

RECONSIDERATION OF *SELAGINELLA ORNITHOPODIOIDES* AND  
*S. INTEGERRIMA* (SELAGINELLACEAE)

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## ABSTRACT

*Selaginella ornithopodioides* (L.) Spring and *S. integerrima* (Hook. & Grev.) Spring established by Trimen (1887) and Alston (1945) as conspecific, following an unacceptable lectotypification of *Lycopodium ornithopodioides* L., are established as correct names. Taxonomic and nomenclatural considerations are reviewed.

Alston (1945: 212, 222), following Trimen (1887: 152) but without any comment, treated *Selaginella ornithopodioides* (L.) Spring based on *Lycopodium ornithopodioides* L. (1753) and *S. integerrima* (Hook. & Grev.) Spring based on *L. integerrimum* Hook. & Grev. (1831), as conspecific. I consider, such a treatment is wrong as it is in conflict with the Article 8 of ICBN (1978), which lays down specific procedure for lecto-typification of taxonomic categories. The nomenclatural and taxonomic questions involved, as I see it, are discussed below.

Linnaeus (1753: 1105) briefly described *Lycopodium ornithopodioides* L. as having (lateral) leaves bifarious, patent; superficial (median) leaves distichous; stems repent and spike (strobili) sessile. He cited the type locality as "Habitat in India" and based his species mainly on:

1. *Lycopodium procumbens repens*, ramis subspicatis, foliolis distichis alternis ovatis appendiculatis. *Fl. Zeyl.* 388.

2. *Lycopodioides repens*, pinnulis ornithopodi. *Dill. musc.* 464. t. 66, f. I B.

It is generally accepted that Linnaeus based his description of plants in *Flora Zeylanica* (1747) on Hermann's plants collected from Ceylon, now housed in the British

Museum (Nat. Hist.), London (BM) and that Dillenius' tab. 66, f. I B (1741) is drawn from a plant collected from China and preserved in OXF.

Spring (1838, 1843, 1850), in making the combination *S. ornithopodioides* (L.) Spring, obviously referred to the plant from China when he cited Dillenius, *Hist. Musc.* t. 66, f. I B and also because he treated *L. ornithopodioides* sensu Hook. & Grev. (1831), non L. (1753) as a synonym of *S. integerrima* (Hook. & Grev.) Spring, based on plants from Ceylon (Sri Lanka), not from Courtallam (see Alston 1945). He emphasised the taxonomic differences between the two species when he included *S. ornithopodioides* in his Section  $\beta\beta$ . "Foliis caulinis homomorphis" and *S. integerrima* in his section  $\alpha\alpha$ . "Foliis undique dimorphis"

Baker (1883: 46, 1884: 88 and 1887: 38) followed Spring and excluded Hermann's Ceylon plant (BM) from *S. ornithopodioides* (L.) Spring to which he unequivocally fixed Dillenius: 464, t. 66, f. I B (1741) and identified with it a specimen "Khasia Hills, Hooker fil. & Thomson" (K). Simultaneously, he identified Hermann's Ceylon plant with *S. integerrima* (Hook. & Grev.) Spring.

Trimen (1887: 152) set aside (what we may now call) the above lectotypification of *L. ornithopodioides* L., treated *S. orni-*

*thopodioides* (L.) Spring and *S. integerrima* (Hook. & Grev.) Spring as conspecific and remarked:

"Hermann's plant is the very common little species in the south of Ceylon, what Baker (*Jour. Bot.* 22 : 88) refers to *S. integerrima* Spring, adding that this is the *L. ornithopodioides* of the Linnaean Herbarium. I think, it should keep this latter specific name, though Linnaeus has confused his species by quoting for it the figure in Dillenius' *Hist. Musc.*, which that writer considered to be Hermann's Ceylon plant, but which represents a different species (As Sir J. E. Smith determined by consulting Dillenius' own specimen at Oxford). Baker (*l.c.* XXI: 46), however, retains the name *S. ornithopodioides* for the latter species as was done by Spring also".

Although *Lycopodium ornithopodioides* L. comprised two discordant elements, Linnaeus (1753) in choosing the trivial (specific) epithet, might be presumed to have been influenced by the "ornithopodii" characteristic of the pinnules of the plant from China, rather than by the Hermann's plant from Ceylon. Therefore, the selection, (what we may, in modern terminology, call lectotypification), of Dillenius: 464, tab. 66, fig. I B to fix the name *L. ornithopodioides* L., by Spring and subsequently, unequivocally by Baker, was not arbitrary but appropriate and must be accepted as final under Article 8 of ICBN (1978).

