterea incoloratum. Hypothecium fusco-carbonaceum. Paraphyses apice haud incrassatae, cohaerentes, indivisae. Sporae late ellipsoideae, simplices, incoloratae, octonae, 17-20 (-24)  $\times$  10-12 (-14)  $\mu$ .*

*Medulla J* —, *KOH* —, *hymenium J* *persistenter caeruleo-nigricans (saltem ascī).*

Zululand : Eshore, corticola, leg. P. van der Býl 1920.

The details of the thallus are not to be discerned by the naked eye, it is a very thin, somewhat furfuraceous film over the substratum.

### **Lecidea theiophoroides Vain.**

*Thallus albidus, verruculis crebris instructus, praeterea tenuis, sorediis isidiisque destitutus.*

*Apothecia thallo adpressa, plus minusve dispersa, rotundata, diam. 1-1.5 mm. Discus planus vel subplanus, laevigatus, epruinosis, obscure fuscescens vel olivaceo-fuscescens, margine integro, crassitudine mediocri, persistenti, ab initio subpruinosis, deinde epruinosis circumdatus. Hyphae excipuli in margine superficiem versus radiantes, distincte subconstrictae septatae, haud leptodermatae, excipulum non corticatum. Hypothecium fusco-fuliginosum, etiam cum parte superiori excipuli. Hymenium 75-90  $\mu$  altum, superne dilute flavo-fuscescens, strato amorpho incolorato, rupto tectum. Paraphyses arcte cohaerentes, apice leviter fusco-clavatae et circ. 2  $\mu$  crassae. Asci satis rari, angusti, circ. 10  $\mu$  crassi. Sporae ellipsoideae, 9-10  $\times$  5  $\mu$ .*

*Asci J* *persistenter caerulescentes, hyphae medullares J* *non caerulescentes, thallus KOH* *intense flavo-rubescens.*

Zululand : Eshore, ad corticem *Thespesiae*, leg. P. van der Býl, 1920.

**Parmelia aleuriza** Vain.

*Thallus (fragmentum) fragilis, lobi haud radiantibus, breves, apice rotundati, valde undulati, superne plicato-rugosi. Thallus cinereo-flavescens, subnitidulus, supra laminam isidiis mox sorediiformiter dissolutis dense instructus, et secundum marginem et plicas isidiis thallo obscurioribus, coralloideis munitus. Thallus subtus ater, rhizinis atris, ramosis usque ad marginem dense vestitus.*

*Cortex superior 20-25 (-30)  $\mu$  altus, saepe a medulla bene limitatus, hyphis valde conglutinatis, punctis minutis adspersis et eam ob causam indistinctis, pachydermatis, superficiei plus minusve perpendicularibus, formatus. Medulla alba, cortex inferior ater, 15-20  $\mu$  altus.*

*Apothecia elevata, cupuliformia, discus flavo-fuscescens, epruinosis, margine constricto, subintegro vel crenulato circumdatus. Excipulum rugosum, cinereo-flavescens, punctis albidis instructum. Cortex excipuli 35-70  $\mu$  altus, subincoloratus, a medulla bene distinctus, hyphis pachydermatis formatus. Hymenium superne flavescens, strato incolorato, continuo tectum, 75-80  $\mu$  altum. Hymenium immaturum videtur, ascos atque sporas frustra quaesivimus. Paraphyses gelatinam firmam percurrentes, apice haud vel non incrassatae.*

*Pycnides fertiles frustra quaesitae.*

*Thallus KOH extus leviter flavescens, intus —, medulla  $\text{CaCl}_2\text{O}_2$  rubescens. Hymenium (immaturum?) J dilute flavo-rubescens.*

Prov. Capensis : Hopefiled, ad corticem Querci.

Vainio added the following herb. notes : « Forsan *P. confluens* Nyl. Flora 1886, p. 319, Lich. S. Pauli p. 5). »

« *P. subsequens* Nyl. Cromb. Cap. p. 167, Thallus KOH superne haud reagentem differt a specie nostra, sed ceterum habitu similis. »

« *P. stictica* Nyl. KOH +  $\text{CaCl}_2\text{O}_2$  + rubescens,  $\text{CaCl}_2\text{O}_2$  —. » Vainio also suggested a comparison with *Parmelia Borreri*, without stating the difference.

