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Two interesting new species of the lichen genus Parmelia.

By ROLF SANTESSON.

The subdivision of the genus *Parmelia* now mostly used was established by VAINIO in 1890 and modified and built on by ZAHLBRUCKNER in 1907 and 1926. There are, however, great weaknesses in this system and many taxonomic problems remain to be solved.

By ZAHLBRUCKNER *Omphalodium* is regarded as a subgenus of *Parmelia,* but it is a genus very well differentiated from *Parmelia* and its natural position is in the family of *Umbilicariaceae* (see DODGE and BAKER 1938, p. 559). *Menegazzia* is also a good proper genus; not in the sense of ZAHLBRUCKNER's, but comprising also 8-spored species (SANTESSON 1942 or 1943). *Hypogymnia* may probably be removed from *Parmelia* and the subdivision of *Parmelia* s. str. badly needs a revision. Many of the about 500 species of *Parmelia* now known have been very little studied and their places in the system are very uncertain. A monographic treatment is needed for a correct delimitation of *Hypogymnia* and for establishing a better system of the sections of *Parmelia.*

The two new species of *Parmelia* here described diverge very much from all previously known species of the sections resp. Thus they may contribute to the knowledge of the variation amplitudes of the sections as accepted at present and will be of importance when a new system is established in the future.

Parmelia (Hypogymnia) zeylanica nov. spec.

Icon.: Fig. nostra 1.

Thallus foliaceus, fistulosus, circ. 5 cm latus, irregulariter subdichotome divisus, sat rigidus, cinereus vel fusco-cinereus, laevis, nitidulus, subtus niger, ad apices et latera loborum fuscus vel fusco-niger, nudus, nitidulus, leviter scrobiculatus, sparse perforatus. Thallus

superne isidiis cylindricis, sparse ramificantibus, apice obtusis, 0,2—0,3 mm crassis, usque 1,5 mm longis instructus. Soredia evanescentia.

Thallus circumcirca corticatus, cortice superiore chondroideo, lutescente vel incolorato, 5—15 μ crasso, ex hyphis intricatis pachydermaticis formato, cortice inferiore 7—10 μ crasso, fusco vel fusconigricante, strato gonidiali valde inaequali, angusto, gonidiis flavovirescentibus, globosis, diam. 7—10 μ, medulla alba, angusta, ex hyphis granularibus pachydermaticis, circ. 3 μ crassis, parce ramosis, minus densis formata.

Apothecia et pycnoconidangia desunt.

React.: Thallus K+ flavescens, C —, KC —, Pd —; medulla K+ flavescens, C —, KC+ rubescens vel fulvescens, Pd —.

C e y l o n. In monte Pedrotallagalla. 1879, E. Almquist. Expeditio Vegae. In Mus. Botan. Stockholm.

In the type locality *P. zeylanica* was associated with *P. cirrhata* Fr., published by NYLANDER (1900) as *P. Kamtschadalis* Ach., and with a *Siphula* sp. (only fragments in the collection).

In 1900 NYLANDER published a list of the lichens collected in Ceylon during the Vega Expedition. The lichen described above was mentioned under the name of *Hypogymnia enteromorpha* Ach. This is a species characterized by total absence of isidia as well as of soredia etc.

Of *P. zeylanica* I have only seen the two specimens of the type collection.

In 1901 BITTER published a good revision of the subgen. *Hypogymnia*. *P. zeylanica* belongs to BITTER's group *Tubulosae* and furthermore to *Insorediatae* Bitter.

The striking feature of *P. zeylanica* is the presence of isidia, which is characteristic of no other described species of *Hypogymnia*. Occasionally isidia are developed in *P. austerodes* Nyl., *P. Bitteriana* Zahlbr. and *P. physodes* (L.) Ach. *P. austerodes* has sometimes cylindrical isidia (v. *isidiata* H. Magn.) or sometimes verrucose isidia, which usually break up into soredia (v. *verrucosa* Elenk.). In *P. physodes* isidiose forms are rare f. *corallina* Ericks., f. *papillosa* Ericks.).

Because of the presence of some perforations in the upper surface of *P. zeylanica* (see Fig. 1) I first thought it might be a species of *Menegazzia*. Careful examination showed, however, that these perforations are defects only. In the lower surface, in the margins and in the tips of small lateral lobes there are natural perforations of the type common in *Hypogymnia*.