As against this lectotypification, there is a third contender, not the Dillenian, nor the Hermann material. There is a specimen in the Linnaean Herbarium (no. 1257.33 of the Savage Catalogue) which is apparently what Trimen (1887) was referring to when he spoke of "... this is the *L. ornithopodioides* of the Linnaean Herbarium." This specimen is believed by some botanists to represent the logical lectotype and the basis for the original phrase name published by Linnaeus in 1753. If Linnaeus did not have new material, he probably would have maintained his phrase name of *Fl. Zeyl.*

However, there is published evidence that Linnaeus did not have this specimen before 1755 and, unless proven otherwise, this specimen cannot be the lectotype. Jackson (*Index Linnaean Herbarium*, 1912) notes

that this specimen was first enumerated as present in the Linnaean Herbarium in 1767 and did not appear in the enumeration of 1755 (Dan H. Nicolson, in *litt.* 6 June, 1978).

Consequently, I hold the view that *S. ornithopodioides* (L.) Spring and *S. integerrima* (Hook. & Grev.) Spring are two distinct allopatric species.

Baker (1887) included both the species in his series 1 *Decumbentes* comprising dwarf species with the main stems decumbent and rhizophores extending to the upper nodes. The two species may be distinguished from each other as follows: *S. ornithopodioides* (L.) Spring, included in his Group 1. *Microphyllae*, represents persistent, densely matted plants with slender stems, 5-7 cm long; cauline leaves homomorphous; lateral leaves ovate-lanceolate, moderately firm in texture distinctly ciliated on the posterior side only, acute; strobili very short; sporophylls ovate. *S. integerrima* (Hook. & Grev.) Spring, on the other hand included in his Group 4 *Apodiae*, represents fugacious annuals of the rainy season, with very flaccid stems, 15 to 30 cm long; leaves dimorphic throughout; lateral leaves ovate-cordate to oblong, membranous, quite entire, obtuse; strobili 1.25 to 2.5 cm long, sporophylls ovate-lanceolate.

The nomenclatural citations may be set out as follows:

1. ***Selaginella ornithopodioides*** (L.) Spring, *Flora* 21: 216 (1838), *Bull. Acad. Brux.* 10: 140 (1843) & *Monogr. Lycopod.* 2: 93 (1850); Baker, *Journ. Bot.* 21: 46 (1883) & *Handb. Fern Allies*: 38 (1887).

*Lycopodium ornithopodioides* L. *Sp. Pl.* 2: 1105 (1753), p.p.

Lectotype. China: Dillenius, *Hist. Musc.*: 464, t. 66, fig. I B (Iconotype) (Fig. 1).

Although Baker (*l.c.*) identified *Hooker fil.* & *Thomson* from Khasia Hills (K) with this species, it is not cited by Alston (1945: 212) under any of the ten species having "leaves uniform at base of main stem".

LXVI.

Lycopodioides

I.B.

