

MALAYSIAN LICHENS—IV*

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SUMMARY

1. The first part deals with and illustrates 4 species of which one, from Java, is described as new.
2. In the second part 26 new species from Java are described.

Rare Indonesian lichens

1. GYMNODERMA COCCOCARPUM Nylander—Fig. 1

Gymnoderma coccocarpum Nyl., Synops. 2: 26. 1860.

Thallus composed of irregularly palmately incised, small, foliaceous scales of about 10 mm length and 12 mm breadth; laciniae about 1 to 2 mm wide with rough margins; scales imbricate, more or less ascending at the tips and loosely attached to the substratum by means of a loose tissue of hyphae, within which more or less distinct strings can be distinguished; this tissue produced by the medulla of the basal part of the scales; upper side of the scales bright green when fresh, becoming more or less olivaceous when dry, the surface dull and somewhat scrobiculate; lower side, formed by the medulla and the above mentioned tissue, white and towards the tips with fine nerves. Cortex of the upper side chondroid, 25—30 μ . thick, colourless, composed of thick-walled, branched and connected hyphae running mainly perpendicularly to the surface; gonidia bright green, globose, 1-celled, 9—12 μ . in diameter, forming a continuous layer beneath the cortex; medulla composed of loose hyphae, mainly running parallel to the surface. *Apothecia* biatorine, subglobose to lentiform, 0.3—0.8 mm in diameter, marginal, on the very brim of the thallus or attached to the tips of small thalline laciniae; apothecia often abnormal, forming clusters of small, more or less globose apothecia of 0.2—0.3 mm in diameter; hymenium colourless, 60 μ . thick, hyaline, dark blue with J; epithecium colourless; excipulum composed of densely intricate hyphae, running perpendicularly to the surface in the marginal zone, pale ferruginous coloured especially under the hymenium and in the centre; asci 8-spored, cylindrical, with thin walls; spores colourless, oblong-ellipsoidal, straight, simple, 3—4 x 12—25 μ ; paraphyses rather thick, simple and conglutinated.

This description answers very well to that of Nylander. I found my specimen in the rain forest above Tjibodas at an altitude of about 1575 m

*For Parts I-III, see *in* Bull. bot. Gdns Buitenz. III 17: 198-203. 1941; *in* Reinwardtia 1: 33-39. 1960; 197-198. 1951.

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above sea level, growing over mosses on the trunk of a tree in company with *Leprocaulon arbuscula* (Nyl.) Nyl. These are quite the same circumstances under which the original specimen must have been growing.

The species seems to be very rare. After the specimens from the collection Hooker fil. & Thomson (nos. 2101 and 2124) no other specimens have been mentioned in literature as far as I know. It was also found by Kjellberg (no. 58 = BO 1619) on Celebes about 2500 m above sea level on Mount Pokapindjang in June 1929 (det. by Sandstede, 1933), so that my specimen (Groenhart 8813 = BO 7834) may be the third find within a century. Though *Leprocaulon* is rather common in the forest above Tjibodas, I failed to detect another specimen of *Gymnoderma*.

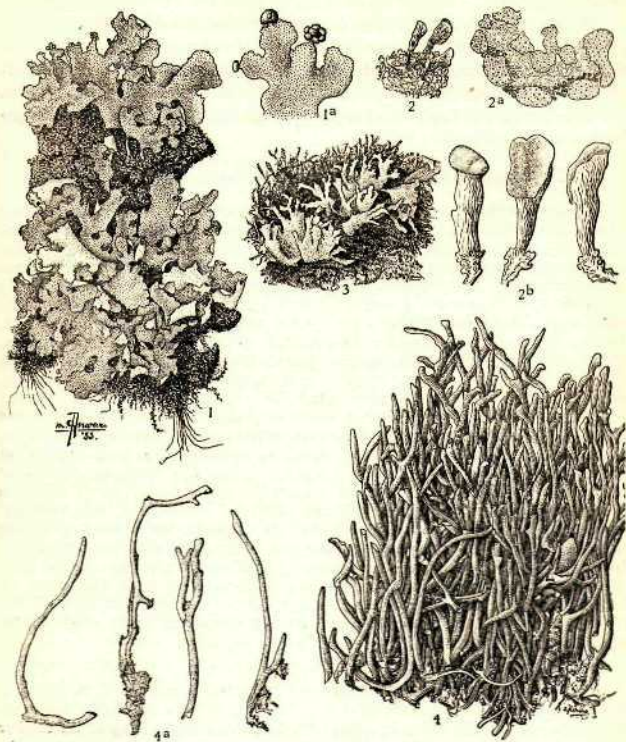
The genus has been referred to the Cladoniaceae by Zahlbruckner, which is probably based on Reinke's "Abhandlungen iiber Flechten" (in Jb. wiss. Bot. 28:109.1895.) This author considers the genus *Gymnoderma* to be an "Auszweigung des phylogenetischen Stammbaumes in gleicher Höhe" of *Sphyridium* (*Baeomyces*). I cannot share this view. In the Cladoniaceae a crustaceous or squamulose primary thallus is distinguished from a cylindrical secondary thallus, the podetia, to which the apothecia are attached. These podetia are always more or less cylindrical, solid or hollow. Reinke gives no anatomical particulars about the podetia and writes only: "Die Friichte stehen auf dem Rande des Thallus, sind kurz gestielt und haufig zerteilt bis zur Bildung traubenformiger Agglomerate."

Zahlbruckner's diagnosis (in Natürl. PflFam. 1. Abt. 1*: 142. 1907; 2. Aufl., 8: 208, 1926) runs: "Podezien kurz, randständig. Apothezien an den Spitzen derselben, traubig gehäuft, fast kugelig"; this is in accordance with Reinke's statement.

These podetia of the apothecia of *Gymnoderma* have nothing to do with real podetia, they are mere elongations of the margin of the thallus and composed in the same way as the thallus, namely: an upper cortex, a gonidial layer and a medulla, without any trace of a radial development. Moreover the apothecia are often directly attached to the very brim of the thallus.

As the podetium, which is the main characteristic of the Cladoniaceae, is lacking, we cannot refer the genus *Gymnopoda* to that family. Nylander also did not think of a relation to the Cladoniaceae. Neither in his diagnosis of the genus nor in that of the species he uses the word podetium. In the former we find only, "Apothecia marginalia," and in the latter,

¹ When this paper was in preparation, Mrs. P. G. H. ALLEN, Kuala Lumpur, kindly sent to me a specimen (no. 1209 = BO 7949) collected near Pine Tree Hill, Frasers Hill, Pahang, ca. 4,000 feet, on forest floor, probably fallen from forest tree, locally common in tall primitive rain forest.



FIGS. 1-4.— Fig. 1, *Gymnoderma coccocarpum* Nyl.; 1, thallus, 2 x; 1a, apothecia, 5 x. — Fig. 2, *Thysanothecium easuarimtm* Groenh.; 2, thallus, 2 X; 2a, section through podetium, 30 X; 2b, podetia, 6 x. — Fig. 3, *Siphula dickotonia* Vain., nat. size. — Fig. 4, *Siphula ceratitii* (Wahl.) Fr. var. *simplex* (Tayl.) Mtil.-Agr.; 4, thallus, 2 X; 4a, podetia, 2 X.