**Parmelia Bylii** Vain. n. sp.

*Thallus (fragmentum solum) subrigidus, lobi minus distincte radiantibus, breves, ut videtur apice rotundati, hinc inde irregulariter imbricati. Thallus cinereo-flavescens, nitidulus, ciliis isidiisque destitutus, sed supra laminam sorediis rotundatis, diam. 0.2-0.3 mm.,*

*bene limitatis, albidis, granulatis, plus minusve elevatis instructus. Thallus subtus dilute flavescens, usque ad marginem rhizinis pallidis vestitus.*

*Cortex superior circ. 25  $\mu$  altus, in parte superiori fuscescens, praeterea incoloratus, hyphis indistinctis pachydermaticis superficiei perpendicularibus, plus minusve conglutinatis, formatus! Cortex inferior a medulla bene limitatus, circ. 15  $\mu$  altus.*

*Apothecia (immatura) elevata, cupuliformia, discus castaneus, epruinosis, concavus, margine constricto, crenulate rupto circumdatus. Sporae frustra quaesitae. — Pycnides haud infrequentes, sed fertiles frustra quaesitae.*

*Cortex KOH flavescens, medulla haud colorata, thallus  $\text{CaCl}_2\text{O}_2$  extus immutatus, intus rubescens.*

Cape Prov. : Klapmuts, leg. P. v. d. Bjl, ad *Quercum*.

Vainio added the following herb. notes : « *Parmelia hypoleucites* Nyl. Cortex KOH —, medulla KOH —,  $\text{CaCl}_2\text{O}_2$  +, thallus nitidus, habitu *Parm. saxatilis*. »

« *Parmelia subglabra* Nyl. KOH +  $\text{CaCl}_2\text{O}_2$  —. »

« *Parm. aleuriza* Nyl. (inedit) e Port Natal, ster. (herb. Nyl. No. 35209) subtus nigricans. »

« *Parm. insignata* Stiz. Lich. Afric., p. 8. Thallus caesiocinereus v. olivaceo-virens, punctis solediosis minutis inspersus, adulta margine solediata, subtus obscuratus, versus marginem pallescens, rhizinis brevibus densis pallidis. »

The thallus is only a small fragment, and it is difficult to give precise information on its habitus. It much resembles his *Parmelia aleuriza*, I am really unable to see any specific difference, if it should not be that the coralloid isidia are lacking in the present fragment.

### ***Parmelia ceresina* Vain.**

*Thallus, ut videtur, expansus, satis adpressus, stramineo-virens, in aetate cinerascens, lobi rugulosi, plus minusve convexi, ambitu circ. 2 mm. lati, varie crenato-incisi, centrum versus irregulariter imbricati, saepe bullati. Thallus soledii isidiisque destitutus, in aetate saepe transversim ruptus, subtus pallide fuscus, rhizinis concoloribus vestitus.*

*Cortex superior circ. 25  $\mu$  altus, incoloratus, strato cinerascenti su-*

*perpositus*. *Hyphae medullares adpersae, crassae* (7-7.5  $\mu$ ), *cortex inferior* 15-20 (-25)  $\mu$  *altus*.

*Apothecia numerosissima, partem centram thalli tegentia, sessilia, sed non adpressa, supra thallum magis elevata et basi constricta, margine crenato constricta. Discus eam ob causam profunde concavus, badius, nitidus, epruinosis. Cortex excipuli incoloratum, altum, 50-70  $\mu$ , hyphis pachydermatis, refractivis, superficiei perpendicularibus formatus. Cortex infrahypothecialis eodem structura, hyphis pachydermatis, hymenio perpendicularibus formatus, satis altus : 35-50  $\mu$ . Hypothecium verum 20-25  $\mu$  altum, hyphis plus minusve horizontalibus, leptodermatis formatum. Hymenium angustum, 50-55  $\mu$ , superne fuscum et minute granulosis (KOH). Paraphyses arcte conglutinatae, indivisae, superne haud incrassatae. Sporae distinctae, octonae, late ellipsoideae, 10-12  $\times$  6-7  $\mu$ .*

*Pycnides numerosae, sed saepe steriles, pycnoconidia recta, bacillaria, 5-7  $\mu$ .*

*Medulla KOH lutescens, deinde intensius colorata (sed non rubescens), KOH + CaCl<sub>2</sub>O<sub>2</sub> sat leviter rubescens. Asci J caerulescentes.*

Cape Province : Ceres 1924, leg. T.B. Leslie; saxicola.

