

A REVISION OF THE NAMES OF FOLIICOLOUS LICHENIZED FUNGI PUBLISHED BY BATISTA AND CO-WORKERS BETWEEN 1960 AND 1975

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Abstract: Between 1960 and 1975, 212 names of foliicolous lichenized fungi (or believed to have such a biological status) were described or used by A. C. Batista and co-workers. A considerable number of the new names were not validly published but mentioned as *nomina nuda* in various papers, while a further 69 names exist only as herbarium names. A taxonomic revision demonstrates that 36 of the 38 validly described genera (=95%) and 56 of the 68 validly published species and varieties (=82%) are either synonyms of previously known taxa, or represent non-lichenized or lichenicolous fungi, or cannot be readily identified and remain *nomina dubia*. Most of the descriptions refer to pycnidia, particularly those of the *Strigulaceae* (5 genera, 8 species or varieties), the hyphophores of *Gomphillaceae* (6 genera, 10 species), and the genus *Microtheliopsis* (3 genera, 3 species), whereas campylidia of the *Ectolechiaceae* are under-represented. A further six, monotypic genera correspond to lichenicolous or non-lichenized fungi. The following validly described taxa remain as autonomous genera or species of foliicolous lichens: *Amazonomyces* Bat., a generic name taken up for two species previously placed in *Stirtonia* and *Cryptothecia*, with two new combinations: *Amazonomyces sprucei* (R. Sant.) Lücking, Sérus. & Thor comb. nov. [Bas.: *Stirtonia sprucei* R. Sant.; Syn.: *Amazonomyces palmae* Bat. & Cavalc.], and *Amazonomyces farkasiae* (Lücking) Lücking, Sérus. & Thor comb. nov. [Bas.: *Cryptothecia farkasiae* Lücking]; *Lyromma* Bat. & H. Maia, a distinctive genus of the Dothideales, with two species described by Batista and co-workers, and one new combination: *Lyromma palmae* (Cavalc. & A. A. Silva) Lücking & Sérus. comb. nov. [Bas.: *Anconomyces palmae* Cavalc. & A. A. Silva]; *Arthonia lecythidicola* (Bat. & H. Maia) Lücking & Sérus. comb. nov. [Bas.: *Ameropeltomyces lecythidicola* Bat. & H. Maia]; *Arthonia orbignyae* (H. B. P. Upadhyay) Matzer [Bas.: *Opegrapha orbignyae* H. B. P. Upadhyay; Syn.: *Arthonia opegraphina* Lücking]; *Asterothyrium aspidospermatis* (Peres) Lücking & Sérus. comb. nov. [Bas.: *Actinoteichus aspidospermatis* Peres] and *Asterothyrium pernambucense* (Cavalc.) Lücking & Sérus. comb. nov. [Bas.: *Actinoteichus pernambucensis* Cavalc.], two apomictic pycnidial forms of *Asterothyrium*, in addition to the reinstated *A. umbilicatum* (Müll. Arg.) Müll. Arg.; *Byssoloma guttiferae* (Bat. & Peres) Lücking & Sérus. comb. nov. [Bas.: *Crocicreomyces guttiferae* Bat. & Peres; Syn.: *Byssoloma aeruginascens* Vězda]; *Phyllobathelium leguminosae* (Cavalc. & A. A. Silva) Lücking & Sérus. comb. nov. [Bas.: *Septoriomyces leguminosae* Cavalc. & A. A. Silva]; *Tricharia couepiae* (Bat.) Lücking & Sérus. comb. nov. [Bas.: *Aderkomyces couepiae* Bat.] and *Trichothelium brasiliense* J. L. Bezerra & L. Xavier. *Echinoplaca amapensis* Bat. & Poroca, a distinctive species with characters that suggest a placement into the

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Arthoniaceae, will most probably require a new genus when more material is available. One species is validated and two are described as new: *Bapalmuia verrucosa* Sérus. & Lücking spec. nov., *Enterographa batistae* Lücking & Sérus. spec. nov. and *Opegrapha duckei* Bat., J. L. Bezerra & Cavalc. ex Lücking & Sérus.

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Introduction

When Santesson published his outstanding monograph on foliicolous lichens in 1952, it would have been expected to immediately stimulate further work in this fascinating group of organisms. However, more than 20 years followed before new studies were published (Vězda 1973, 1974, 1975; Sérusiaux 1976). At that time, few people were aware that already in the early sixties, a group of scientists around the Brazilian mycologist Augusto Chaves Batista (Fig. 1) had begun a thorough study of foliicolous non-lichenized and lichenized fungi in the Amazon region.

Founder of the Instituto de Micologia da Universidade do Recife (IMUR), still today one of the very few institutions in the Tropics dedicated to the taxonomy of microfungi, Batista was particularly attracted by the diversity of anamorphic, conidia-producing stages that are so common in foliicolous lichens but were largely disregarded or misinterpreted by R. Santesson. Between 1960 and 1975, Batista and his co-workers described no less than 38 new genera and 68 species or varieties of foliicolous lichens (Batista 1961;



FIG. 1. The Brazilian mycologist Augusto Chaves Batista (1916–1967), founder of the Instituto de Micologia da Universidade do Recife (IMUR). From an illustration made by an anonymous artist and housed in the Departamento de Micologia of the Universidade Federal de Pernambuco, Recife. Used with the kind permission of that Department.

Batista & Bezerra 1961; Batista & Cavalcante 1964; Batista & Maia 1961, 1965*a,b*, 1967; Batista & Peres 1964; Batista & Poroca 1970; Batista *et al.* 1961, 1962; Bezerra *et al.* 1970; Cavalcante *et al.* 1971, 1972*a,b*; Upadhyay 1964; Xavier Filho 1964, 1974, 1975, 1976). Many other names have been used in numerous papers but were never validly published and remained *nomina nuda*, or were just herbarium names. The reason for this situation is most probably the sudden and unexpected death of Batista in 1967 (Carneiro 1968; Singer 1969) and the subsequent disintegration of the working group in the early seventies.

In spite of the enormous output, documented in a recent literature compilation (Silva & Minter 1995), most of the names published by Batista and his co-workers were not fully accepted by other authors, although Vobis & Hawksworth (1981: 266) assumed 'from the experience with lichenicolous hyphomycetes described by these workers, . . . a reasonable proportion of the described taxa [seem] to be soundly based'. This unfortunate situation was the result of difficult access to pertinent literature and type material (Vobis & Hawksworth 1981). The enormous number of new names has had a significant impact on checklists of anamorphic and foliicolous lichens. According to Vobis & Hawksworth (1981), out of the 38 validly described genera of lichens known only by their conidial stages, no fewer than 33 refer to Batista and co-workers. Similarly, 34 of the 107 genera of lichens known to include foliicolous species, listed in Farkas & Sipman (1993), were described by Batista's scientific group. This means that 31–87% of the generic names in these groups refer to poorly understood or unknown taxa.

To clarify this confusing situation, a thorough taxonomic revision of the relevant type material was essential. The opportunity for such a study arose during a recent, three-week stay (June–July 1996) by the first two authors at the Department of Mycology of the Universidade Federal de Pernambuco (Recife, Brazil), where the Batista collections are now conserved. This paper deals with the results of these investigations conducted in collaboration with the two last authors who are in charge of the Herbarium and of lichen research in Recife. It also gives an insight into the work of Batista and his group, evaluating their taxonomic activities in the context of modern taxonomy.

Materials and Methods

Collections

A. C. Batista started his institute as a private initiative, although associated with the Universidade do Recife, hence the original abbreviation IMUR (Instituto de Micologia da Universidade do Recife). When the University became the Universidade Federal de Pernambuco (UFPE), the abbreviation changed to IMUFPe (Instituto de Micologia da Universidade Federal de Pernambuco). For herbarium purposes, both abbreviations are equivalent. Types were also deposited at the Instituto Nacional de Pesquisas da Amazonia (INPA) in Manaus (Amazonas). After the disintegration of Batista's working group in the early seventies due to Batista's decease, the institute changed its name to Departamento de Micologia, which nowadays is part of the Centro de Ciências Biológicas, and the official abbreviation URM (Universidade do Recife, Micologia) was adopted for the herbarium.

TABLE 1. *The 30 taxa with the highest number of entries in the files of URM, including invalidly published names*

Species name	Entries
<i>Setomyces orchideae</i> nom. inval.	2116
<i>Porina epiphylla</i>	1321
<i>Setomyces belluciae</i> nom. inval.	989
<i>Mazosia melanophthalma</i>	784
<i>Strigula elegans</i> [= <i>smaragdula</i>]	699
<i>Porina rufula</i>	687
<i>Porina rubentior</i>	543
<i>Mazosia phyllosema</i>	510
<i>Mazosia rotula</i>	503
<i>Spinomyces genipae</i> nom. inval.	500
<i>Setomyces crescentiae</i> nom. inval.	458
<i>Strigula subtilissima</i>	457
<i>Strigula nemathora</i>	431
<i>Setomyces minutus</i> nom. inval.	430
<i>Setomyces giganteae</i> nom. inval.	420
<i>Mysia combreti</i> nom. inval.	412
<i>Porinomyces</i> [= <i>Strigula</i>] <i>phyllogena</i> nom. inval.	364
<i>Byssoloma tricholomum</i>	284
<i>Chroodiscus coccineus</i>	233
<i>Strigula maculata</i>	209
<i>Spinomyces ocoteae</i> nom. inval.	205
<i>Spinomyces giganteae</i> nom. inval.	202
<i>Tegoa parenchymatica</i> nom. inval.	188
<i>Trichothelium epiphyllum</i>	185
<i>Acleistomyces rionegrensis</i>	164
<i>Scutomyces concentricus</i>	164
<i>Byrsomyces olivaceus</i>	145
<i>Raciborskiella</i> [= <i>Strigula</i>] <i>janeirensis</i>	143
<i>Microxyphiomyces minutus</i>	140
<i>Tegoa tabebuiae</i> nom. inval.	136

Batista and his group accumulated *c.* 43 000 collections of non-lichenized and lichenized fungi, with a total of more than 80 000 specimens, of which *c.* 18 000 refer to foliicolous lichens. According to the files, almost 80% of these correspond to only 30 taxa, and nearly half of the collections represent ten species (Table 1). The generic names *Setomyces* Bat. & Peres nom. inval., *Porina* Müll. Arg., *Mazosia* A. Massal., *Strigula* Fr. and *Spinomyces* Bat. & Peres nom. inval. account for most of the entries.

The collections in URM are arranged according to 'exsiccate' numbers (in this paper referred to as Exs. number), each containing one or several specimens with separate numbering (in Batista's papers referred to as IMUR=IMUFPe number, now listed as URM numbers). Only the latter ones were used in the publications. In other terms, there are two sets of numbers in use in the herbarium: each set of leaves collected in the field has a number (here referred to as Exs. number), apparently given by chronological order, and each specimen of a species identified in it got a completely different one (referred to as URM number). Access to collections is provided by a well-organized file system, divided into non-lichenized ('Fungos') and lichenized fungi ('Líquens'), arranged in alphabetical order, and with each file being typewritten and carrying the complete data from the original label. The 'lichen' files comprise no less than 107 generic and

357 specific names of foliicolous taxa. The exsiccate collections containing the types are conserved in a separate cabinet.

The great majority of lichen collections were gathered in the Amazon region. Most were made by few collectors, and the often rich assemblages of foliicolous lichens indicate some collecting experience. The enormous value of the herbarium is, however, reduced by several factors: (1) Insect attack, most probably soon after collecting and during the drying process, leading to the destruction of diagnostic structures. This may explain why campylidia and ascocarps of the *Pilocarpaceae*, *Ectolechiaceae* and *Gyalectaceae* are uncommon: they are the first to be damaged by insects in poorly processed collections. (2) Missing 'connection' between the specimens in the often large set of leaves preserved in any exsiccate with the names given on the labels (Fig. 2); this is most unfortunate with types, as authentic material has to be searched for in the complete—and often very large—set of leaves that were collected and are kept together. (3) Absence, for unknown reasons, of determinations of large, conspicuous thalli in species-rich assemblages. (4) Destruction of types due to the selection of poor specimens and their complete consumption for the purpose of description. Indeed, we noticed several times that scanty specimens, easily localized as they are marked on the leaves, were nevertheless selected as types and were almost completely destroyed during microscopic examination.

Literature

One of the most embarrassing questions regarding the work of Batista and co-workers is whether some names were validly published or not (Silva & Minter 1995: 15). Silver & Minter discuss two possibilities: either the literature in which those names have been published escaped the compilers of the *Index of Fungi* at IMI, or these names were used by the Recife team in anticipation of their publication, which was in fact never realized.

With some few exceptions, a complete set of the papers published by Batista and his group is housed in the library of the Centro de Ciências Biológicas of the Universidade Federal de Pernambuco in Recife. Papers on non-lichenized fungi are bound in 47 volumes and indexed in a computer-based catalogue, whereas the publications on foliicolous lichens were mostly found in a compilation of the series *Publicações, Instituto de Micologia da Universidade do Recife (Universidade Federal de Pernambuco)* and *Atas do Instituto de Micologia da Universidade Federal de Pernambuco*. Some papers originally designated for the series *Publicações, Instituto de Micologia da Universidade do Recife (Universidade Federal de Pernambuco)* eventually also appeared in *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* or in *Anais do XIII Congresso da Sociedade Botânica do Brasil*. Batista and his co-workers mainly used these 'house' journals, mostly produced within their Institute, to guarantee a rapid publication of their results (W. de A. Cavalcante, L. Xavier Filho, pers. comm. 1996). The rationale for the diffusion of those publications is unknown but several scientific institutions in Europe have received large but usually incomplete series.

Screening of the available literature confirmed our assumption that most of the names indicated as '... [publication not checked] ...' by Silva & Minter (1995) were indeed never validly published. This was further confirmed by W. de A. Cavalcante (pers. comm. 1996) and by handwritten notes of Batista in the copies of the *Index of Fungi* housed in the library in Recife. Indeed, the *Index of Fungi* was carefully screened by Batista and his team: each name they had validly published is underlined in those copies. This is an indication that the names not reported in the *Index of Fungi* were indeed never validly published. Otherwise, one can expect that Batista would have sent the IMI compilers a copy of the papers they had neglected to report. Another hint was found in the type collections: whereas types of validly published species were usually found in the 'types cabinet', designated types of invalidly published taxa were deposited in the general herbarium, among the other collections. Also very helpful for our studies were handwritten notes of Batista on his generic concept in a copy of Santesson's monograph (1952) housed in the library in Recife (Fig. 3).

It should be noticed that Silva & Minter (1995) provide an incomplete report of the publications of Xavier Filho (1974, 1975, 1976) and Bezerra *et al.* (1970): the validly published *Arthonia anisolocularis* is included but *Lopadium couepiae*, *Raciborskiella parva* and *Trichothelium brasiliense* are not, and the genus *Phragmopeltheca* and the species described in it are mentioned only by their incidental inclusions in earlier papers of Batista and co-workers.

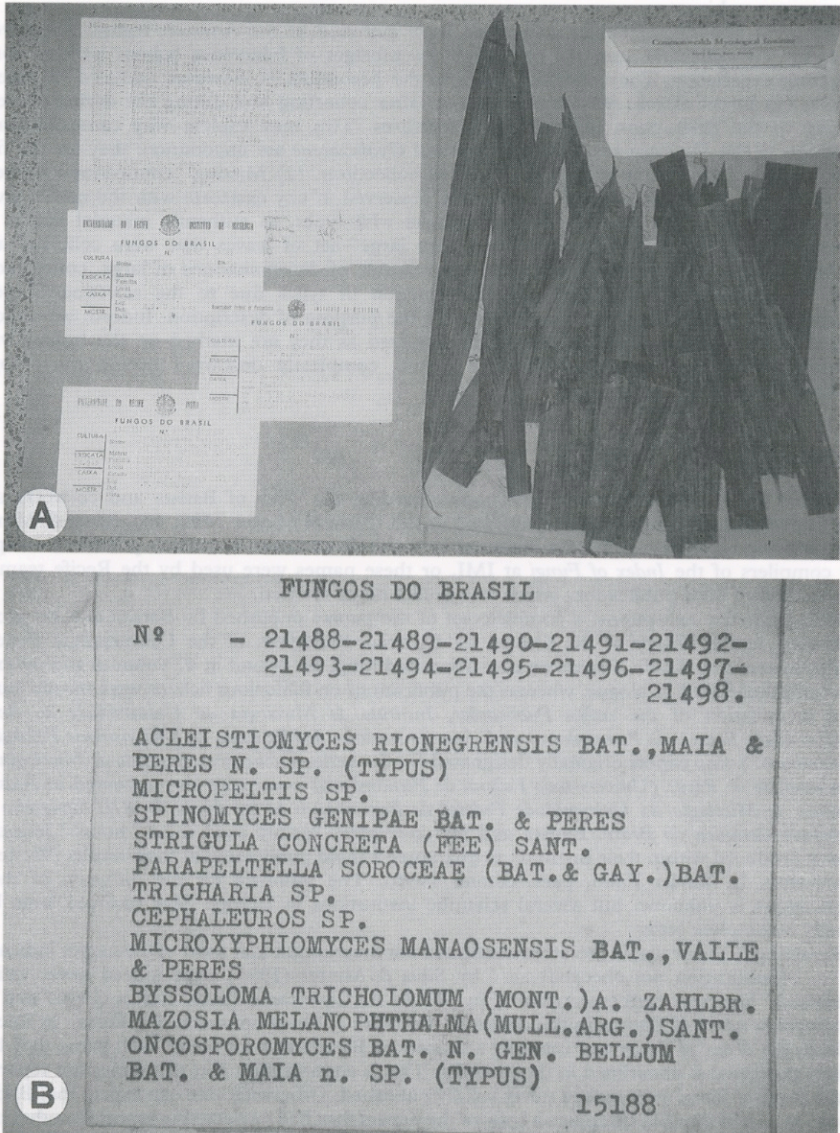


FIG. 2. A, Type collection of *Opegrapha orbignyae* H. B. P. Upadhyay [= *Arthonia orbignyae* (H. B. P. Upadhyay) Matzer], further including the types of *Keratosphaera batistae* H. B. P. Upadhyay, *Sphaeromma mazosiae* H. B. P. Upadhyay, and *Sporhaphus rondoniensis* H. B. P. Upadhyay, three new genera of lichenicolous fungi, and nine additional taxa of foliicolous lichens, algae, or fungi. The collection consists of many pieces of the palm *Orbignya martiana*, and none of the names indicated on the label is identified with a particular specimen. B, Label on the type collection of *Acleistomyces rionegrensis* Bat., H. Maia & Peres [= *Sporopodium leprieurii* Mont.] and *Oncosporomyces bellus* Bat. & H. Maia nom. dub.

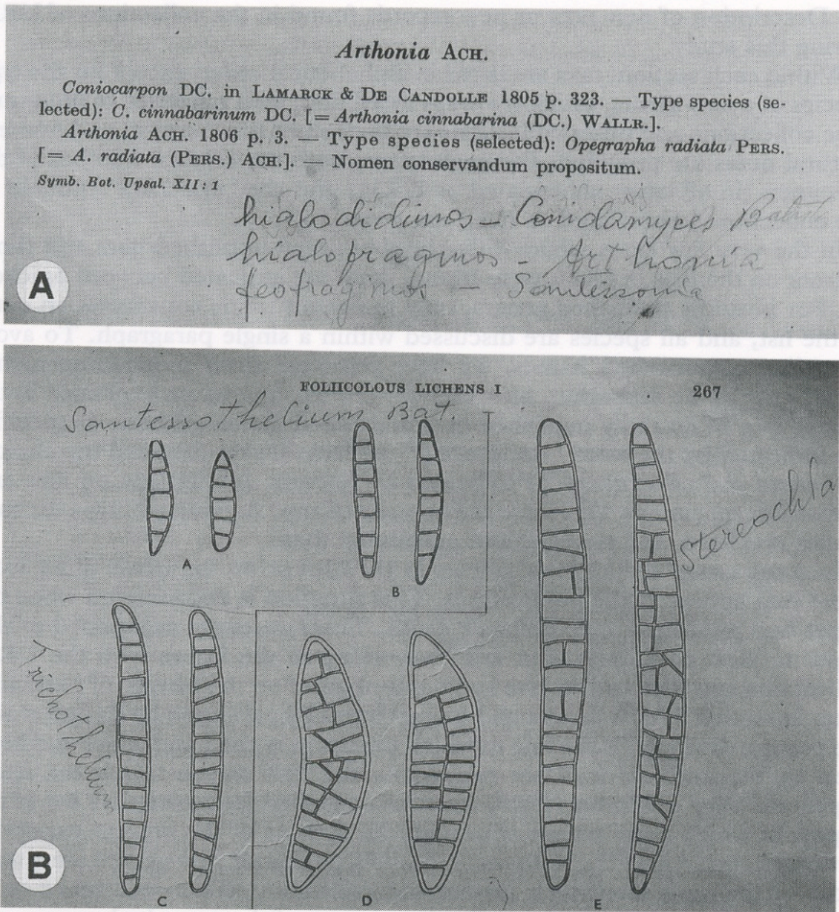


FIG. 3. Handwritten notes of A. C. Batista in his copy of Santesson's monograph on foliicolous lichens (Santesson 1952), demonstrating Batista's ideas towards an ascospore-based generic concept in the tradition of Zahlbruckner. A, Division of the genus *Arthonia* (from Santesson 1952: 68) into species with 1-septate, colourless ascospores [= *Conidomyces* Bat. *nom. inval.*], species with multiseptate, colourless ascospores [= *Arthonia* s. str.], and species with brown ascospores [= *Santessonia* Bat. *nom. inval.*, non *Santessonia* Hale & Vobis]. B, Division of the genus *Trichothelium* (from Santesson 1952: 267, fig. 41) into species with small, multiseptate ascospores [= *Santessothelium* Bat. *nom. inval.*], species with large, multiseptate ascospores [= *Trichothelium* s. str.], and species with (sub)muriform ascospores [= *Stereochlamys* Müll. Arg.]. Note that with this concept, *Trichothelium epiphyllum*, the type species of the genus (fig. 41B in Santesson 1952), would have been included in the newly erected genus *Santessothelium* Bat. *nom. inval.*

Taxonomic account

The following taxonomic account is divided into four sections: (1) New genera and species validly published by Batista and co-workers, (2) New genera and species invalidly published by Batista and co-workers, (3) New distribution records of previously known species, reported by Batista and co-workers,

(4) Description of new taxa or new records found in the collections of URM during this study.

Within each section, taxa are listed in alphabetical order, except for the type species of a new genus, which is always listed first, with reference to literature, type collections and other collections studied; short taxonomical and nomenclatural notes are provided. For each taxon, both the original number of the specimen (in all cases abbreviated as URM) and the 'exsiccata' number of the collection (abbreviated as Exs.) are given.

In the very few cases where differences between published data and those present on the files or labels were found, these are indicated between brackets []. For invalidly published genera, only the genus name constitutes an entry in the list, and all species are discussed within a single paragraph. To avoid spreading unpublished names, we have refrained from mentioning names found only in the herbarium files: the very few exceptions are explained in the text. Types of invalidly published or unpublished names (generic or specific) are indicated by the word 'designated': we have always followed the choices of Batista and co-workers, as indicated by relevant annotations on files and herbarium specimens. Of course the absence of any 'designated' type for such names precludes any possibility of examining them.

In some cases, the authors' names in the files or on the labels differ from those that appear in the publications. This situation is encountered when the paper was published after Batista's death. These cases are mentioned in this paper to alert colleagues who will be working in the future with the URM collections and files and to give some information on the history of particular taxa. In section 2 (new genera and species invalidly published by Batista *et al.*), the paper mentioned is the one in which the taxon is cited and which has been seen by the authors; it is not necessarily the first one in which the name appeared. Silva & Minter (1995) must be consulted for a complete list of the papers in which these names appeared; the authors of the present paper did not check such a list. The authors of invalidly published new genera are always those of the designated type species and are indicated between brackets [] with a ?; indeed, there are no indications in any of the consulted papers, nor in the URM files nor in Silva & Minter (1995) of who would have been the authors of these new genera if they had been validly published.

The name of one of the prominent assistants of A. C. Batista, Wlandemir de A. Cavalcante, appears either as 'Cavalcante' or 'Cavalcanti' in the papers; these two names represent the same person and we mention him always as Cavalcante. In one paper (Cavalcante *et al.* 1972a), the name of his wife (Cavalcante A. A. S. A. S.) appears as one of the co-authors; she never appears as author of any genus or species and it is thus unnecessary to make any distinction between both Cavalcante in authors' names of the taxa. It can also be mentioned that three names have been spelled in different ways: (1) de Barros Correia [as de Barros, Barros, de Barros Correi(r)a, or just Correi(r)a], (2) Soares da Silva (as Soares da Silva or simply da Silva), and (3) Maria Carvalho (as Maria Carvalho or simply Carvalho). Moreover, Osvaldo (or Oswaldo) Soares represents the same person as Soares da Silva. We have always followed the data in papers, URM files or labels of specimens for the citations in the present paper.

Section 1: New genera and species validly published by Batista and co-workers

***Aciesia xylopieae* Bat. & J. L. Bezerra**

in Batista, A. C., *Publicações, Instituto de Micologia da Universidade do Recife* 320: 6–7 (1961); Silva & Minter (1995: 20); type: Brazil: *Pernambuco*: Recife, Dois Irmãos, iii 1958, *Soares da Silva* (URM 17055/Exs. 12425—holotype!).
[typus generis *Aciesia* Bat.]

Notes: The description and illustrations of this taxon point to a black-haired *Tricharia*. The type collection is in very bad condition and contains sterile thalli of *Tricharia* cf. *urceolata* (Müll. Arg.) R. Sant.; however, the described conidial type does not match the hyphophores typical of that group of *Tricharia*. It is questionable whether these structures really represent conidia or something else, perhaps algal cells. *Aciesia xylopieae* remains as a *nomen dubium*.

***Acleistomyces zollerniae* Bat. & J. A. Lima**

in Batista, A. C., *Publicações, Instituto de Micologia da Universidade do Recife Publicação* 320: 10–11 (1961); Silva & Minter (1995: 21); type: Brazil: *Pernambuco*: Caruarú, x 1959 (acc. to URM files; 1950 in the original publication), *Correia* (URM 19036/Exs. 13957—holotype!).
[typus generis *Acleistomyces* Bat.]

Notes: According to the description and the generic name, *A. zollerniae* was expected to represent gaping pycnidia or the base of broken campylidia. However, nothing fitting the description was found either in the type collection or in any of the other specimens filed in URM under that name. One collection carries a fruiting thallus of *Loflammia gabrielis* (Müll. Arg.) Vězda, the pycnidia of which would fit the description, but are absent from these specimens. However, a part of the collection mentioned below was loaned to UPS by Batista and checked by the first author: it contains depauperate specimens of *Sporopodium* cf. *xantholeucum* (Müll. Arg.) Zahlbr. with the campylidia broken and the remaining bases looking like gaping pycnidia. Hence we consider the generic name *Acleistomyces* to be a synonym of *Sporopodium* Mont. although the specific epithet remains of doubtful application.

Additional specimen examined: **Brazil:** *Rondônia:* Ariquenes, vi 1962, *Fonseca* (URM 34965/Exs. 19249).