"Apothecia . . . , podicello brevi, tenui *thallino* portata, saepius agglomerato-aggregata."² This is in accordance with my own observations.

Nylander placed the genus in the neighbourhood of *Psoroma* and *Erioderma* from which *Gymnoderma* differs in its primitive cortex and other characteristics. It is most closely related to *Phyllopsora* of which it only differs in the marginal apothecia and the much larger thalline scales.

The drawing is made after a piece of my specimen no. 8813, collected November 20, 1952 (BO 7834).

2. *Thysanothecium casuarinarum* Groenhart, *spec. nov.*—Fig. 2

Thallus primarius epiphloeodes, squamulosus, imbricatus, adscendens; squamulae usque 2 mm longae, incisae vel crenatae, ad marginem albido-sorediatae, supra laevigatae, olivaceae, opacae, subtus albae, iaidiis destitutae. Cortex superior 30—50 μ crassus, hyalinus, decolor, ex hyphis pachydermaticis, conglutinatis, superficie parallelis, formatus, in parte inferiore hinc inde cavis dispersis; gonidia globosa, viridia, stratum subcontinuum formantia; medulla ex hyphis intricatis, sat pachydermaticis, 3—5 μ . crassis formata, decolor. *Podetia* 1.5—5 mm longa, ca. 1 mm crassa, longitudinaliter striata vel sulcata, cylindrica vel applanata, ad apicem dilatata, subnitida, fulva, inter rugas pseudocypHELLIS, striiformibus, albidis, nuda, vel basin versus granulis vel lobulis praedita. Cortex podetiarum 25—30 μ crassus, in parte exteriori subflavicans, in parte interiore decolor, ex hyphis pachydermaticis, fasciculato-conglutinatis, superficie parallelibus, formatus. Gonidia agglomerata, sub cortice et hypothecio stratum incontinuum formantia. Medulla stuppea. *Apothecia* ad apices podetiarum affixa, in juventute orbicularia, disco concavo margineque integro, elevato, demum obliqua, orbicularia, elliptica vel irregularia, integra vel incisa, 1—3 mm lata, disco carneo, opaco, subtiliter pruinoso, piano vel convexo et margine tenui, indistincto; hymenium decolor, 20—30 μ . altum, J. coerulescens; epithecium decolor, strato plus minusve granuloso, amorpho obductum, hypothecium laete flavidum, ex hyphis intricatis, formatum; asci 8-spori, clavati; sporae simplices, 2.5 X 7.5—8 μ , decolores, ellipsoideae; paraphyses simplices, arete cohaerentes, ad apicem non incrassatae.

TYPUS.—Groenhart 5414.

JAVA. Idjen Plateau, trail from Kawah Idjen to the trifurcation K. Idjen-Litjen-Sempol, ca. 1860 m, June 9, 1932, *Groenhart 107, 108, 783*; Mt. Kawi, Mt. Butak, ca. 2600 m, July 21-22, 1937, *Groenhart 5ili*; Mt. Ardjuno, near the camp of the sulphur porters above Lalidjiwo, 2500m, March 28, *Groenhart 51,11-51,13, 7385-7389*; Mt. Ardjuno, above Tretes, ca. 1800 m, Oct. 14, 1938, *Groenhart 51,10*; Mt. Ardjuno, Mt. Slamet, ca. 2000 m, Oct. 18, 1938, *Groenhart 1,196, 7391, 7352*.

All specimens were collected on trunks of tjemara (*Casuarina spec.*), which were damaged by fire and of which the bark was more or less

² Italics are mine.

charred. I could never find the species on other substrata neither in East nor in West Java.

Thysanothecium hyalinum (Tayl.) Nyl. is characterized by its hyaline podetia and granular, somewhat yellowish thallus; *Th. indicum* Harm. has an ash-coloured, granular and somewhat cottony thallus, while the podetia bear small soredia; *Th. hookeri* Berk. & Mont. has a granular, effuse thallus, the podetia are much longer and the apothecia are often deeply incised and lobate.

All three species are terrestrial.

Thysanothecium casuarinarum has a persistent, squamulose primary thallus, which may depauperate into a more or less granulose mass. The new species is probably most closely related to *Th. hookeri*.

3. SIPHULA CEEATITES (Wahlenberg) Fries var. SIMPLEX
(Taylor) Müller-Argov.—**Fig. 4**

The only known specimens of this species found in Indonesia were collected by Dr. C. G. G. J. van Steenis no. 10145 = BO 1885, Feb. 4, 1937, on Mount Leuser (N. W. Sumatra, Gajo Luëns) at 3250 m above sea level. According to Nylander it should also occur in the Himalaya Mountains (J. D. Hooker 2122) at an altitude of 15,000 feet.

The podetia, growing in dense tufts, are 1—2 cm high and about 1 mm thick, simple or furcate, pale grayish white or pale brownish beneath and white at the tips, which are bluntly rounded. As the podetia are rather brittle in a dry state, they are easily broken off. The flat top of such podetia resembles an apothecium with a concave, somewhat flesh-coloured disc and a thin, entire margin, not unlike the apothecia of *Thysanothecium*. In sections, however, nothing can be found that suggests an apothecial structure (cf. Müller-Argov. in Flora 71: 130. 1888 and Taylor in Lond. J. of Bot. 6: 185. 1847).

At the sides of some podetia I found outgrowths resembling flesh-coloured, botryose cephalodia. Sections of these outgrowths showed the same structure as that of the podetia, but the medullary hyphae were less regularly arranged.

The anatomical structure of the podetia is in accordance with Nylander's description (Synops. 1: 262. 1860). The cortex is about 45 μ thick, composed of rounded, thin-walled, 4—5 μ . wide cells; the gonidia are globose, 7.5—9 μ in diameter, forming a layer of about 75—90 n thick. But they are not "intense viride." Probably the material has been treated with alcohol, by which the algae were damaged and the protoplasts shrivelled. With the help of KOH they become yellowish and can be

distinguished from the hyphae. The central axis is solid, composed of thin-walled hyphae.

Most of the podetia are sprouting from older ones, which are covered with soil; others seem to have a broken off base and are not connected with other podetia. Some of these podetia, but not all of them, send branched, rather thick rhizinae into the soil.

With K the podetia become brownish, with J the cortex becomes violet-brown (*sub microscopic*).

4. SIPHULA DICHOTOMA Vainio—Fig. 3 .

Thallus caespitose, decumbent to ascendent, up to 2.5 cm high, 5 mm wide, compressed, brittle, palmately or dichotomously divided into sub-linear, 0.2—0.8mm broad laciniae with blunt tips; upper side white, smooth, without soredia or isidia; lower side white, warty, the warts depressed and often arranged into longitudinal rows. Cortex pseudoparenchymatic, with round to angular, rather thin-walled cells, colourless, hyaline; the upper cortex 30—40 μ thick, the lower one 20—30 μ thick; gonidia pale yellowish green, globose, 7.5—9 μ . in diameter, laying in scattered groups beneath the upper cortex; medulla colourless, composed of branched, loosely interwoven, rather thin-walled hyphae, running mainly parallel to the axis, intensely yellow with K.

