

NOMENCLATURE COMMUNICATIONS

(3026) Proposal to conserve the name *Cyathea patens* H. Karst. against *Cyathea patens* hort. ex Houlston & T. Moore (*Cyatheaceae*)Marcus Lehnert,^{1,2} Christopher Hoess³ & Michael Sundue⁴¹ Herbarium (HAL), Martin-Luther-Universität Halle-Wittenberg, Neuwerk 21, 06108 Halle (Saale), Germany² BIOB Abt. I - Biodiversität der Pflanzen, Rheinische Friedrich-Wilhelms-Universität, Meckenheimer Allee 170, 53115 Bonn, Germany³ Delaware Technical Community College, 400 Stanton-Christiana Road, Newark, Delaware 19713, U.S.A.⁴ Royal Botanic Garden Edinburgh, 20A Inverleith Row, Edinburgh, Scotland, EH3 5LR United KingdomAddress for correspondence: Marcus Lehnert, marcus.lehnert@botanik.uni-halle.deDOI <https://doi.org/10.1002/tax.13187>

- (3026) *Cyathea patens* H. Karst., Fl. Columb. 2: 173, t. 191. 24 Aug 1869, nom. cons. prop.

Lectotypus (hic designatus): Colombia, Bogotá, “habitat montem Bogotensem “Guadalupe” altitudine 2900 mtr.”, [ca. 4°35'17"N 74°03'38"W] Karsten (LE barcode LE 00008063 [image!]; isotypi: B barcode B 20 0131346!, LE barcode LE 00008064 [image!]).

- (H) *Cyathea patens* hort. ex Houlston & T. Moore in Gard. Mag. Bot. 3: 330. 1851, nom. rej. prop.
Typus: non designatus.

In the last attempted complete revision of the genus *Cyathea* for the Neotropics, R.M. Tryon (in Contr. Gray Herb. 206: 19–101. 1976) accepted neither of these homonyms as names of valid species. He listed the earlier *C. patens* hort. ex Houlston & T. Moore (in Gard. Mag. Bot. 3: 330. 1851) as a “*nom. nud.*” under the excluded names, judging that “the meager description is not sufficient to effect valid publication” (Tryon, l.c.: 91). Houlston and Moore published *C. patens* as a fourth species in line after short descriptions of *C. arborea* Sm., *C. elegans* Heward and *C. dealbata* Sw., reporting that it came from Jamaica and giving details on stature and size of the plant, the leaf dissection and the armament of its axes, as well as the colors of the respective parts. The scaly indument, which is essential for tree fern taxonomy, however, is not described; neither is a specific collection mentioned nor reference to an earlier published iconography made. With this information alone, *C. patens* hort. ex Houlston & T. Moore cannot be aligned with a specific Jamaican tree fern because *C. caracasana* (Klotzsch) Domin, *C. dissoluta* Baker ex Jenman, *C. furfuracea* Baker, *C. gracilis* Griseb., *C. harrisii* Maxon, and *Alsophila grevilleana* (Mart.) D.S. Conant would all match these specifications. Nevertheless, despite Tryon’s opinion, the name is in fact validly published according to Art. 38.1(a) of the *ICN* (Turland & al. in Regnum Veg. 159. 2018). Consequently, although the description of *C. patens* hort. ex Houlston & T. Moore can be compared with the other species’ descriptions by the reader, the species are not directly juxtaposed by the authors in a way that would provide a proper diagnosis. Unless original material can be found, the name will remain *incertae sedis*. To be clear, lack of a type does not invalidate the name, as the species was published before 1958 (Art. 40.1). The only argument against the validity of the name could be made through Art. 36.1, i.e., that the authors did not specifically accept

the name in the original publication and considered it to be a provisional name. However, Houlston and Moore report the species as being accepted by gardeners and horticulturists (“hortulani”), which we believe supports the notion that they validly published a new species.

During our revision of tree ferns (e.g., Lehnert in Bot. J. Linn. Soc. 158: 621–649. 2008; Lehnert in Stuttgarter Beitr. Naturk., A., N.S., 2: 409–445. 2009; Lehnert & al. in Amer. Fern J. 109: 115. 2017), we never came across material that could be considered original material of *Cyathea patens* hort. ex Houlston & T. Moore. One sheet representing *Alsophila grevilleana* (syn. *C. elegans*) from the herbarium H. Witte at Naturalis Biodiversity Center (www.naturalis.nl) in Leiden (L.1280747) is labelled “*Cyathea patens* Hort.? Jamaica” without date. The question mark behind the name and the fact that Witte started his work as scientific gardener at the Leiden botanical garden in 1855 (i.e., four years after the publication by Houlston and Moore in 1851) makes it more likely that this plant was sampled and tentatively identified after the name was published.