Vainio had added the following herb. notes :

1. « *Parmelia digitulata* Nyl. Flora 1878, p. 247 (Hue Addenda, p. 40) in ambitu laciniis crebris, 0.5 mm. latis. »

2. « *Parmelia loxodes* Nyl. Pyr. Orient. p. 5, centro verrucosa et verruculosa, crebra, et solediosa. »

3. « *Parmelia verrucigera* Nyl. Pyr. Orient. p. 5, 50. Habitu sicut *Parmelia conspersa* sine isidiis. Excipulum subtus inaequale. Thallus KOH lutescens tantum (Hue Addenda, p. 39), e Transsylvaniae. Orig. e Fougère, Del. (Nyl. herb. No. 34780) thallo centro bene verrucoso, non distincte soledioso. »

4. « Affinis *Parmelia Lusitana* Nyl. Flora 1881, p. 449 (Hue Addenda, p. 40), thallus isidiosus. »

5. « *Parmelia subconstrictans* Vainio, KOH + CaCl<sub>2</sub>O<sub>2</sub> extus et intus lutescens, KOH extus et intus lutescens, dein fulvescens aul aurantiaco-fulvescens. » — This species is not mentioned in Zahlbr. Catalogus.

The very adpersae hyphae of the thallus attract much air, the sections are, therefore, very impellucidous and can only be studied after a careful clearing. Heating with chlorale hydrate proved excel-



lent, as usual,  $\text{HNO}_3$  failed. The hyphae of the lower cortex are fused together into an almost amorphous substance. The hyphae of the upper cortex are more or less perpendicular to the surface, they are not plectenchymatous. If stained with chlorzinkiodide the gonidia are clearly seen, they are found in the lower part of what one would be inclined to call the cortex, often very near the surface, soredia are, however, not developed.

*Parmelia ceresina* very much resembles *Parm. stenophylla*, and Vainio had not stated the difference from that species.

***Parmelia stenophylla* (Ach.) Du Rietz,  
f. *hypomelaena* Vain.**

*Differt a typo thallo subtus aterrimo.*

Cape Prov. : Ceres, leg. T.B. Leslie; saxicola.

***Parmelia subdecipiens* Vain.**

*Thallus (fragmentum solum) saxicolus, ut videtur laxè adpressus, submollis, fragilis, lobi irregulares, haud elongati, marginem versus circ. 1-1.5 (-2) mm. lati, margine non ciliati, lobuli subtruncati. Thallus sorediis isidiisque destitutus, superne flavescens, subtus pallidus, dilute flavofuscescens, usque ad marginem rhizinis plus minusve dense vestitus.*

*Cortex superior hyphis indistinctis, pachydermaticis, superficiei subperpendicularibus formatus, a strato medullari non bene limitatus, crassitudine varianti, circ. 12-20 (-25)  $\mu$  altus. Gonidia in strato satis crasso dispersa, interdum fere usque ad superficiem inveniuntur. Medulla alba, hyphae medullares pachydermaticae, non adspersae, 5-6  $\mu$  crassae.*

*Apothecia numerosa, sed immatura, ut videtur subelevata. Hymenium superne flavofuscescens, paraphyses apice bene capitato-incrasatae, circ. 5-6  $\mu$ . Epithecium granulosum. Sporae  $8 \times 5 \mu$  (? , vide infra). — Pycnides numerosae, sed immaturae.*

*Cortex KOH superne —, medulla levissime subluteus, fere —, thallus  $\text{CaCl}_2\text{O}_2$  extus et intus immutatus, KOH +  $\text{CaCl}_2\text{O}_2$  leviter lutescens.*

Cape Prov. : Klapmuts, leg. P. v. d. Bÿl; saxicola videtur.