This species has been reported by Vainio from Sarawak, Borneo. [*in Ann. Acad. Sci. fenn. A* 19 (15): 28. 1923], growing over mosses on rock. I found it in East Java on the Idjen Plateau at about 1860 m above sea level, amongst mosses on the trunk of a species of *Casuarina*, alongside the trail from the trifurcation Kawah Idjen-Litjen-Sempol to the Kawah Idjen, June 8, 1932 (Grh. 103) and on Mount Gede, West Java, near Lebak Saat at about 2175 m above sea level, on rotten bark of a fallen tree, March 19, 1952 (Grh. 8498 = BO 7480).

New Lichens from Java

1. *Staurothele (Willeya) australis* Groenhart, *spec. nov.*

Thallus epilithicus, uniformis, crustaceus, areolato-diffractus, fissuris hiascentibus, sordide viridis (in herbario isabellinus), subnitidus, laevigatus, sat crassus, sorediis et isidiis destitutus, in margine zona laetiore, linea hypothallina non cinctus, K —, Ca —, KCa —; zona corticalis 15 μ crassa, decolor; zona gonidialis 50—65 μ crassa, gonidiis globosis, viridibus, 6 n latis; zona medullaris et hypothallina brunnea 200—250 μ crassa. *Perithecia* immersa, numerosa; ostiolum nigrum vel brunneum thallum leviter superans, 0,2 mm latum, poro tenuissimo; excipulum urnaeforme, ferrugineum, circa 320 n altum, 280 μ latum; nucleus globosus vel subpyriformis, albidus, impurus, guttulas oleosas continens, J —; periphyses septatae, usque 25 μ . longae, 1,5 μ crassae; sporae decolores, ovoideae vel ellipsoideae, 11,2—12,8 X 19—25,6 μ ; gonidia hymenialia numerosa, laete

viridia, bacilliformia, recta vel leviter curvata, apicibus rotundatis, 5—10 μ longa, 1.5—2 μ lata.

TYPUS.—Groenhart 94.

EAST JAVA. Malang, falls of the Brantas Rivei- near Sengguruh, ea. 200 m, Oct. 16, 1936, *Groenhart* 9i.

I have not seen asci and paraphyses, which probably dissolve.

2. *Microglæna javanica* Groenhart, *spec. nov.*

Thallus epiphloeodes, crustaceus, uniformis, tenuis, effusus, substratum arete obducens, 0,05 mm crassus laevigatus vel minutissime rugulosus granulatusque, subnitidus laete melleus, sorediis et isidiis destitutus, linea obscuriore pro parte limitatus, K—, Ca—, KCa—, ecorticatus; gonidia globosa, laete virida, 5—10 μ lata. *Perithecia* in verruculis thalpinis, numerosis, 0,5 mm latis, subglobois, ad basin bene constrictis dispersis vel 2—3 confluentibus, thallo concoloribus vel obscurioribus, innata; excipulum integrum globosum, decolor; basis et ostiolum interdum obscuratum; paries pseudoparenchymaticus, 30—35 μ crassus, cellulis minutissimis; nucleus globosus, decolor, hyalinus, impurus, J—; asci 4—6-spori, ellipsoidei, circa 150—160 μ . alti, 40—45 μ crassi, superne rotundati, membrana tenui superne bene incrassata, cincti; sporae in ascis biseriales, decolores, fusiformes, murali-divisae, membrana tenui cinetae, 16—20 X 50—64 μ cellulis numerosis angulatis; paraphyses filiformes, ad basin ramosae, ceterum simplices.

TYPUS.—Groenhart 1602.

EAST JAVA. Malang, in the garden of the Agricultural School, 450 m, 1936-40, on trunks of *Erythrina lithosperma* Miq. and *Ceiba penlandra* Gaertn., *Groenhart* 1318, 1602, 4602, 1,895, 4995, 5074, 5089, 56S8, 5S89, 5690, 5691, 56,12, 5769, 5110, 5773, 6432, 6S10, 7278, 7279, 7280; Mt. Andjasmoro, Pengadjaran Estate, 750 m, July 27, 1938, on *Erythrina litosperma* Miq., *Groenhart* 6811.

3. *Microglæna marginata* Groenhart, *spec. nov.*

Thallus epilithicus, crustaceus, uniformis, tenuis, 1—1,5 cm latus, substratum arete obducens, 0,1—0,2 mm crassus avellaneus, in margine plus minusve albidus, minutissime areolatus vel granulatus, opacus, sorediis et isidiis nullis, linea hypothallina non limitatus, K—, Ca—, KCa—; gonidia globosa, laete viridia. *Perithecia* globosa, sessilia, sat numerosa, dispersa, 0,2 mm lata, nuda, ad basin constricta et a thallo plus minusve obducta, poro terminali tenuissimo pertusa, brunnea vel nigro-brunnea, epruinosa, opaca; excipulum integrum, in parte inferiore decolor, in parte superiore ochraceum vel obscuratum; nucleus globosus, decolor, purus, J—; asci 8-spori, ellipsoidei, circa 150 μ longi, 33 μ . crassi, superne rotundati, membrana tenui, superne incrassata, cincti; sporae in ascis uni-vel biseriales, laete citrinae, ellipsoideae vel ovoideae utrinque bene rotundatae, murali-divisae, membrana tenui cinetae, 12—15 x 39—45 μ , cellulis numerosis, angulatis vel subglobois; paraphyses filiformes, ad basin ramosae, ceterum simplices.

TYPUS.—Groenhart 7134.

EAST JAVA. Near Lawang, along the trail from desa Tjowek to Sempu, oa. 450 m, Jan. 15, 1939, on piece of volcanic rock, *Groenhart 7JS4*.

4. *Porina* (*Segestria*) *isidiosa* Groenhart, *spec. nov.*

Thalhis epiphloeodes, crustaceus, sat expansus, uniformis, sat crassus, olivaceo-viridis, continuus vel diffractus, bullato-inaequalis, totaliter denseque Isidiis minutissimis obsitus, hinc inde albo-marginatus et albo-maculatus, linea hypothallina, tenui, nigra cinctus, intus albus, subtus (in bullis) nigrescens; K brunnescens, Ca —, KCa —. Gonidia subglobosa vel oblonga, 9—12 μ . longa, 5—8 μ lata, pro parte concatenata, guttulas oleosas aurantiacas continentia, ad *Trentepohliam* pertinentia. *Perithecia* sessilia, dispersa, ad apicem nigra, ceterum thallo vestita, 0,6—0,8 mm lata, poro tenuissimo, terminali pertusa, ad basin constricta vel dilatata; excipulum integrum, globosum, diametro circa 350 μ , decolor vel laete ferrugineum, ad apicem nigro-fuscum; paries excipuli equaliter 30 μ crassus; nucleus decolor, globosus, hyalinus, J flavescens; asci 8-spori, fusiformes, circa 120 μ alti, 20 μ lati, membrana tenui cincti; sporae univulvulares, fusiformes, decolores, 7—9-septatae, 6—9 X 27—30 μ loculis cubicis, fere aequalibus; paraphyses filiformes, simplices, persistentes.

TYPUS.—Groenhart 8889.

WEST JAVA. Bogor, 275 m, Feb. 5, 1953, on the trunk of *Spondias spec.*, *Groenhart SSSS = BO 7980*.