The remaining few sheets bearing this name were material of *Cyathea patens* H. Karst. where the authorship had been incorrectly changed to the older name. The younger homonym *C. patens* H. Karst. was not frequently used because Tryon (l.c.) treated it as one of the many synonyms under his broadly defined *C. caracasana*. Several of these synonymized names have been recognized as distinct species in recent years, including *C. patens* H. Karst. (Lehnert, l.c. 2009: 430).

In contrast to the earlier homonym, Karsten (Fl. Columb. 2: 173, t. 191. 1869) provided a diagnosis, an exhaustive description in Latin with a German translation, an exact type locality, and an exquisite detailed colorized engraving showing the habit of the plant and all the critical characters of the leaf (<https://www.biodiversitylibrary.org/page/4747350>). Until recently, only one authentic specimen was known to us, consisting of a single pinna, at B (Tryon, l.c.: 77; Lehnert, l.c. 2009: 430), but there are also two specimens at LE (available at [https://en.herbariumle.ru/?t=occ&s=Cyathea+patens&f=\[all\]](https://en.herbariumle.ru/?t=occ&s=Cyathea+patens&f=[all])). This makes designation of a lectotype necessary, which we fulfil here. The lectotype (LE barcode LE 00008063, labelled as “Typus”) has the locality written verbatim as in the publication, in Karsten’s handwriting on paper embossed with his name; like the isolectotype (LE barcode LE 00008064; labeled as “Isotypus”), it consists of pinna, leaf apex, part of petioles and croziers, thereby providing all necessary characters needed

for secure tree fern identification. The pinna of the LE isotype is also one of the pinnae depicted in the original publication (Karsten, l.c.: t. 191). Regarding the scaly indument on the leaf blades, the material at B is much denser and more colorful than the LE material. However, this variation is typical of the species, as we know from experience in the field, and can differ in this way between an old and a fresh leaf of the same plant. We have observed this species in southern Ecuador as well as in northern Colombia, near Medellín, in pristine elfin forests; the type locality near Bogotá was also searched but the vegetation there was completely altered to a secondary forest of acacias, pines and bamboo, and the species is not found there anymore. We can confirm that *C. patens* H. Karst. has the exact same appearance in nature as drawn in the *Florae Columbiae* (Karsten, l.c.), emerging with a flat crown of rather short leaves on top of a strikingly slender trunk between tall shrubs and dwarfed trees. As its presence seems to correlate with the degree of disturbance of its fragile habitat, it may serve as an easily addressable indicator species in ecosystem quality surveys. The easiest way to reintroduce this species into public and scientific awareness would be to choose a replacement name, as we have done multiple times before (e.g., Lehnert & al., l.c.: 115). Here we give our reasons why we want to avoid this in the present case.

There are already more than 1500 entries on IPNI (www.ipni.org) for epithets in the genus *Cyathea*, which only has ca. 300 acceptable

described species (personal account) under the current genus concept (PPG I in J. Syst. Evol. 54: 563–603. 2016). The rest are homonyms, heterotypic synonyms or basionyms of taxa that belong to other genera. Yet there are still new taxa of true *Cyathea* to be described, and most simple descriptive epithets have already been used. *Cyathea patens* H. Karst. is the rare case when a more than 150-year-old species description meets today's standards and requirements of the *ICN*. It is also a concise, easy to remember and very descriptive name, which makes it suitable for popularisation in public awareness and conservation campaigns. To us, it seems irrational to sacrifice this name for an earlier homonym that will only end up among the *incertae sedis* by simply adhering to the principle of priority. Even if authentic material of *C. patens* hort. ex Houlston & T. Moore is found in the future and can be identified unambiguously, the name will most certainly end up as a heterotypic synonym under one of the already established species (Proctor, *Ferns Jamaica*: 143. 1985); among these, one of three (i.e., either *C. dissoluta*, *C. furfuracea*, or *C. harrisii*) could succumb to the priority of *C. patens* hort. ex Houlston & T. Moore.

For *Cyathea patens* H. Karst., on the other hand, there is no heterotypic alternative available. Replacement names are an easy solution in such cases, but are fully detached from the original description and obfuscate the nomenclatural history. Accepting our proposal would not simply satisfy our obvious preference, but foremost serve the original purpose of the *ICN*: nomenclatural stability and clarity.