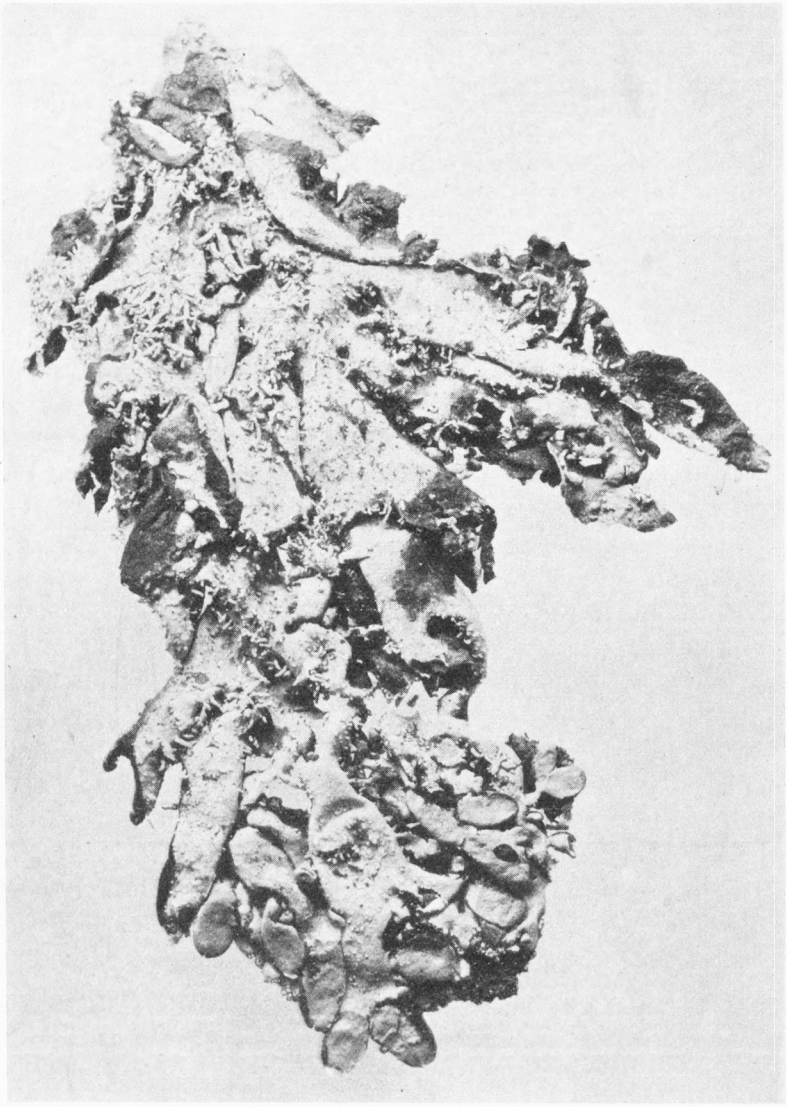

Fig. 1. *Parmelia zeylanica* R. Sant. nov. spec. The type specimen. 3 × nat. size.

Further researches will show that *P. zeylanica* is not the only isidiose species of *Hypogymnia*. In the rich collections brought home by Prof. G. Einar Du Rietz from New Zealand there are isidiose species not yet described.

Parmelia (Everniaeformes) ecuadoriensis nov. spec.

Icon.: Fig. nostra 2, 1.

Thallus laxe pulvinatus, usque 5 cm longus, laciniis irregulariter radiantibus, discretis, angustatis, 0,5—1,5 mm latis, plus minusve dichotome ramosis, planis, laevigatis, opacis, glauco-cinereis vel cinerascentibus, sorediis et isidiis destitutis, subtus nigris vel fusco-nigris, apice vulgo pallide fuscenscentibus, scrobiculatis, vulgo transversaliter plicatis, leviter nitidulis, rhiziniis destitutis, ad marginem et raro subtus in plica ciliis valde numerosis, arbores similantibus dense ramosis, 1—2 vel rarius 3 mm longis, nigris vel obscure fusco-nigris instructus.

Cortex superior 20—25(—30) μ crassus, incoloratus, ex hyphis subperpendicularibus, pachydermaticis, septatis, contiguis formatus. Stratum gonidiale subcontinuum, 20—40 μ altum. Gonidia flavo-virescentia, diam. 8—12 μ. Medulla alba, 85—125 μ crassa, hyphae medullares 3—4 μ crassae septatae, sparse ramosae. Cortex inferior 20—30 μ crassus, fuscus vel fusco-niger.

Apothecia sat numerosa, lateralia, rotunda, diam. 1—2,5 (rarius 4) mm, sessilia, non perforata. Margo tenuis, usque 0,1 mm, crenulatus, interdum ciliis instructus. Receptaculum leviter scrobiculatum. Discus planus, rarius leviter concavus vel leviter convexus, epruinosus, nitidulus, badius vel spadiceus.

Cortex receptaculi incoloratus, 25—40 μ crassus, ex hyphis perpendicularibus, pachydermaticis, septatis, contiguis formatus. Gonidia in strato continuo sub excipulo et in strato interrupto infra corticem receptaculi disposita, in medulla sparsa et dispersa.

Hymenium 40—45 μ altum, superne fuscum, ceterum incoloratum. Paraphyses strictiusculae, sparse ramosae, apice leviter clavato-incrassatae. Asci clavati, membrana superne incrassata cincti, octospori, 30—35×10—15 μ. Sporae uni- vel biserialiter dispositae, ovales vel subglobosae, 5—6×4—5 μ, membrana sat crassa.

Pycnoconidangia sat numerosa, lateralia, vertice punctiformi, circ. 50 μ diam., nigro.

Pycnoconidangia subglobosa, 150—250 μ diam., perifulcro fusconigro, verticem versus incrassato. Fulcra endobasidialia. Conidia breviter acicularia, apice obtusa, 4—5 μ longa, circ. 0,5 μ crassa.