***Acleistomyces rionegrensis* Bat., H. Maia & Peres**

in Batista, A. C., *Publicações, Instituto de Micologia da Universidade do Recife* 320: 14 (1961); Silva & Minter (1995: 21); type: Brazil: *Amazonas:* Manaus, Rio Negro, ii 1961, *Peres* (URM 21488/Exs. 15188—lectotype!, here selected; INPA—isotype).

(Fig. 4A)

Notes: The illustration of *A. rionegrensis* shows a typical campylidium, and the description points to the genus *Sporopodium* Mont. The only taxa producing campylidia in the type collection are two species of *Sporopodium*,

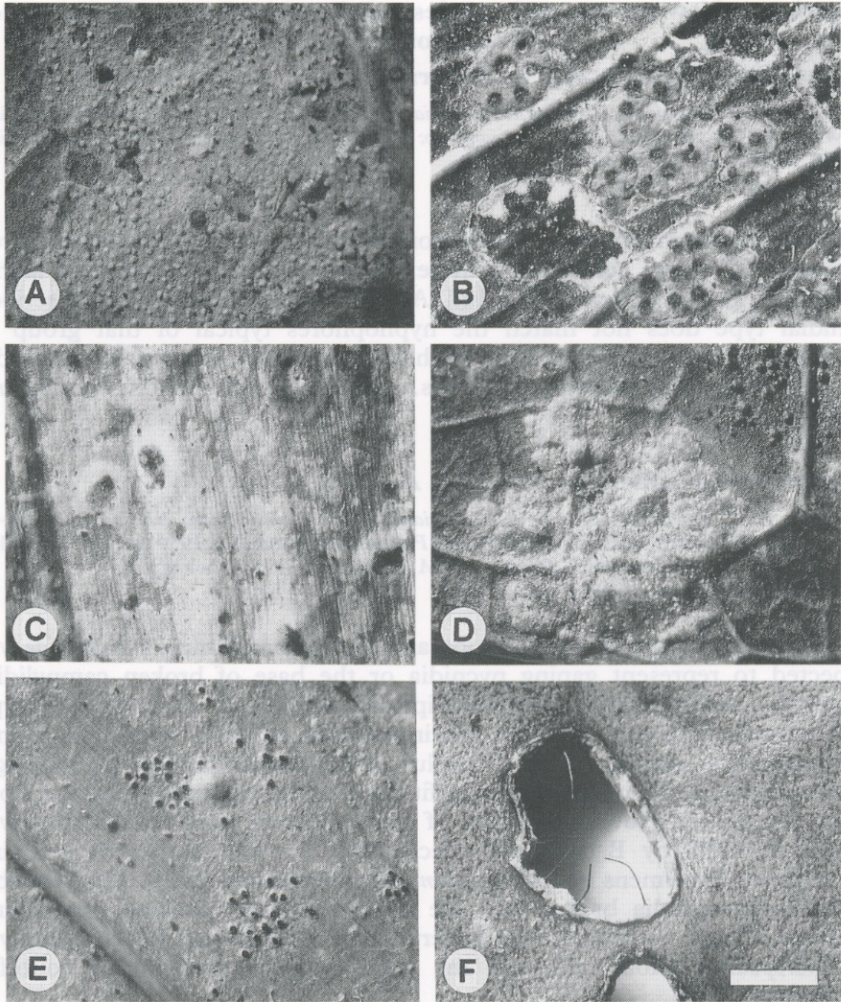


FIG. 4. A, Lectotype of *Acleistomyces rionegrensis* [= *Sporopodium leprieurii*]. B, Holotype of *Actinoteichus aspidospermatis* [= *Asterothyrium aspidospermatis*]. C, Holotype of *Amazonomyces palmae* [= *Amazonomyces sprucei*]. D, Holotype of *Amoebomyces pseudolmediae* [= *Strigula nemathora*]. E, Holotype of *Alysia pithospora* [= *Vouauxiella pithospora*]. F, Holotype of *Caprettia amazonensis*. General habit. Scale = 1 mm.

one of which is probably identical with the recently described *S. antonianum* Elix, Lumbsch & Lücking (Elix *et al.* 1995). A definite identification is not possible, however, since the specimens are not well preserved, and the characteristic lasiolomoid prothallus of that species was not observed. The other species is a typical *S. leprieurii* Mont. differing from *S. antonianum* by the smaller, continuous thallus without a woolly prothallus, and by the smaller, brown campylidia. Since several specimens of both taxa are marked, a specimen of the *S. leprieurii* was chosen as lectotype.

A third species of *Acleistomyces*, *A. anibae* Bat. nom. inval. [Art. 32, 36–37] is mentioned by Silva & Minter (1995: 21). No specimen with that name was found in the files in URM.

Actinoteichus maranhensis Cavalc. & Poroca

in Cavalcante, W. de A., Poroca, D. J. M., Peres, G. E. P. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 668: 5–7 (1971); Silva & Minter (1995: 23); type: Brazil: Maranhão: Porto Franco, x 1961, da Silva (URM 46652/Exs. 22717—holotype!; INPA—isotype).

[typus generis *Actinoteichus* Cavalc. & Poroca]

Notes: *Actinoteichus* corresponds to a distinctive pycnidial type assumed to belong to the genus *Asterothyrium* (short description in Santesson 1952: 318). These pycnidia are not squat-conical, as for example in *Asterothyrium microsporium* R. Sant., but completely applanate. Such pycnidia have hitherto not been found on thalli with apothecia, but anatomical and ontogenetical studies have shown that they definitely belong to *Asterothyrium* Müll. Arg. (Henssen & Lücking, unpublished data).

Actinoteichus maranhensis, with filiform, simple, $16\text{--}25 \times 1 \mu\text{m}$ conidia (not $15\text{--}40 \times 2\text{--}3 \mu\text{m}$ as indicated in the original description), is identical with a previously described species, *Strigula umbilicata* Müll. Arg., eventually recombined as *Asterothyrium umbilicatum* (Müll. Arg.) Müll. Arg. (Santesson 1952: 318). It is the most common representative of this peculiar group of species in the Neotropics. Besides the two additional species treated below, a fourth conidial type is mentioned by Santesson (1952: 318) with filiform, septate conidia up to $50 \mu\text{m}$ long.

A specimen that was, according to the URM file and label, originally designated as the type of *Actinoteichus maranhensis* [Brazil: Pernambuco: Igarassú, Granja Sao Luiz, vi 1969, Bezerra (URM 71020/Exs. 40948)] contains a non-lichenized, foliicolous ascomycete, resembling a species of *Strigula*, which has applanate pycnidia with filiform conidia and was therefore probably mistaken for the same taxon.

Actinoteichus aspidospermatis Peres

in Cavalcante, W. de A., Poroca, D. J. M., Peres, G. E. P. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 668: 9 (1971); Silva & Minter (1995: 23); type: Brazil: Minas Gerais: Rio Doce, Fazenda Laranja da Terra, i 1970, Heringer (URM 72025/Exs. 41690—holotype!).

(Fig. 4B)

Notes: With its simple, cylindrical, $c. 10 \times 1 \mu\text{m}$ conidia, *Actinoteichus aspidospermatis* represents an intermediate type between the two other species treated here. The new combination ***Asterothyrium aspidospermatis* (Peres) Lücking & Sérus.** (Bas.: *Actinoteichus aspidospermatis* Peres, in Cavalcante, W. de A. et al., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 668: 9, 1971) is therefore necessary. In the original publication, the number of the holotype is incorrectly given as 80705. The last number of the Batista collections registered in the URM files is 75808, and

therefore the supposedly correct number of the holotype of *A. aspidospermatis* is 72025.

Actinoteichus pernambucensis Cavalc.

in Cavalcante, W. de A., Poroca, D. J. M., Peres, G. E. P. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* **668**: 8 (1971); Silva & Minter (1995: 23); type: Brazil: Pernambuco: Recife, Tapacurá, xii 1970, Cavalcante (URM 71436/Exs. 41144—holotype!).

Notes: The type of *Actinoteichus pernambucensis* was not found during the stay of the first two authors in Recife but was eventually discovered by the third author. In the description, the holotype is incorrectly mentioned with the number 80708; it is actually 71436. The species was searched for in vain in other collections deposited in URM, most of them containing species assemblages typical for open habitats, e.g. *Asterothyrium pittieri* Müll. Arg., *A. cf. microsporum* R. Sant. (conical pycnidia), *Bullatina aspidota* (Vain.) Vězda & Poelt, *Strigula antillarum* (Fée) Müll. Arg., and *S. smaragdula* Fr.

According to the original description, *A. pernambucensis* is identical with pycnidiate specimens from Honduras mentioned by Santesson (1952: 318) with simple, bacillar, *c.* $3 \times 1 \mu\text{m}$ conidia. This species can be easily distinguished from the other two mentioned above by its very small, simple conidia, measuring $3\text{--}4 \times 1 \mu\text{m}$ (the measurements given in the original description, $2\text{--}6.5 \times 1\text{--}2 \mu\text{m}$, could not be verified). The new combination ***Asterothyrium pernambucense* (Cavalc.) Lücking & Sérus.** (Bas.: *Actinoteichus pernambucensis* Cavalc., in Cavalcante, W. et al., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* **668**: 8, 1971) is thus necessary.

Additional specimens examined: Brazil: Pernambuco: Recife, Tapacurá, xii 1970, Cavalcante (URM 71431/Exs. 41140); *ibid.* (URM 71436/Exs. 41144); *ibid.* (URM 71449/Exs. 41152); *ibid.* (URM 73980/Exs. 42566).

Aderkomyces couepiae Bat.

in Batista, A. C., *Publicações, Instituto de Micologia da Universidade do Recife* **320**: 17–18 (1961); Silva & Minter (1995: 24); type: Costa Rica: Limon: Braulio Carillo National Park, v 1991, R. Lücking (ULM—epitype, here selected!).
[typus generis *Aderkomyces* Bat.]

Notes: *Aderkomyces couepiae* is one of the taxa described by Batista and his co-workers that are referable to the hyphophores of *Gomphillaceae*. The described hyphophore type is characteristic for a group of white-haired species of *Tricharia* with thin and flat apothecia. Two Neotropical species of *Tricharia* produce hyphophores identical with those present in the type of *A. couepiae* [Brazil: Amazonas: Manaus, Reserva Ducke, i 1961, Batista (URM 21543/Exs. 15198—holotype!)]. The first one, which has asci with a single, large muriform ascospore, has so far been assigned (Sérusiaux 1976: 12; Vězda 1984: 200; Kalb & Vězda 1988b: 58; Lücking 1992: 117) to *Tricharia dilatata* Vězda, a species described from Africa, but differs by its smooth thallus and narrower hyphophores ($0.4\text{--}0.8$ mm high and *c.* 0.5 mm wide in *T. dilatata* and $0.3\text{--}0.5$ mm high and $0.2\text{--}0.3$ mm wide in the Neotropical taxon). The

other one is similar but has asci with 2–4, smaller muriform ascospores. Without ascocarps, it is impossible to distinguish these species and thus to establish the identity of *A. couepiae*. In order to make this genus name available in any generic rearrangement of the *Gomphillaceae*, we choose to nominate as its type species the most common one, for example the one with a single ascospore per ascus, and to select an epitype for it with hyphophores and ascomata (Art. 9.7). The following combination is proposed: ***Tricharia couepiae* (Bat.) Lücking & Sérus.** comb. nov. (Bas.: *Aderkomyces couepiae* Bat., *Publicações, Instituto de Micologia da Universidade do Recife* 320: 17–18, 1961), = *T. dilatata* auct. neotrop., non Vězda.

A short description of *T. couepiae* follows: thallus smooth, with white setae and basally pale, apically darkened, hand-shaped hyphophores, 0.3–0.5 mm high and 0.2–0.3 mm wide; apothecia rather thin, applanate, with a dark greyish brown disc and a paler, slightly swollen margin; exciple of branched and radiating hyphae embedded in a gelatinous matrix; ascospores one per ascus, muriform, 40–60 × 15–28 µm. The other species, externally identical but with 2–4-spored asci, is described elsewhere as *Tricharia planicarpa* Lücking (Lücking 1997a: 86–87). *Echinoplaca tricharioides* Kalb & Vězda (1988b: 28), described from São Paulo (Brazil) can be distinguished by its narrower, lanceolate hyphophores, its emarginate apothecia, which are hardly raised over the thallus surface, and its 1–2-spored asci.

***Alysia pithospora* Cavalc. & A. A. Silva**

in Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 32–34 (1972); Silva & Minter (1995: 28).—*Alysia pithospora* Bat. & Cavalc. nom. nud., files URM.—*Vouauxiella pithospora* (Cavalc. & A. A. Silva) B. C. Sutton, *The Coelomycetes*: 24 (1980); type: Brazil: Rondônia: Ariquenes, i 1963, Xavier Filho (URM 35089/Exs. 19263—holotype!; INPA—isotype).
[typus generis *Alysia* Cavalc. & A. A. Silva]

(Fig. 4E)

Notes: This taxon is a rather common lichenicolous fungus on thalli of the *Porina epiphylla* group, particularly *P. mirabilis* Lücking & Vězda ined. The catenulate conidia are very characteristic, and synonymy with the genus *Vouauxiella* has already been established by Sutton (1980).

***Amazonomyces palmae* Bat. & Cavalc.**

in Batista, A. C. & Peres, G. E. P., *Anais do XIV Congresso da Sociedade Botânica do Brasil*: 90–91 (1964); Silva & Minter (1995: 29); type: Brazil: Amazonas: Manaus, Rodovia Manaus-Itacoatiara km 67, v 1961, Garnier (URM 23295/Exs. 15761—holotype!; INPA—isotype).
[typus generis *Amazonomyces* Bat.]

(Fig. 4C)

Notes: From the description and illustrations, as well as from several other collections identified with that name, we expected *Amazonomyces palmae* to be a synonym of *Eremothecella calamicola* Syd., a pantropical species, common in the Amazon region and abundantly found in its pycnidial stage (Sérusiaux

1992). However, the type collection contains a well-developed and fertile *Stirtonia sprucei* R. Sant., another species typical of the Amazon region. The pycnidia of that species, abundant in the type collection, are somewhat similar to those of *Eremothecella* Syd. but differ by their pale margins, and the identification with the description of *A. palmae* provides no difficulties.

Lücking (1995a) pointed out that *Stirtonia sprucei* does not belong to *Stirtonia* but, together with *Cryptothecia farkasiae* Lücking, forms a natural entity close to *Eremothecella*, with the same pycnidial type. Besides the microcephalic ascospores, *Stirtonia sprucei* and *Cryptothecia farkasiae* differ from *Eremothecella* in their pale ascocarps and in the algiferous tissue covering lateral parts of the ascocarps and pycnidia. Both species stand as a separate genus close to *Eremothecella*, and the name *Amazonomyces* is available for it. The following new combinations are therefore proposed: **Amazonomyces sprucei (R. Sant). Lücking, Sérus. & Thor** comb. nov. [Bas.: *Stirtonia sprucei* R. Sant., *Symb. Bot. Upsal.* 12: 60, 1952; type: Brazil: Pará: Caripi, Spruce 119 (UPS—holotype!); Syn.: *Amazonomyces palmae* Bat. & Cavalc.], and **Amazonomyces farkasiae (Lücking) Lücking, Sérus. & Thor** comb. nov. [Bas.: *Cryptothecia farkasiae* Lücking, *Lichenologist* 27: 142–145, 1995; type: Costa Rica: Puntarenas: Corcovado National Park, Lücking 92–3215 (M—holotype!)]. Both species of *Amazonomyces* are endemic to the Neotropics, *A. farkasiae* being known from Costa Rica and Colombia, and *A. sprucei* being restricted to the Amazon basin.

With the new arrangement outlined above and two combinations introduced in other papers, viz. *Eremothecella macrocephala* (R. Sant.) Thor, Sérus., Lücking & Matsumoto (Thor *et al.* 1998), and *E. cingulata* (R. Sant.) L. I. Ferraro & Lücking (Ferraro & Lücking 1997), the genera of *Arthoniaceae* with foliicolous species can be distinguished as follows:

- 1 Ascocarps unorganized, consisting of a loose tissue in which the asci are embedded, pure white; ascospores muriform, with equally divided cells **Cryptothecia Stirt.**
- Ascocarps organized, smooth, compact, pale yellowish to dark brown or black; ascospores transversely septate, or muriform with a very large cell near the middle 2
- 2(1) Ascospores small (6–25 × 2–8 µm), 1–5-septate; pycnidia rounded, radiately symmetrical, the conidiogenous layer symmetrically arranged; conidia short (2–25 µm), ellipsoid to needle-shaped, simple or rarely 1–3(–5)-septate **Arthonia Ach.**
- Ascospores large (30–90 × 7–15 µm), 5–11-septate, or muriform with a very large cell near the middle; pycnidia ellipsoid-ovoid, bisymmetrical, the conidiogenous layer asymmetrically developed on one side only; conidia long (70–150 µm), filiform, multiseptate 3
- 3(2) Ascocarps pale yellowish, without any dark pigmentation and never pruinose, laterally covered by algiferous thallus tissue; ascospores fusiform, microcephalic; pycnidia pale yellowish, with their margin covered by algiferous thallus tissue **Amazonomyces Bat.**

Ascocarps dark brown to blackish brown, rarely (*E. macrocephala*) with a white pruina, the algal layer below the lateral parts of the ascocarps; ascospores tapering, microcephalic, rarely (*E. cingulata*) ovoid; pycnidia dark brown to blackish brown, with their margin never covered with algiferous thallus . . . **Eremothecella Syd.**

Ameropeltomyces lecythidicola Bat. & H. Maia

in Batista, A. C. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 62–63 (1967); Silva & Minter (1995: 29); type: Brazil: *Amapá*: Serra do Navio, v 1963, *Barros* (URM 45042/Exs. 22414—holotype!).
[typus generis *Ameropeltomyces* Bat. & H. Maia]

Notes: Thalli fitting the description and illustrations are rather abundant in the type collection. They carry numerous plane, circular pycnidia 0.2–0.3 mm in diam., with simple, oblong, 3–5 × 1.5 µm conidia. The impression that they represent a species of *Arthoniaceae* was confirmed by two thalli carrying both pycnidia and arthonioid ascocarps. The ascocarps are up to 0.6 mm in diam., angular-rounded, dark blackish brown, and contain (2–)3-septate, colourless to very slightly brownish, 11–15 × 3–5 µm ascospores. The taxon comes close to *Arthonia palmulacea* (Müll. Arg.) R. Sant. but differs by its pycnidia, the smaller ascospores, and the external appearance. Similarly flattened, but smaller and more prominent pycnidia are known from *A. cyanea* Müll. Arg. and an aberrant population of *A. palmulacea* (Lücking 1995a: 148). The following new combination is necessary for this species, so far known only from the type collection: ***Arthonia lecythidicola* (Bat. & H. Maia) Lücking & Sérus.** comb. nov. (Bas.: *Ameropeltomyces lecythidicola* Bat. & H. Maia in Batista *et al.*, *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 62–63, 1967).

Amoebomyces pseudolmediae Bat. & H. Maia

in Batista, A. C. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 2: 353–355 (1965); Silva & Minter (1995: 30); type: Brazil: *Rondônia*: Pôrto Velho, iii 1962, *Correia* (URM 28314/Exs. 20177—holotype!; INPA—isotype).
[typus generis *Amoebomyces* Bat. & H. Maia]

(Fig. 4D)

Notes: *Amoebomyces pseudolmediae* is a typical *Strigula nemathora* Mont. The ‘*verrucas albidas*’ mentioned in the original description are the white papillae that are so characteristic for the species. The macroconidia usually have two oil droplets in each cell, which may give them the appearance of being 3-septate (as described by Batista & Maia). In spite of the fact that no less than 431 entries in the files of URM correspond to most probably correct identifications of *S. nemathora*, Batista & Maia did not realize that the lobate thallus of their new genus (which led them to describe it as *Amoebomyces*) is in fact a typical feature of that common species of *Strigula*.

Anconomyces palmae Cavalc. & A. A. Silva

in Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 25–26 (1972); Silva & Minter (1995:

32).—*Anconomyces palmae* Bat. & Cavalc. *nom. nud.*, files URM.; type: Brazil: Maranhão: Zé Doca, ix 1965, Peres (URM 52420/Exs. 25270—epitype, here selected!). [typus generis *Anconomyces* Cavalc. & A. A. Silva]

Notes: The original description, together with the illustration, indicate some similarities with *Lyromma*, a fascinating genus described by Batista & Maia (see below). In the type collection [Brazil: Amazonas: Manaus, Rodovia AM-1, km 55, viii 1961, Maria Carvalho (URM 29109/Exs. 17065—holotype!; INPA—isotype)], nothing but sterile thalli of *Phycopeltis* were found, as well as two species of *Lyromma*, viz. *L. nectandrae*, and a presumably new species with longer setae, which does not correspond to the description of *A. palmae* and which is left unnamed for lack of well-developed material. Another specimen that, according to the files in URM, was originally to be designated as the type [Brazil: Maranhão: Zé Doca, ix 1965, Peres (URM 52420/Exs. 25270)], bears three thalli of *A. palmae* separated in transparent envelopes. The pycnidia are very small but agree with the description and illustration. We regard this material as a species of *Lyromma* with reduced apical setae, as compared to the short ones of *L. nectandrae* and the very long ones of *L. dolicobelum*. We select this collection as an epitype (Art. 9.7) and propose the following new combination: ***Lyromma palmae* (Cavalc. & A. A. Silva) Lücking & Sérus.** *comb. nov.* (Bas.: *Anconomyces palmae* Cavalc. & A. A. Silva, in Cavalcante, W. de A. *et al.*, *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 25–26, 1972).

***Arthonia anisocularis* L. Xavier & Taltasse**

in Xavier Filho, L., *Anais do XIII Congresso da Sociedade Botânica do Brasil*: 462 (1964); Silva & Minter (1995: 36).—*Arthonia anisocularis* Bat. & Taltasse *nom. nud.*, files URM; type: Brazil: Pernambuco: Dois Irmãos (Carpina acc. to files URM), i 1959 (iv 1959 acc. to files URM), Soares da Silva (URM 17350/Exs. 12617—holotype!).

Notes: The only arthonioid lichen present in the type collection is a depauperate *Arthonia cyanea* Müll. Arg. It is marked by several cuts, leaving no doubt that it corresponds to the description. Most parts of the description fit the specimen, particularly ascospore septation and size, except for the description of ascocarps as ‘*non pruinosi*’. The specimen has a reduced pruina that, nevertheless, is visible at the margins of the ascocarps.

***Arthrobotryomyces amazonensis* Bat. & J. L. Bezerra**

in Batista, A. C. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 321 9–10 (1961); Silva & Minter (1995: 38); type: Brazil: Amazonas: Manaus, Cachoeira do Tarumã, ii 1961, Batista (URM 26686 (20686 acc. to files)/Exs. 14835—holotype!). [typus generis *Arthrobotryomyces* Bat. & J. L. Bezerra]

Notes: The description and illustration provided for this taxon give the impression of hyphophores of the *Gomphillaceae*. However, the conidial type is completely unknown in that family. Hyphophore-like structures with such differentiated, septate conidia are known in very few Lecanorales, e.g. *Woessia pseudohyphophorifera* Sérus. & Lücking (Sérusiaux 1995: 422–428), but none of them can be identified with *A. amazonensis*. Nothing fitting the description

was found in the type collection, which consists of several large leaves with numerous lichens. Hence, the name, which may also refer to a non-lichenized fungus, remains a *nomen dubium*.

Asbolisiomyces ingae Bat. & H. Maia

in Batista, A. C. & Maia, H. da S., *Publicações, Instituto de Micologia da Universidade do Recife* 322: 5–6; Silva & Minter (1995: 39); type: Brazil: Pernambuco: Recife, Dois Irmãos, iii 1960, Soares da Silva (URM 18776/Exs. 13835—holotype!).
[typus generis *Asbolisiomyces* Bat. & H. Maia]

Notes: Several species carrying pycnidia are present in the type collection, e.g. *Dimerella epiphylla* (Müll. Arg.) Malme, *Dimerella* sp., and *Mazosia melanophthalma* (Müll. Arg.) R. Sant. but none of them fits the description of *A. ingae*. For the time being, the name remains as a *nomen dubium*.

Astrabomyces amazonensis Bat. & Cavalc.

in Batista, A. C., *Publicações, Instituto de Micologia da Universidade do Recife* 320: 22–24 (1961); Silva & Minter (1995: 53); type: Brazil: Amazonas: Manaus, ii 1961, Batista (URM 21254/Exs. 15016—holotype!; INPA—isotype).
[typus generis *Astrabomyces* Bat.]

Notes: The description and illustrations do not point to any known foliicolous lichen but to a non-lichenized hyphomycete. Nothing fitting the description was found in the type collection, but it can hardly be expected that such a delicate structure could have survived if not preserved with great care. *Astrabomyces amazonensis* remains a *nomen dubium*.

Byrsomyces olivaceus Cavalc.

in Cavalcante, W. de A., Bezerra, J. L. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 675: 6–7 (1972); Silva & Minter (1995: 69, as *Byrsomyces olivaceus* Bat. & Cavalc.)—*Byrsomyces olivaceus* Bat. & Cavalc. *nom. nud.*, files URM; type: Brazil: Amazonas: Manaus, viii 1961, Carvalho (URM 27661/Exs. 20057—holotype!; INPA—isotype).
[typus generis *Byrsomyces* Cavalc.]

Notes: In the introduction of their paper, Cavalcante *et al.* (1972b) discuss possible relationships of *Byrsomyces* and *Scutomyces*, another genus described in the same paper (see below), with *Microtheliopsis* Müll. Arg. No important differences between the three genera can be detected from the original descriptions and very good illustrations: it is perfectly clear that *Byrsomyces olivaceus* is a synonym of *Microtheliopsis uleana* Müll. Arg., a well-known pantropical species. This is confirmed by many of the 145 specimens filed under *Byrsomyces olivaceus* in URM. The type itself contains sterile, depauperate specimens, associated with *Arthonia orbignyae* (H. B. P. Upadhyay) Matzer (see below), *Mazosia* spp., and abundant *Porina rubentior* (Stirt.) Müll. Arg. Since the last species superficially resembles *Microtheliopsis uleana*, there is a very slight possibility that, among the numerous collections available, *Porina rubentior* was, by mistake, selected as the type. However, our experience with other type specimens leads us to consider it more probable that a very small specimen of *M. uleana* was designated and then used up with the preparation of the diagnosis.

Caprettia amazonensis Bat. & H. Maia

in Batista, A. C. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 2: 377–378 (1965); Silva & Minter (1995: 81); type: Brazil: Amazonas: Manaus, v 1961, Garnier (URM 23168/Exs. 15729—holotype!; INPA—isotype).
[typus generis *Caprettia* Bat. & H. Maia]

(Fig. 4F)

Notes: This taxon is not rare on living leaves, especially in the Neotropics. It typically grows at the margins of leaf wounds, projecting the long beaks of its pycnidia horizontally into the free space of the hole. Whether it is lichenized or not is a matter of speculation as it very often cohabits with young, immature thalli of *Strigula* Fr. or *Graphis* Adans., two genera that grow below the leaf cuticle and appreciate leaf wounds, and thus can be found associated with algal cells.

