

Bilimbia (Lichenes) resurrected

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Abstract: *Bilimbia* [Rheede] Rchb. (*Oxalidaceae*) is not validly published, whereby *Bilimbia* De Not. (Lichenes) is not a later homonym and must replace *Myxobilimbia* Hafellner. In an Appendix, the nomenclatural implications are acted upon: *Bilimbia* De Not. is re-instated and the new combination *Bilimbia lobulata* (Sommerf.) Hafellner & Coppins is made.

Key words: botanical nomenclature, lichen genera, *Myxobilimbia*.

Introduction

Bilimbia De Not. as a lichen genus was once widely employed by lichenologists. In the British Isles, for example, it was used by many authors from the flora of Mudd (1861: 187) until the guidebook of Duncan (1959: 47). However, it fell into disuse because of the realization of conflict with an earlier use of the name for a genus of phanerogams, and of the species being subsumed into the ‘super-genus’ *Bacidia* De Not. by Zahlbruckner (1926: 96; 1932: 396). Nomenclatural research into the phanerogamic use of *Bilimbia*, has led to a reassessment of the situation, with nomenclatural implications for a small group of lichens.

Bilimbia [Rheede] Rchb. (1837; *Oxalidaceae*)

Reichenbach (1837: 294) included in the unranked *Oxaleae*—*Caramboleae* of the *Oxalidaceae* (‘*Oxalideae*’) a new genus, *Bilimbia* (Rheede) Rchb., next to the genera *Biophytum* DC. and *Averrhoa* L. In 1841 (Reichenbach 1841a: 203; 1841b: 136) he again noted “*Bilimbia* (Rheede) Rchb.” (although in 1841b: 15 he synonymized

Bilimbi Rheede with *Averrhoa* L., an excusable oversight when one has to deal with so many names). This indirect reference to Van Rheede is obviously to *Bilimbi* Rheede (1682: 51–56, t. 43–46), which in subsequent literature [e.g. Nicolson *et al.* (1988: 204)] has been considered to be *Averrhoa bilimbi* L. (*Oxalidaceae*).

Averrhoa bilimbi, the Bilimbing or Cucumber tree, is a fruit tree of uncertain origin, but in view of its relationships most likely SE Asian, probably W Malesian, and not S American, as sometimes is said [e.g. Hooker (1874: 439), Merrill (1904: 28) and Shaw (1973: 112)].

Van Rheede gave a two-page description with 4 folio pages for two plates, t. 45 showing habit, flowering branch, an entire and a transversally cut fruit, t. 46 a fruiting stem and flowering branch, flowers with and without petals, an entire and transversely sectioned fruit, and entire seeds, one transversely dissected. All in all by themselves quite sufficient to fulfill the requirement of the ICBN of an “illustration with analysis” (Art. 41. Note 2, 42.3, and 44.1).

The question now is whether Reichenbach’s indirect reference constitutes validation of the generic name *Bilimbia*. It is only rarely mentioned in later phanerogamic literature. It has, for instance, not been included in the *Index kewensis*, and I was therefore not aware of it in my previous treatments of

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the *Oxalidaceae* (Veldkamp 1970; 1972). Lichenological circles, however, knew of its existence and there the name was considered to be validly published causing *Bilimbia* De Not. (1846) to be a later homonym [e.g. Opiz (1857), who expressly proposed *Weitenwebera* as a substitute].

Both uses of *Bilimbia* have been included in the hard copy version of the *Index nominum genericorum* ('ING'; Farr *et al.* 1979: 203). The Reichenbach one was considered to be validly published, but this opinion has been reversed in the version currently available on the Web (Farr & Zijlstra, March 2004).

Discussion

Are generic names solely based on a reference to Van Rheede's text and plates validly published? Several previous authorities agree that they are not, for example Rickett & Stafleu (1959, 1960), Manitz (1968), Nicolson *et al.* (1988: 197). For validation Article 41.2 requires "a reference (direct or indirect) to a previously and effectively published description or diagnosis of a *genus or subdivision of a genus*" (italics mine). In this case there is an indirect reference, and there has never been any doubt as to what. Van Rheede's *Hortus malabaricus* surely is an effective publication. However, in the sense of post-Linnean concepts (and that of the ICBN) Van Rheede did not distinguish between genera and species.

What he did do was to describe "plants" that somehow struck him for being conspicuous or of some kind of use. These he arranged under their vernacular Malabar (S Indian) names, and when he talked about "species" he apparently meant "plants" that were similar but somehow differed. These range from cultivars to what we would call 'species' today and by chance some of his "plants" even belong to what we at present regard as different genera in different families. Today we still find this use of 'species' in horticultural publications, where 'species' are actually cultivars or even clones (think of the numerous Dutch tulips).