React.: Thallus K+ flavescens, de cetero thallus, medulla et cilia K, C, KC et Pd non reagentia.

Ecuador. León: Cotopaxi, in decliv. austro-occid. In ramulis

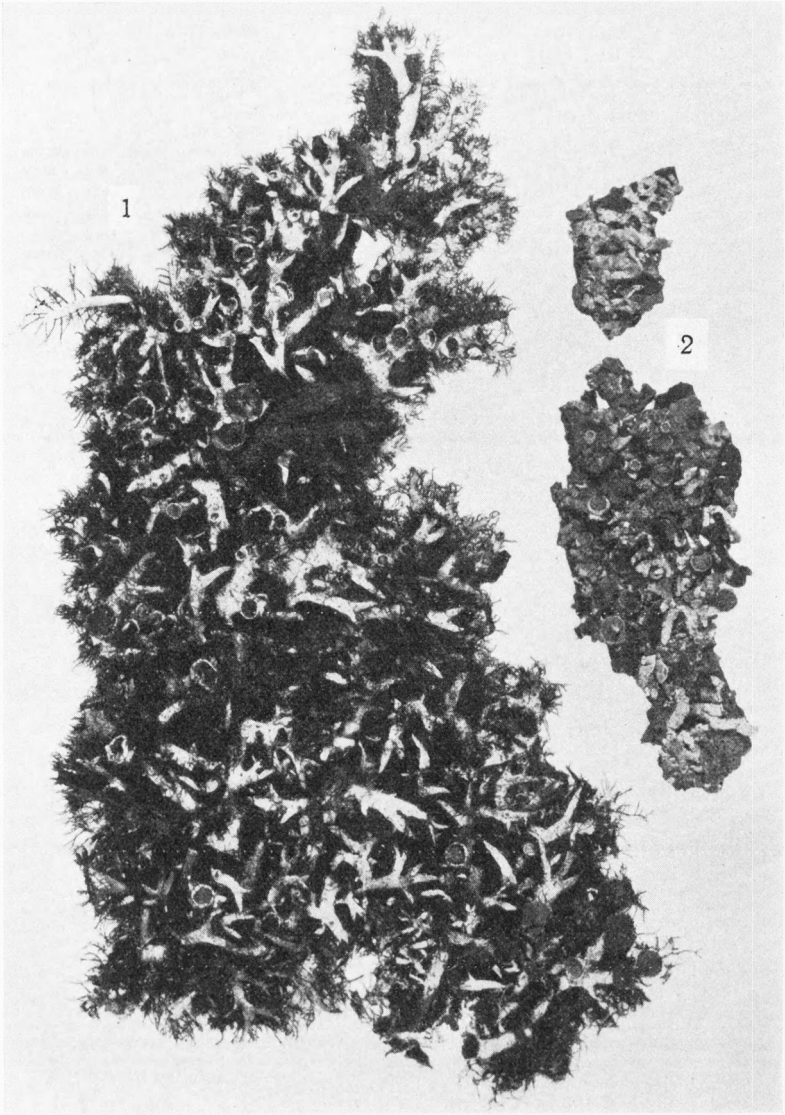

Fig 2. 1. *Parmelia ecuadoriensis* R. Sant. nov. spec. The type specimen. 2. *Parmelia angustior* Nyl. The type specimen. Both 2 × nat. size.

Chuquiraguae. Alt. 4300 m s. m. 3. VII. 1939, Erik Asplund. Exped. Regnell. IV. Lich. n. 180. In Mus. Botan. Stockholm.

By its numerous comparatively small apothecia and the very

numerous and long cilia of the margins *P. ecuadoriensis* diverges from all previously known species.

The laciniate, slender lobes etc. indicate the place of the species in the section *Everniaeformes* of *Euparmelia*.

Apart from the absence of marginal cilia and the presence of sparse rhizinia of the lower surface the description of *Parmelia angustior* Nyl. (NYLANDER 1859) agrees very well with *P. ecuadoriensis*. I have examined the type specimen of *P. angustior* (Fig. 2, 2) and furthermore stated the great similarities between this species and *P. ecuadoriensis*. At a cursory glance the two species, however, seem to be very different because of the richness of cilia in *P. ecuadoriensis*.

P. angustior was in 1863 transferred by NYLANDER from *Parmelia* to *Parmeliopsis* as a subspecies of *P. placorodia* (Ach.) Nyl. There are no pycnoconidangia in the type specimen of *P. angustior* and none are described by NYLANDER. Evidently he made the transference to *Parmeliopsis* only on account of similarities in habit between *Parmelia angustior* and *Parmeliopsis placorodia* and not because of the presence of exobasidial fulcra. Certainly *P. angustior* is not a species of *Parmeliopsis* but is to be included in *Parmelia Everinaeformes*.

The pycnoconidangia of *P. ecuadoriensis* agree completely with those of *P. cirrhata* and *P. americana*. They have all around brown perifulcra and are immersed in the upper surface of the thallus.

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