The species is characterized by the small isidia densely covering the thallus and the perithecial warts; the bullae of the thallus are brittle, which is caused by the mass of crystals within the medulla.

5. *Opegrapha* (*Enopegrapha*) *aggregata* Groenhart, *spec. nov.*

Thallus epiphloeodes, tenuis, uniformis, continuus vel diffractus, sat expansus, albidus vel flavo-viridis, opacus, laevigatus, soridiis et isidiis destitutus, linea hypothallina, brunnea pro parte cinctus; medulla alba; gonidia flavo-viridia, cellulis concatenatis, 12—15 μ . longis, 9—10 μ latis, guttulas oleosas includentibus, ad *Trentepohliam* pertinentia. *Apothecia* numerosa, sessilia, solitaria vel varie aggregata, recta vel eurvata, simplicia aut furcata, 0,8—2 mm longa, 0,2—0,5 mm lata, ad basin abrupta, nuda, apicibus rotundatis vel plus minusve attenuatis; discus planus vel leviter convexus, opacus, niger, nudus vel leviter flavo-viridi-pruinosis, margo tenuis, integer, niger; excipulum integrum; labia erecta vel divergentia, integra, tenuia; hypothecium 60—70 n crassum; hymenium 65 μ altum, hyalinum, impurum, laete citrino-sulphureum, J—; asci 8-spori, clavati, membrana tenui ad apicem incrassata, cincti; sporae biseriales, decolores, oblongo-ellipsoideae vel subdactyliformes, membrana tenui cinctae, 3-septatae, ad apices rotundatae, 12—16 x 3—4 μ , cellulis cubicis; paraphyses simplices, filiformes, ad apicem non incrassatae.

TYPUS.—Groenhart 8849.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Nov. 21, 1952, on trunk of *Cupressus spec.*, *Groenhart 8849 = BO 7870*.

6. *Graphis* (*Eugrarkis*) *psidii* Groenhart, *spec. nov.*

Thallus epiphloeodes, crustaceus, uniformis, continuus, tenuis, albidus, laevigatus, opacus, sorediis et isidiis destitutus, effusus aut lineam griseam tenuem contra lichenes alios formans, K — vel leviter flavescens, Ca—, KCa—; medulla alba; gonidia ad *Trentepohliam* pertinentia. *Apothecia* sessilia, simplicia, recta vel curvata, 0,4—2,5 mm longa 0,3—0,4 mm lata, nuda, nigra, ad basin thallo leviter oblecta, nitida, apicibus rotundatis; discus rimiformis; excipulum dimidiatum, nigrum; labia erecta, integra, apicibus incurvis, conniventibus, ad basin extrorsum dilatata, sub hymenio plus minusve evanescentia; hymenium usque 130 μ altum, decolor, hyalinum, purum, J flavescens; asci 8-spori, oblongo-ellipsoidei, membrana tenui ad apicem incrassata, cincti; sporae bi- vel triseriales, decolores, oblongo-fusiformes, 15—19-septatae, ad apices attenuatae rotundatae, 10,5—13,5 x 65—75 μ , J violascentes, cellulis lentiformibus; paraphyses filiformes, simplices, ad apicem non incrassatae.

TYPUS.—Groenhart 8744.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 24, 1952, on branchlets of *Psidium cattleianum* Sab., Groenhart 8744 = BO 7743.

7. *Phaeographis* (*Chiographa*) *ramulicola* Groenhart, *spec. nov.*

Thallus epiphloeodes, crustaceus, uniformis, continuus, cremeo-albidus, saepe laete fulvo-punctatus, laevigatus, subnitidus, sorediis et isidiis destitutus, contra lichenes alios lineam hypothalinam, atram, formans, K rubescens, Ca—, KCa—; medulla alba; gonidia ad *Trentepohliam* pertinentia. *Apothecia* semiimmersa, sat crebra, simplices, recta, curvata vel flexuosa, 0,4—1,3 mm longa, 0,3 mm lata, apicibus rotundatis aut attenuatis; discus planus, niger, nudus aut griseo-pruinosis; margo tenuis, integer, niger, discum superans, thallo vestitus; excipulum integrum, fuliginium, tenue; labia erecta vel divergentia, integra; hymenium 140—145 μ altum, decolor, hyalinum, guttulis oleosis inspersum, J flavescens; epithecium fuliginium; asci 8-spori, oblongo-ellipsoidei, membrana tenui ad apicem incrassata, cincti; sporae bi- vel triseriales, fumosae, oblongae, rectae, 9—11-septatae, ad apices rotundatae, 7,5—9 x 30—4 μ ; sporae juveniles J vioscentes; paraphyses simplices, filiformes, ad apicem non incrassatae.

TYPUS.—Groenhart 8485.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, March 18, 1952, on branchlets of *Calliandra brevipes* Bth., Groenhart 8485 = BO 7470.

8. *Lecanactis* (*Eulectinactis*) *albida* Groenhart, *spec. nov.*

Thallus epiphloeodes, crustaceus, uniformis, tenuis, continuus, albus, opacus, sat laevigatus, plus minusve farinaceus, sorediis et isidiis destitutus, linea nigra, tenui, cinctus; gonidia laete flavo-viridia, cellulis subglobosis vel elongatis, 9—15 μ longis crassisque, ad *Trentepohliam* pertinentia. *Apothecia* sessilia vel substipitata, orbicularia, sat numerosa, dispersa, biatorina, subolivaceo-nigra, 0,3—0,5 mm lata, ad basin bene constricta;

discus convexus, nudus, opacus; margo indistinctus; epithecium fuliginosa; hymenium 70 μ altum, decolor, J—, guttulis oleosis inspersum; hypothecium (stratum subhymeniale) decolor vel laete ferrugineum ex hyphis intricatis formatum; excipulum nigro-fuliginosum, ex hyphis intricatis formatum; parathecium tenuissimum; asci 8-spori, clavati, membrana tenui ad apicem non incrassata, cincti; sporae in ascis fastigiatae, decolores, oblongo-fusiformes, apicibus attenuatis, leviter curvatae vel sigmoideae, 7—9-septatae, 4,5—6 x 37—45 μ ., cellulis cubicis, aequilongis; paraphyses, laxe cohaerentes, ad apicem non incrassatae.

TYPUS.—Groenhart 8698.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 24, 1952, on branch of *Cinnamomum camphora* Kees & Eberm., Groenhart 8698 = BO 7696.