Sometimes a distinction is made between 'species' and 'botanical species', i.e. cultivated forms against the 'true' species of botanical lore.

In the case of *Bilimbia*, Van Rheede gave a description, but did not specify any 'generic' characters, although he noted similarities in habit, leaf, etc., to the preceding 'plant': *Tamara-tonga seu Carambolas*, the *Averrhoa carambola* L. of post-Linnaean literature. In his account he remarked on the presence of two "species" in it: one with sweeter fruits than the other. As with any species cultivated for its produce, *A. bilimbi* has a number of cultivars with fruits of different tastes. Obviously Van Rheede was speaking of such cultivars.

He (or J. Commelin?, who edited the work) thought that the next "plant", *Neli-pouli*, was even more similar, hence the addition *seu Bilimbi altera minor*, again with two "species", the one fruiting, the other never. Today the first is identified with *Phyllanthus acidus* (L.) Skeels (*Euphorbiaceae*). What the sterile form represents is not clear. It cannot be the sexually male form, as the species is monoecious. Possibly because of these similarities Linnaeus (1753: 428) included all three in *Averrhoa* L. and never realized that his *Cicca disticha* L. was the same thing.

In various discussions about the present case it was argued that the presence of "an illustration with analysis" as mentioned by Art. 41. Note 2 would validate *Bilimbia* [Rheede] Rchb. However, on closer inspection this note refers only to the exceptional case of Art. 42.3: "a single figure showing details aiding identification, is acceptable for the purpose of *this article* (italics mine)" which deals with a *descriptio generico-specifica*. Note that Art. 42.1 specifically states "Reference to an earlier description or diagnosis is not acceptable in place of a *descriptio generico-specifica*". This is exactly what Reichenbach did, so Art. 42 does not apply.

If this were not convincing enough, Art. 42.2 cannot be invoked as there it is required that "a single binomial is validly published", and Reichenbach had none. That Linnaeus

in 1753 included the reference to Van Rheede under *Averrhoa bilimbi* and so Reichenbach would have referred indirectly to a binomial seems a notion too far fetched. Article 33.2 deals with *new* combinations and so does not apply here either. In any case in an argument in favour of this Reichenbach would have referred to an 'old combination'.

Article 42.3 requires that an illustration with analysis is presented, Reichenbach did not do so, but only referred to one. Consequently, *Bilimbia* [Rheede] Rchb. was not validly published under either Art. 41 or 42.

***Bilimbia* De Not. (1846; Lichenes)**

This conclusion brings us to a second consideration: De Notaris (1846: 190) used the name *Bilimbia* for a lichen genus, in which he included *B. hexamera* De Not. and *B. tetramera* De Not. He did not explain the derivation of the generic name.

If *Bilimbia* [Rheede] Rchb. was to be regarded as validly published, *Bilimbia* De Not. would be a later homonym, but as the first is invalidly published, the second one is legitimate. Fink (1910: 85) lectotypified it with *Bilimbia hexamera* De Not., but this choice could be overturned, as he stated (p. 2) that he designated the types of the genera according to the 'first species' rule. He and this questionable method are specifically mentioned in Art. 10. Ex. 6. ("may be superseded", italics mine). The current version (Mar 2004) on the Web of the ING states "typus non designatus". There seems to be no reason not to accept this lectotypification, but in case of doubt, Hafellner (1984: 310) designated the same one again.

Weitenwebera Opiz (1857: 235) was explicitly intended to replace *Bilimbia* De Not., but this is a later homonym of his own *Weitenwebera* Opiz [in Berchtold & Opiz (1839: 9)]. As he considered this to be a synonym of *Marianthemum* Schrank (1822: 34) now included in *Campanula* L. (*Campanulaceae*), he apparently thought the name had become available again.

Weitenweber, editor of the journal, was not too happy about this, as he stated in a footnote ("erlaube ich mir . . . vom principiellen Standpunkte aus meine Besorgniss dahin auszusprechen, dass diese projectirte Vermehrung der ohnedies masslosen botanischen Synonymik kaum den erwarteten Eingang im Pflanzensysteme finden dürfte."). And indeed, as he feared, under the present rules the second attempt in eponymy is illegitimate.