The conidia of *Caprettia amazonensis* are aggregated in several, \pm cylindrical, gelatinous masses, which are dispersed as single diaspores at the tips of the pycnidia beaks. These masses may have been confused with asci, which of course cannot be found in such pycnidia. *Caprettia amazonensis* shows some superficial similarities with *Lagenomyces marginalis* (see below), but differs in several respects.

Chaetomonodorus brosimi Bat. & H. Maia

in Batista, A. C. & Maia, H. da S., *Publicações, Instituto de Micologia da Universidade do Recife* 322: 10–11 (1961); Silva & Minter (1995: 92); type: Brazil: Pernambuco: São Lourenço, Camaragibe, iv 1960, Soares da Silva (URM 19093/Exs. 13971—holotype!).
[typus generis *Chaetomonodorus* Bat. & H. Maia]

(Fig. 5A)

Notes: From the original description and illustrations, there is absolutely no difference between *Chaetomonodorus brosimi* and *Microtheliopsis uleana*. Indeed, the type of *C. brosimi* is a very typical and well-developed *M. uleana*.

Crocicreomyces guttiferæ Bat. & Peres

in Batista, A. C. & Peres, G. E. P., *Anais do XIV Congresso da Sociedade Botânica do Brasil*: 92–93 (1964); Silva & Minter (1995: 113); type: Brazil: Amazonas: Manaus, Reserva Ducke, iv 1961, Peres (URM 23131/Exs. 15772—holotype!).
[typus generis *Crocicreomyces* Bat. & Peres]

Notes: The description and illustrations point to pycnidia of a *Byssoloma* Trevis. or *Fellhanera* Vězda, and a rather large and typical thallus of *Byssoloma aeruginascens* Vězda (1974) fitting the description was found in the type collection. The earlier epithet *guttiferæ* is thus available for that species, and the following new combination is proposed: ***Byssoloma guttiferæ* (Bat. & Peres) Lücking & Sérus.** comb. nov. (Bas.: *Crocicreomyces guttiferæ* Bat. & Peres, in Batista *et al.*, *Anais do XIV Congresso da Sociedade Botânica do Brasil*: 92–93, 1964; syn.: *Byssoloma aeruginascens* Vězda).

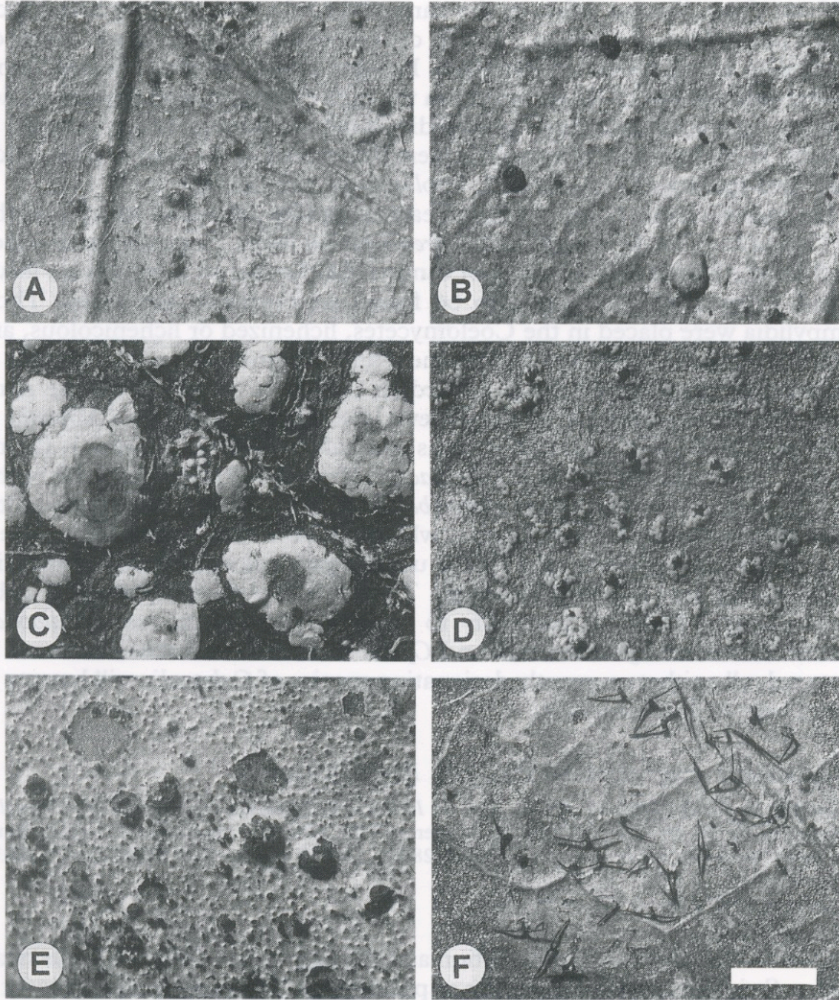


FIG. 5. A, Holotype of *Chaetomonodorus brosimi* [= *Microtheliopsis uleana*]. B, Holotype of *Cyrta licaniae* and designated type of *Lopadium applanatum* nom. inval. [campylidia and apothecia of *Calopadia subcoerulea*]. C, Holotype of *Echinoplaca amapensis*. D, Epitype of *Kiliklostroma peresii* [= *Strigula prasina*]. E, Holotype of *Lopadium couepiae* [= *Phyllobathelium epiphyllum*]. F, Holotype of *Lyromma dolichobelum*. General habit. Scale = 1 mm.

Cyrta licaniae Bat. & H. Maia

in Batista, A. C. & Maia, H. da S., *Publicações, Instituto de Micologia da Universidade do Recife* 322: 14–15 (1961); Silva & Minter (1995: 116); type: Brazil: Pernambuco: Paulista, Ferrai, iv 1959, Soares da Silva (URM 17210/Exs. 12549—holotype!). [typus generis *Cyrta* Bat. & H. Maia]

(Fig. 5B)

Notes: *Cyrta licaniae* refers to the campylidia of a typical *Calopadia* Vězda, viz. *C. subcoerulescens* (Zahlbr.) Vězda, characterized by bluish black apothecia with a dark aeruginous hypothecium. Besides *Tapellaria nana* (Fée) R. Sant., it is the only species of *Ectolechiaceae* in the type collection, and the connection between the apothecia and campylidia (both structures being present) is evident. Nevertheless, the apothecia were designated as the type of an invalidly published species of *Lopadium*, *L. applanatum* (see below).

The generic name *Cyrta* is thus an earlier, validly published name available for *Calopadia*. The same applies to *Pyrenotrichum* Mont., a genus name widely used for the bluish grey ear-shaped campylidia that are so common on leaves in the Tropics but that can also be found on branches and rocks. Those campylidia were placed in the Coelomycetes, lichenized or lichenicolous, and even in the Basidiomycetes, before their final assignment as conidiomata of members of the *Ectolechiaceae*. According to Vězda (1986: 204), the name could not be determined at genus level (belonging either to *Calopadia* or *Tapellaria* Müll. Arg.) and hence was not taken into consideration for the generic rearrangement of the *Ectolechiaceae*. However, there is little doubt that the type species, *Pyrenotrichum splitgerberi* Mont., represents campylidia of the much more common *Calopadia* type, which can be distinguished from those of the much rarer *Tapellaria* type by the usually grey colour (whitish or blackish in *Tapellaria*) and the longer conidia. Therefore, for the purpose of a stable nomenclature, it will be necessary to conserve the generic name *Calopadia* against the earlier *Pyrenotrichum* and *Cyrta*. If such a conservation cannot be accepted, all epithets currently designating species of *Calopadia* will have to be transferred to *Pyrenotrichum*.

Didymaster myrtaciicola Bat., H. Maia & Castro

in Batista, A. C. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 58–59 (1967); Silva & Minter (1995: 124, as ‘myrtaceicola’); type: Brazil: Amazonas: Manaus, v 1961, Garnier (URM 28856 (23856 acc. to files URM)/Exs. 15863—holotype!).

[typus generis *Didymaster* Bat. & H. Maia]

Notes: According to the description and illustrations, we expected this taxon to be a *Strigulaceae* with *Phycopeltis* as photobiont. The only species present in the type collection fitting the description is a rather small *Strigula platypoda* (Müll. Arg.) R. C. Harris (= *Porina platypoda* Müll. Arg.) with young perithecia and several, immature pycnidia. The latter are, unfortunately, empty, so that the relatively small size of the conidia mentioned in the description could not be confirmed. We nevertheless consider *Didymaster myrtaciicola* to be a synonym of *S. platypoda*.

Didymopycnomycetes hyalinus Cavalc. & A. A. Silva

in Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 17–18 (1972); Silva & Minter (1995: 126).—*Didymopycnomycetes hyalinus* Bat. & Cavalc. nom. nud., file URM; type: Brazil: Rondônia: Abunã, Ferrovia Madeira-Mamoré, ii 1963, Xavier Filho (URM 32870/Exs. 18253—holotype!; INPA—isotype).

[typus generis *Didymopycnomycetes* Cavalc. & A. A. Silva]

Notes: *Didymopycnomycetes hyalinus* is represented only by the type collection. It is identical with *Dimerella epiphylla* (Müll. Arg.) Malme, as already suspected by Sérusiaux (1992: 42), the thalli showing all typical characters of that species, viz. lacinate thalli and abundant pycnidia with 1-septate, c. 20 µm long conidia. Even a few young apothecia were found.

***Dothiomyces couepiae* Bat. & J. L. Bezerra**

in Batista, A. C. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 321: 5–6 (1961); Silva & Minter (1995: 133); type: Brazil: Amazonas: Manaus, iii 1961, *Fonseca* (URM 22470/Exs. 15543—epitype, here selected!).
[typus generis *Dothiomyces* Bat. & J. L. Bezerra]

Notes: The type collection [Brazil: Amazonas: Manaus–Caracarái, km 12, iv 1961, *Peres* (URM 21645/Exs. 15224—holotype!)] does not contain any specimen that could fit the description. However, in another collection filed under that name, a specimen marked by cutting was found with abundant pycnidia belonging to a species of *Byssolecania* Vain. [Brazil: Amazonas: Manaus, iii 1961, *Fonseca* (URM 22470/Exs. 15543)]. As the type collection contains fertile specimens of *Byssolecania fumosonigricans* (Müll. Arg.) R. Sant., we are convinced that *D. couepiae* refers to the pycnidia of that species, which were used up for the study and original description. The latter collection is selected as an epitype (Art. 9.7) to clarify the situation in this little-studied genus.

The apothecia of *Byssoloma fumosonigricans* in the type collection of *D. couepiae* were designated as type of an invalidly published species, viz. *Arthonia orbicularis* (see below).

***Echinoplaca amapensis* Bat. & Poroca**

in Batista, A. C. & Poroca, D. J. M., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 635: 1–8 (1970; '1969' on the second front page of the paper); Silva & Minter (1995: 134).—*Echinoplaca amazonensis* Bat. & Poroca *nom. nud.*, files URM; type: Brazil: Amapá: Calçoene, iv 1963, *Barros* (URM 48692/Exs. 23380—holotype!).

(Figs 5C & 6)

Thallus foliicolous, epiphyllous, circular, c. 1.5 mm in diam., made of several, mostly separated, rounded and slightly lobulate patches (up to 1.7 mm diam.); patches slightly but conspicuously convex, almost pure white, smooth and very shiny (looking icy under the dissecting microscope), 25–40 µm thick; in sections, an algiferous layer is covered by a layer of hyaline, large polyhedral crystals and a thin corticiform layer; prothallus not seen, although a pellucid, very thin membrane can be expected to connect the thallus patches. *Photobiont:* probably a species in the *Trentepohliaceae*, with green, polyhedral or rounded cells, 6–12 µm in diam., usually ± arranged in short rows.

Apothecia usually starting at the middle of the thallus patches and obviously spreading radially over the thallus surface, plane, very thin (less than 30 µm

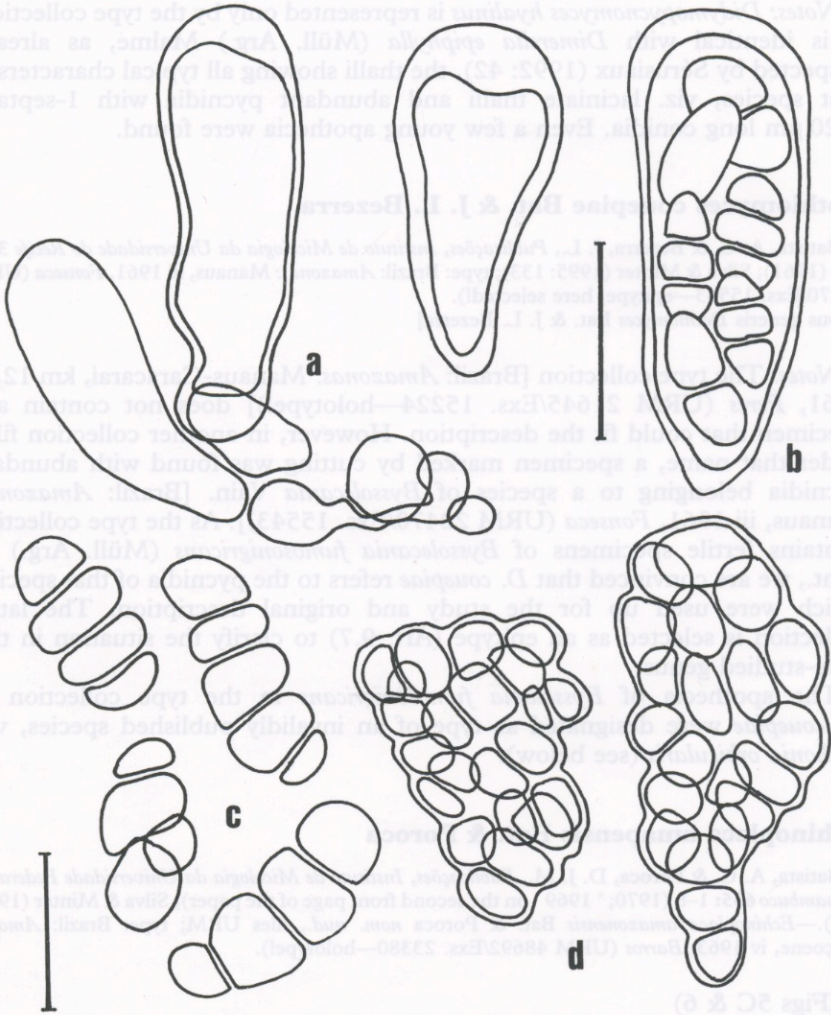


FIG. 6. Holotype of *Echinoplaca amapensis*. A, Immature asci with ascogenous hyphae. B, Mature ascus with ascospores. C, Mature ascospores expelled out of the asci during microscopic preparation. D, Overmature asci with fragments of ascospores, forming the tiny verrucae on the surface of ascocarps. Scale = 10 μ m.

thick), not raised at the margins, 0.4–0.5(–0.9) mm in diam.; disc at first rather smooth or with a thin, almost indistinct pruina, pale brownish, with a hue of green, and when mature with numerous minute verrucae and much paler. *Excipulum* a dense and compact network of very much branched and anastomosed hyphae, c. 1 μ m thick, up to 80–100 μ m wide and c. 25 μ m thick but gradually thinner towards its edge, with a faint brownish tinge in microscopic preparations. *Hamathecium* identical to the excipulum but

somewhat looser. *Asci* numerous, clavate, usually with a distinct, short stipe, $20\text{--}28 \times 10\text{--}15 \mu\text{m}$, at first immersed in the hamathecium and typically two-layered and with a rather large apical dome, but soon extending beyond the apothecium surface and thin-layered while still containing the ascospores. *Ascospores* 8 per ascus, ellipsoid, 1–3(–4)-septate, straight or slightly curved, distinctly constricted at the septa (observed in KOH!), $15\text{--}16 \times 5.5\text{--}6.5 \mu\text{m}$, breaking up into several (1–3) cells when mature but remaining inside the asci. *Pycnidia* not found.

Notes: Several features of the original description are quite enigmatic and raise some doubts about its accuracy, for example the asci being described as 10–12-spored. However, examination of the type material shows it to be essentially correct. Indeed the species, although superficially looking like an *Echinoplaca*, does not belong to that genus and most probably not to the *Gomphillaceae* either. We are convinced that this species belongs to a new genus. We refrain from describing it as new as the species is known only from the scanty type collection, but we provide a complete description above.

Our interpretation of several unusual features must be treated with caution as the available material is small (only one thallus) and thus it was impossible to reproduce several observations. Moreover, the thallus is typically filled with numerous crystals that congest most of the microscopic preparations and hide other important structures, and the hamathecium is so dense that the hymenium had to be observed in 10% KOH solution.

Our observations on the identity of the photobiont are not in accordance with the statement of Batista & Poroca (1970). In the original description, they stated that the photobiont belongs to the *Chlorococcaceae* but, with the scarce material available, we must accompany our conclusions with a question mark.

The development of apothecia is very remarkable: asci are first embedded in the hamathecium but, at maturity, are partly exposed to the air, due either to an upwards movement or most probably due to the contraction of the hamathecium. This phenomenon would explain the loss of colour of mature parts of the disc. The asci are then seen as minute verrucae on the disc surface at high magnification. Another interesting feature is that the mature ascospores do not escape the asci but break up into several pieces within them while the ascus walls become much thinner. This explains why Batista & Poroca mentioned '10–12-spored asci'. Although we have no convincing observations to support the idea, we suggest that the thin-walled, protruding asci containing fragments of ascospores are dispersed as single diaspores.

The thin, plane apothecia, the hamathecium of richly branched and anastomosed hyphae, the small, clavate asci with a short stipe and the transversally septate ascospores suggest a placement in the *Arthoniaceae*. A trentepohlioid photobiont would also provide a strong argument for such a position but our observations on this matter are not final. Batista & Poroca reported a I+ 'marron-avermelhado' reaction of the ascoplasm, an observation that also points to the *Arthoniaceae*, but unfortunately we have been unable to reproduce such a reaction.

Kilikiostroma peresii Bat. & J. L. Bezerra

in Batista, A. C. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 321: 13–14 (1961); Silva & Minter (1995: 171); type: Brazil: Amazonas: Manaus-Caracarái, iv 1961, Coêlho (URM 22456/Exs. 15541—epitype, here selected!).
[typus generis *Kilikiostroma* Bat. & J. L. Bezerra]

(Fig. 5D)

Notes: According to the description and illustrations, *Kilikiostroma peresii* refers to the pycnidia of a *Strigulaceae*. Several species of *Strigula*, viz. *S. concreta* (Fée) R. Sant., *S. nemathora* Mont., *S. schizospora* R. Sant. and *S. smaragdula* Fr., were found in the type collection [Brazil: Amazonas: Manaus, Rio Negro, ii 1961, *Peres* (URM 21008/Exs. 14935)], but none of them fits the description. In a further collection gathered in a nearby locality [Brazil: Amazonas: Manaus-Caracarái, iv 1961, Coêlho (URM 22456/Exs. 15541)], two specimens of *Strigula prasina* Müll. Arg. [= *Raciborskiella prasina* (Müll. Arg.) R. Sant.] were found. The pycnidia of these specimens fit the description perfectly; even the conidia have a slightly brownish tinge, which caused the authors to describe them as ‘*brunneae*’. This collection is here designated as an epitype to avoid any confusion (Art. 9.7). It is quite probable that a small specimen of that species was present in the original type collection but destroyed during the description process.

Lagenomyces marginalis Cavalc. & A. A. Silva

in Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 28–29 (1972); Silva & Minter (1995: 173).—*Lagenomyces marginalis* Bat. & Cavalc. *nom. nud.*, files URM; type: Brazil: Rondônia: Jaci-Paraná, Ferrovia Madeira-Mamoré, km 63, i 1963, Xavier Filho (URM 32998/Exs. 18279—holotype!; INPA—*isotype*).
[typus generis *Lagenomyces* Cavalc. & A. A. Silva]

Notes: *Lagenomyces marginalis* is a non-lichenized fungus with very thin, long-beaked pycnidia. It bears some resemblance with *Caprettia amazonensis* (see above), but differs in the shape and size of the conidia, which are not embedded in a gelatinous mass, and in the sessile (not immersed in the thallus) and much inflated basal part of the pycnidia. Beaked pycnidia are known in a few species of foliicolous lichens, but none of them is related to *L. marginalis*.

Lopadium couepiae L. Xavier

in Xavier Filho, L., *Anais da Universidade Federal Rural de Pernambuco* 3: 95 (1976).—*Lopadium couepiae* Bat. *nom. nud.*, files URM; type: Brazil: Amazonas: Manaus, Reserva Ducke, i 1961, Batista (URM 21545/Exs. 15198—holotype!).

(Fig. 5E)

Notes: The type collection of *Lopadium couepiae* is the same as of *Aderkomyces couepiae* (see above). Apart from the latter, the only specimens marked are several well-developed thalli of *Phyllobathelium epiphyllum* (Müll.

Arg.) Müll. Arg. Their perithecia are not well-preserved: their upper parts are partly disrupted and the powdery black mass forming a ring around the ostiole within the perithecial wall is largely exposed; they thus look like apothecia, and this is the reason why the specimens were mistaken for a *Lopadium* (*sensu* Santesson 1952: 521–545). The illustrations provided by Xavier Filho (1976), however, depict a typical pyrenocarpous lichen.

***Lyromma nectandrae* Bat. & H. Maia**

in Batista, A. C. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 2: 359–360 (1965); Silva & Minter (1995: 185); type: Brazil: Amazonas: Manaus, Itacoatiara, vii 1967, *Omar* (URM 69375/Exs. 40677–epitype, here selected!).
[*typus generis Lyromma* Bat. & H. Maia]

Notes: *Lyromma nectandrae* is a very distinctive taxon, found in all tropical regions (Aptroot *et al.* 1997: 100–101). The type collection [Brazil: Pernambuco: Recife, Dois Irmãos, iii 1960, *Soares da Silva* (URM 18764/Exs. 13832—holotype!)] contains only sterile (without pycnidia or perithecia) specimens. Typical pycnidia, perfectly matching the original description, were found in two other collections in which Batista & Maia had recognized it. One of them is selected as an epitype (Art. 9.7) to definitely settle the situation.

Additional specimen examined: Brazil: Rondônia: Guajará Mirim, ii 1963, *Coelho* (URM 46458/Exs. 22627).

***Lyromma dolicobelum* Cavalc.**

in Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 39 (1972); Silva & Minter (1995: 185, as '*dolichobellum*').—*Lyromma nectandrae* var. *dolicobelum* Bat. & Cavalc. *nom. nud.*, files URM; type: Brazil: Roraima: Mucajaí-Caracarái, ii 1962, *de Lima* (URM 37178/Exs. 19682—holotype!; INPA—isotype).

(Fig. 5F)

Notes: *Lyromma dolicobelum* is a very conspicuous species, characterized by the very long pycnidial setae, which overlap with those of neighbouring pycnidia. It is probably endemic in the Amazon region as already indicated by Sérusiaux (1992: 42). According to the URM files, the species was first designated as a variety of *L. nectandrae*. Material for a further but never published variety of the latter has been found in URM; it is identical with *L. dolicobelum* [Brazil: Roraima: Mucajaí-Caracarái, ii 1962, *de Lima* (URM 36809/Exs. 19599)].

Additional specimens examined: Brazil: Roraima: Mucajaí-Caracarái, ii 1962, *de Lima* (URM 36711/Exs. 19580); *ibid.*, xi 1962 (URM 36704/Exs. 19579). Maranhão: Alto Turí, xi 1965, *Peres* (URM 54807/Exs. 26547); *ibid.*, Zé Doca, xi 1965, *Peres* (URM 54884/Exs. 26557); *ibid.*, *s. loc.*, *s. d.*, *Chatthoo Ram* (URM 68734/Exs. 40618).

***Manaustrum palmae* Cavalc. & A. A. Silva**

in Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 13–14 (1972); Silva & Minter (1995: 188).—*Manaustrum palmae* Bat. & Cavalc. *nom. nud.*, file URM; type: Brazil: Amazonas: Manaus,

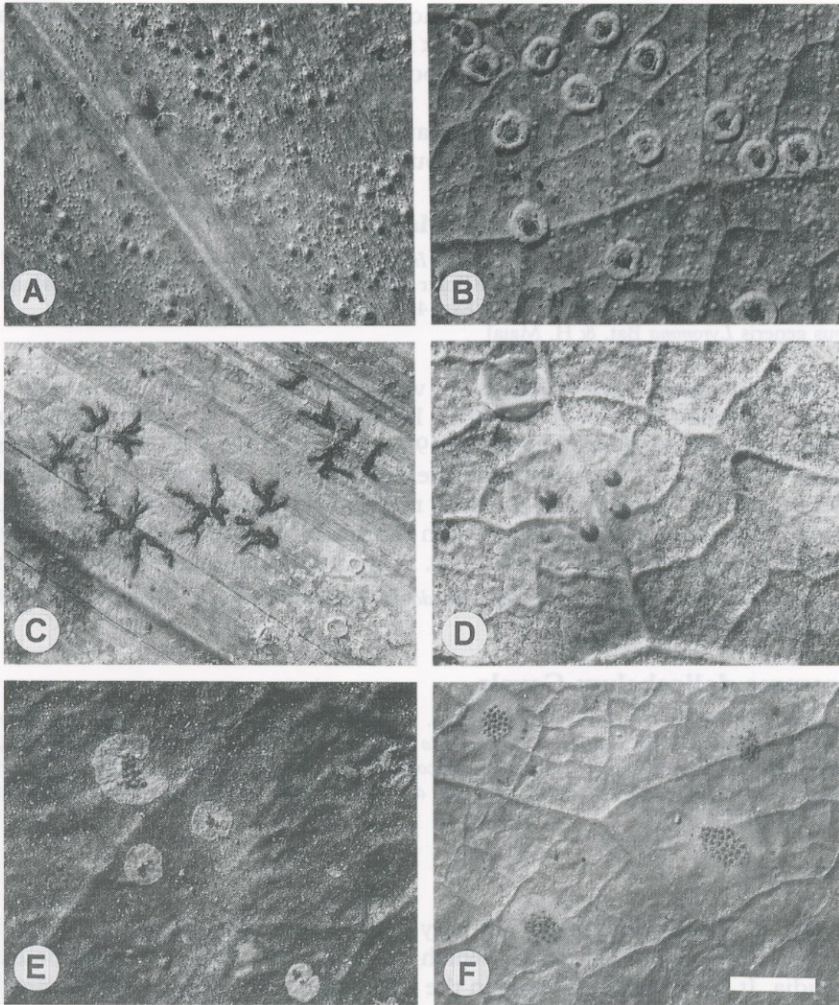


FIG. 7. A, Holotype of *Manaustrum palmae* [= *Strigula multipunctata*]. B, Holotype of *Mazosia paupercula* var. *macrospora* [= *Mazosia praemorsa*]. C, Holotype of *Opegrapha orbignyae* [= *Arthonia orbignyae*]. D, Holotype of *Phragmopelthecca cupaniae* [= *Porina rubentior*]. E, Holotype of *Pycnociliopora belucia* [= *Strigula antillarum*]. F, *Septoriomyces leguminosae* [URM 21611/Exs. 15214; = *Phyllobathelium leguminosae*]. General habit. Scale = 1 mm.

Rodovia Manaus-Itacoatiara, km 67, v 1961, Garnier (URM 23296/Exs. 15761—holotype!; INPA—isotype).