9. *Diploschistes centrifugus* Groenhart, *spec. nov.*

Thalhis epilithicus, crustaceus, sat tenuis, uniformis, continuus, verruculoso-inaequalis, in centro diffractus, emoriens evanescensque, ad marginem plus minusve areolato-dispersus vel continuus, flavido-cremeus, opacus vel leviter nitidulus, zona alba einctus, isidiis et sorediis destitutus, K Havens, Ca et KCa rubescens; superne strato corticali, 20—30 μ crasso, decolre, ex hyphis dense intricatis formato, tectus; gonidia globosa, viridia, 7,5—15 μ . lata in strato 30 μ . crasso conglomerata; medulla alba. *Apothecia* subimmersa, 0,5—1,2 mm lata, dispersa vel approximata, rotunda aut plus minusve irregularia, basin versus leviter constricta vel abrupta; margo thallinus thallo concolor, bene prominulus, integer vel plus minusve verruculosus; margo proprius, tenuis, fisso a margine thallino plus minusve separatus; discus concavus vel planus, niger, leviter caesio-pruinosis; epithecium flavo-brunneum; hymenium 100—105 μ altum, decolor, purum, J—; hypothecium 25—30 μ . crassum, decolor vel plus minusve laete fulvescento-striatum, ex hyphis horizontalibus, conglutinatisque formatum, in parathecium laterale badium, strato ex hyphis pachydermaticis, verticalibus, conglutinatis tectum, vergens; asci 8-spori, cylindrici, hymenio aequilongi; sporae biseriales (depauperatae uniseriales), ellipsoideae, murali-divisae, murinae, septis transversalibus 4—5, verticalibus 1, membrana tenui cinctae, 10,5—13,5 x 25—30 μ .; paraphyses simplicies, filiformes, ad apicem leviter clavatae, bene cohaerentes.

TYPUS.—Groenhart 8570.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 10, 1952, on volcanic rock, Groenhart 8570 = BO 7567.

10. *Ionaspis (Euionaspis) badia* Groenhart, *spec. nov.*

Thallus epilithicus crustaceus, uniformis, continuus vel dispersus, sat tenuis, griseo-albidus, diffractus, sat laevigatus, opacus, sorediis et isidiis destitutus, linea hypothallina non einctus, K flavescens, Ca—, KCa rubescens, intus albus; gonidia viridia, cellulis elongatis angulosisque, pro parte concatenatis, 7,5—12 μ longis, 6—10 μ . latis, ad *Trentepohliam* pertinentia. *Apothecia* sessilia, orbicularia, dispersa, sat numerosa, 0,3—0,4 mm lata; discus badius, planus, nudus aut plus minusve albo-pruinosis; margo

primum supra discum productus, laceratus, demum integer, tenuis, discum leviter superans, thallo concolor; epithecium decolor vel laete coloratum; hymenium 110—120 μ altum, decolor vel laete citrinum, hyalinum, irapurum, J flavescens; hypothecium in centro 30—35 μ . crassum, laete citrinum; excipulum egaliter 16 μ crassum, badium, extus thallo vestitum; asci clavati, 8-spori, membrana tenui cincti; sporae biseriales, decolores, ovoideo-ellipsoideae, simplices, membrana tenui cinctae, 10—12 x 20—22 μ ; paraphyses filiformes, simplices, ad apicem non incrassatae.

TYPUS.—Groenhart 3634.

EAST JAVA. Lawang, Mt. Wedon, ca. 500 m, Dec. 12, 1937, on volcanic rock, *Groenkart 863b*.

11. *Gyalecta (Eugyalecta) recedens* Groenhart, *spec. nov.*

Thallus epilithicus, crustaceus, uniformis, tenuis, continuus vel inter fragmenta substrati dispersus, albus vel testaceo-albidus, opacus, sorediis et isidiis destitutus, in margine linea obscuriore non limitatus, substratum arete obducens, ecorticatus, K—, Ca—, KCa—; gonidia subglobosa, laete viridia, 7—9 μ lata 8—12 μ . longa, pro parte concatenata, ad *Trentepohliam* pertinentia. *Apothecia* sessilia, dispersa, orbicularia, basin versus *constricta*, 0,4—0,5 mm lata; discus primum concavus, demum planus, nudus vel minutissime albo-pruinosis, laete fulvus vel prasinus, opacus; margo integer, tenuis, prominulus, demum inconspicuus, albus; excipulum decolor ex hyphis tenuibus et dense conglutinatis formatum, gonidia includens; epithecium decolor; hymenium 100—110 μ . altum, decolor, purum, J asci et sporae flavescens; hypothecium decolor ex hyphis dense intricatis marginem versus radiantibus, formatum; asci 8-spori, ellipsoideo-clavati, circa 100 μ . alti, membrana tenui ad apicem incrassata, cincti; sporae in ascis irregulariter dispositae, decolores, ellipsoideae-oblongae, utrinque rotundatae vel uno apice angustatae, rectae, murali-divisae, septis transversalibus 4—6, verticalibus 1,8—9 X 25—27 μ .; paraphyses filiformes, simplices, esepatae, ad apicem non incrassatae, liberae.

TYPUS.—Groenhart 8888.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Jan. 21, 1953, on piece of rock in the borders near the emplacement, *Groenhart 8888 = BO 7D2S*.

12. *Gyalecta (Eugyalecta) misera* Groenhart, *spec. nov.*

Thallus epilithicus, tenuis, uniformis, albidus, opacus, continuus vel fissuris plus minusve hiantibus diffractus, isidiis et sorediis non praeditus; linea obscuriore non cinctus, K—, Ca—, KCa—; gonidia viridia, cellulis elongatis, concatenatis, 6—8 μ . longis, 4—6 μ latis, ad *Trentepohliam* pertinentia. *Apothecia* immersa, dispersa, orbicularia vel irregularia, 0,25—0,5 mm lata, demum margine tenui, integro, discum superante, thallo concolore, circumdata; discus planus, epruinosis vel leviter albidopruiinosus, testaceus; epithecium flavido-ferrugineum vel fusco-nigrum; hymenium 75 μ altum, decolor, purum, J—; hypothecium decolor ex hyphis intricatis formatum; asci 8-spori, ellipsoideo-clavati, membrana tenui ad apicem beneincrassata rotundataque, cincti; sporae biseriales, decolores,

ellipsoideae, murali-divisae, septis transversalibus 3—5 verticalibus 1, membrana tenui, 9—12 x 16—21 μ ; paraphyses simplices, filiformes, bene cohaerentes.

TYPUS.—Groenhart 8747.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 25, 1952, on volcanic rock, Groenhart 3767 — BO 7746.

13. *Heppia (Pannariella) pulchra* Groenhart, *spec. nov.*

Thallus in terra habitans, subsquamosus, ca. 2 cm latus, substrato arete adhaerens, radiatim vel irregulariter lobatus; lobi contigui vel subimbricati, plani, 0,6—1,2 mm lati, usque 3 mm longi, supra laevigati, opaci, coeruleo-virides (in herbario mellei), marginibus leviter adscendentibus, apicibus rotundatis, K —, Ca —, KCa —; thallus 250—300 μ crassus, supra et in media parte pseudoparenchymaticus, cellulis leptodermaticis, circa 15 μ latis; zona superior gonidiis destituta, decolor vel in parte exteriore laete ferruginea; zona media gonidia continens; gonidia scytonemea, subglobosa, 10—15 μ . lata, aeruginosa, in vagina gelatinosa sat tenui glomerata; zona inferior ex hyphis leptodermaticis, 3—4 n crassis, ferrugineis, intricatis et subtus liberis, formata. *Apothecia* subimmersa, vel sessilia, orbicularia, dispersa, circa 1 mm lata; discus planus, castaneus, opacus, nudus; margo thallinus integer, discum leviter superans; epithecium ferrugineum; hymenium 120—130 μ altum, decolor, hyalinum, purum, J flavescens; hypothecium decolor, ex hyphis intricatis formatum, J coerulescens; asci 8-spori, ellipsoidei vel clavati, membrana tenui, ad apicem non incrassata, cincti; spores uni- vel biseriales, ellipsoideae, simplices, decolores, membrana tenui cinctae, 6—7,5 X 14—16 μ ; paraphyses filiformes, simplices, ad apicem non incrassatae.