Mycobilimbia Rehm (1889) is a heterotypic genus as none of the three species Rehm included in it appear to have any nomenclatural connection with those described by De Notaris (which apparently are not accounted for in Rehm's work). The name has been lectotypified by Clements & Shear (1931: 315) and again by Hafellner (1984) with *Myc. obscurata* (Sommerf.) Rehm, a synonym of *Myc. tetramera* (De Not.) Vitik. *et al.* [in Hafellner & Türk (2001: 154)]. The authorship is sometimes attributed to Clauzade *et al.* (1989: 32), but the combination is invalidly published there (no full and direct reference to the basionym) and to Brunnbauer, who did not publish it (W. Brunnbauer, *in litt.*). According to Kirk *et al.* (2001: 338) *Mycobilimbia* comprises *c.* 12 species, but this number will be lower if the '*Myxobilimbia*' species [see below] and the '*Lecidea*' *hypnorum* group are excluded. Furthermore, the relationship of the type species, *Myc. tetramera*, with *Biatora* Fr. (1817) requires further investigation (B. J. Coppins, *in litt.*).

Hafellner (1984) regarded the lectotype of *Bilimbia*, *B. hexamera*, as a synonym of *Myc. sabuletorum* (Schreb.) Hafellner.

Probilimbia was only casually mentioned by Vainio (1899: 318; "Wainio") "... *L(ecidea) syntrophica* . . . ad genus *Probilimbiae* Wain. (*Mycobilimbiae* Rehm) pertinens . . .", and so, if considered valid, is a superfluous name for *Mycobilimbia*. The name does not seem to have been used subsequently.

Hafellner & Türk (2001) distinguished the genus *Myxobilimbia*, typified by *M. lobulata* (Sommerf.) Hafellner. They did not refer to *B. hexamera* De Not., although this

is “a later synonym of *Lichen sabuletorum* Schreb., which is now . . . *Myx. sabuletorum* (Schreb.) Hafellner” (J. Hafellner, *in litt.*). However, this synonymy was not stated in their paper and so does not make the name superfluous.

Nevertheless, *Bilimbia* is the oldest name for *Myxobilimbia*, and the taxa Hafellner & Türk (2001) accepted in the latter should be transferred to the former, with new combinations where necessary. As an alternative, the formal rejection of *Bilimbia* against *Myxobilimbia* could be proposed. Given that *Myxobilimbia* is such a young name, such a proposal is unlikely to find favour with the Committee for Fungi. As a result, the former course of action has been taken in the Appendix to this paper, prepared by Drs J. Hafellner and B. J. Coppins.

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Appendix

J. Hafellner & B. J. Coppins

Veldkamp has shown that, contrary to the previous understanding of lichenologists, a phanerogamous genus *Bilimbia* Rchb. (1837) has never been validly published. Therefore, *Bilimbia* De Not. (1846) (lectotype: *B. hexamera* De Not., see below) is not a later homonym but a valid generic name for a group of lichenized fungi, commonly known as the *Bacidia sabuletorum* group. As the generic rank for this group of lichens is now generally accepted, *Bilimbia* De Not. is the correct generic name and has to be taken up, thus making *Myxobilimbia* Hafellner a younger synonym.

Bilimbia De Not.

Giorn. Bot. Ital., ann. 2, 1 (1): 190 (1846); lectotype [selected by Fink (1910: 85), and Hafellner (1984:

310)]: *Bilimbia hexamera* De Not. [= *Bilimbia sabuletorum* (Schreb.) Arnold].

Myxobilimbia Hafellner, in Hafellner & Türk, *Stappia* 76: 154 (2001); type: *Myxobilimbia lobulata* (Sommerf.) Hafellner (*Lecidea lobulata* Sommerf.).

The correct names of the European *Bilimbia* species are as follows:

Bilimbia accedens Arnold

Flora 45: 391 (1862).

Bilimbia lobulata (Sommerf.) Hafellner & Coppins comb. nov.

Basionym: *Lecidea lobulata* Sommerf., *Kongel. Norske Vidensk. Selsk. Skr.* 2(2): 54 (1827).

Bilimbia microcarpa (Th. Fr.) Th. Fr.

Bot. Not. 1863: 8 (1863).

Bilimbia sabuletorum (Schreb.) Arnold

Verh. Zool.-Bot. Ges. Wien 19: 637 (1869).

Bilimbia hexamera De Not., *Giorn. Bot. Ital.*, ann. 2, 1 (1): 191 (1846); type: Switzerland, “*Sylvæ bernenses*”, Schaerer *Lich. Helv. Exs.* no 209 [“*Lecidea sphaeroides* η. muscorum Schaer.”] (E—syntype!).

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