[typus generis *Manaustrum* Cavalc. & A. A. Silva]

(Fig. 7A)

Notes: According to the original description and the illustration, there is little doubt that *Manaustrum palmae* refers to pycnidia of a species of

Strigulaceae. The thallus is described as verrucose, and in the type collection, a well-developed specimen of *Strigula multipunctata* (R. Sant.) R. C. Harris (= *Porina multipunctata* R. Sant.) with abundant pycnidia but lacking perithecia is present: it fits the description perfectly.

***Mazosia melanophthalma* var. *macrospora* Bat. & M. M. P. Herrera**

in Batista, A. C., Maia, H. da S., Santos, W. F. & Bezerra, J. L., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 431 (1967); Silva & Minter (1995: 191); type: Brazil: Amazonas: Manaus, Rodovia AM-1, km 44, vii 1961, P. S. Colares (URM 25454/Exs. 16636—holotype!; INPA—isotype!).

Notes: The description refers to an aberrant specimen of *Mazosia dispersa* (Hedrick) R. Sant. with mostly immature ascospores in which the distal septa have not yet formed. A few typically 5-septate ascospores were found. Such specimens are not rare in *M. dispersa* and might cause some confusion if not carefully examined. A similar problem is known from *M. paupercula* (Müll. Arg.) R. Sant. (Lücking & Matzer 1996: 122–123).

***Mazosia paupercula* var. *macrospora* Bat. & H. Maia**

in Batista, A. C., Maia, H. da S., Santos, W. F. & Bezerra, J. L., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 436 (1967); Silva & Minter (1995: 191); type: Brazil: Pernambuco: Recife, Passarinho, iv 1960, Soares da Silva (URM 19040/Exs. 13959—holotype!).

(Fig. 7B)

Notes: It is rather difficult to understand why this taxon has been described as a variety of *Mazosia paupercula* (Müll. Arg.) R. Sant. since the description reads ‘*Thalo algifero . . . verrucoso, . . .*’, and the thallus of the latter is typically smooth. All in all, the description and illustration point to a completely different taxon, viz. *M. praemorsa* (Stirt.) R. Sant. Besides *M. bambusae* (Vain.) R. Sant., *M. melanophthalma* (Müll. Arg.) R. Sant., *M. phyllosema* (Nyl.) Zahlbr. and *M. rotula* (Mont.) A. Massal., a well-developed and typical *M. praemorsa* is indeed present in the type collection.

***Microxyphiomyces manaosensis* Bat., Valle & Peres**

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 8, 21 (1961); Silva & Minter (1995: 233, 234); type: Brazil: Amazonas: Manaus, Reserva Ducke, i 1961, Batista (URM 20521/Exs. 14763—holotype!).

[*typus generis Microxyphiomyces* Bat., Valle & Peres]

Notes: Cavalcante *et al.* (1972a: 7) give *Microxyphiomyces* as the anamorph corresponding to *Aulaxina* Fée. The genus is actually a mixture of two hyphophore types, belonging to *Aulaxina* (three species) and *Tricharia* Fée (two species). They differ in the structure of the conidial masses hanging down the hyphophore tips (= diahyphae): they are rather loose in *Aulaxina* and form compact masses in *Tricharia*. The description and illustration of the generic type, *M. manaosensis*, point to hyphophores typical of *Tricharia*, and the type collection contains several sterile thalli of a black-haired *Tricharia* with smooth

thallus, being close to *T. vainioi* R. Sant. or *T. hyalina* Kalb & Vězda. A definite identification to species level is impossible without ascocarps, but there is no doubt that the generic name *Microxyphiomyces* is synonymous with *Tricharia*.

***Microxyphiomyces astrocaryifolii* Bat., J. L. Bezerra & Cavalc.**

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 10 (1961); Silva & Minter (1995: 233); type: Brazil: Amazonas: Manaus, Colônia Sto. Antônio, ii 1961, Peres (URM 21411/Exs. 15166—holotype!).

Notes: The hyphophore type of this taxon clearly indicates *Aulaxina*, and the only species of that genus present in the scarce type collection is a badly developed *A. quadrangula* (Stirt.) R. Sant. with abundant hyphophores.

***Microxyphiomyces capitulatus* Bat. & J. L. Bezerra**

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 13 (1961); Silva & Minter (1995: 233); type: Brazil: Amazonas: Manaus—Caracarái km 13, iv 1961, Peres (URM 21641/Exs. 15224—holotype!; INPA—isotype).

Notes: *Aulaxina minuta* R. Sant. and *Tricharia* aff. *vainioi* R. Sant. (both sterile) are present in the type collection, but since the description and drawings point to *Tricharia*, the taxon is referred to the latter. As in *Microxyphiomyces manaoensis*, a specific determination is impossible without ascocarps.

***Microxyphiomyces intermedius* Bat., J. L. Bezerra & Cavalc.**

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 17 (1961); Silva & Minter (1995: 233); type: Brazil: Amazonas: Manaus, Reserva Ducke, ii 1961, Batista (URM 21347/Exs. 15138—lectotype!, here selected).

Notes: The description of the hyphophore type of this taxon is rather typical of *Aulaxina*, and the only species present in the type collection is *A. minuta*. The description fits rather well, except for the thallus diameter, which is given as '20–25 mm'. However, the type collection also contains larger, sterile, badly developed specimens of an indeterminate species of *Mazosia* that, on account of the dark prothallus, could have been mistaken for *Microxyphiomyces intermedius*. Therefore, and to avoid any confusion, a lectotype is selected within the original collection, and *M. intermedius* is reduced into synonymy with *Aulaxina minuta*.

***Microxyphiomyces minutus* Bat. & Cavalc.**

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 24 (1961); Silva & Minter (1995: 234); type: Brazil: Amazonas: Manaus, ii 1961, Batista (URM 21244/Exs. 15116—holotype!; INPA—isotype).

Notes: The descriptions and drawings do not provide evidence to differentiate *M. minutus* from *M. intermedius*, and certainly there are none that would justify the description of a new taxon. Like *M. intermedius*, *M. minutus* is a synonym of *Aulaxina minuta*.

Oncosporomyces bellus Bat. & H. Maia

in Batista, A. C. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 2: 364–365 (1961); Silva & Minter (1995: 254); type: Brazil: Amazonas: Manaus, Rio Negro, ii 1961, *Peres* (URM 21498/Exs. 15188—holotype!; INPA—isotype). [typus generis *Oncosporomyces* Bat.]

Notes: From the description and drawings, *Oncosporomyces bellus* was expected to represent campylidia of the *Calopadia* type, combined with a verrucose thallus. However, no such combination is known so far. In the type collection, which is the same as of *Acleistomyces rionegrensis* (see above), only thalli and campylidia of the *Sporopodium* type are present. The only other collection filed under that name [Brazil: Amazonas: Manaus, Reserva Ducke, i 1961, *Peres* (URM 21947/Exs. 15334)] does not contain anything that would fit the description. Thus, for the time being, *Oncosporomyces bellus* remains a *nomen dubium*.

Opegrapha orbignyae H. B. P. Upadhyay

in Upadhyay, H. B. P., *Publicações, Instituto de Micologia da Universidade do Recife* 410: 3 (1964); Silva & Minter (1995: 254); type: Brazil: Rondônia: Pôrto Velho, i 1962, *Fonseca* (URM 38675—holotype!).

(Fig. 7C)

Notes: *Opegrapha orbignyae* is a very characteristic species that is a lirellicarpous *Arthonia*. It is identical with *A. opegraphina* Lücking (1991: 270) and was recombined as *A. orbignyae* (H. B. P. Upadhyay) Matzer (1996: 175). This name should not be confused with *A. orbignyae* Bat. & J. L. Bezerra *nom. inval.* [Art. 29, 32, 36–37], an unpublished herbarium name referring to an aberrant specimen of *A. palmulacea* (Müll. Arg.) R. Sant. [Brazil: Rondônia: Pôrto Velho, iii 1962, *Correia* (URM 33287/Exs. 18348!)]. The identical epithet is due to the fact that both *O. orbignyae* and *Arthonia orbignyae* were collected on leaves of *Orbignya*, a common palm genus in the Amazon region.

According to the herbarium files, another very typical and well-developed collection of the same species was intended to be described as a new genus [Brazil: Amazonas: Manaus, iii 1961, *Peres* (URM 22986/Exs. 15688!)]. The collection is a typical assemblage of species common on palm leaves in lowland rain forests, with *Calenia conspersa* (Stirt.) R. Sant., *Caleniopsis laevigata* (Müll. Arg.) Vězda & Poelt, *Chroodiscus coccineus* (Leight.) Müll. Arg. and *Byssoloma guttiferæ* (see above).

Additional specimen examined: Brazil: Maranhão: Alto Turí, ii 1967, de *Anchieta* (URM 69435/Exs. 40680) is a lichenicolous *Opegrapha* on *Strigula phyllogena* (Müll. Arg.) R. C. Harris.

Phallomyces palmae Bat. & Valle

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 28–30 (1961); Silva & Minter (1995: 292);

type: Brazil: Amazonas: Manaus, Reserva Ducke, i 1961, *Batista* (INPA—holotype; URM 20519/Exs. 14763—isotype!).
[typus generis *Phallomyces* Bat. & Valle]

Notes: The description and illustration of this taxon refer to typical hyphophores of *Gomphillaceae*, and the type collection contains a sterile specimen of *Echinoplaca* with abundant hyphophores which fit the description well. The species belongs to the group of *E. hymenocarpoides* (Vain.) Lücking, but without ascocarps a definite identification is not possible (see Lücking 1997a: 52, 82–83, 1997c for further details on this difficult group of species).

***Phragmopeltheca pulcherrima* L. Xavier**

in Xavier Filho, *Tese apresentada ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 54 (1974); type: Philippines: Luzon: s. loc., s. d. (BO, not seen).

[typus generis *Phragmopeltheca* L. Xavier]

Notes: According to the files in URM, the creation of the genus *Phragmopeltheca* was a very early idea of Batista. For unknown reasons, but perhaps because he eventually realized that such a new genus would not be properly based, he never published the name. Xavier Filho did so, seven years after Batista's death, and further erected the family *Phragmopelthecaceae*. The publication of the genus and family names is valid.

After its publication, the name *Phragmopelthecaceae* was not adopted until the study of bitunicate ascomycetes by Eriksson (1981: 127–128). Eriksson placed *Phragmopeltheca* as a synonym of *Mazosia*, but accepted the family *Phragmopelthecaceae* for the latter genus, placing it in the Dothideales. This treatment caused a great deal of confusion, as recently pointed out by Lücking & Matzer (1996: 114–116), for two reasons: (1) *Mazosia* is clearly a member of the *Opegraphaceae*, not related to the Dothideales s. lat. (2) Eriksson did not study the generic type but an isotype of another variety (*P. pulcherrima* var. *octospora*), and his identification with *Mazosia* was based on the assumption that the only species present in the type collection that fits the description was *M. melanophthalma*. However, as pointed out by Lücking & Matzer (1996), the description of *Phragmopeltheca*, especially the photographic plates, show that this genus has nothing to do with *Mazosia*, but clearly refers to *Porina*. The only weak parts in the descriptions are the paraphyses sometimes described as branched, the irregular number of ascospore septa, and the irregular number of ascospores per ascus, but these discrepancies with *Porina* are certainly due to uncritical examination.

The type collection of *Phragmopeltheca pulcherrima* was requested from BO but has not been received. From the description and illustrations, we are convinced it is a representative of the *Porina rufula* or *P. tetramera* aggregates. The URM herbarium hosts the types of several other taxa assigned to *Phragmopeltheca*. As expected, all of them contain species of *Porina* that fit the descriptions. The group as a whole is very homogeneous, with all species belonging either to the *P. rufula* or the *P. tetramera* aggregates. Thus, *Phragmopeltheca* has to be considered as a synonym of *Porina* Müll. Arg. corresponding to the *Porina rufula* group in the sense of Santesson (1952). In

the new generic arrangement proposed by Hafellner & Kalb (1995), it falls within *Porina*, and in that introduced by Harris (1995: 168–171), it is a synonym of *Segestria* Fr.

***Phragmopelthea caseariae* L. Xavier**

in Xavier Filho, L., *Tese apresentado ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 46 (1974); Silva & Minter (1995: 298, as *Phragmopelthea caseariicola*)—*Phragmopelthea caesariicola* Bat. & Costa nom. nud., files URM; type: Brazil: Pernambuco: Recife, Mirueira, vi 1955, Lacerda (URM 5774/Exs. 3024—holotype!).

Notes: The description, and especially the illustrations, point to a species of the *Porina rufula* aggregate. Present in the type collection are several species of *Strigula*, e.g. *S. subtilissima* (Fée) Müll. Arg., and a small thallus of *Porina rubentior* (Stirt.) Müll. Arg. with few perithecia, which is easily identified with the photographic plate provided by Xavier Filho (1974: 71). The ascospores are described as 3–4-septate, but are, without exception, 3-septate. *Phragmopelthea caseariae* is thus a synonym of *Porina rubentior*.

***Phragmopelthea cupaniae* L. Xavier**

in Xavier, Filho, L., *Tese apresentado ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 47 (1974).—*Phragmo 'scutella' cupaniae* Bat. & Costa nom. nud., files URM; type: Brazil: Pernambuco: Caruarú, x 1956, Correia (URM 5802/Exs. 3075A—holotype!).

(Fig. 7D)

Notes: From the description and illustrations, it is almost impossible to understand the differences between *Phragmopelthea caseariae* and *P. cupaniae*, except that the asci of the latter are described as eight-spored. The type material of *P. cupaniae* is a very well-developed *Porina rubentior*, which is somewhat akin to *P. leptospermoides* Müll. Arg. (Lücking 1996). Contrary to the description, no ascospore with more than three septa was found.

***Phragmopelthea cupaniae* var. *caruaruensis* L. Xavier**

in Xavier Filho, L., *Tese apresentado ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 58 (1974).—*Phragmopelthea cupaniae* var. *caruaruensis* Bat. & Costa nom. nud., files URM; type: Brazil: Pernambuco: Caruarú, xi 1956, Correia (URM 5907/Exs. 3463—holotype, not seen).

Notes: This variety should be distinguished by the size of perithecia and asci. Despite the absence of the type in URM, we have little doubt that it is identical with *Porina rubentior*.

***Phragmopelthea cupaniae* var. *minor* L. Xavier**

in Xavier Filho, T., *Tese apresentado ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 59 (1974).—*Phragmopelthea cupaniae* var. *minor* Bat. & Costa nom. nud., files URM; type: Brazil: Pernambuco: Recife, Dois Irmãos, x 1956, Soares da Silva (URM 5805/Exs. 3155—holotype, not seen).

Notes: The type collection was not found in URM, but the minor differences in perithecial and ascus dimensions, together with '*paraphysibus septatis*', mentioned in the original description, do not merit recognition as a new variety.

Phragmopeltheca hymenaeae L. Xavier

in Xavier Filho, L., *Tese apresentado ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 49 (1974); Silva & Minter (1995: 298, as *Phragmopeltheca hymenaeae* Bat. & I. H. Lima).—*Phragmopeltheca hymenaeae* Bat. & Lima nom. nud., files URM; type: Brazil: Pernambuco: Moreno, vi 1955, da Silva (URM 2491/Exs. 1254—holotype, not seen).

Notes: Despite a careful search, the type collection of *Phragmopeltheca hymenaeae* was not found in URM. However, judging from the description, this taxon most probably refers to *Porina rufula* (Krempelh.) Vain., since the perithecia are described as hyaline with an orange tinge.

Phragmopeltheca psidii L. Xavier

in Xavier Filho, L., *Tese apresentado ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 51 (1974); Silva & Minter (1995: 298, as *Phragmopeltheca psidii* Bat. & H. Maia).—*Phragmopeltheca psidii* Bat. & H. Maia nom. nud., files URM; type: Brazil: Pernambuco: Vitoria, viii 1959, Soares da Silva (URM 17629/Exs. 12826—holotype, not seen).

Notes: From the description and illustrations, there is no doubt that this taxon represents a member of the *Porina tetramera* aggregate, most probably *P. octomera* (Müll. Arg.) F. Schill. However, the type collection was not detected, and hence, a confirmation is impossible at present.

Phragmopeltheca psychotriae L. Xavier

in Xavier Filho, L., *Tese apresentado ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 52 (1974); Silva & Minter (1995: 298, as *Phragmopeltheca psychotriae* Bat. & Peres).—*Phragmopeltheca psychotriae* Bat. & Peres nom. nud., files URM; type: Brazil: Pernambuco: Paulista, Seringá, v 1959, Soares da Silva (URM 16100/Exs. 11562—holotype, not seen).

Notes: The type was not found in URM. Judging from the description and illustrations and our experience with other specimens, we are convinced that this taxon refers to *Porina rubentior*.

Phragmopeltheca pulcherrima var. octospora L. Xavier

in Xavier Filho, L., *Tese apresentado ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 60 (1974); type: Philippines: Luzon: s. loc., vii 1916, Elmer (BO 16599—holotype, not seen).

Notes: A specimen identified as *Phragmopeltheca pulcherrima* var. *octospora* was found in URM [Brazil: Pernambuco: Recife, Macacos, s. d., Soares da Silva (URM 5806/Exs. 3094)]. It is a well-developed and abundant *Porina rubentior*, akin to *P. leptospermoides* (Lücking 1996). We have not seen the type (it has been requested from BO but not received) but the description does not contradict our identification.

Phragmopeltheca pulcherrima var. pentaseptata L. Xavier

in Xavier Filho, L., *Tese apresentado ao Instituto de Ciências Biológicas da Universidade Federal Rural de Pernambuco, para obtenção do título de 'Docente Livre'*: 62 (1974); type: Philippines: Luzon: *s. loc.*, *s. d.*, Baker no. 513 (BO 26430, Fungi Malayana—holotype, not seen).

Notes: The number of septa given for this variety points to *Porina monocarpa* (Krempelh.) F. Schill. but the very small size given for the perithecia are not in accordance with that species. Since in the type material of the other species checked, all ascospores were regularly 3-septate, even when described as 3–5-septate, we have little confidence in this feature of the original description, and assume that the present variety is a further synonym of *P. rubentior*.

Podoxyphiomyces manaosensis Bat., Valle & Peres

In Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 35–37 (1961); Silva & Minter (1995: 321); type: Brazil: Amazonas: Manaus, Reserva Ducke, i 1961, Batista (INPA—holotype; URM 20522/Exs. 14763—isotype!).
[typus generis *Podoxyphiomyces* Bat., Valle & Peres]

Notes: The description and illustrations of *Podoxyphiomyces manaosensis* may point to the black sterile hairs or hyphophores of *Tricharia*, and the structures interpreted as conidia by Batista and his co-workers may not be conidia at all but other structures mistaken for conidia. Neither the type collection nor any of the other two collections filed under this name in URM [Brazil: Acre, Colonia Penal Rio Branco Perfil, ii 1961, Vasconcelos, URM 30503; *ibid.*, Macujaí km 65–Caracará B. Vista Rio Branco, ii 1962, Lima, URM 28991] contains anything that would fit the description. Thus the name must be considered a *nomen dubium*.

Psathyromyces rosacearum Bat. & Peres

in Batista, A. C. & Peres, G. E. P., *Anais do XIV Congresso da Sociedade Botânica do Brasil*: 95–96 (1964); Silva & Minter (1995: 336); type: Brazil: Amazonas: Manaus, Rio Negro, iii 1961, Peres (URM 20959/Exs 14923—holotype!).
[typus generis *Psathyromyces* Bat. & Peres]

Notes: The description and illustrations of this taxon point to the characteristic hyphophores of *Tricharia heterella* (Stirt.) Lücking [= *Tricharia membranula* (Müll. Arg.) Lücking, = *Echinoplaca affinis* Kalb & Vězda; see Lücking 1997a: 82–83], a rather common species in the Neotropics. This was confirmed by checking the type collection. A few apothecia are present on the rather large thalli.

Pycnocliospora bellucia Bat. & J. A. Lima

in Batista, A. C., Lima, J. A. & Taltasse, M. A., *Publicações, Instituto de Micologia da Universidade do Recife* 251: 6–8 (1962); Silva & Minter (1995: 340); type: Brazil: Amazonas: Juruá, 1901, Ule (PAD—holotype; URM 15321/Exs. 10865—isotype!).
[typus generis *Pycnocliospora* Bat.]

(Fig. 7E)

Notes: *Pycnociliospora* was the first taxon of foliicolous lichens described by Batista and co-workers. The genus is an assemblage of different pycnidial types belonging to various species of *Strigula* Fr., as indicated by Cavalcante *et al.* (1972a: 7). The generic type, *Pycnociliospora belluciae*, is a small but very typical *Strigula antillarum* (Fée) Müll. Arg.

***Pycnociliospora caesalpiniifolii* Bat. & J. A. Lima**

in Batista, A. C., Lima, J. A. & Taltasse, M. A., *Publicações, Instituto de Micologia da Universidade do Recife* 251: 12 (1962); Silva & Minter (1995: 341); type: Brazil: Pernambuco: São Lourenço, Cimeira, iii 1959, *Soares da Silva* (URM 17167/Exs. 12558—holotype!).

Notes: Present in the type collection and fitting the description is a rather well-developed *Strigula nitidula* Mont. with abundant pycnidia and a few perithecia.

***Pycnociliospora crescentiae* Bat. & Taltasse**

in Batista, A. C., Lima, J. A. & Taltasse, M. A., *Publicações, Instituto de Micologia da Universidade do Recife* 251: 15 (1962); Silva & Minter (1995: 341); type: Brazil: Pernambuco: São Lourenço, Camaragibe, iii 1958, *Soares da Silva* (URM 17206/Exs. 12548—holotype!).

Notes: *Pycnociliospora crescentiae* is a typical *Strigula smaragdula* Fr. with numerous rounded thalli carrying abundant pycnidia. The appearance of the type collection is characteristic for that species when it grows in secondary habitats.

***Pycnociliospora crescentiae* var. *microcarpa* Bat. & Taltasse**

in Batista, A. C., Lima, J. A. & Taltasse, M. A., *Publicações, Instituto de Micologia da Universidade do Recife* 251: 19 (1962); Silva & Minter (1995: 341); type: Brazil: Pernambuco: Recife, Dois Irmãos, iii 1960, *Soares da Silva* (URM 18753/Exs. 13827—lectotype!, here selected).

Notes: This variety is identical with the preceding one, viz. *Strigula smaragdula*. The slight differences in thallus outline and pycnidial size are due to the influence of the different phorophyte leaves. Further species present in the type collection are *S. antillarum* (Fée) Müll. Arg. and *S. orbicularis* Fr. The thalli of *S. antillarum* are easily confused without experience with *S. smaragdula*, and the description might have been based on both taxa; a lectotype containing *S. smaragdula* only was thus selected.

***Pyriomyces protii* Bat. & H. Maia**

in Batista, A. C. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 2: 369–370 (1965); Silva & Minter (1995: 343); type: Brazil: Pernambuco: Camocim de S. Felix, viii 1979, *Cavalcante* (URM 74107/Exs. 42631—epitype, here selected!).
[typus generis *Pyriomyces* Bat. & H. Maia]

Notes: According to the description and illustrations, *Pyriomyces protii* refers to pycnidia and conidia commonly found in genera of the *Pilocarpaceae*, especially *Byssoloma* Trev. and *Fellhanera* Vězda, as already suggested by

Sérusiaux (1992: 42). No pycnidia except those of *Asterothyrium* cf. *microsporum* R. Sant. are present in the type collection [Brazil: Pernambuco: Nazaré, i 1960, Soares da Silva (URM 19046/Exs. 13960)]. Those of *Byssoloma subdiscordans* (Nyl.) P. James were found on another collection gathered in a nearby locality [Brazil: Pernambuco: Camocim de S. Felix, viii 1979, Cavalcante (URM 74107/Exs. 42631)]. Since the species assemblage in the type collection is characteristic for open habitats, and *B. subdiscordans* is typical for that environment, we suppose that pycnidia of that species were originally present but destroyed during study. However, the description and illustrations of *Pyriomyces* could also be interpreted as belonging to the more recently described *Fellhanera* Vězda (Vězda 1986), and collections in Batista's herbarium gathered in the same area can be found with typical *Fellhanera* species. The interpretation of *Pyriomyces* as being identical with *Fellhanera* could thus be soundly argued and the commonly used generic name *Fellhanera* would fall into synonymy with *Pyriomyces*. To avoid such an unpleasant situation, we have decided to typify the type species of the genus *Pyriomyces* by an epitype (Art. 9.7) of the collection of *Byssoloma subdiscordans* mentioned above, and thus to reduce it into synonymy with *Byssoloma*.

***Pyriomyces maranhensis* Cavalc.**

in Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 20–22 (1972); Silva & Minter (1995: 343).—*Pyriomyces maranhensis* Bat. & Cavalcante *nom. nud.*, file URM; type: Brazil; Maranhão: Alto Turi, ix 1965, Peres (URM 51036/Exs. 25091—holotype!). [typus generis *Pyriomyces* Cavalc.]

Notes: Nothing fitting the original description and illustrations could be found in the type collection, which consists of several leaves with several species of foliicolous lichens present. The type of conidia described by Cavalcante *et al.* (1972a) is completely unknown among foliicolous lichens, and it seems improbable that other structures, such as crystals, have been mistaken for conidia. We therefore believe that the generic name *Pyriomyces* refers to a non-lichenized fungus.

***Raciborskiella parva* L. Xavier**

in Xavier Filho, L., *Acta Amazonica* 5: 141 (1975)—*Raciborskiella parva* Bat. *nom. nud.*, file URM; type: Brazil: Amazonas: Manaus, Rio Paranauari, ii 1961, Fontoura & Andrade (URM 21611/Exs. s.n.—lectotype!, here selected).

Notes: No specimen clearly indicated as the type of *Raciborskiella parva* could be found but a collection gathered at the same locality and with identical information on the label was examined. We assume it is the original collection and that the author forgot to mention it as the holotype on the label. Present on the leaves are three species of *Strigula*, viz. *S. nemathora* Mont., *S. phyllogena* (Müll. Arg.) R. C. Harris [= *Phylloporis phyllogena* (Müll. Arg.) Clem.] and *S. subtilissima* (Fée) Müll. Arg., the thalli of the last two growing intermingled. We assume that the description of *R. parva* is based on mixed

features of *S. phyllogena* and *S. subtilissima*, as in the case of *S. xylopieae* (see below). For the sake of clarity, we have decided to designate the thalli of *S. subtilissima* as the lectotype (Art. 9.2) of *R. parva*; such a decision is consistent with most data of the original description.

The URM files contain six further new species and one new variety in the same genus but none was ever described. This high number is due to the accurate observation of the paraphyses of the *Strigulaceae* as partly branched and anastomosing. Santesson (1952: 194–195) was somewhat confused with that character and used the branching pattern of paraphyses as the main and almost only character to distinguish *Raciborskiella* (paraphyses branched) from *Strigula* (paraphyses simple). As the paraphyses of most *Strigulaceae* are always slightly branched and anastomosing at the base, but mostly simple at their apices, Batista was unable to identify his material of *Strigula* with Santesson's key and thought he was observing new taxa of *Raciborskiella*. Nowadays *Raciborskiella* is reduced into synonymy with *Strigula* (Harris 1975: 131, 1995: 152).