TYPUS.—Groenhart 648.

EAST JAVA. S Malang, near desa Tawangredjeni near the bridge over the Lesti River, ca. 350 m, July 2, 1938, Groenhart 648, idem, July 9, 1939, Groenhart 3i21.

14. *Heppia (Peltula) scabra* Groenhart, *spec. nov.*

Thallus epilithicus, squamulosus; squamae primum rotundatae, demum irregulares, contiguae, discretae aut leviter imbricatae, 2—3 mm diametro, planae vel subconcavae, adpressae, supra olivaceae, nitidulae (in herbario aeruginosae, opacae), hinc inde supra et ad marginem subsoredioso-scabridae, intus albae, subtus sordide griseae vel carnea, sat laevigatae vel leviter verrucosae plicataeque, gompho subcentrali substrato affixae, saepe in cavernis parvis saxi sitae, K —, Ca —, KCa —. *Thallus* pseudoparenchymaticus; zona superior decolor, cellulis leptodermaticis, 6—12 μ . latis, gonidiis destituta, 15—30 μ crassa; zona media 60—100 μ crassa, gonidiis scytonemeis, aeruginosis, subglobosis, ca. 10 n latis, in vagina gelatinosa sat tenui glomeratis, praedita; zona inferior 30—65 μ . crassa, gonidiis destituta, decolor vel laete flavida, cellulis minutis; gomphus ex hyphis parallelis, septatis, conglutinatis, formatus, flavidus vel laete violascens. *Apothecia*, immersa, rotunda, 0,3—0,4 mm lata, dispersa; discus planus, opacus, laete brunneus, margine thalino, integro, tenui circumdatus;

excipulum cupuliforme, pseudoparenchymaticum, cellulis elongatis minutis, in parathecio 16 μ et in hypothecio 50 μ crassum, decolor; epithecium flavum; hymenium 200 μ crassum, decolor, hyalinum, purum, J—; asci multispori, clavati, membrana tenui, ad apicem non incrassata, cincti; sporae simplices, decolores, ellipsoideae, 2—2,5 x 3—4 μ ; paraphyses simplices, ad apicem incrassatae conglutinataeque. *Pycnidia* globosa vel pyriformia; paries decolor; fulcra exobasidialia; pycnoconidia 1—1,5 μ lata, 2—3 μ longa, recta vel leviter curvata, in centro leviter constricta. TYPUS.—Groenhart 84.

EAST JAVA. S Malang, near the falls of the Brantas River near Sengguruh, ca. 250 m, Oct. 16, 1936, on volcanic rock, *Groenhart 84*

15. *Lecidea (Eideeidea) pertusarioides* Groenhart, *spec. nov.*

Thallus epilithicus, crustaceus, sat crassus, uniformis, continuus, griseus, plicato-verrucosus, verrucis semiglobosis, depressis vel convexis, ad basin plus minusve constrictis, sorediis et isidiis destitutus, linea hypothallina non cinctua, K flavens, Ca —, KCa —; gonidia globosa, flavo-viridia, 7,5—9 μ lata, protococcoidea. *Apothecia* lecidema, dispersa, sessilia, orbicularia, 0,5—1 mm lata, ad basin constricta; discus niger, planus, nudus, leviter nitidus; margo disco coneolor, integer, tenuis, discum vix superans; epithecium laete fuligineum; hymenium 60 μ altum, hyalinum, purum, decolor, J — (asci coerulescenti); hypothecium decolor, ex hyphis intricatis formatum; excipulum nigrum; asci 8-spori, clavati, membrana tenui ad apicem incrassata, cincti; sporae simplices, biaerialae, ellipsoideae, decolores, membrana tenui cinctae, 7,5—9 x 15—16,5 μ ; paraphyses simplices, ad apicem non incrassatae.

TYPUS.—Groenhart 8556.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 10, 1952, on volcanic rock, *Groenhart 8556 = BO 7553*.

The thallus resembles a species of *Pertusaria*.

16. *Mycoblastus grisomagrinatus* Groenhart, *spec. nov.*

Thallus epiphloeodes, parvus, ca. 10 mm latus, crustaceus, uniformis, tenuissimus, continuus, sordide griseus, opacus, sublaevigatus, sorediis et isidiis destitutus, linea hypothallina non cinctus; gonidia globosa, laete viridia, 7—5 μ lata, protococcoidea. *Apothecia* biatorina, sessilia, ad basin bene constricta, orbicularia, dispersa vel plus minusve aggregata, 0,5—0,8 mm lata; discus concavus vel planus, opacus, castaneus, nudus; margo integer, crassus, discum bene superans, thallo coneolor; epithecium laete ferrugineum vel decolor; hymenium 130 μ altum hyalinum, purum, decolor, J coerulescens; hypothecium nigro-castaneum, ab excipulo non separatum; excipulum hymenium versus nigro-castaneum, in zona exteriori hyalinum, subdecolor ex hyphis intricatis subradiantibusque, formatum; asci 8-spori, clavati, membrana tenui ad apicem incrassata, cincti; sporae uni- vel biserialae, ellipsoideae, simplices, decolores, membrana dupla, 3 μ crassa, cinctae, 15—18 x 24—30 μ ; paraphyses

simplices, filiformes, numerosissimae, ad apicem non incrassatae, arete cohaerentes.

TYPUS.—Groenhart 8658.

WEST JAVA. Mt. Gede, trail to Tjibeureum, 1450 m, Sept. 20, 1952, on branch, Groenhart 8658 = BO 7656.

17. *Megalospora flavidula* Groenhart, *spec. nov.*

Thallus epiphloeodes parvus, 12 mm latus, crustaceus, uniformis, tenuis, continuus, flavido-albus, sat laevigatus vel leviter inaequalis, sorediis et isidiis destitutus, linea nigra pro parte cinctus; gonidia globosa, flavo-viridia, 8—9 μ . lata, protococcoidea. *Apothecia* lecidinea, late sessilia, orbicularia, ad basin abrupta, dispersa, 0,7—1,2 mm lata; discus planus, niger, opacus, epruinosis; margo tenuis, integer, disco aequans, sat distinctus; epithecium nigrum vel nigro-ferrugineum; hymenium 160 μ altum, hyalinum, griseum, guttulis oleosis inspersum, J coeruleus; hypothecium decolor, ex hyphis dense intricatis formatum, subchondroidum; excipulum sordide inspersum ex hyphis intricatis, in margine radiantibus, formatum, ad basin zona hyalina pura, subchondroidea, eelulis minutissimis, in margine plus minusve nigratum; asci monospori, clipoidei; spores decolores, oblonge-ellipsoideae, rectae, 1-septatae, ad septum non constrictae, apicibus bene rotundatis, 25,5—37,5 x 97—120 μ ; paraphyses simplices, filiformes, ad apicem non incrassatae, numerosissimae, arete cohaerentes, in K facile liberae.

TYPUS.—Groenhart 8746.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m., Sept. 24, 1952, on branchlet of *Paklium cattleyanovi* Sab., Groenhart 8746~ BO 7745.