Vainio added the following herb. notes : « *Parmelia Lusitana* Nyl.

var. *decipiens* Vain. thallo isidiosa, KOH —, KOH + CaCl<sub>2</sub>O<sub>2</sub> extus et intus lutescens ». And « *Parmelia Lusitana* Nyl. Flora, 1881, p. 450 (Hue 40) thallus isidiosus (Nyl. herb. No. 34775) e Portugal : KOH medulla flavescens vel fulvoflavescens ».

It is evident from the above description that *Parmelia subdecipiens* Vain. belongs to the section *Hypotrachyna* Vain. The writer would refer it to the subsection *Irregulares* Vain.

The marginal lobes are more or less distinctly pinnate, towards the centre more irregular, somewhat imbricate, short lobuli are formed, as is so often the case in this section. The writer only detected one spore, it was found in the hymenium, but not in its ascus. The measure is, therefore, given with every reserve.

On the plant were found several pollen grains, much resembling those of *Pinus silvester*, perhaps suggesting a forest lichen.

### **Pyxine rhodesiaca** Vain.

*Typus (fragmentum solum) Physciam pulverulentam in memoriam revocat, lobatus, lobi arcte conniventes vel subimbricati, convexiusculi, secundum peripheriam thalli haud profunde sinuato-incisi, lobulis apice rotundatis et hinc inde indistincte pruinosis, centrum versus thallus lobulis marginalibus subverrucosis densissime instructus. Thallus cinereus, sorediis isidiisque destitutus, sed lineis sinuatis vel angulatis percursus (ut in Parmelia omphalodi).*

*Cortex superior 20-25  $\mu$  altus, incoloratus, hyphis valde indistinctis formatus, superficiei subperpendicularibus, leptodermaticis, septatis. Gonidia strato regulari, satis crasso inclusa. Medulla impure fulvescens, infra gonidia laxè contexta, corticem inferiorem versus crebrius contexta, hyphae medullares leptodermaticae.*

*Apothecia (in specimine) dispersa, supra thallum elevata, basi constricta, rotundata, diam. 0.4-0.5 mm. Discus depresso convexus, epruinosis, fusco-nigrescens vel ater, minute rugulosus, margine subtenui, integro, persistenti circumdatus. Cortex excipuli crassitudine varianti, 50-60  $\mu$  altus, incoloratus vel in parte interiori plus minusve intense fusco-obscuratum. Hyphae corticis flabelliformiter radiantes, subleptodermaticae, septis distinctis in articulis oblongis divisae. Hypothecium dilute infuscatum, in parte interiori in excipulum sine limite distincto transiens, Hymenium 75-80  $\mu$  altum, superne anguste (5-12  $\mu$ ) olivaceo (-caerulescens). Paraphyses arctissime cohaerentes, superne furcatae, apice haud vel levissime solum*

*incrassatae. Asci angusti, sporas 5-8 continentes. Sporae (saepe immaturae, male evolutae) oblongae vel medio levissime constrictae, apice (haud late) rotundatae, interdum subapiculatae, episporium sat tenue, aequaliter incrassatum. Sporae 12-15 (-17)  $\times$  7-7.5  $\mu$ . — Epithecium granulis leviter inspersum.*

*Medulla J —, KOH partes coloratae dilute violascentes, cortex superior KOH subincoloratus (dilute virescens). Hymenium J e caeruleo nigricans, cortex excipuli J flavescens, epithecium KOH violascens, etiam HNO<sub>3</sub> magis violascens.*

Rhodesia : Salisbury, on *Ficus*, leg. F. Eyles.

Herb. notes by Vainio :

1. « *Pyxine Azorea* Nyl. (31753) thallus albus, laevigatus, isidiatus. Medulla alba, KOH  $\pm$  flavescens, sec. annot. Nyl. Ster. »

2. « *Pyxine Meissneri* Nyl. Andam. p. 5, sec. herb. Nyl. ad species plures spectat. — *Pyxine Meissneri* Tuck. sec. orig. Wright e Cuba ser. 2, 33 (Nyl. 31771) : Thallus KOH =, vel medulla partim fulva, KOH —. »

3. « *Pyxina obscurascens* Malme *Pyxine*, p. 42 : sorediis instructus, medulla flava, KOH + rubescens. »

4. « *Pyxine chrysantha* (Müll.) Welw. 412 medulla KOH —. »

5. « *Pyxine Meissneri* var. *subobscurascens* Malme : thallo superne laevigato differt. »