Additional specimen examined: Brazil: Amazonas: Manaus, Rio Paranauari, ii 1961, Fontoura & Andrade (URM 21603/Exs. 15213).

Scutomycetes concentricus J. L. Bezerra & Cavalc.

in Cavalcante, W. de A., Bezerra, J. L. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 675: 9–10 (1972); Silva & Minter (1995: 363).—*Scutomycetes concentricus* Bat., Bezerra & Cavalc. *nom. nud.*, file URM; type: Brazil: Amazonas: Manaus, v 1961, Garnier (URM 23644/Exs. 15833—holotype!; INPA—isotype).
[*typus generis Scutomycetes* J. L. Bezerra & Cavalc.]

Notes: The most characteristic traits in the original description of *Scutomycetes concentricus* are the cylindrical or setiform isidia, the very small, concentrically arranged perithecia, the paraphysate hamathecium, and the 1-septate ascospores (Cavalcante *et al.* 1972b). The taxon is abundant in the type collection and easily identified: it is an aberrant *Microtheliopsis uleana* Müll. Arg. with small, probably young perithecia, which might have caused the authors to describe the ascospores as 1-septate. The concentric arrangement of the perithecia is typical for *M. uleana*, and the 'isidia' are the sporangia of the photobiont (*Phycopeltis* sp.), a phenomenon already pointed out by Santesson (1952: 134–135). This new genus was described together with *Byrsomyces* (see above), which also is a synonym of *Microtheliopsis*.

Septoriomyces leguminosae Cavalc. & A. A. Silva

in Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 9–10 (1972); Silva & Minter (1995: 367).—*Septoriomyces leguminosae* Bat. & Cavalc. *nom. nud.*, file URM; type: Brazil: Rondônia: Abunã, Ferrovia Madeira-Mamoré, ii 1963, Xavier Filho (URM 32868/Exs. 18252—holotype, not seen; INPA—isotype).
[*typus generis Septoriomyces* Cavalc. & A. A. Silva]

(Fig. 7F)

Notes: The type collection was not found in URM, but another specimen originating from the same locality and fitting the description perfectly was studied [Brazil: *Rondônia*: Abunã, Ferrovia Madeira-Mamoré, ii 1963, *Xavier Filho* (URM 32947/Exs. 18270)]. It is a typical *Phyllobathelium* (Müll. Arg.) Müll. Arg., representing a species close to *P. nigrum* R. Sant. & Tibell (1988: 538), which is known from SE Asia, Australia and Costa Rica. This taxon, so far known only in the Neotropics, has similar perithecia and ascospores to *P. nigrum*, but differs in the pycnidia, which are not arranged in regular, concentric circles of 5–8 pycnidia but in irregular or \pm rounded patches of 7–15 pycnidia. Furthermore, the pycnidia of the Neotropical specimens are usually smaller than those of *P. nigrum* (c. 30 μ m versus c. 50 μ m). The epithet *leguminosae* is available for that taxon, and the following new combination is proposed: ***Phyllobathelium leguminosae* (Cavalc. & A. A. Silva) Lücking & Sérus.** comb. nov. (Bas.: *Septoriomyces leguminosae* Cavalc. & A. A. Silva, in Cavalcante, W. de A. et al., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 9–10, 1972).

The very characteristic pycnidial stage of *Phyllobathelium* was described as *Opercularia firma* Stirt. (Santesson 1952: 287–288). Santesson reduced *O. firma* into synonymy with *P. epiphyllum* (Müll. Arg.) Müll. Arg., a common species in the Neotropics, but he did not pick up the generic name *Opercularia* for this very characteristic genus because he could not find ascocarps in the type collection of its type species, *O. firma*. *Opercularia firma* may, however, be identical with *Phyllobathelium leguminosae*, a taxon that was not known to Santesson. As we have not yet obtained the type of *O. firma*, we are unable to give a definite statement on that taxon. Since both the generic name and specific epithet are the first described for a neotropical, foliicolous species of *Phyllobathelium* [either *epiphyllum* or *leguminosae*, which are the only two foliicolous species of that genus widespread in the Neotropics, *P. nigrum* being very rare, and *P. thaxteri* (Vain.) Zahlbr. being restricted to Trinidad], the assignment of *O. firma* to one of them would have considerable nomenclatural consequences; indeed *O. firma* was described in 1878 whereas *Phyllobathelium*, typified by *P. epiphyllum*, was introduced in 1890. It would require (i) the introduction of a new epithet for either *epiphyllum* or *leguminosae*, or the conservation of one of them (Art. 14.9), or its rejection (Art. 56), and (ii) the necessity of conservation of *Phyllobathelium* against *Opercularia* if the type collection of *O. firma* appears to be *epiphyllum* as indicated by Santesson.

***Sporocybomyces pulcher* H. Maia**

in Batista, A. C. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 60–61 (1967); Silva & Minter (1995: 387); type: Brazil: *Pernambuco*: Recife, Iputinga, ix 1959, *Batista* (URM 19052/Exs. 13961—holotype!).
[typus generis *Sporocybomyces* H. Maia]

Notes: *Sporocybomyces pulcher* is a further taxon referring to the hyphophores of *Gomphillaceae*. Present in the type collection and fitting perfectly the description is a sterile thallus of *Echinoplaca leucotrichoides* (Vain.) R. Sant. with numerous distinctive hyphophores.

Stephosia protii Bat. & H. Maia

in Batista, A. C. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 56–57 (1967); Silva & Minter (1995: 392); type: Brazil: Rondônia: Est. do Iata, Guajará-Mirin, ii 1963, Coêlho, URM 38710/Exs. s. n.—epitype, here selected!).
[typus generis *Stephosia* Bat. & H. Maia]

Notes: From the description and illustrations, it is perfectly clear that *Stephosia* is a synonym of *Phyllophiale* R. Sant., as already suggested by Farkas (in Farkas & Sipman 1993: 144). This is confirmed by a handwritten note of Batista in a copy of Santesson's monograph, listing *Stephosia* as a synonym of *Phyllophiale* (the only obvious case in which Batista admitted synonymy of one of his taxa). The type collection [Brazil: Pernambuco: Passarinho-Recife, viii 1960, Soares da Silva (URM 19559/Exs. 14245—holotype!)] contains numerous sterile thalli that might have carried the typical isidia of *Phyllophiale alba* R. Sant. but none could be found. Typical isidia were detected in another specimen filed as *S. protii* [Brazil: Rondônia: Est. do Iata, Guajará-Mirin, ii 1963, Coêlho, URM 38710/Exs. s. n.], which is here designated as an epitype (Art. 9.7) for the sake of clarity. *Stephosia protii* is thus definitely reduced into synonymy with *P. alba*. As the isidia usually referred to that genus seem to belong to several representatives of *Porina*, especially *P. mirabilis* Lücking & Vězda *ined.* and *P. fusca* Lücking, both generic names (*Phyllophiale* and *Stephosia*) would fall into synonymy with *Porina*, whatever the generic splitting and rearrangement adopted (Santesson 1952: 199–208; Hafellner & Kalb 1995; Harris 1995: 168–171).

Strigula xylopieae Bat. & Cavalc.

in Batista, A. C. & Cavalcante, W. de A., *Anais do XIII Congresso da Sociedade Botânica do Brasil*: 472 (1964); Silva & Minter (1995: 402); type: Brazil: Amazonas: Manaus, Reserva Ducke, iii 1961, Peres (URM 21833/Exs. 15295—lectotype!, here selected).

Notes: Several well-known species of *Strigula* are present in the type collection, viz. *S. maculata* (Cooke & Masse) R. Sant., *S. nemathora* Mont., *S. schizospora* R. Sant. and *S. smaragdula* Fr. The description is obviously based on features of two different species. Whereas the perithecia and ascospores refer to *S. schizospora*, the pycnidia and conidia are those of *S. smaragdula*. A specimen of *S. schizospora* was therefore selected as lectotype.

The external appearance of *S. schizospora* in this collection is somewhat puzzling, as the perithecia are more exposed than usual, and the thallus is provided with small, whitish papillae. Similar specimens were found in other collections [e.g. Brazil: Amazonas: Manaus, Rio Negro, ii 1961, Peres (URM 21008/Exs. 14935—holotype of *Kilikiostroma peresii*)], and for some time we thought the taxon to be different from *S. schizospora*. However, intermediate forms demonstrated the connection towards typical specimens, indicating that this form is probably induced by the leaf characteristics.

Tauromyces catenulatus Cavalc. & A. A. Silva

in Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. de B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 35–37 (1972); Silva & Minter (1995: 407);

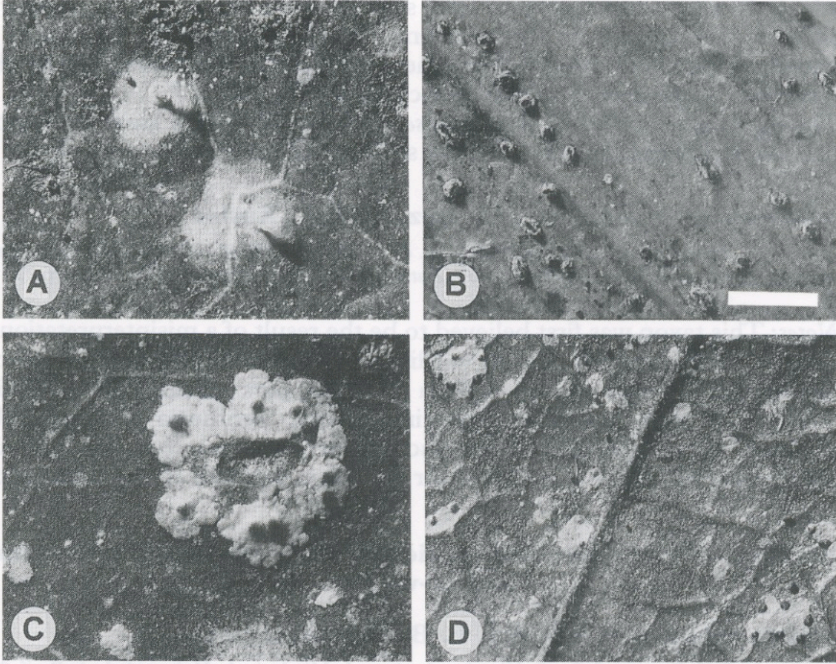


FIG. 8. A, Holotype of *Tauromyces catenulatus* [= *Gyalectidium filicinum*]. B, Holotype of *Opographa duckei*. C, Designated type of *Raciborskiella zollerniae* nom. inval. [= *Strigula microspora*]. D, Designated type of *Tegoa tabebuiae* nom. inval. [= *Asterothyrium* aff. *microsporum*]. General habit. Scale=1 mm.

type: Brazil: Rondônia: Pôrto Velho, i 1963, Xavier Filho (URM 35356/Exs. 19321—holotype!; INPA—isotype).
[typus generis *Tauromyces* Cavalc. & A. A. Silva]

(Fig. 8A)

Notes: The type of *Tauromyces catenulatus* consists of several thalli of *Gyalectidium filicinum* Müll. Arg. bearing typical hyphophores, apothecia being absent. As already suspected by Sérusiaux (1992), *T. catenulatus* is thus a synonym of *G. filicinum*.

Additional specimen examined: Brazil: Pernambuco: Usiná, S. José Igarassu, iv 1970, Barros (URM 69273/Exs. 40669).

Trichothelium amazonense J. L. Bezerra & Cavalc.

Bezerra, J. L., Xavier Filho, L. & Cavalcante, W. de A., *Brotéria* 39: 221–229 (1970); Silva & Minter (1995: 421, as ‘*T. amazonense* Bat., J. L. Bezerra & Cavalcante’); type: Brazil: Amazonas: Manaus, Reserva Ducke, ii 1961, Batista (URM 21339/Exs. 15138—holotype!).

Notes: *Trichothelium amazonense* has already been recognized as a species distinct from *T. annulatum* (Karst.) R. Sant. (Lücking 1992: 71, 75–76), with the original description correctly pointing out all important features,

particularly ascospore septation and size (Bezerra *et al.* 1970). However, studies of type specimens listed among the synonyms of *T. annulatum* by Santesson (1952: 275) revealed that there is an earlier name available for that taxon, viz. *T. bipindense* F. Schill. (Lücking 1997b,c).

The type collection of *T. amazonense* contains only a few small perithecia, which externally appear typical of the species but have no ascospores.

Trichothelium brasiliense J. L. Bezerra & L. Xavier

Bezerra, J. L., Xavier Filho, L. & Cavalcante, W. de A., *Brotéria* 39: 221–229 (1970); type: Brazil: Amazonas: Manaus, Reserva Ducke, i 1961, Batista (URM 21461/Exs. 15177—holotype!).

Notes: This taxon was first believed to be the result of a misinterpretation of ascospores within the asci, but its validity was confirmed by recent collections of the species in Brazil and Costa Rica (K. Kalb, pers. comm. 1995; Lücking 1997b). The type collection contains several perithecia that resemble the Costa Rican specimens, but ascospores were searched for in vain. Nevertheless, the name is accepted for the taxon involved in the description.

Section 2: New genera and species invalidly published by Batista and co-workers

Arthonia orbicularis Bat. & J. L. Bezerra nom. inval.

in Batista, A. C. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 321: 7 (1961); Silva & Minter (1995: 36); type (designated): Brazil: Amazonas: Manaus-Caracará, iv 1961, Peres (URM 21639/Exs. 15224!).
[Art. 32, 36–37]

Notes: The type collection of this invalidly published name contains typical and abundant, although largely destroyed, *Byssolecania fumosonigricans* (Müll. Arg.) R. Sant. On the basis of the same type collection, the pycnidia of this species have been described as *Dothiomyces couepiae* (see above).

Besides *Arthonia orbignyae* Bat. nom. nud [*non A. orbignyae* (H. B. P. Upadhyay) Matzer; see above under *Opegrapha orbignyae*], two further new but unpublished species supposedly belonging to *Arthonia* were found in URM [Brazil: Rondônia: Abunã, Ferrovia Madeira-Mamoré, ii 1963, Xavier Filho (URM 35202/Exs. 19285), and Amazonas: Manaus, Caracará, iv 1961, Peres (URM 22842/Exs. 15657)]. Both collections represent somewhat aberrant and depauperate *B. fumosonigricans*.

Asterothyrium rondoniense Bat. & H. Maia nom. inval.

in Batista, A. C. & Maia, H. da S., *Publicações, Instituto de Micologia da Universidade do Recife* 463: 10 (1965); Silva & Minter (1995: 53); type (designated): Brazil: Rondônia: Pôrto Velho, ii 1962, Ulysses (URM 45814/Exs. 22514!).
[Art. 32, 36–37]

Notes: The designated type contains only sterile specimens of an *Asterothyrium*, with no apothecia left. Two further collections with that name [Brazil: Amazonas: Manaus, Reserva Ducke, s. d., Omar (URM 66854/Exs.

TABLE 2. Handwritten notes referring to generic concepts made by Batista in a copy of Santesson's monograph (1952) housed in the library of the Biological Sciences Center of the UFPE

Original genus	New generic concept	Ascospores
<i>Arthonia</i>	<i>Conidomyces</i> nom. inval. [Art. 32, 36–37]	1-septate, colourless
	<i>Arthonia</i> s. str.	Multiseptate, colourless
	<i>Santessonia</i> nom. inval. [Art. 32, 36–37] (non <i>Santessonia</i> Hale & Vobis 1978)	Multiseptate, brown
<i>Porina</i>	<i>Porinomyces</i> nom. inval. [Art. 32, 36–37]	1-septate
	<i>Porina</i> s. str.	Multiseptate
<i>Trichothelium</i>	<i>Santessothelium</i> nom. inval. [Art. 29, 32, 36–37]	Multiseptate, small
	<i>Trichothelium</i> s. str.	Multiseptate, large
	<i>Stereochlamys</i> Müll. Arg.	(Sub)muriform
<i>Asterothyrium</i>	<i>Asterothyrium</i> s. str.	1-septate, small
	<i>Stictoclypeolum</i> Rehm	1(–2)-septate, large
	<i>Stictopela</i> nom. inval. [Art. 29, 32, 36–37]	Multiseptate
<i>Aulaxina</i>	<i>Aulaxinella</i> nom. inval. [Art. 29, 32, 36–37]	1-septate
	<i>Aulaxina</i> s. str.	Multiseptate
	<i>Lochomyces</i> nom. inval. [Art. 32, 36–37]	(Sub)muriform

40469); *ibid.* (URM 66860/Exs. 40470)] are well-developed, abundant and fertile *A. monosporum* Müll. Arg., with a slightly aberrant margin.

Catenata [?Bat.] nom. inval.

in Batista, A. C. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 321: 15 (1961); Silva & Minter (1995: 82).

[Art. 32, 36–37; *typus generis designatus*: *Catenata antillarum* (Fée) Bat., comb. inval. = *Strigula antillarum* (Fée) Müll. Arg.]

Notes: The collections in URM contain 9 entries filed as *Strigula elegans* var. *antillarum* (Fée) R. Sant. and 38 filed as *Catenata antillarum*. There is no apparent reason for transferring this species to a new genus; the characteristic, often 'catenate' arrangement of the pycnidia, cannot justify any generic separation for this species, which fits very well into the concept of *Strigula*. No paper by Batista could be found that gave any idea about his opinion. No type was designated for a second, invalidly published species, *Catenata minutispora* Bat. & Peres, nom. inval. (Silva & Minter 1995: 82), and hence, no further hints were found as to the reason for establishing this new genus.

Conidomyces [?Bat.] nom. inval.

in Batista, A. C. & Fonsêca, O. J. M., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 4: 59 (1967); Silva & Minter (1995: 108).

[Art. 32, 36–37; *typus generis designatus*: *Conidomyces leptosperma* (Müll. Arg.) Bat. nom. inval. = *Arthonia leptosperma* (Müll. Arg.) R. Sant.]

Notes: According to handwritten notes made by Batista in a copy of Santesson's monograph (Table 2, Fig. 3A), the name *Conidomyces* nom. inval. was intended to include the species of *Arthonia* with 1-septate ascospores, viz. *A. aciniformis* Stirt., *A. leptosperma* (Müll. Arg.) R. Sant. and *A. lividofusca*

Müll. Arg. A further species was intended to be described as a new species of *Conidomyces* [Brazil: Roraima: Malta Zé Pereira, iii 1962, de Lima (URM 47022/Exs. 22883)]; the marked specimen is a badly developed *A. leptosperma*.

Didymopyrostroma [?Bat. & Cavalc.] nom. inval.

in Batista, A. C. & Cavalcante, W. de A., *Anais do XIII Congresso da Sociedade Botânica do Brasil*: 473 (1964); Silva & Minter (1995: 126).

[Art. 32, 36–37; *typus generis designatus*: *Didymopyrostroma xylopieae* Bat. & Cavalc. *nom. inval.*]

Notes: Marked in the designated type collection [Brazil: Amazonas: Manaus, Reserva Ducke, vi 1961, Batista & Cavalcante (URM 21834/Exs. 15296)] of this invalidly published taxon is a rather typical *Lichenopeltella epiphylla* R. Sant. on *Porina mirabilis* Lücking & Vězda *ined.*, a widespread lichenicolous fungus on members of the *Porina epiphylla* group (Matzer 1996: 136–140).

Dimerella hypophylla Bat. & Cavalc. nom. inval.

in Batista, A. C., Cavalcante, W. de A. & Peres, G. E. P., *Publicações, Instituto de Micologia da Universidade do Recife* 389: 10 (1963); Silva & Minter (1995: 129); type (designated): Brazil: Amazonas: Manaus, vi 1961, Fonseca (URM 25481/Exs. 16640!).

[Art. 32, 36–37], non *Dimerella hypophylla* Vězda

Notes: The designated type collection of this invalidly published name contains two species of *Dimerella* with epiphyllous thalli and marginally hypophyllous apothecia. One of them has a smooth thallus and is probably *D. fallaciosa* (Müll. Arg.) Vězda, whereas the other has a hairy thallus and belongs to a rather common, probably undescribed, species resembling *D. pilifera* Vězda, a species endemic to Papua New Guinea. *Dimerella hypophylla* Bat. & Cavalc. should not be confused with the validly published and pantropical *D. hypophylla* Vězda.

Enterographa pernambucensis var. psychotriae Bat. & H. Maia nom. inval.

in Batista, A. C., Cavalcante, W. de A. & Peres, G. E. P., *Publicações, Instituto de Micologia da Universidade do Recife* 389: 4 (1963); Silva & Minter (1995: 140).—Type (designated): none.

[Art. 32, 36–37]

Notes: No type was designated for this supposedly new variety, nor is there any hint of the existence of a nominal variety of *Enterographa pernambucensis*. Another collection with that name on the label [Brazil: Pernambuco: Paulista, Seringá, v 1960, Soares da Silva (URM 19354/Exs. 14132)] contains different lirellicarpous species, such as *Opegrapha filicina* Mont., lichenicolous *Opegrapha* on thalli of *Porina*, or non-lichenized taxa.

Lasioloma helicotropicum Bat. & M. M. P. Herrera nom. inval.

in Batista, A. C. & Cavalcante, W. de A., *Portugalia Acta Biologica, Sér. B., Sistemática* 7: 358 (1964); Silva & Minter (1995: 174); type (designated): Brazil: Pará: Bragança, x 1961, Vasconcelos (URM 28064/Exs. 20118!).

[Art. 32, 36–37]

Notes: The only lecanoralean taxa present in the designated type collection are *Byssoloma subdiscordans* (Nyl). P. James [on the label incorrectly identified as *B. tricholomum* (Mont.) Zahlbr.] and a rather well-developed *Tapellaria nana* (Fée) R. Sant.

Lochomyces [?Bat.] nom. inval.

in Silva, A. A., *Anais do XIII Congresso da Sociedade Botânica do Brasil*: 430 (1964); Silva & Minter (1995: 184).

[Art. 32, 36–37; *typus generis designatus*: *Lochomyces quadrangularis* [sic!] (Stirt.) Bat. *nom. inval.* = *Aulaxina quadrangula* (Stirt.) R. Sant.]

Notes: *Lochomyces nom. inval.* is another 'ascospore genus' intended to be established by Batista, to include the species of *Aulaxina* Fée with (sub)muriform ascospores. This statement is based on handwritten notes of Batista in a copy of Santesson's monograph on foliicolous lichens (Table 2).

Lopadium applanatum H. Maia nom. inval.

in Poroca, D. J. M., Bezerra, J. L. & Leal, F. B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 683: 5 (1972); Silva & Minter [1995: 184, as '*Lopadium applanatum* Bat. & H. Maia, *Symbolae Botanicae Upsalienses* 12 (1): 521, 1952' (sic!)] type (designated): Brazil: Pernambuco: Paulista, iv 1959, Soares da Silva (URM 17211/Exs. 12549).

[Art. 32, 36–37]

Notes: The name *Lopadium applanatum* was never validly published. The designated type collection is the same as of the validly published *Cyrta licaniae*. Whereas the latter refers to the campylidia, *Lopadium applanatum* refers to the apothecia of the same species, which is a typical *Calopadia subcoerulescens* (see above). The apothecia were obviously damaged during the drying process and therefore are slightly deformed and applanate.

Lopadium didymopanax Bat. & Peres nom. inval.

in Batista, A. C. & Peres, G. E. P., *Publicações, Instituto de Micologia da Universidade do Recife* 268: 6 (1960); Silva & Minter (1995: 184); type (designated): Brazil: Pernambuco: Usiná Maravilha-Goiana, viii 1959, Soares da Silva (URM 18845/Exs. 13879!).

[Art. 32, 36–37]

Notes: Three species of the *Ectolechiaceae* are present in the type collection, viz. *Calopadia* sp., *Tapellaria* sp., and *Sporopodium* cf. *phyllocharis* (Mont.) Massal. Since *Lopadium paudalhense* [= *Tapellaria nana* (Fée) R. Sant.] is indicated as an associated species (see below), the invalidly published name *Lopadium didymopanax* probably refers to *S.* cf. *phyllocharis*.

Lopadium paudalhense Bat. & Peres nom. inval.

in Batista, A. C. & Peres, G. E. P., *Publicações, Instituto de Micologia da Universidade do Recife* 268: 6 (1960); Silva & Minter (1995: 184); type (designated): Brazil: Pernambuco: Paulista, Seringa, v 1959, Soares da Silva (URM 17108/Exs. 12371!).

[Art. 32, 36–37]

Notes: Two specimens are marked in the designated type collection: both are typical *Tapellaria nana* (Fée) R. Sant.

Lyrommotheca [?Bat., Pavlich & J. L. Bezerra] nom. inval.

in Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 406 as *L. leguminosarum* Bat. & Pavlich, and: 408 & 409 as *L. leguminosae* Bat. & Pavlich (1967); Cavalcante, W. de A., Cavalcante, A. A. S. A. S. & Leal, F. B., *Publicações, Instituto de Micologia da Universidade Federal de Pernambuco* 647: 7 (1972); Silva & Minter (1995: 186).

[Art. 32, 36–37; *typus generis designatus*: *Lyrommotheca leguminosarum* Bat., Pavlich & J. L. Bezerra *nom. inval.*, URM files; Bat. & M. M. P. Herrera according to Silva & Minter 1995: 186; *L. leguminosae* Bat. & Pavlich in Silva & Minter 1995: 186 is considered as an orthographic variant, or as citation error]

Notes: Cavalcante *et al.* (1972a: 6–7) mention *Lyrommotheca* as the teleomorph of *Lyromma*. Ascocarps have been reported and described for *Lyromma nectandrae* (Lücking 1992: 168; Aptroot *et al.* 1997: 100–101) and were also found in collections of URM [Brazil: Rondônia: IATA Guajará-Mirim, ii 1963, *Fernandes* (URM 39320/Exs. 21523)]. However, the designated type collection of *Lyrommotheca* [Brazil: Amazonas: Manaus, v 1961, *Garnier* (URM 23477/Exs. 15803)] does not contain perithecia of that taxon but, besides several other lichens, very small perithecia of *Trichothelium* cf. *bipindense* F. Schill. Thus, although the teleomorph of *Lyromma* has been shown to exist, the invalidly published name *Lyrommotheca* must probably be regarded as equivalent to *Trichothelium*.

A collection filed as a second, unpublished species of *Lyrommotheca* was found in URM [Brazil: Amazonas: Manaus, Reserva Ducke, i 1961, *Batista* (URM 22829/Exs. 15654)]. The specimen was first quite correctly identified as *Aspidothelium fugiens* (Müll. Arg.) R. Sant. (the name being still present on the label), but erased on the corresponding file and assigned to a new species of *Lyrommotheca* that has never been published.