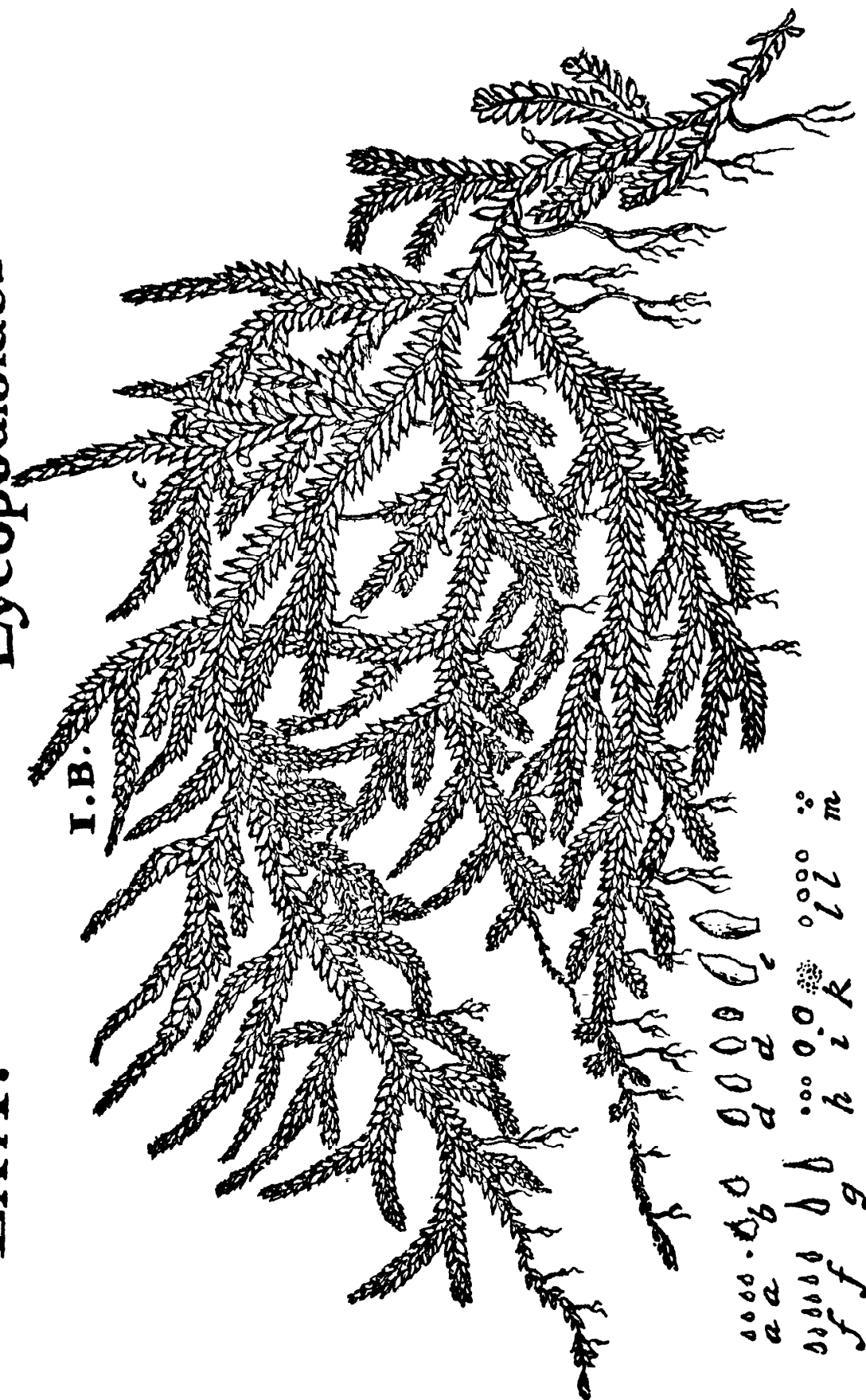
Fig. 1 : Iconotype of *Selaginella ornithopodioides* (L.) Spring



Plate 1. A photograph of a herbarium specimen of *S. integririma* (Hook. & Grev.) Spring

Again, Alston (l.c.: 230-231) does not refer to Dillenius t. 66, fig. I B, he includes only tab. 66, f. 8 (1741) & tab. 65, f. 6 (1741) under "Species dubiae et excludendae".

*Distribution*: INDIA (Meghalaya) and CHINA.

2. *S. integerrima* (Hook. & Grev.) Spring, Bull. Acad. Brux. 10: 138 (1843) & Mongr. Lycopod. 2: 79 (1850); Baker, Journ. Bot. 21: 46 (1883) & l.c. 22: 88 (1884) & Handb. Fern Allies: 66 (1887).

*Lycopodium integerrimum* Hook. & Grev., Hook. Bot. Misc. 2: 396 (1831).

*Type*: Sri Lanka (Ceylon), Colombo, Klein s.n., Herb. Wight Prop. (K); (in error, Courtallam Dr. Wight E). (see Alston 1945: 222).

*S. ornithopodioides* sensu Trimen, Jour. Linn. Soc. 24: 152 (1887); *sensu* Alston, Proc. Inst. Sci. India 11: 222 (1945), *non* (L.) Spring (1838).

*Lycopodium ornithopodioides* L., Sp. Pl. 1: 1105. 1753, p.p. quoad spec. Hermann (BM), excludo. lectotype Dillenius t. 66, fig. I B; Hook. & Grev. in Hook. Bot. Misc. 3: 107. 1833; *non* Swartz (1806); nec. Willd. (1810).

*S. denudata* (Willd.) Spring  $\beta$  *indiae-orientalis* Spring, Flora 21: 213 (1838).

*Syntypes*: Insulae Ceylana, Klein s.n.; (?) S. India, Courtallam, Wight 20.

*S. concinna* sensu Ferguson, Ceylon Ferns: 64 (1880), *non* (Sw.) Spring (1838).

*Specimens referred to this species*: Ceylon, Thwaites C. P. 3280 (CAL!) (Plate I); Koenig s.n. (BM); Walker 34; Gardner 1184.

*Distribution*: (?) INDIA (Tamil Nadu) and SRI LANKA.

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