

THE LECTOTYPIFICATION OF *FOSSOMBRONIA CRISPA*

In the protologue of *F. crisper* Nees in Gottsche *et al.* (1844–1847), the second species of the genus to be described from southern Africa, the following is stated: 'foliis subhorizontalibus planiusculis subrotundo-quadratis truncatis integerrimis subrepandis' (leaves with margins absolutely entire, very slightly uneven and wavy), and in the commentary it is noted that, 'differt ab adfinibus foliis nec lobatis neque dentatis' (differs from the allies in the leaves being neither lobed nor dentate). The following synonyms are given: *Jungermannia crisper* Spreng. in sched. Herb. Zeyher, and *J. pusilla* Lehm. Hep. Cap. Ecklon in Linn. 4: 369, No. 42. [presumably in the sense of Lehmann, since Linnaeus (1753) is the author of this taxon]. The locality is stated to be 'In Promontorio Bonae Spei, locis umbrosis ad latus orientale montis Tabularis et in locis humidis prope hortos

eiusdem montis'. It is also noted that 'Octobri cum fructibus (Ecklon in Hb. Zeyher, N. et L.)'. This Ecklon holotype in Hb. Zeyher has not been traced. In the absence of a holotype, Article 9.9 of the ICBN (Greuter *et al.* 1994) permits the designation of a lectotype chosen from the original material. I propose to do this in the following paragraph.

Acting on the advice of Dr R. Grolle, who kindly refereed an earlier draft of this note, the *F. crisper* specimens seen by Nees were requested on loan from STR and graciously sent by the curator. Of the five specimens sent, only one (numbered 3 in pencil) has spores; the ornamentation is incompletely reticulate (Figure 4A, B), and the margins of the leaves are entire. This specimen (Figure 5) is here selected as the lectotype of *F. crisper*.