Mazosia praemorsa var. macrocarpa Bat. & Taltasse nom. inval.

in Batista, A. C., Maia, H. da S., Santos, W. F. & Bezerra, J. L., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 432 (1967); Silva & Minter (1995: 193); type (designated): Brazil: Pernambuco: Carpina, Lagoa do Carro, ix 1959, *Soares da Silva* (URM 18647/Exs. 13687). [Art. 36]

Notes: Due to a perhaps genuine printing error, no Latin diagnosis was added to the Portuguese description of this new variety, which is therefore not validly published. Incidentally, it is the only taxon described in *Mazosia* by the Batista team that really deserved a new name; indeed, it refers to a species described only recently. The specimen is easily identified in the type collection, despite its co-occurrence with several other *Mazosia* species, and is a typical and well-developed *M. longispora* Lücking & Matzer (1996: 119–121). It is distinguished from the related *M. praemorsa* (Stirt.) R. Sant. by the longer and larger ascospores [$55\text{--}65 \times 4\text{--}5 \mu\text{m}$ versus $36\text{--}50 \times 2\text{--}3\text{--}(4\text{--}5) \mu\text{m}$ in the latter] and the smaller ascocarps (Lücking & Matzer 1996, fig. 5) with gently sloping sides. *Mazosia praemorsa* is also present in this collection, and both species are easily distinguished morphologically. Despite the correct circumscription of their var. *macrocarpa*, it is difficult to understand the chosen epithet, since the ascocarps are smaller than those of *M. praemorsa*.

Mazosiella [?Bat. & A. A. Silva] nom. inval.

in Batista, A. C., Cavalcante, W. de A. & Mello, O. B., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 457, 458, 459 & 460 (1967); Silva & Minter (1995: 194). [Art. 32, 36–37; *typus generis designatus*: *Mazosiella palmae* Bat. & A. A. Silva *nom. inval.*]

Notes: According to a handwritten note by Batista in a copy of Santesson's monograph (1952), the invalidly published name *Mazosiella* refers to species of *Mazosia* with a pilose thallus. Several species with that feature have subsequently been described (*Mazosia aptrootii* Sipman, *M. pilosa* Kalb & Vězda, *M. tenuissima* Lücking & Matzer and *M. tomentifera* Vězda & Lumbsch), but their separation at generic level is not justified (see Lücking & Matzer 1996 for further details on this group of *Mazosia*).

The designated type of *Mazosiella palmae* *nom. inval* [Brazil: Rondônia: Pôrto Velho, ii 1962, *Correia* (URM 43864/Exs. 22104)] is a badly developed *Mazosia pilosa*. A collection filed as a second, unpublished species of *Mazosiella* was found in URM [Brazil: Amazonas: Manaus, Cacao Perera, iii 1961, *Peres* (URM 51431/Exs. 25142)]; it contains no less than six species of *Mazosia*, of which two are probably *M. pilosa* and *M. tenuissima*.

Mysia [?Bat.] nom. inval.

in Batista, A. C. & Maia, H. da S., *Publicações, Instituto de Micologia da Universidade do Recife* 322: 7 (1961); Silva & Minter (1995: 249). [Art. 32, 36–37; *typus generis designatus*: *Mysia combreti* Bat. *nom. inval.*]

Notes: The invalidly published genus *Mysia* comprised no less than 461 specified entries in the files of URM, 412 corresponding to *M. combreti* *nom. inval.*, and 49 to *M. microspora* Bat. & Cavalc. *nom. inval.* The designated type collection of *M. combreti* [Brazil: Pernambuco: Paulista, v 1959, *Soares da Silva* (URM 16187/Exs. 11595)] contains nothing except *Strigula*, and that of the other species [Brazil: Amazonas: Manaus, viii 1961, *Carvalho* (URM 27658/Exs. 20057)] is an assemblage of several characteristic foliicolous lichens, none of them making the reasons for the description of a new genus evident. Thus this invalidly published name remains a mystery.

Opegrapha duckei Bat., J. L. Bezerra & Cavalc. ex Lücking & Sérus.

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 18 (1961); Silva & Minter (1995: 254); type: Brazil: Amazonas: Manaus, Reserva Ducke, ii 1961, *Batista* (URM 21342/Exs. 15138—holotype!).

Generis *Opegraphae* species foliicola lirellis parvis (0.25–0.4 mm longis) simplicibusque, pruina pallide ochracea tectis insignis.

(Figs 8B & 9C)

Thallus foliicolous, epiphyllous, forming small to rather large (up to 1.5 cm long) patches, thin and more or less discontinuous (this feature may however be the result of inappropriate processing of the specimen), orange brown to dark brown, smooth and matt, without papillae, verrucae, or goniocystangia, with a badly delimited margin and no prothallus. *Photobiont*: a species of

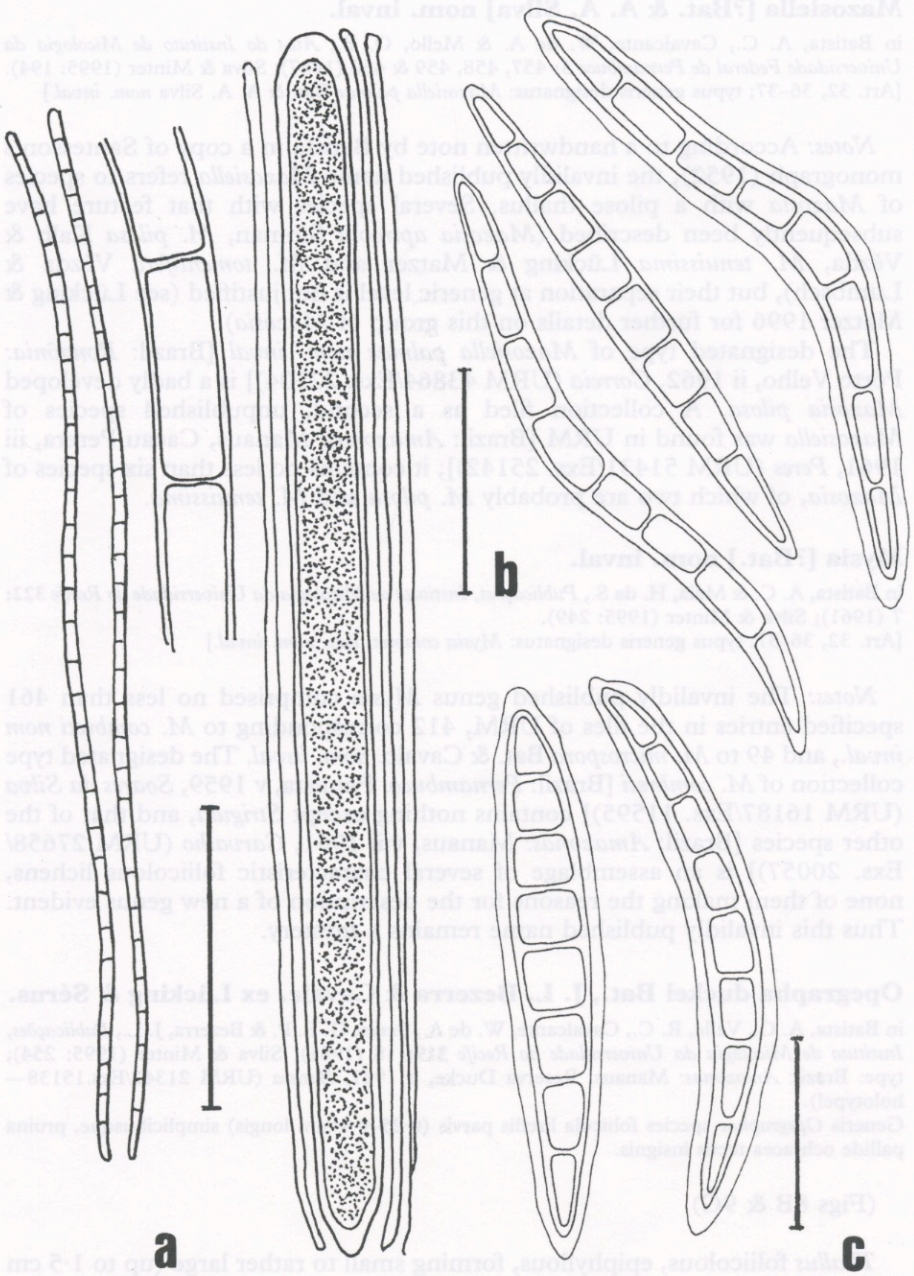


FIG. 9. A, Holotype of *Bapalmuia verrucosa*, immature ascus with paraphyses, mature ascospores and detailed view of the ascospore septation. B, Holotype of *Enterographa batistae*, mature ascospores (one with halo). C, Holotype of *Opegrapha duckei*, mature ascospores with their halo. Scales: A=50 μ m; B, C=10 μ m.

Phycopeltis (Trentepohliaceae), with angular to \pm rounded cells not arranged in rows (similar to illustration K in fig. 14 of Lücking & Matzer 1996: 137).

Ascomata abundant, non-stromatic lirellae, opening by a longitudinal split, at first punctiform and soon becoming elongated but typically remaining small and simple, 0.25–0.4 mm long, 0.15–0.2 mm large and *c.* 0.1 mm high, with their outer wall slightly spreading laterally over the thallus surface, black and most frequently with a thick, pale, ochraceous yellow pruina; pruina formed of minute, pale-orange crystals, easily seen under polarized light, not or slowly dissolving in K, K⁻. *Excipuloid tissue* carbonized, K⁺ dark greenish, absent under the hypothecium; hypothecium hyaline and very thin (<10 μ m thick). *Hamathecium* of numerous, densely branched and anastomosed paraphysoids, *c.* 1.5 μ m thick, embedded in an amorphous gel that reacts K/I⁺ blue; hymenium 50–70 μ m thick. *Asci* broadly ellipsoid to ovoid, 35–40 \times *c.* 20 μ m, typically bitunicate, with an exoascus strongly swelling in K, an endoascus that reacts K/I⁺ pale blue along its whole length, and a K/I⁺ dark blue ring at their apex, and thus belonging to the *Opegrapha*-type (Sérusiaux 1985: 17–18), 4–6-spored. *Ascospores* fusiform, 7-septate, not loculate, 25–31 \times 3–4 μ m, with a distinct halo *c.* 1–2 μ m thick (only hyaline spores seen but most probably becoming dark brown when old, as in other foliicolous species of the genus).

Pycnidia not found.

Notes: *Opegrapha duckei* is a very characteristic species, differing from all other foliicolous members of the genus by its short ascocarps covered with a pale, ochraceous yellow pruina. The 7-septate ascospores and the general habit indicate a close relationship with a still undescribed species reported from Costa Rica (Lücking & Matzer 1996: 138–140).

Opegrapha duckei is known only from the type locality. The type collection is the same as of *Microxyphiomyces intermedia*, *Pleurophomyces palmicola* *nom. inval.*, *Porina minuta* *nom. inval.*, and *Trichothelium amazonense* J. L. Bezerra & L. Xavier.

Porina cannareana* Bat. & J. A. Lima *nom. inval.

in Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 410 (1967); Silva & Minter (1995: 327).—Type (designated): none.

[Art. 32, 36–37]

Notes: Without a designated type, it is impossible to give a statement on this invalidly published species.

Porina cupreola* var. *ciliata* Bat. & Taltasse *nom. inval.

in Batista, A. C., Maia, H. da S., Santos, W. F. & Bezerra, J. L., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 434 (1967); Silva & Minter (1995: 328); type (designated): Brazil: Pernambuco: Carpina, Lagoa do Carro, ix 1959, Soares da Silva (URM 18644/Exs. 13786!).

[Art. 32, 36–37]

Notes: Three species of *Porina* are present in the designated type collection: *P. epiphylla* (Fée) Fée, *P. rubentior* (Stirt.) Müll. Arg. and *P. rufula* (Krempelh.) Vain. It is unclear whether the epithet *ciliata* refers to appendages

on the perithecia or on the ascospores (germ tubes) as no description is available. In any case, no formal taxon is required for such a variation. The typical variety, *P. cupreola* (Müll. Arg.) F. Schill. var. *cupreola*, which was reported from Brazil by the same workers, does not occur in the Neotropics (see below).

***Porina minuta* Bat., J. L. Bezerra & Cavalc. nom. inval.**

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 18 (1961); Silva & Minter (1995: 330); type (designated): Brazil: *Amapá*: Mazagão, iv 1963, Barros (URM 45567/Exs. 22479). [Art. 32, 36–37]

Notes: From the study of the designated type collection, the name refers to specimens of *Porina* with very small, subglobose, dark reddish brown, naked perithecia with 3-septate ascospores. Such specimens are usually identified as *P. leptosperma* Müll. Arg. but differ from typical specimens by the dark perithecia, the somewhat smaller ascospores, and the radiate photobiont. A revision of the *P. tetramera* aggregate is necessary to clarify the taxonomic position of this taxon; if it is confirmed as a separate species, the name *P. minuta* could be validated.

***Porina oenocarpi* Bat., Peres & H. Maia nom. inval.**

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 18 (1961); Silva & Minter (1995: 330); type (designated): Brazil: *Amazonas*: Manaus, Reserva Ducke, i 1961, Batista (URM 21217/Exs. 150061). [Art. 32, 36–37]

Notes: The designated type collection contains three species of *Porina*: *P. fusca* Lücking (abundant), *P. mirabilis* Lücking & Vězda *in ed.*, and *P. limbulata* (Krempelh.) Vain. (scarce). Since *P. mirabilis* has usually been (mis)identified as *P. applanata* Vain. or *P. conica* R. Sant by Batista and co-workers (see below), it seems most probable that the name *P. oenocarpi* refers to *P. fusca*, a species that was described only recently.

***Porinomyces* [?Bat.] nom. inval.**

in Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 410 (1967); Silva & Minter (1995: 334).

[Art. 32, 36–37; typus generis designatus: *Porinomyces phyllogena* (Müll. Arg.) Bat. nom. inval. = *Strigula phyllogena* (Müll. Arg.) R. C. Harris = *Phylloporis phyllogena* (Müll. Arg.) Clem.]

Notes: As indicated in an annotated copy of Santesson's monograph, Batista intended to create the new genus *Porinomyces* to accommodate the species of *Porina* with 1-septate ascospores; in that sense, it corresponds to *Phylloporis* Clem. It is difficult to understand why Batista was ready to introduce a new generic name for that group when the name *Phylloporis* was available. In similar cases, for example, *Stereochlamys* Müll. Arg. versus *Trichothelium* Müll. Arg., he intended to re-establish old generic names (Table 2). The status of

the genus was indeed very unclear within the working team as the type species appears several times as *Porina phyllogena* in Bezerra *et al.* (1967), and once as *Porinomyces phyllogena* and as *Porina phyllogena* on the same page (p. 410) without any indication that this is indeed the same species.

Interestingly, three files referring to *Porinomyces phyllogena* carry the note 'forma imperfeita', indicating that Batista was well aware that the species produces pycnidia and perithecia; indeed the anamorph of this species has not received any other name (but the closely related *Strigula multipunctata* has; see under *Manaustrum palmae*).

Psathyromyces minutus Bat. & J. L. Bezerra nom. inval.

in Batista, A. C., Bezerra, J. L. & Almeida, C. R., *Anais do XIV Congresso da Sociedade Botânica do Brasil*; 120 (1964, '1963'); Silva & Minter (1995: 335); type (designated): Brazil: Amazonas: Manaus, vi 1961, *Peres* (URM 26087/Exs. 16732!).
[Art. 32, 36–37]

Notes: No details on the morphological and anatomical features of this species are available. The designated type collection consists of numerous palm leaves with abundant foliicolous lichens, including several *Gomphillaceae*; it is thus impossible to make a sound connection between the name and one of those species.

Psorotheciopsis paudalhensis Bat. & Peres nom. inval.

in Batista, A. C. & Peres, G. E. P., *Publicações, Instituto de Micologia da Universidade do Recife* 248: 5–6 (1961); Silva & Minter (1995: 338); type (designated): Brazil: Pernambuco: s. loc., vii 1959, *Peres* (URM 17354/Exs. 12618!).
[Art. 32, 36–37]

Notes: The type collection consists of several small leaves, most of them containing pure communities of a species marked with red colour. It is a very well-developed and typical *Psorotheciopsis premneella* (Müll. Arg.) R. Sant.

Pycnomyces [?Bat. & J. L. Bezerra] nom. inval.

in Batista, A. C., Bezerra, J. L. & Maia, H. da S., *Portugalia Acta Biologica, Sér. B., Sistemática* 7: 389 (1964); Silva & Minter (1995: 342).
[Art. 32, 36–37; typus generis designatus: *Pycnomyces dipteris* Bat. & J. L. Bezerra nom. inval., URM files; 'Bat., J. L. Bezerra & Cavalc.' according to Silva & Minter 1995: 342]

Notes: Despite being filed as a lichen in URM, there is no doubt that this name refers to a non-lichenized fungus. The designated type collection [Brazil: Minas Gerais: Paracatu, vi 1960, *Heringer* (URM 19528/Exs. 14233)] contains two envelopes with small leaf fragments, both of them without any lichen but with several non-lichenized fungi. On the label, the name *Pycnomyces* was later erased and replaced by *Stilbomyces*, another invalidly published non-lichenized genus.

Raciborskiella zollerniae Bat. & J. A. Lima nom. inval.

in Batista, A. C., *Publicações, Instituto de Micologia da Universidade do Recife* 320: 11 (1961); Silva & Minter (1995: 345); type (designated): Brazil: Pernambuco: Caruarú, x 1959, *de Barros Correia* (URM 19034/Exs. 13957!). [Art. 32, 36–37]

(Fig. 8C)

Notes: Although mentioned in several publications, *R. zollerniae* was never validly described. The type collection is the same as *Acleistomyces zollerniae* (see above) and is a typical, well-developed and fertile *Strigula microspora* Lücking (1991: 275–276).

Rhynchostrigula [?Bat., J. L. Bezerra & Cavalc.] nom. inval.

in Batista, A. C., Maia, H. da S. & Bezerra, J. L., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 3: 269, as *Rhynchostrigula* sp. (1966); Silva & Minter (1995: 349).

[Art. 32, 36–37; *typus generis designatus*: *Rhynchostrigula papillata* Bat., J. L. Bezerra & Cavalc. *nom. inval.*]

Notes: The only species present in the designated type collection of *Rhynchostrigula papillata nom. inval.* [Brazil: Amazonas: Manaus, iii 1961, Peres (URM 21472/Exs. 15183)] is an indeterminable *Strigula* covered with algal threads of its photobiont *Cephaleuros*.

Santessonia [?Bat.] nom. inval.

in Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 383, 387, 397, 407, 411 & 413 (1967); Silva & Minter (1995: 351).

[Art. 32, 36–37; *typus generis designatus*: *Santessonia trilocularis* (Müll. Arg.) Bat. *nom. inval.* = *Arthonia trilocularis* Müll. Arg., non *Santessonia* Hale & Vobis (1978).

Notes: According to the ascospore concept of Batista demonstrated by handwritten notes in a copy of Santesson's monograph, *Santessonia nom. inval.* would have comprised the foliicolous species of *Arthonia* with brown ascospores, typified by *A. trilocularis* Müll. Arg. (Table 2; Fig. 3A). There is no need for such a generic separation, but the name *Santessonia* was unfortunately widely used by the Batista team and has caused a great deal of confusion. Indeed Silva & Minter (1995: 351) confused it with the validly published name *Santessonia* Hale & Vobis, which refers to a spectacular fruticose lichen genus belonging to the *Physciaceae* and is endemic to the Namib desert/southwest Africa.

Two specific epithets of *Santessonia sensu* Bat. have been used, viz. *S. bactridifolii* Bat. & Cavalc. *nom. inval.* and *S. epiphylla* Bat. & Cavalc. *nom. inval.* (Silva & Minter 1995: 351). The designated type of the first one [Brazil: Maranhão: Alto Turi, xi 1965, Peres (URM 54434/Exs. 26494)] is a young specimen of *Eremothecella calamicola* Syd. with slightly brownish ascospores. The second one [Brazil: Amazonas: Manaus, viii 1961, Carvalho (URM 27659/Exs. 20057)] is a non-lichenized fungus with arthonioid ascocarps and 1-septate ascospores, which is unknown to us.

Setomyces [?Bat. & Peres] nom. inval.

in Batista, A. C., *Publicações, Instituto de Micologia da Universidade do Recife* 320: 14 (1961); Silva & Minter (1995: 368).

[Art. 32, 36–37; *typus generis designatus*: *Setomyces belluciaie* Bat. & Peres *nom. inval.*]

Notes: Although never validly published, the name *Setomyces* and several specific names included in it have been used in various publications. Judging from the name, it was expected to be sterile *Tricharia*. The designated type collection of *Setomyces belluciae* *nom. inval.*, which is the same as of *Pycnocliospora belluciae* (see above) [Brazil: Amazonas: Juruá, 1901 Ule, (URM 15322/Exs. 10865)] is easily identified as sterile *Tricharia* aff. *urceolata* (Müll. Arg.) R. Sant.

Six further specific epithets of *Setomyces* have been used. The designated types of *S. concentricus* Bat., J. L. Bezerra & Cavalc. *nom. inval.* and *S. genipae* Bat. & Peres *nom. inval.* could not be found. Those of *S. giganteae* Bat. & J. L. Bezerra *nom. inval.* [Brazil: Pernambuco: Carpina, v 1959, Soares da Silva (URM 17143/Exs. 12437)], *S. minutus* Bat. & H. Maia *nom. inval.* [Brazil: Pernambuco: Camaragibe, iii 1958, Soares da Silva (URM 16235/Exs. 11632)], and *S. orchideae* Bat. & Peres *nom. inval.* [Venezuela: Merida: Sierra Nevada, viii 1958, Dennis (URM 16015/Exs. 11523)] were located, but, without any information on their morphological and anatomical features, cannot be definitely referred to any of the *Gomphillaceae* present in the collections. However, because of the immense number of entries in the URM files (2116) for *S. orchideae* and from several other specimens with that name on the label, we are quite convinced that *S. orchideae* refers to *Tricharia vainioi* R. Sant., the most common sterile form of *Tricharia*. *Setomyces crescentiae* Bat. & Taltasse *nom. inval.* [Brazil: Pernambuco: Camaragibe, vii 1959, Soares da Silva (URM 17203/Exs. 12546)] is also a sterile *T. vainioi*.

Spinomyces* [?Bat. & Peres] *nom. inval.

in Batista, A. C., *Publicações, Instituto de Micologia da Universidade do Recife* 320: 14 (1961); Silva & Minter (1995: 384).

[Art. 32, 36–37; *typus generis designatus: Spinomyces genipae* Bat. & Peres *nom. inval.*]

Notes: Whereas *Setomyces* (see above) obviously covers the black-haired *Tricharia*, the name *Spinomyces nom. inval.* seems to refer to sterile specimens of white-haired *Gomphillaceae*, particularly *Echinoplaca* and *Tricharia*. The designated type of *Spinomyces genipae nom. inval.* [Brazil: Pernambuco: Paulista, Seringá, v 1959, Soares da Silva (URM 17112/Exs. 12371)] contains several sterile, white-haired specimens, partly belonging to *Tricharia* aff. *albostrigosa* R. Sant., and partly to an undeterminable *Echinoplaca* species.

The designated types of two further invalidly published species (Silva & Minter 1995: 384), viz. *Spinomyces giganteae* Bat. & M. M. Herrera *nom. inval.* and *S. ocoteae* Bat. & H. Maia *nom. inval.* [Brazil: Amazonas: Manaus, Caracará, iv 1961, Peres (URM 22729/Exs. 15629)] were either not found, or no type was indicated amongst the numerous lichen thalli present. Three further species exist only as herbarium names.

Strigula hymenaeicola* Bat. & J. L. Bezerra *nom. inval.

in Batista, A. C., Maia, H. da S. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 229: 5 (1963); Silva & Minter (1995: 400).—Type (designated): none.

[Art. 32, 36–37]

Notes: No type was designated for this name, and hence no statement on its identity is possible.

Strigula orchyospora R. Sant.

in Batista, A. C., Cavalcante, W. de A. & Maia, H. da S., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 2: 273 (1965); Silva & Minter (1995: 401).

Notes: The name is believed to be a misspelling for *Strigula schizospora* R. Sant.

Strigula stilboideum Bat. nom. inval.

in Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 412 (1967); Silva & Minter (1995: 402).—Type (designated): none.

[Art. 32, 36–37]

Notes: No specimen with this name was found in the files of URM.

Tegoa [?Bat. & Peres] nom. inval.

in Batista, A. C., Bezerra, J. L. & Maia, H. da S., *Publicações, Instituto de Micologia da Universidade do Recife* 283: 21 (1961); Silva & Minter (1995: 407).

[Art. 32, 36–37; typus generis designatus: *Tegoa tabebuiae* Bat. & Peres. nom. inval.]

(Fig. 8D)

Notes: *Tegoa* is one of several generic names that have never been validly published but appeared widely in different publications as *nomina nuda*. No less than five specific epithets of *Tegoa* are mentioned in various papers. The type collections of three of them, including the designated generic type, were found in URM.

According to the files in URM, three specimens were possible candidates as the type of *T. tabebuiae*. All of them originate from the same locality [Brazil: Pernambuco: Paudalho, vii 1959, *Peres* (URM 17353/Exs. 12618)]; *ibid.* (URM 17337/Exs. 12428); *ibid.* (URM 17294/Exs. 12608)] and consist of very scarce assemblages of foliicolous lichens typical for exposed habitats, viz. *Asterothyrium* spp. and *Psorotheciopsis premneella* (Müll. Arg.) R. Sant. The only anamorphic stage present is represented by abundant thalli of *Asterothyrium* cf. *microsporum* R. Sant. with typically marginal, squat-conical pycnidia; some of them are marked. Since this taxon is common and widespread throughout the Tropics and particularly in the Neotropics, and is not covered by any other name produced by Batista and co-workers, we have no doubt that the name *Tegoa tabebuiae* refers to it. Our assumption is confirmed by the study of the other species, which all-in-all characterize the designated genus *Tegoa* as a group of (non-related) taxa with small, black pycnidia and simple conidia, not belonging to the *Strigulaceae*.

Tegoa couepiae Bat. & J. L. Bezerra nom. inval. and *T. eugeniae* Bat. & H. Maia nom. inval. [Brazil: Pernambuco: Paudalho, Chã de Capoeira, iii 1959, *Soares da Silva* (URM 17095/Exs. 12431)] were searched for in vain, but the designated types of *T. mappiae* Bat. & Peres nom. inval. [Brazil: Pernambuco:

Carpina, iv 1959, *Soares da Silva* (URM 17521/Exs. 12729)] and *T. parenchymatica* Bat. & Cavalc. nom. inval [Brazil: Amazonas: Manaus, v 1961, Colares (URM 22369/Exs. 15525)] were found. Whereas *T. mappiae* most probably refers to the pycnidia of *Opegrapha filicina* Mont. (which are sometimes abundant on thalli without ascocarps), the designated type collection of *T. parenchymatica* contains marked specimens of *Anisomeridium foliicola* R. Sant. & Tibell, a common foliicolous species throughout the Tropics, usually present in its pycnidial stage and rarely producing perithecia.