18. *Bacidia (Weitenwebera) modesta* Groenhart, *spec. nov.*

Thallus epilithicus, crustaceus, uniformis, continuus, laevigatus vel minutissime granulatus, laete isabellinus, sorediis et isidiis destitutus, linea hypothallina non cinctus, K—, Ca—, KC —; gonidia globosa vel subglobosa, viridia, protococcoidea. *Apothecia* biatorina, sessilia, dispersa, basin versus constricta, 0,1—0,2 mm lata; discus planus, nudus, flavo-ochraceus; margo tenuis, integer, nigricans, discum non, vel leviter superans; excipulum decolor, in zona exteriori obscuratum, ex hyphis dense intricatis, conglutinatisque, cellulis minutis, in zona exteriori radiantibus, formatum; epithecium decolor vel laete isabellinum; hymenium 65—75 μ altum, decolor, purum, J flavens; asci 8-spori, clavati, membrana tenui ad apicem bene incrassata rotundataque, cincti; spores biseriales, decolores, membrana tenui, 3-septatae, oblongae, utrinque bene rotundatae, 6—7,5 x 15—21 μ ; paraphyses simplices, liberae, ad apicem non incrassatae.

TYPUS.—Groenhart 8575.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 10, 1952, on volcanic rock, Groenhart 8575b = BO 7573.

The specimen is not a good one and less fit for a type specimen. It is partially covered with colonies of Cyanophyceae and mixed with a lead-grey sterile thallus. The small apothecia are scattered and rather inconspicuous.

19. *Bacidia (Weitemvebera) elegantula* Groenhart, *spec. nov.*

Thallus epiphloeodes, parvus, 25 mm latus, crustaceus, uniformis, continuus, griseus, tenuis, isidioso-verruculosus, sorediis destitutus, linea hypothallina non cinctus, K bene flavescens, Ca,—, KCa—; medulla alba; gonidia globosa, flavo-viridia, 7—10 μ lata. *Apothecia* sessilia, orbicularia, dispersa, 0,3—0,5 mm lata ad basin constricta; discus niger, opacus, nudus, leviter convexus; margo albus vel griseus, tenuis, integer, persistens vel plus minusve exclusus; epithecium decolor vel nigratum; hymenium 85—95 μ altum, hyalinum, pro parte nigratum, J coerulescens; hypothecium nigro-fuligineum; excipulum decolor, ex hyphis intricatis radian-tibusque, cellulis minutissimis, formatum; asci 8-spori, clavati, membrana tenui ad apicem incrassata, cincti; sporae biseriales, decolores, oblongae, utrinque rotundatae, ad unum apicem angustata; rectae vel subrectae, 3-septatae, 4—4,5 x 18—15 μ , vel 5-septatae, C x 21—25 μ ; paraphyses simplices, gelatinam hyalinam percurrentes, ad apicem non incrassatae, filiformes.

TYPUS.—Groenhart 8531.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, March 24, 1952, on branches of *Psidium cattleianum* Sab., Groenhart 8531 = BO 7522.

20. *Bacidia (Weitemvebera) aspera* Groenhart, *spec. nov.*

Thallus epilithicus, sat crassus, uniformis, albus, opacus, verruculoso-inaequalis, irregulariter et minutissime diffractus, granulis subsorediosis hinc inde obsitis, soralis et isidiis destitutus, K — vel flavescens, Ca —, KCa —; medulla alba; gonidia globosa, viridia, 8—10 μ lata protococcoidea. *Apothecia* sessilia, biatorina, dispersa, orbicularia, ad basin constricta, 0,7—1,2 mm lata; discus niger, opacus, planus, demum plus minusve convexus, nudus; margo integer, tenuis, persistens, fumosus vel atro-niger; epithecium fuligineum vel nigrum; hymenium 70 μ . altum, hyalinum, purum, J coerulescens; stratum subhymeniale ca. 30 μ crassum, fuligineum, in K purpurascens; excipulum nigro-fuligineum, ex hyphis dense intricatis subradiantibusque, cellulis minutissimis, formatum; asci 8-spori, clavati, membrana tenui ad apicem incrassata, cincti; sporae biseriales, oblongae, decolores, 5-septatae, rectae, utrinque rotundatae vel uno apice angustatae, 5—6 x 21—24 μ ; paraphyses simplices, arete cohaerentes, ad apicem non incrassatae.

TYPUS.—Groenhart 8673.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 23, 1952, on volcanic rock, Groenhart 8671 = BO 7671.

When fresh the species is characterized by a greenish marginal zone and a dirty white centre. After it has dried up this green zone disappears.

21. *Bacidia* (*Weitenioebera*) *avellanea* Groenhart, *spec. nov.*

Thallus epilithicus, crustaceus, uniformis, diffracto-areolatus, subleprose-inaequalis, avellaneus, opacus, sorediis et isidiis destitutus, linea hypothallina non cinctus, K —, Ca —, KCa —; gonidia globosa, viridia, 9—12 μ lata; protococcoidea. *Apotheeia* lecideina, sessilia, dispersa, nigra, orbicularia, 0,8—2 mm lata, simplicia vel aggregata; discus planus, opacus, nudus demum convexus; margo integer, tenuis, leviter prominulus, disco concolor; excipulum nigrum vel fulvo-nigrum (in KOH aurantiaco-ferrugineum), pseudoparenchymaticum, cellulis minutis, 3—5 μ latis, materiam nigro-fulvam continentibus, in zona marginal! plus minusve radiantibus; epithecium tenue, fulgineum; hymenium 70—75 μ . altum (in apotheciis latoribus usque 90 μ), hyalinum, decolor vel laete coloratum, J coerulescens; hypothecium fulvo-nigrum, ex hyphis dense intricatis formatum; asci clavati, 8-spori, membrana tenui ad apicem incrassata, cincti; sporae biseriales, oblongae, decolores rectae vel leviter curvatae, utrinque rotundatae, 5-septatae, 7,5—9 x 25—28 μ .; paraphyses filiformes, simplices, ad apicem non incrassatae.

TYPUS.—Groenhart 8577.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 10, 1952, on volcanic rock, Groenhart 8577 = BO 757S.

22. *Bacidia* (*Scolicosporum*) *sorediosa* Groenhart, *spec. nov.*

Thallus epiphloeodes, crustaceus, sat tenuis, uniformis, albido-griseus, continuus vel plus minusve areolato-diffractus, sorediis, flavo-viridibus copiosis, obsitus, linea hypothallina non cinctus, K —, Ca —, KCa —; medulla alba; gonidia globosa, flavo-viridia, 5—8 μ . lata, protococcoidea. *Apotheeia* biatorina, numerosa, dispersa, sessilia, ad basin constricta, orbicularia; discus castaneus, planus, vel leviter convexus, opacus, nudus; margo tenuissimus, integer, niger, aut inconspicuus; epithecium decolor; hymenium 45 μ altum, hyalinum, purum, decolor, J coerulescens; asci clavati, copiosi, membrana tenui ad apicem incrassata, cincti; sporae ignotae; excipulum castaneum vel nigro-castaneum, ex hyphis dense intricatis, formatum; paraphyses simplices, paucae, ad apicem non incrassatae.