A further 11 new generic and specific names that were invalidly published (Silva & Minter 1995) could not be definitely identified. At least some of them, though filed among lichens, might refer to non-lichenized fungi. These names are: *Actinicus turbinatus* Bat. & J. L. Bezerra nom. inval. (Bezerra et al. 1967; Silva & Minter 1995: 22). Type (designated): Brazil: Amazonas: Manaus, Igarapé do Leão, vi 1961, Colares (URM 23850/Exs. 15861, not seen); *Ainsworthiomyces sterculiae* Bat. & J. L. Bezerra nom. inval. (Batista & Bezerra 1961; Silva & Minter 1995: 22). Type (designated): none; *Aspidaster palmicola* Bat. & Cavalc. nom. inval. (Bezerra et al. 1967; Silva & Minter 1995: 46). Type (designated): none; *Deltomyces myrtacearum* Bat., J. L. Bezerra & Cavalc. nom. inval. (Batista et al. 1967; Silva & Minter 1995: 117). Type (designated): Brazil: Amazonas: Manaus, Ponta Negra, iv 1961, Peres (URM 26248/Exs. 16780, not seen); *Desmidiophorus concentricus* Bat. & Cavalc. nom. inval. (Batista et al. 1963b; Silva & Minter 1995: 119). Type (designated): none; *Diplodiomyces annonacearum* Bat. & Cavalc. nom. inval. (Batista et al. 1963a; Silva & Minter 1995: 131). Type (designated): Brazil: Amazonas: Manaus, v 1961, Garnier (URM 23118/Exs. 15720, not seen); *Monodorus hendersonianus* Bat. & J. L. Bezerra nom. inval. (Batista & Souza 1960a; Silva & Minter 1995: 240). Type (designated): Brazil: Pernambuco: Tapera, x 1959, Batista (URM 18670/Exs. 13795, not seen); *Pleurophomyces palmicola* Bat., J. L. Bezerra & Cavalc. nom. inval. (Batista et al. 1963a; Silva & Minter 1995: 319). Type (designated): Brazil: Amazonas: Manaus, Reserva Ducke, ii 1961, Batista (URM 21345/Exs. 15138, not seen); *Ruthia perseae* Bat. nom. inval. (Batista & Souza 1960b; Silva & Minter 1995: 351). Type (designated): Brazil: Pernambuco: Paudalho, Ramas, vii 1959, Peres (URM 20069/Exs. 14533, not seen); *Skenia bombacis* Bat. & Taltasse nom. inval. (Batista et al. 1962; Silva & Minter 1995: 376). Type (designated): Brazil: Pernambuco: Recife, Dois Irmãos, iii 1960, Soares da Silva (URM 18752/Exs. 13827, specimen not identified); *Tegaster proticola* Bat. & H. Maia nom. inval. (Bezerra et al. 1967; Silva & Minter 1995: 407). Type (designated): Brazil: Pernambuco: Jaboatão, xi 1959, Batista (URM 17450/Exs. 12668, not seen).

Section 3: New distribution records by Batista and co-workers of previously known species

Aulaxina uniseptata R. Sant.

in Poroca, D. J. M., Bezerra, J. L. & Leal, F. B., *Publicações, Instituto de Micologia da Universidade do Recife* 683: 5 (1972); Silva & Minter (1995: 56).

Notes: Not confirmed. A very rare species, known from India. The present collections are typical *Psorotheciopsis patellarioides* (Rehm) R. Sant. [= *Linhartia patellarioides* (Rehm) Vězda] with inappropriately dried and therefore rather plain apothecia, which give the impression of an *Aulaxina* species.

Selected specimens examined: Brazil: Pernambuco: Granja S. Luiz, Igarassú, s. d., Bezerra (URM 70763/Exs. 40785) is *Psorotheciopsis patellarioides*; *ibid.*, Tapacurá, viii 1970, Cavalcante (URM 71261/Exs. 41042) is *P. patellarioides*; *ibid.*, Vicência, ii 1973, Poroca (URM 71925/Exs. 41643) is *P. patellarioides*; *ibid.*, Recife-Goiana, vii 1970, Falcão (URM 71256/Exs. 41041) contains no *Aulaxina*.

Byssoloma chlorinum (Vain.) Zahlbr.

in Batista, A. C. & Maia, H. da S., *Publicações, Instituto de Micologia da Universidade do Recife & Instituto Nacional de Pesquisas da Amazonia, Conselho Nacional de Pesquisas* 338: 8 (1961); Silva & Minter (1995: 69).

Notes: Confirmed. Probably a pantropical taxon, belonging to the complex aggregate of *Byssoloma leucoblepharum* (Nyl.) Vain. which is in need of further investigation. The species has recently been repeatedly reported for the Neotropics, but this represents the first historical record.

Specimen examined: Brazil: Amazonas: Manaus, Rio Negro, ii 1961, Peres (URM 21008/Exs. 14935); this collection is also the type of *Kilikiostroma peresii* (see under that name).

Calenia aggregata R. Sant.

Xavier Filho, L., *Anais do XIII Congresso da Sociedade Botânica do Brasil:* 464 (1964); Silva & Minter (1995: 71).

Notes: Not confirmed. A rare species, known only from the type locality in Honduras and from Costa Rica.

Selected specimens examined: Brazil: Rondônia: Perfil AB 8, s. d., s. c. (URM 33364/Exs. 18386) contains no *Calenia*. *Pernambuco:* Vitoria, viii 1959, Soares da Silva (URM 18738/Exs. 13821) contains no *Calenia*.

Coccocarpia rotula (Nyl.) Vain

Batista, A. C., Maia, H. da S. & Bezerra, J. L., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 3: 269 (1966); Silva & Minter (1995: 104).

Notes: Not confirmed.

Specimen examined: Brazil: Amazonas: Manaus, Tarumazinho, ii 1961, Peres (URM 27731/Exs. 20069) is *Coccocarpia stellata* Tuck.

Lasioloma trichophorum (Vain.) R. Sant.

Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 379 (1967); Silva & Minter (1995: 174).

Notes: Not confirmed. A rare species known only from S-E Asia.

Specimen examined: Brazil: Maranhão: Zé Doca, xi 1965, Peres (URM 54789/Exs. 26541) is a sterile *Bacidina mirabilis* (Vězda) Vězda.

Porina albicera (Krempelh.) Overeem

in Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 380, 386, 392, 395, 404, 410 & 415 (1967); Silva & Minter (1995: 327).

Notes: Not confirmed. A very characteristic, paleotropical taxon. Recent records from the Neotropics (Aptroot & Sipman 1993: 16–17) have not been checked and may belong to *Porina guianensis* Lücking & Vězda *in ed.*

Selected specimens examined: **Brazil:** Rondônia: Perfil AB 8, s. c., s. d. (URM 33365/Exs. 18386) contains a mixture of *Porina fusca* Lücking, *P. rubentior* (Stirt.) Müll. Arg. and *P. mirabilis* Lücking & Vězda *ined.* Maranhão: Alto Turi, vi 1967, de Anchieta (URM 68561/Exs. 40600) is *P. guianensis*. Amazonas: Manaus, Reserva Ducke, viii 1967, Omar (URM 68715/Exs. 40615) is *P. guianensis*.

Porina applanata Vain.

in Batista, A. C., Maia, H. da S., Santos, W. F. & Bezerra, J. L., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 440 (1967); Silva & Minter (1995: 327).

Notes: Not confirmed. A species known in S-E Asia. The specimens filed under that name are without exception *Porina mirabilis* Lücking & Vězda *in ed.*, which can be confused with *P. applanata* if the crystalline cover is reduced and if the specimen is not carefully studied.

Selected specimen examined: **Brazil:** Rondônia: IATA Guajará-Mirim, ii 1963, Fernandes (URM 45885/Exs. 22524) is *Porina mirabilis*.

Porina cerina (Zahlbr.) R. Sant.

in Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 410, 414 & 420 (1967); Silva & Minter (1995: 327).

Notes: Not confirmed. A rare species known from S-E Asia and New Zealand.

Selected specimens examined: **Brazil:** Amazonas: Manaus, Caracarái, iii 1961, Peres (URM 21514/Exs. 15192) contains nothing similar to that taxon; *ibid.*, Manaus, vii 1961, Fonseca (URM 26159/Exs. 16758) contains young *Porina mirabilis* Lücking & Vězda *ined.* and *P. rubentior* (Stirt.) Müll. Arg.

Porina conica R. Sant

in Batista, A. C. & Maia, H. da S., *Publicações, Instituto de Micologia da Universidade do Recife* 246: 5 (1960); Silva & Minter (1995: 327).

Notes: Not confirmed. A paleotropical species, especially common in S-E Asia, with distinct perithecia. Most of the specimens filed under that name are *Porina mirabilis* Lücking & Vězda *in ed.*, some of them with slightly conical perithecia.

Selected specimens examined: **Brazil:** Rondônia: Pôrto Velho, s. d., Ulysses (URM 32667/Exs. 18212) is *Porina mirabilis*. Amazonas: Manaus, Reserva Ducke, iv 1961, Peres (URM 22296/Exs. 15499) is *P. mirabilis*. Pernambuco: Paulista, v 1960, Soares da Silva (URM 20906/Exs. 14910) is *P. subbiphylla* Lücking & Vězda *ined.*

Porina cupreola (Müll. Arg.) F. Schill.

in Batista, A. C., Bezerra, J. L. & Maia, H. da S., *Publicações, Instituto de Micologia da Universidade do Recife* 283: 26 & 27 (1960); Silva & Minter (1995: 327).

Notes: Not confirmed. A species known from S-E Asia and tropical Australia. Several specimens filed under this name contain dead thalli of *Porina epiphylla* (Fée) Fée with the outer, reddish brown perithecial wall exposed and hence slightly resembling *P. cupreola*.

Selected specimens examined: **Brazil:** *Amapá:* Mazagão Velho, iv 1963, Barros (URM 45551/Exs. 22478) is a dead *Porina epiphylla*. *Amazonas:* Manaus, Reserva Ducke, vii 1967, Omar (URM 65887/Exs. 40328) is a young *P. mirabilis* Lücking & Vězda *ined.* with slightly reddish perithecia. *Maranhão:* Alto Turí, xii 1966, de Anchieta (URM 63019/Exs. 40028) contains several species of *Porina*, none of them resembling *P. cupreola*.

Porina kamerunensis F. Schill.

in Batista, A. C., Valle, R. C., Cavalcante, W. de A., Peres, G. E. P. & Bezerra, J. L., *Publicações, Instituto de Micologia da Universidade do Recife* 319: 18 (1961); Silva & Minter (1995: 329).

Notes: Not confirmed. A typical taxon from Africa and Australia with lens-shaped, black perithecia. Very dark specimens of *Porina rubentior* (Stirt.) Müll. Arg. might be confused with that species, but can always be distinguished by their reddish, K+ orange red perithecial wall.

Selected specimens examined: **Brazil:** *Amazonas:* Manaus, Cacao Perêra, iii 1961, Peres (URM 21193/Exs. 15100) is *Porina rubentior*; *ibid.*, Reserva Ducke, iii 1961, Peres (URM 21771/Exs. 15277) is *P. rubentior*. *Pernambuco:* Recife, Dois Irmãos, x 1960, Bezerra (URM 20903/Exs. 14908) is *P. rubentior*.

Porina semecarpi Vain.

in Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 401 (1967); Silva & Minter (1995: 332).

Notes: Not confirmed. A rather common and widespread paleotropical species. If not carefully examined, neotropical taxa such as *Porina fulvella* Müll. Arg., *P. leptosperma* Müll. Arg. or *P. fusca* Lücking may be easily confused with *P. semecarpi*, which is clearly distinguished by the occurrence of an algal layer between the perithecial walls. The specimen cited in the files [Brazil: *Maranhão:* Zé Doca, ix 1965, Peres (URM 52028/Exs. 25230)] was not located.

Porina virescens (Krempelh.) Müll. Arg.

in Bezerra, J. L., Batista, A. C., Poroca, D. J. M., Cavalcante, W. de A. & Santos, W. F., *Atas do Instituto de Micologia da Universidade Federal de Pernambuco* 5: 380, 397 & 410 (1967); Silva & Minter (1995: 332).

Notes: Not confirmed. A common species restricted to tropical Australasia.

Selected specimen examined: **Brazil:** *Maranhão:* Alto Turí, xi 1965, Peres (URM 53088/Exs. 25636) is a depauperate *Porina mirabilis* Lücking & Vězda *in ed.*, covered with algal threads.

The URM files contain further entries that were never published. The following would represent a considerable extension of range for several species that are either unknown in the Neotropics, or very rare: *Arthonia lividula* Vain., *A. ramosii* (Räs.) R. Sant., *Arthothelium cingulatum* R. Sant. [= *Eremothecella cingulata* (R. Sant.) L. I. Ferraro & Lücking], *Aulaxina epiphylla* (Zahlbr.) R. Sant., *Bacidia elegans* (Vain.) Zahlbr. [= *Badimia elegans* (Vain.) Vězda], *B. lecanorina* (Zahlbr.) R. Sant. [= *Badimia lecanorina* (Zahlbr.) Lücking, Lumbsch & Elix], *B. olivaceorufa* Vain., *B. pauciseptata* R. Sant. [= *Fellhanera pauciseptata* (R. Sant.) Lücking], *B. polillensis* (Vain.) Zahlbr. [= *Badimia polillensis* (Vain.) Vězda], *B. subundulata* (Stirt.) R. Sant. [= *Byssoloma subundulatum* (Stirt.) Vězda], *B. tuckermanii* R. Sant. [= *Badimia tuckermanii* (R. Sant.) Lücking, Lumbsch & Elix], *Calenia maculans* (Vain.) R. Sant., *Lopadium perpallidum* (Nyl.) Zahlbr. [= *Calopadia perpallida* (Nyl.) Vězda], *Opegrapha vegae* R. Sant., *Phyllobothelium thaxteri* (Vain.) Zahlbr., *Porina coruscans* (Rehm) R. Sant., *P. impressa* R. Sant., *P. lucida* R. Sant. (all specimens filed under that name in URM represent other species, but *P. lucida* is now known in the Neotropics; Lücking & Vězda, unpublished data), *P. monocarpa* (Krempelh.) F. Schill., *P. perminuta* Vain., *P. thaxteri* R. Sant., *P. trichothelioides* R. Sant., *Strigula graminicola* R. Sant., *S. macrocarpa* Vain., and *Tricharia helminthospora* R. Sant. None of these could be confirmed during our study: either the relevant material has not been found, or the specimens were wrongly identified.

Section 4: Description of new species or new records found in the collections of URM during this study

Badimia galbinea (Krempelh.) Vězda

Notes: A very conspicuous species, which was for a long time known only from S-E Asia but was recently found in the Neotropics (Lücking 1992: 148). The specimen was identified as *Bacidia tuckermanii* R. Sant. [= *Badimia tuckermanii* (R. Sant.) Lücking, Lumbsch & Elix]. Two other specimens filed as *Bacidia galbinea* in URM proved to belong to other species: [Brazil: Rondônia: IATA Guajará Mirim, ii 1962, Coêlho (URM 43889/Exs. 22105)] is an unknown *Gyalideopsis* sp. with yellowish apothecia, and [Brazil: Roraima: Mucajaí-Carararai, ii 1962, Lima (URM 38287/Exs. 19891)] is *Badimia* aff. *dimidiata* (Bab. ex Leight.) Vězda.

Specimen examined: **Brazil:** Maranhão: Alto Turi, iv 1967, de Anchieta (URM 64691/Exs. 40207) (sterile but typical collection though verrucae filled with yellow crystals).

Bapalmuia verrucosa Sérus. & Lücking sp. nov.

Bapalmuia species insignis thallo verrucis ochraceis vel pallide aurantio-brunnei obtecto et a *Bapalmuii palmulare* ascosporis longis (160–190 µm) distincta.

Type: Brazil: Amazonas: Manaus, km 67, v 1961, G. E. P. Peres (URM 22249/Exs. 15486—holotype).

(Fig. 9A)

Thallus foliicolous, epiphyllous, covering large portions of the leaf surface, up to 4–4.5 cm across, in young parts formed by a thin membrane with

numerous, small [50–80(–100) μm diam.], circular or elongated, pale orange brown verrucae and sometimes with radiating mycelium-like strands, when mature comprising a thin, smooth and matt pale orange greenish algeriferous layer covered with dense and confluent verrucae that are pale ochraceous to orange-brown; small, rectangular and colourless crystals present, mainly in the verrucae; verrucae content K –; a dark bluish, *c.* 0.3 mm wide prothallus sometimes present. *Photobiont*: a species of *Chlorococcaceae*, with spherical, 8–12 μm diam., greenish cells.

Apothecia present only at the under edge of the leaves, where they grow on an unlichenized mycelium, often with root-like mycelial strands at their base, usually single, circular and very strongly constricted at their base when mature, 0.7–0.9(–1.0) mm in diam. and *c.* 0.6 mm high; disc at first \pm plane but soon strongly convex (with the apothecia becoming almost hemispherical), at first dark brownish red but soon very dark red brown and almost black; beige and minutely pilose margin seen in young apothecia, soon disappearing; apothecial sides beige to pale orange and also minutely pilose. *Excipulum* compact and \pm paraplectenchymatous in the inner parts where it is made of densely interwoven hyphae, with cells \pm arranged in radial rows, but with very loosely arranged hyphae, with free-ends towards the edge, reddish brown, K+ intensifying except for a 20–40 μm thick marginal layer, which is almost hyaline, present under most of the hypothecium where it measures 180–230 μm thick. *Hamathecium* of numerous, dense and compact, simple paraphyses, *c.* 1 μm thick; hymenium *c.* 250 μm high, pale orange, K+ intensifying; hypothecium forming a distinct dome (500–550 \times *c.* 150 μm at its maximal height) between the hymenium and the excipulum portion, which is underneath the apothecium and obviously responsible for its strong convexity, reddish brown, K+ intensifying. *Asci* cylindrical, with thin walls, 180–200 \times 9–12 μm , with tholus I+ blue, especially around the ascoplasm tip but without any visible structure. *Ascospores* 4 per ascus, filiform with obtuse ends, multiseptate (32–38 cells), not constricted at the septa, 160–190 \times 3–3.5 μm .

Pycnidia not found.

Notes: This new species definitely belongs to *Bapalmuia* Sérus. (Sérusiaux 193: 449–451) with which it shares all typical features, especially its filiform, very long and multiseptate ascospores and its excipulum type. It is easily distinguished from all other species referred to that genus by its thallus covered with numerous and confluent, ochre to pale orange-brown verrucae. All other species have a smooth thallus, except for *B. marginalis* (Vain.) Sérus., which has a slightly verrucose, pale green thallus but apothecia and ascospores of very different size. Its closest relative is the type species of the genus, *B. palmularis* (Müll. Arg.) Sérus., a pantropical species. Besides its verrucose thallus, *B. verrucosa* is separated by its longer ascospores (100–140 μm long in *B. palmularis* fide Santesson 1952: 448, 90–120 μm fide Vězda 1987: 83 and Lücking 1992: 130). In the material examined (two mature apothecia), no asci with more than four spores could be observed. This feature can of course be rather difficult to assess and just be an artefact as the asci are very narrow and the filiform multiseptate

ascospores are very compact in them; we therefore do not put too much weight on this character for the time being.

Bapalmuia verrucosa is so far only known from the type locality.

Calopadia subcoerulescens (Zahlbr.) Vězda

Notes: This species is mainly known from the Paleotropics and has recently been reported from the Neotropics (Lücking 1995b). It was not found in the collection filed under this name [Brazil: Rondônia: IATA, Gaujará-Mirim, ii 1963, *Fernandes* (URM 38774/Exs. 19957) contains only *Sporopodium leprieurii* Mont.] but was detected in others, for example, the holotype of *Cyrta licaniae* and *Lopadium applanatum* nom. inval. (see above).

Echinoplaca marginata Lücking

Notes: A recently described species from Costa Rica (Lücking 1997a: 57–58). The specimen was identified as *Echinoplaca argentea* (Mont.) R. Sant. by Batista and co-workers, following its circumscription by Santesson (1952: 374–375). Kalb & Vězda (1988b: 52–53) have however demonstrated that the type collection represents a corticolous *Gyalideopsis* [*Gyalideopsis argentea* (Mont.) Kalb & Vězda] with the consequence that the numerous *Echinoplaca* specimens with brown apothecia and asci with a single, muriform ascospore had to be assigned elsewhere: three different species are involved, viz. *E. similis* Kalb & Vězda for corticolous populations, and *E. fusconitida* Lücking and *E. marginata* Lücking for foliicolous ones (Lücking 1997a: 51, 57). The present specimen, which had been examined earlier by R. Santesson, is a small but typical *E. marginata*.

Specimen examined: Brazil: Pernambuco: Moreno, 1955, da Silva (URM 10820/Exs. 4686).

Echinoplaca verrucifera Lücking

Notes: This species has just been described from Costa Rica (Lücking 1997a: 62–64) and was found in the collection originally mentioned as the type for *Pyriomyces protii*.

Specimen examined: Brazil: Pernambuco: Nazaré, i 1960, Soares da Silva (URM 19046/Exs. 42631).

Enterographa batistae Lücking & Sérus. sp. nov.

Enterographa foliicola species insignis thallo hypophyllo et ascomatibus parvis [0.1–0.15 (–0.2) × 0.1–0.15 mm], rotundis vel leviter elongatis.

Type: Brazil: Bahia; Salvador, hypophyllous on *Prunus armeniaca*, ii 1959, E. A. D. da Matta (URM 17482/Exs. 12705—holotype).

(Fig. 9B)

Thallus foliicolous, hypophyllous, ± circular, 0.3–0.8 mm in diam., very thin (<15 µm thick) except around the ascocarps where it can be developed all along their height and then reach c. 100 µm, pale greenish grey or pale yellow, without any crystals, felt-like, without prothallus. *Photobiont:* a species in the

Trentepohliaceae, with rounded or angular, yellowish green cells, \pm arranged in distinct rows.

Ascomata numerous, never contiguous, rounded or slightly elongated, 0.1–0.15(–0.2) \times 0.1–0.15 mm, 0.08–0.1 mm high, always simple; disc pale brownish or pale orange, sometimes with a pink hue. *Excipuloid tissue* very thin, hardly distinct, formed of a network of coherent hyphae, laterally covered by the thallus, without any crystals; hypothecium thin (<10 μ m thick), hyaline. *Hamathecium* of branched and anastomosed paraphysoids, c. 1 μ m thick, with a K+ dissolving pale orange pigment in the upper parts; hymenium 70–90 μ m thick. *Asci* broadly ellipsoid, 50–60 \times 18–26 μ m, usually shortly pedicellate, thick-walled, without any visible structure at the apex but inner content (ascoplasm) reacting K/I+ brownish red, 8-spored. *Ascospores* fusiform, 7-septate, 24–33 \times 3.5–4.5 μ m, with a distinct halo c. 1–2 μ m thick.

Pycnidia not found.

Notes: Batista intended to publish this new species in the genus *Stirtonia*; it is indeed a new species but it definitely belongs in *Enterographa* Fée. It is easily distinguished from all other foliicolous species of that genus by its short, rounded to slightly elongated ascocarps. Lücking & Matzer (1996: 114) provide a key for all foliicolous *Enterographa* in which *E. batistae* appears to be quite isolated by its short ascocarps. The four other species (*E. bariletti* Sérus., *E. bella* R. Sant., *E. byssoidea* Lücking and *E. effusa* Vězda) with hyaline hypothecium and 7-septate ascospores have elongated and much longer ascocarps. Moreover, *E. batistae* is the only foliicolous species to grow on the underside of the leaves, but further collections may show that this species may also grow on their upper side.

Enterographa batistae is known only from the type locality.

Fellhanera verrucifera Lücking

Notes: A recently described species from Costa Rica (Lücking 1997d).

Specimen examined: **Brazil:** Amapá: Mazagão velho, iv 1963, Sylvio Barros (URM 45556/Exs.–).

Mazosia bambusae (Vain.) R. Sant.

Notes: For a long time, this taxon was known from S-E Asia, but was recently reported from the Neotropics (Lücking 1992: 117–118). It was not found in the collection filed under this name [Brazil: Maranhão: Alto Turí, xii 1965, Peres (URM 58244/Exs. 28052) is a young, indeterminable *Mazosia* sp.] but typical specimens were detected in several other collections.

Selected specimen examined: **Brazil:** Pernambuco: Recife, Passarinho, iv 1960, Soares da Silva (URM 19040/Exs. 13959).

Porina rubrosphaera R. Sant.

Notes: A rare species, formerly known only from Chile (Santesson 1952: 261–262). The present specimen was correctly identified by Batista and co-workers, but was never published. It is rather typical and represents a considerable range extension for that species.

Specimen examined: Brazil: Rondônia: Paraná, Ferrovia Mamoré-Jaci, i 1963, Xavier Filho (URM 32752/Exs. 18233).

Trichothelium argenteum Lücking & Ferraro

Notes: A recently described species from Central and South America (Lücking & Ferraro 1997).

Specimen examined: Brazil: Acre: Colonia Penal Rio Branco, Perfil I, ii 1961, Vasconcelos (URM 30503/Exs. 17081).

Trichothelium sipmanii Lücking

Notes: A recently described species from Costa Rica (Lücking 1997b). These collections were identified as *Porina perminuta* Vain. or *P. trichothelioides* R. Sant., two species unknown in the Neotropics.

Specimens examined: Brazil: Maranhão: Alto Turí, xii 1966, de Anchieta (URM 64772/Exs. 40216). Rondônia: IATA Guajará-Mirim, ii 1963, Fernandes (URM 39320/Exs. 21523); ibid. (URM 39002/Exs. 19981).

Conclusions

From a total of 38 new genera and 68 new species and varieties of foliicolous lichens validly published by A. C. Batista and his co-workers, in particular W. de A. Cavalcante and L. Xavier Filho, only two genera (three if *Caprettia* is considered as lichenized) and 12 species have finally survived our detailed investigations. This is less than 5% in terms of genera and less than 20% of the species. The Batista collections, which, according to the URM files, comprise a total of 107 genera and 357 species of foliicolous lichens (including unpublished names), are dramatically reduced to a confirmed number of 47 genera and 143 species.

The most distinctive taxon described by Batista *et al.* is without doubt the genus *Lyromma*, with the minute *L. nectandrae* and *L. palmae*, and the very conspicuous *L. dolicebelum*. Also quite spectacular is the species described as *Echinoplaca amapensis*, which will require the description of a new genus when more material is available. Surprisingly, only four species previously or subsequently established by other authors are affected by nomenclatural changes: *Arthonia opegraphina* [= *Arthonia orbignyae*], *Byssoloma aeruginescens* [= *Byssoloma guttiferæ*], *Cryptothecia farkasiae* [= *Amazonomyces farkasiae*] and *Stirtonia sprucei* [= *Amazonomyces sprucei*]. In six cases, viz. *Arthonia lecythidicola*, *Asterothyrium aspidospermatis*, *A. pernambucense*, *Lyromma palmae*, *Phyllobathelium leguminosae*, and *Tricharia couepiae*, the work of the Batista team makes epithets available for undescribed taxa. Only a single species remains in its original sense: *Trichothelium brasiliense*. A further invalidly published species, *Opegrapha duckei*, had to be validated. No less than five validly and three invalidly published generic names are synonyms of *Strigula sensu* Harris (1995), and three generic synonyms apply to *Microtheliopsis*. The family *Phragmopelthecaceae*, with six species and four varieties in the genus *Phragmopeltheca*, is largely based on a single species, viz. *Porina rubentior*.

Despite these figures, it seems inappropriate to completely reject the work of Batista and his group. The high number of synonyms, including invalidly

published names, is mainly due to the application of two taxonomic concepts: (1) separate taxonomic treatment of anamorphic structures as 'form genera', even when the connection with the teleomorph was evident, and (2) the generic boundaries largely based on ascospores, as developed by Zahlbruckner.

The first one is not surprising: Batista was primarily a mycologist dealing with non-lichenized fungi, including their anamorphic stages. Batista & Maia (1965a: 373) stated that: '... the proposal of these new genera as real entities is done, until further work disclose the fact that they constitute metagenetic forms of ascolichens', and in one of the latest papers published by the group, foliicolous genera such as *Aulaxina* and *Strigula* were presented as the teleomorphs of *Microxyphiomyces* and *Pycnociliopsis* (Cavalcante *et al.* 1972a: 7). Such a situation is not unique: Nag Raj (1981) has also thoroughly described the very typical anamorph of *Strigula* in the genus *Discosiella* Syd. & P. Syd. The author was well aware that the foliicolous species he was studying were lichenized and that they represented the anamorph of a well-known lichen genus ('*Discosiella* is here accepted as a lichenized mycobiont, with *Strigula* as its presumptive teleomorph': 2519) but nevertheless described a new species, and makes new combinations, in *Discosiella* without any reference to the provision of the *International Code of Botanical Nomenclature* (ICBN). These provisions regarding the nomenclature of anamorphic stages of fungi are of course very confusing, as a biological decision has to be taken before the use of the so-called dual nomenclature. Indeed, the dual nomenclature is allowed for non-lichenized fungi and it is forbidden for lichenized ones (Art. 59.1). With foliicolous fungi, such a distinction can be extremely difficult to make and may even be irrelevant since such fungi show a much larger spectrum of relationships with algae than the two very simple ones assumed by the ICBN (lichenized or non-lichenized). Hence, we can understand that Batista and his co-workers were using nomenclature in the same way for lichenized and non-lichenized fungi. However, whatever our indulgence towards Batista's use of the ICBN and his practice of using a different name for the anamorphic stage of foliicolous lichens, we strongly believe that achieving a natural system of classification of fungi will only be possible if each taxon has only one name covering all its morphs.

A. C. Batista was obviously following the Zahlbruckner concept of 'ascospore-type genera': handwritten notes of Batista in a copy of Santesson's monograph of foliicolous lichens (1952) housed in the library of the Centro de Ciências Biológicas of the Universidade Federal de Pernambuco (Fig. 3; Table 2) leave no doubt about it. Several of these names were introduced as *nomina nuda* in various publications and we would have had a lot of problems to interpret them without those handwritten notes. It is also interesting to note that Batista was planning to split several genera of foliicolous lichens studied by Santesson (1952) on the basis of a generic concept that Santesson had eloquently condemned in his monograph.

With his great interest for anamorphic stages, Batista was the first to describe and illustrate hyphophores as genuine parts and reproductive structures of some lichens (all of which are now placed in the *Gomphillaceae*). This feature has not been recognized by Santesson (1952), who, however, had

noticed the very typical hyphophores of *Gyalectidium filicinum*, which he planned to describe as the parasymbiotic *Cristidium pallidum* (Santesson 1952: 357). These structures were subsequently 'rediscovered' by Vězda (1973), who was not aware of the publications of Batista and did not mention his work in his first analysis of hyphophores. Batista and his group managed to cover practically all characteristic anamorphs of foliicolous lichens, with the exception of some distinctive types of campylidia, which may, however, be hidden behind herbarium names he never had the time to publish. Nevertheless, even if the work of Batista and co-workers is considered pioneering with regard to such particular structures as hyphophores, their descriptions entirely lack the genuine understanding of systematic relationships and the sense of important taxonomic details that characterize the work of Santesson and Vězda.

Indeed, some taxonomic treatments are quite difficult to understand, such as the triple synonymy of *Microthelopsis*, or the repeated description of new genera referring to similar structures, for example *Aderkomyces*, *Psathyromyces*, and *Sporocybomyces*. This unfortunate situation and the fact that some common and easily distinguished species, for example, *Porina rubentior* or *Strigula nemathora*, were in some cases properly identified and in others completely misidentified or even described as new genera, may be explained by the organization of the working group. It seems that the taxonomic work, as well as co-authorship, was distributed between different persons with different taxonomic concepts and experience. In addition, almost all publications lack taxonomic discussions or references to other taxa described by the same or other authors, as well as literature citations. Apart from a few hints of exchange of material with R. Santesson (UPS, Sweden) or the Herbarium Bogoriense (Indonesia), and although Singer (1969) states that he had visited Recife several times and that Batista had travelled to the US at the National Collections of Fungi in Beltsville and to England at the Commonwealth Mycological Institute (CMI), the group worked in complete isolation. It had very little, if any, scientific exchange with other lichenologists.

It is difficult for us to evaluate the impact of Batista's work on the taxonomy of other groups of foliicolous fungi as no reassessment or survey has been conducted and published. We expect the situation in other fungi described by Batista and co-workers, especially in non-lichenized ascomycetes and fungi imperfecti, to be even more complicated than with foliicolous lichens, especially as the latter represents only c. 20% of Batista's collections. For anyone working with these groups, the Batista herbarium, along with the countless publications, are definitely a primary reference. However considering the work of Batista as a sound base for a preliminary checklist of Brazilian fungi, as suggested by Silva & Minter (1995: 8, 17) is questionable, not only because of the highly uncertain taxonomic background of many names, but also because of the clear focus on foliicolous taxa from the Amazon basin. Although the immense list of names produced by Batista *et al.* might reflect the diversity of foliicolous fungi in the Amazon region, it represents only a minor aspect of the entire diversity of fungi and surely is only a small part of the entire flora of non-lichenized and lichenized fungi of Brazil.

Finally, there is one further point regarding the work of Batista that certainly deserves positive attention: the Instituto de Micologia da Universidade do

Recife (IMUR) housed the first, and so far the only, genuine working group in the Neotropics dedicated entirely to the taxonomy of tropical microfungi and lichens. Since then, no comparable institution has ever appeared, definitely leaving a large gap in the tropical lichenological landscape. Today, the Departamento de Micologia has different research projects, and, apart from the URM herbarium, houses Brazil's largest collection of fungi in culture, but taxonomy of tropical lichens plays only a minor role. This situation may change in the future, since the fruitful contacts established during the present revision of the Batista's collections may well attract URM students to lichen taxonomy. They are definitely encouraged to do so.

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Appendix

List of genera, species, and varieties, published by Batista *et al.* and their taxonomic equivalents. Taxa which entirely or partly remain in their original sense are in **bold face**, those invalidly published are in [brackets]

Aciesia Bat. = *nomen dubium*

Aciesia xylopieae Bat. & J. L. Bezerra = *nomen dubium*

Acleistomyces Bat. = *Sporopodium* Mont.

[*Acleistomyces anibae* Bat. *nom. inval.* = not identified]

Acleistomyces rionegrensis Bat., H. Maia & Peres = *Sporopodium leprieurii* Mont.

Acleistomyces zollerniae Bat. & J. A. Lima = *Sporopodium* cf. *xantholeucum* (Müll. Arg.) Zahlbr.

[*Actinicus* Bat. & J. L. Bezerra *nom. inval.* = not identified]

[*Actinicus turbيناتus* Bat. & J. L. Bezerra *nom. inval.* = not identified]

Actinoteichus Cavalc. & Poroca = *Asterothyrium* Müll. Arg.

Actinoteichus aspidospermatis Peres

= ***Asterothyrium aspidospermatis* (Peres) Lücking & Sérus.**

Actinoteichus maranhensis Cavalc. & Poroca = *Asterothyrium umbilicatum* (Müll. Arg.) Müll. Arg.

Actinoteichus pernambucensis Cavalc.

= ***Asterothyrium pernambucense* (Cavalc.) Lücking & Sérus.**

Aderkomyces Bat. = *Tricharia* Fée

Aderkomyces couepiae Bat.

= ***Tricharia couepiae* (Bat.) Lücking & Sérus.**

[*Ainsworthiomyces* Bat. & J. L. Bezerra *nom. inval.* = not identified]

[*Ainsworthiomyces sterculiae* Bat. & J. L. Bezerra *nom. inval.* = not identified]

Alysia Cavalc. & A. A. Silva = *Vouauxiella* Petr. & Syd.

Alysia pithospora Cavalc. & A. A. Silva

= ***Vouauxiella pithospora* (Cavalc. & A. A. Silva) B. Sutton**

***Amazonomyces* Bat.** = confirmed

Amazonomyces palmae Bat. & Cavac.

= ***Amazonomyces sprucei* (R. Sant.) Lücking, Sérus. & Thor**

Ameropeltomyces Bat. & J. L. Bezerra = *Arthonia* Ach.

Ameropeltomyces lecythidicola Bat. & H. Maia

- =**Arthonia lecythidicola** (Bat. & H. Maia) Lücking & Sérus.
Amoebomyces Bat. & H. Maia = *Strigula* Fr.
Amoebomyces pseudolmediae Bat. & H. Maia = *Strigula nemathora* Mont.
Anconomyces Cavalc. & A. A. Silva = *Lyromma* Bat. & J. L. Bezerra
Anconomyces palmae Cavalc. & A. A. Silva
 = **Lyromma palmae** (Cavalc. & A. A. Silva) Lücking & Sérus.
Arthonia amisolocularis L. Xavier & Taltasse = *Arthonia cyanea* Müll. Arg.
 [*Arthonia orbicularis* Bat. & J. L. Bezerra *nom. inval.*
 = *Byssolecania fumosomigrans* (Müll. Arg.) R. Sant.]
Arthrobotryomyces Bat. & J. L. Bezerra = *nomen dubium*
Arthrobotryomyces amazonensis Bat. & J. L. Bezerra = *nomen dubium*
Asbolisiomyces Bat. & J. L. Bezerra = *nomen dubium*
Asbolisiomyces ingae Bat. & J. L. Bezerra = *nomen dubium*
 [*Aspidaster* Bat. & Cavalc. *nom. inval.* = not identified]
 [*Aspidaster palmicola* Bat. & Cavalc. *nom. inval.* = not identified]
 [*Asterothyrium rondoniense* Bat. & H. Maia *nom. inval.* = *Asterothyrium monosporum* Müll. Arg.]
Astrabomyces Bat. = non-lichenized fungus
Astrabomyces amazonensis Bat. & Cavalc. = non-lichenized fungus
Byrsomyces Cavalc. = *Microtheliopsis* Müll. Arg.
Byrsomyces olivaceus Cavalc. = *Microtheliopsis uleana* Müll. Arg.
Capretia Bat. & H. Maia = ?non-lichenized fungus
Capretia amazonensis Bat. & H. Maia = ?non-lichenized fungus
 [*Catenata* Bat. *nom. inval.* = *Strigula* Fr.]
 [*Catenata antillarum* (Fée) Bat. *nom. inval.* = *Strigula antillarum* (Fée) Müll. Arg.]
 [*Catenata minutispora* Bat. & Peres *nom. inval.* = not identified]
Chaetomonodorus Bat. & H. Maia = *Microtheliopsis* Müll. Arg.
Chaetomonodorus brosimi Bat. & H. Maia = *Microtheliopsis uleana* Müll. Arg.
 [*Conidomyces* Bat. *nom. inval.* = *Arthonia* Ach.]
 [*Conidomyces leptosperma* (Müll. Arg.) Bat. *nom. inval.* = *Arthonia leptosperma* (Müll. Arg.) R. Sant.]
Crocicreomyces Bat. & Peres = *Byssoloma* Trevis.
Crocicreomyces guttiferae Bat. & Peres
 = **Byssoloma guttiferae** (Bat. & Peres) Lücking & Sérus.
 (Syn.: *Byssoloma aeruginescens* Vězda)
Cyrtia Bat. & H. Maia = *Calopadia* Vězda (genus name to be conserved)
Cyrtia licaniae Bat. & H. Maia = *Calopadia subcoerulea* (Zahlbr.) Vězda
 [*Deltomyces* Bat. *nom. inval.* = not identified]
 [*Deltomyces myrtacearum* Bat., J. L. Bezerra & Cavalc. *nom. inval.* = not identified]
 [*Desmidiosporus* Bat. & Cavalc. *nom. inval.* = not identified]
 [*Desmidiosporus concentricus* Bat. & Cavalc. *nom. inval.* = not identified]
Didymaster Bat. & H. Maia = *Strigula* Fr. (Syn.: *Phylloporis* Clem.)
Didymaster myrtaciicola Bat., H. Maia & Castro = *Strigula platypoda* (Müll. Arg.) R. C. Harris
 (= *Phylloporis platypoda* (Müll. Arg.) Vězda)
Didymopycnomycetes Cavalc. & A. A. Silva = *Dimerella* Trevis.
Didymopycnomycetes hyalinus Cavalc. & A. A. Silva = *Dimerella epiphylla* (Müll. Arg.) Malmé
 [*Didymopyrostroma* Bat. & Cavalc. *nom. inval.* = *Lichenopeltella* Höhn.]
 [*Didymopyrostroma xylopieae* Bat. & Cavalc. *nom. inval.* = *Lichenopeltella epiphylla* R. Sant.]
 [*Dimerella hypophylla* Bat. & Cavalc. *nom. inval.* = *Dimerella* sp., non *D. hypophylla* Vězda]
 [*Diplodiomyces* Bat. & Cavalc. *nom. inval.* = not identified]
 [*Diplodiomyces annonacearum* Bat. & Cavalc. *nom. inval.* = not identified]
Dothiomyces Bat. & J. L. Bezerra = *Byssolecania* Vain.
Dothiomyces couepiae Bat. & J. L. Bezerra = *Byssolecania fumosomigrans* (Müll. Arg.) Zahlbr.
Echinoplaca amapensis Bat. & Poroca = confirmed, belonging to an undescribed genus
 [*Enterographa pernambucensis* var. *psychotriae* Bat. & H. Maia *nom. inval.* = not identified]
Kilikiostroma Bat. & J. L. Bezerra = *Strigula* Fr. (Syn.: *Raciborskiella* Höhn.)
Kilikiostroma peresii Bat. & J. L. Bezerra = *Strigula prasina* Müll. Arg. (= *Raciborskiella prasina*
 (Müll. Arg.) R. Sant.)

- Lagenomyces* Cavalc. & A. A. Silva = non-lichenized fungus
Lagenomyces marginalis Cavalc. & A. A. Silva = non-lichenized fungus
 [*Lasioloma heliotropicum* Bat. & M. M. P. Herrera *nom. inval.* = not identified]
 [*Lochomyces* Bat. *nom. inval.* = *Aulaxina* Fée]
 [*Lochomyces quadrangularis* (Stirt.) Bat. *nom. inval.* = *Aulaxina quadrangula* (Stirt.) R. Sant.]
 [*Lopadium applanatum* Bat. & H. Maia *nom. inval.* = *Calopadia subcoerulea* (Zahlbr.) Vězda]
Lopadium couepiae L. Xavier = *Phyllobathelium epiphyllum* (Müll. Arg.) Müll. Arg.
 [*Lopadium didymopanacis* Bat. & Peres *nom. inval.* = *Sporopodium phyllocharis* (Mont.) Massal.]
 [*Lopadium paudalhense* Bat. & Peres *nom. inval.* = *Tapellaria nana* (Fée) R. Sant.]
Lyromma Bat. & H. Maia = confirmed
Lyromma dolicobelum Cavalc. = confirmed
Lyromma nectandrae Bat. & H. Maia = confirmed
 [*Lyrommotheca* Bat., Pavlich & J. L. Bezerra *nom. inval.* = *Lyromma* Bat. & H. Maia]
 [*Lyrommotheca leguminosarum* Bat., Pavlich & J. L. Bezerra *nom. inval.* = *Lyromma nectandrae* Bat. & H. Maia]
Manastrum Cavalc. & A. A. Silva = *Strigula* Fr. (Syn.: *Phylloporis* Clem.)
Manastrum palmae Cavalc. & A. A. Silva = *Strigula multipunctata* (G. Merr. ex R. Sant.) R. C. Harris (= *Phylloporis multipunctata* (G. Merr. ex R. Sant.) Vězda)
Mazosia melanophthalma var. *macrospora* Bat. & Herrera = *Mazosia dispersa* (Hedrick) R. Sant
Mazosia paupercula var. *macrospora* Bat. & H. Maia = *Mazosia praemorsa* (Stirt.) R. Sant.
 [*Mazosia praemorsa* var. *macrocarpa* Bat. & Taltasse *nom. inval.* = *Mazosia longispora* Lücking & Matzer]
 [*Mazosiella* Bat. & A. A. Silva *nom. inval.* = *Mazosia* Massal.]
 [*Mazosiella palmae* Bat. & A. A. Silva *nom. inval.* = *Mazosia pilosa* Kalb & Vězda]
Microxyphiomyces Bat., Valle & Peres = *Tricharia* Fée (*Tricharia* 'melanothrix')
Microxyphiomyces astrocaryifolii Bat., J. L. Bezerra & Cavalc. = *Aulaxina quadrangula* (Stirt.) R. Sant.
Microxyphiomyces capitulatus Bat. & J. L. Bezerra = *Tricharia* aff. *vainioi* R. Sant.
Microxyphiomyces intermedius Bat., J. L. Bezerra & Cavalc. = *Aulaxina minuta* R. Sant.
Microxyphiomyces manaosensis Bat., Valle & Peres = *Tricharia* aff. *vainioi* R. Sant.
Microxyphiomyces minutus Bat. & Cavalc. = *Aulaxina minuta* R. Sant.
 [*Monodorus* Bat. & J. L. Bezerra *nom. inval.* = not identified]
 [*Monodorus hendersonianus* Bat. & J. L. Bezerra *nom. inval.* = not identified]
 [*Mysia* Bat. *nom. inval.* = not identified]
 [*Mysia combreti* Bat. *nom. inval.* = not identified]
 [*Mysia microspora* Bat. & Cavalc. *nom. inval.* = not identified]
Oncosporomyces Bat. = *nomen dubium*
Oncosporomyces bellus Bat. & H. Maia = *nomen dubium*
Opegrapha duckei Bat., J. L. Bezerra & Cavalc. ex Lücking & Sérus. = confirmed and validated
Opegrapha orbignyae H. B. P. Upadhyay
 = **Arthonia orbignyae** (H. B. P. Upadhyay) Matzer, non *A. orbignyae* Bat. *nom. inval.*
Phallomyces Bat. & Valle = *Echinoplaca* Fée
Phallomyces palmae Bat. & Valle = *Echinoplaca* aff. *hymenocarpoides* (Vain.) Lücking
Phragmopelthea L. Xavier = *Porina* Müll. Arg.
Phragmopelthea caseariae L. Xavier = *Porina rubentior* (Stirt.) Müll. Arg.
Phragmopelthea cupaniae L. Xavier = *Porina rubentior* (Stirt.) Müll. Arg.
Phragmopelthea cupaniae var. *caruaruensis* L. Xavier = ?*Porina rubentior* (Stirt.) Müll. Arg.
Phragmopelthea cupaniae var. *minor* L. Xavier = ?*Porina rubentior* (Stirt.) Müll. Arg.
Phragmopelthea hymenaeae L. Xavier = ?*Porina rufula* (Krempelh.) Vain.
Phragmopelthea psidii L. Xavier = ?*Porina octomera* (Müll. Arg.) F. Schill.
Phragmopelthea psychotriae L. Xavier = ?*Porina rubentior* (Stirt.) Müll. Arg.
Phragmopelthea pulcherrima L. Xavier = belongs to *Porina rufula*- or *tetramera*-aggr.
Phragmopelthea pulcherrima var. *octospora* L. Xavier = *Porina rubentior* (Stirt.) Müll. Arg.
Phragmopelthea pulcherrima var. *pentaseptata* L. Xavier = ?*Porina rubentior* (Stirt.) Müll. Arg.
 [*Pleurophomyces* Bat. & Cavalc. *nom. inval.* = not identified]
 [*Pleurophomyces palmicola* Bat. & Cavalc. = not identified]

- Podoxyphiomyces* Bat., Valle & Peres=*nomen dubium*
Podoxyphiomyces manaosensis Bat., Valle & Peres=*nomen dubium*
 [*Porina cammareana* Bat. & J. A. Lima *nom. inval.*=not identified]
 [*Porina cupreola* var. *ciliata* Bat. & Taltasse *nom. inval.*=not identified]
 [*Porina minuta* Bat., J. L. Bezerra & Cavalc. *nom. inval.*=*Porina* aff. *leptosperma* Müll. Arg.]
 [*Porina oenocarp* Bat., Peres & H. Maia *nom. inval.*=*Porina fusca* Lücking]
 [*Porinomyces* Bat. *nom. inval.*=*Strigula* Fr. (Syn.: *Phylloporis* Clem.)]
 [*Porinomyces phyllogena* (Müll. Arg.) Bat. *nom. inval.*=*Strigula phyllogena* (Müll. Arg.) R. C. Harris (= *Phylloporis phyllogena* (Müll. Arg.) Clem.)]
Psathyromyces Bat. & Peres=*Tricharia* Fée (*Tricharia* 'leucothrix')
Psathyromyces rosacearum Bat. & Peres=*Tricharia heterella* (Stirt.) Lücking (Syn.: *Echinoplaca affinis* Kalb & Vězda)
 [*Psathyromyces minutus* Bat. & J. L. Bezerra *nom. inval.*=not identified]
 [*Psorotheciopsis paudalensis* Bat. & Peres *nom. inval.*=*Psorotheciopsis premmeella* (Müll. Arg.) R. Sant.]
Pycnocliospora Bat.=*Strigula* Fr.
Pycnocliospora bellucia Bat. & Lima=*Strigula antillarum* (Fée) Müll. Arg.
Pycnocliospora caesalpiniifolii Bat. & Lima=*Strigula nitidula* Mont.
Pycnocliospora crescentiae Bat. & Taltasse var. *crescentiae*=*Strigula smaragdula* Fr.
Pycnocliospora crescentiae var. *microcarpa* Bat. & Taltasse=*Strigula smaragdula* Fr.
 [*Pycnomycetes* Bat. & J. L. Bezerra *nom. inval.*=non-lichenized fungus]
 [*Pycnomycetes dipteris* Bat. & J. L. Bezerra=non-lichenized fungus]
Pyrionomyces Bat. & H. Maia=*Byssoloma* Trevis.
Pyrionomyces protii Bat. & H. Maia=*Byssoloma subdiscordans* (Nyl.) P. James
Pyrionomyces Cavalc.=non-lichenized fungus
Pyrionomyces maranhensis Cavalc.=non-lichenized fungus
Raciborskiella parva L. Xavier=*Strigula subtilissima* (Fée) Müll. Arg.
 [*Raciborskiella zollerniae* Bat. & J. A. Lima *nom. inval.*=*Strigula microspora* Lücking]
 [*Rhynchostrigula* Bat., J. L. Bezerra & Cavalc. *nom. inval.*=*Strigula* Fr.]
 [*Rhynchostrigula papillata* Bat., J. L. Bezerra & Cavalc. *nom. inval.*=*Strigula* sp.]
 [*Ruthia* Bat. *nom. inval.*=not identified]
 [*Ruthia perseae* Bat. *nom. inval.*=not identified]
 [*Santessonia* Bat. *nom. inval.*=*Arthonia* Ach., non *Santessonia* Hale & Vobis]
 [*Santessonia baetridifolii* Bat. & Cavalc. *nom. inval.*=*Eremothecella calamicola* Syd.]
 [*Santessonia epiphylla* Bat. & Cavalc. *nom. inval.*=non-lichenized fungus]
 [*Santessonia trilocularis* (Müll. Arg.) Bat. *nom. inval.*=*Arthonia trilocularis* Müll. Arg.]
Scutomyces J. L. Bezerra & Cavalc.=*Microtheliopsis* Müll. Arg.
Scutomyces concentricus J. L. Bezerra & Cavalc.=*Microtheliopsis uleana* Müll. Arg.
Septoriomyces Cavalc. & A. A. Silva=*Phyllobathelium* Müll. Arg.
Septoriomyces leguminosae Cavalc. & A. A. Silva
 =**Phyllobathelium leguminosae (Cavalc. & A. A. Silva) Lücking & Sérus.**
 [*Setomyces* Bat. & Peres *nom. inval.*=*Tricharia* Fée (*Tricharia* 'melanothrix')]
 [*Setomyces bellucia* Bat. & Peres *nom. inval.*=*Tricharia* cf. *urceolata* (Müll. Arg.) R. Sant.]
 [*Setomyces concentricus* Bat., J. L. Bezerra & Cavalc. *nom. inval.*=not identified]
 [*Setomyces crescentiae* Bat. & Taltasse *nom. inval.*=*Tricharia* aff. *vainioi* R. Sant.]
 [*Setomyces genipae* Bat. & Peres *nom. inval.*=not identified]
 [*Setomyces giganteae* Bat. & J. L. Bezerra *nom. inval.*=not identified]
 [*Setomyces minutus* Bat. & H. Maia *nom. inval.*=not identified]
 [*Setomyces orchideae* Bat. & Peres *nom. inval.*=*Tricharia* aff. *vainioi* R. Sant.]
 [*Skenia* Bat. & Taltasse *nom. inval.*=not identified]
 [*Skenia bombacis* Bat. & Taltasse *nom. inval.*=not identified]
 [*Spinomyces* Bat. & Peres *nom. inval.*=*Echinoplaca* Fée or *Tricharia* 'leucothrix']
 [*Spinomyces genipae* Bat. & Peres *nom. inval.*=*Echinoplaca* sp. or *Tricharia* aff. *albostrigosa* R. Sant.]
 [*Spinomyces giganteae* Bat. & Pavlich *nom. inval.*=not identified]
 [*Spinomyces ocoteae* Bat. & H. Maia *nom. inval.*=not identified]
Sporocybomyces H. Maia=*Echinoplaca* Fée
Sporocybomyces pulcher H. Maia=*Echinoplaca leucotrichoides* (Fée) R. Sant.

- Stephosia* Bat. & H. Maia = *Phyllophiale* R. Sant.
Stephosia protii Bat. & H. Maia = *Phyllophiale alba* R. Sant.
 [*Strigula hymenaeicola* Bat. & J. L. Bezerra *nom. inval.* = not identified]
Strigula 'orchyospora' R. Sant. = misspelling for *Strigula schizospora* R. Sant.
 [*Strigula stilboideum* Bat. *nom. inval.* = not identified]
Strigula xylopieae Bat. & Cavalc. = *Strigula schizospora* R. Sant.
Tauromyces Cavalc. & A. A. Silva = *Gyalectidium* Müll. Arg.
Tauromyces catenulatus Cavalc. & A. A. Silva = *Gyalectidium filicinum* Müll. Arg.
 [*Tegaster* Bat. & H. Maia *nom. inval.* = not identified]
 [*Tegaster proticola* Bat. & H. Maia *nom. inval.* = not identified]
 [*Tegoa* Bat. *nom. inval.* = *Asterothyrium* Müll. Arg.]
 [*Tegoa tabebuiae* Bat. & Perez *nom. inval.* = *Asterothyrium* cf. *microsporium* R. Sant.]
 [*Tegoa couepiae* Bat. & J. L. Bezerra *nom. inval.* = not identified]
 [*Tegoa eugeniae* Bat. & H. Maia *nom. inval.* = not identified]
 [*Tegoa mappiae* Bat. & Peres *nom. inval.* = *Opegrapha filicina* Mont.]
 [*Tegoa parenchymatica* Bat. & Cavalc. *nom. inval.* = *Anisomeridium foliicola* R. Sant. & Tibell]
Trichothelium amazonense J. L. Bezerra & Cavalc. = *T. bipindense* F. Schill.
Trichothelium brasiliense J. L. Bezerra & L. Xavier = confirmed

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