TYPUS.—Groenhart 8670.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 22, 1952, on trunk of *Noronhia emarginata* Thou., Groenhart 8670 = BO 7668.

Though the thallus bears many apothecia, I could not find asci with ripe spores. In only a few asci I found a structure suggesting a spirally wound bundle of needle-like spores.

23. *Thelocarpon algicola* Groenhart, *spec. nov.*

Thallus crustaceo-squamulosus, parvus, 0,2—0,5 mm latus, orbicularis vel plus minusve irregularis, subplanus, adpressus, avellaneus vel avellaneo-melleus, in centro saepe castaneus, laevigatus, opacus, sorediis et isidiis destitutus; cortex 30—45 μ crassus, hyalinus, pseudoparenchymaticus.

cellulis orbicularibus, 3—4,5 μ . latis, intus decolor, zona Iguperiore circum apothecium castanea, ad marginem thalli nigra, ceterum griseo-inapera; gonidia globosa, viridia, 7—14 n lata, stratum 30—45 μ . crassum formantia aut spatium inter apothecium et corticem deplentia; medulla alba, hyalina, pura ex hyphis intricatis formata, tenuis vel evanescent; zona inferior super substratum nigra, tenuis vel crassa. *Apothecia* immersa, in sectione subglobosa, solitaria, in centro thalli sita; discus primum punctiformis, demum apertus, parvus, margine tenuissimo, integro, sub-nigro, thallum leviter superante, circumdatus; excipulum integrum, decolor vel in apice castaneum, 30—35 n crassum, ex hyphis subparallela, conglutinatis, formatum, chondroideum; hymenium hyalinum, 110 μ altum, purum, J laete coerulescens; epithecium decolor; asci multispori, ellipsoideo-clavati, membrana tenui, ad apicem incrassata, cincti; sporae simplices, decolores, bacilliformes, rectae, utrinque rotundatae, 1,5 x 6; μ ; paraphyses filiformes, simplices, ad apicem non incrassatae, ascis longiores.

TYFUS—Groenhart 8887.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Jan. 21, 1953, over Cyanophyceae on volcanic rock, *Groenkart* 8887 = *BO* 7927.

24. *Acarospora (Euacarospora) confusa* Groenhart, *spec. nov.*

Thallus epilithicus, biformis, ex hypothallo tenuissimo vel fere inconspicuo griseoque, et verrucis, solitariis vel contiguas, depresso-globosis, usque 1 mm latis, ad basin constrictis abruptisve, castaneis, opacis, formati, K —, Ca —, KCa —; cortex verrucarum 25—30 a crassus, decolor, hyalinus, zona exteriore brunnea, ex hyphis intricatis, cellulis minutis, formati; gonidia globosa, viridia, 12—15 μ lata, stratum 30—60 μ crassum formantia; medulla alba. *Apothecia* in apice verrucarum immersa, 0,2—0,3 mm lata; discus planus, ater; margo tenuissimus, integer, discum thallumque leviter superans, thallo concolor vel obscurior, saepe indistinctus; excipulum cupuliforme, hyalinum, decolor vel ochraceum, in parathecio saepe brunnescens; hymenium 120—150 μ altum, hyalinum, decolor, purum, J —; asci multispori, clavati; sporae decolores, simplices, globosae. 2—3 μ . latae; paraphyses filiformes, simplices, ascis longiores.

TYPUS.—Groenhart 7063.

EAST JAVA. Mt. Ardjuno, Mt. Welirang, ca. 3100 m, March 28, 1937, on volcanic rock, *Groenhart* 7065, 7064.

As the pale grey hypothallus is almost inconspicuous, the brown verrucas seem to grow isolated and suggest a species of *Thelocarpon*.

25. *Blastenia olivacea* Groenhart, *spec. nov.*

Thallus epilithicus, crustaceus, tenuis, uniformis, olivaceus, nitidus, continua vel plus minusve diffractus, laevigatus, sorediis et isidiis destitutus, linea hypothallina non cinctus; gonidia globosa, flavo-viridia, 6—10 μ lata; medulla alba. *Apothecia* 0,2—0,4 mm lata, sessilia, biatorina, dispersa, obscure fuliginea, numerosa, nuda, opaca, convexa; margo inconspicuus; epithecium fuligineum, K violascens; hymenium 60—70 μ

altum, decolor, hyalinum, purum, J coerulescens; asci 8-spori, clavati, raembrana tenui art apicem bene incrassata, cincti; sporae biseriales, polaridiblastae, decolores, ellipsoideae, cellulis isthmo connectis, 7—7.5 X 12—15 μ .; paraphyses simplices, septatae, ad apicem incrassatae et saepe furcatae; hypothecium decolor; excipulum ex hyphis intricatis, radiantibus formatum, in margine nigro-fuligineum, pseudoparenchymaticum, cellulis orbicularibus 3—4 μ . latis, nulla gonidia continens.

TYPUS.—Groenhart 8522.

WEST JAVA. Bogor, Kedung Halang, 260 m, July 27, 1952, on paling of fence, Groenhart 8522 = BO 7511.

26. *Buellia (Eubuellin) dissipata* Groenhart, *spec.nov.*

Thailus epilithicus, crustaceus, areolatus; areolae rotundae irregularesque, 0.3—1 mm latis, dispersae vel contiguae, supra planae, opacae, laete stramineae, laevigatae, K flavescens demum rubescentes. sorediis et isidiis destitutae, 0.4 mm crassae, substrate arete adhaerentes, linea hypothallina non cinctae; stratum corticale 35 μ crassum, decolor, griseo-inspersum, ex hyphis intricatis formatum; stratum gonidiale 36—50 μ crassum, continuum, gonidiis globosis, viridibus, 7—9 μ latis, protococoidis; medulla alba in K pr. p. rubescens, circa medium strato nigro-brunneo, tenui praedita. *Apothecia* sessilia, Iecideina, nigra, opaca, nuda, 0.3—0.6 mm lati, in juventute plana, margine tenuissimo, integro, cincta, demum convexa et margine indistincto; epithecium laete badium, K —; hymenium 75 μ altum, hyalinum, purum, J coerulescens; hypothecium badio-nigrum, ex hyphis intricatis formatum; asci clavati, 8-spori, membrana tenui ad apicem incrassata, cincti; sporae biseriales, diblastae, brunneae, ellipsoideae, 6—7 x 12—14 μ ; ad septum non constrictae; paraphyses simplices ad apicem clavatae septataeque et brunneae.

TYPUS.—Groenhart 8582.

WEST JAVA. Mt. Gede, Tjibodas, 1450 m, Sept. 10, 1952, on volcanic rock, Groenhart 8582 = BO 7580

The structure of the apothecium is somewhat confusing. Beneath the hymenium lies a dark coloured hypothecium shaped like a half lens resting with the flat side on a hyaline tissue. The parathecium beside the hymenium is connected with the hypothecium by a very thin, dark tissue. The parathecium seems to be built up of septate hyphae with round cells not unlike the apical cells of the paraphyses as far as this is visible in a crushed mount. The dark colour is not suitable for a more profound investigation without the help of a microtome. The parathecium rests on the same tissue as the hypothecium on the same level. As the gonidial layer is absent under the apothecium, the base of the apothecium, the cortex, and the medulla form together one hyaline tissue without any apparent differentiation.