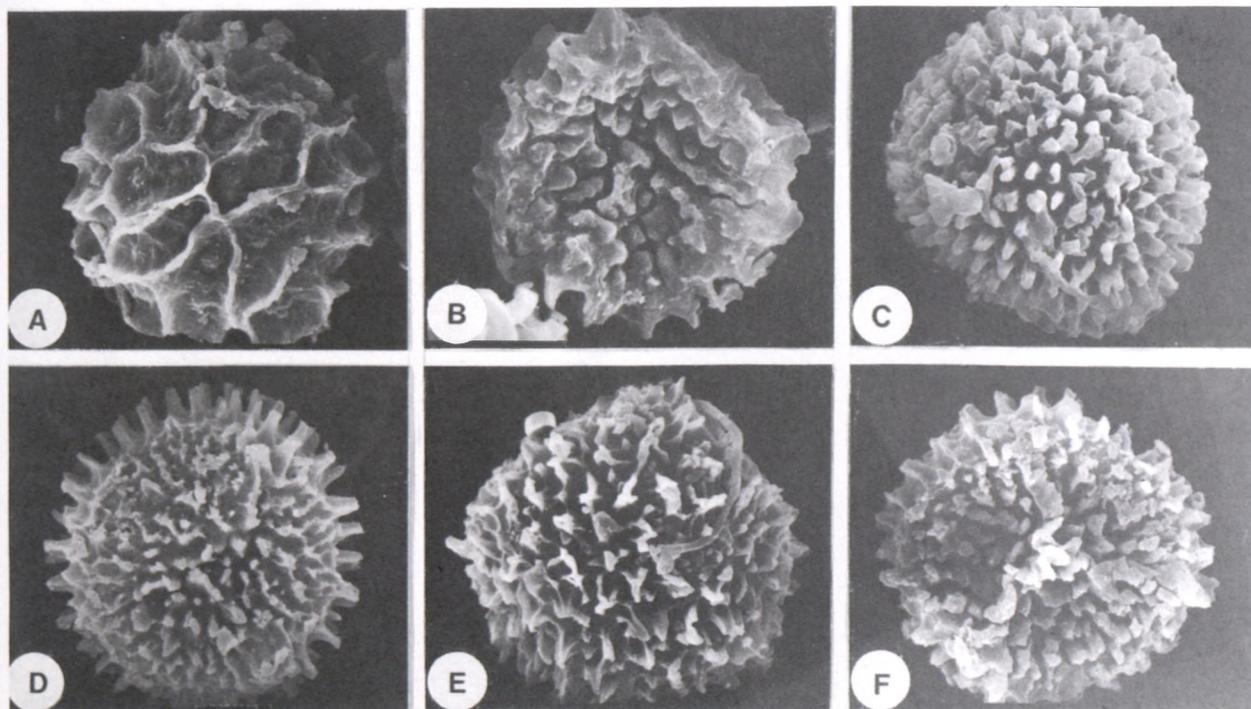


FIGURE 4.—*Fossombronia* spores. *F. crisper*: A, distal face; B, proximal face. *F. leucoantha* (non *F. crisper*): C, distal face; D, proximal face. *F. leucoantha* (lectotype in S): E, distal face; F, proximal face. A, B, Zeyher (STR), lectotype; C, D, Ecklon 64 (BM); E, F, Ecklon L.29 (S), lectotype. A, $\times 906$; B, $\times 940$; C, $\times 713$; D, $\times 701$; E, $\times 975$; F, $\times 848$.

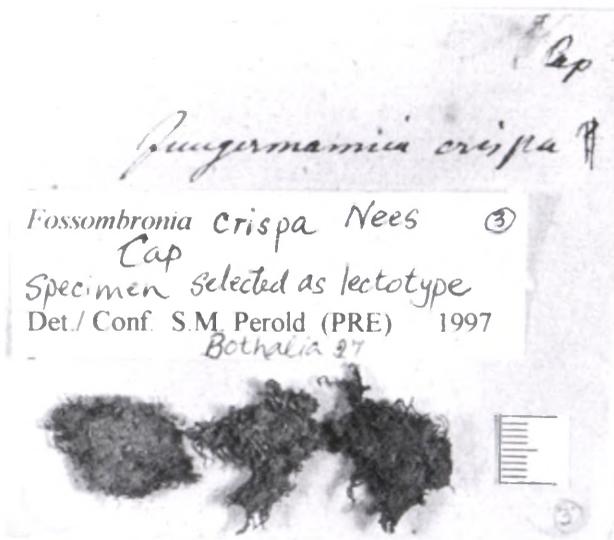


FIGURE 5.—Photograph of *Fossombronia crispa* packet and portion of specimen held at STR.

There is no collector's name on the packet, however. A specimen (Figure 6D), which is presumably a duplicate, since the label is in the same handwriting, is mounted on a herbarium sheet held at BM (ex Herb. Hampe 1881). It would appear that the epithet, *F. crispa*, has since Stephani (1900) been wrongly applied to plants with dentate leaves and spinose spores (i.e. *F. leucoxantha*) and not to plants with entire leaves and reticulate spores.

There are six liverwort collections pasted on the said herbarium sheet in BM, in two rows of three each, one below the other (Figure 6A–F). Scott & Pike (1987) numbered these specimens 1:1 (Figure 6A), up to 1:6 (6F). All

specimens except 1:5 (6E) are labelled *Jungermannia* (or *Fossombronia*) *crispa*. Specimens 6A, B and D have leaves with entire margins and incompletely reticulate spores. The five small pieces under 6C have dentate leaves and spinose spores. Specimen 6E is labelled *J. pusilla*, and 'No. 42' has been added to the label in pencil. It consists of a mixture of two different species of *Fossombronia*; they are both sterile and could therefore not be identified to species level. This specimen was originally referred to in *Hepaticarum capensium* (Lehmann 1829), where it is remarked that it was collected with fruit in October. As stated above, it was cited by Nees under synonymy of *F. crispa*. Specimen 6F is not a *Fossombronia*. It could be a *Riccardia* and need not be considered further.

A duplicate of one of the specimens with entire leaf margins and incompletely reticulate spores (Figure 6A, B or D) was described by Stephani (1900) as a new species, *F. zeyheri* sub *F. crispa* Spreng. He selected the specimens, leg. Carl Zeyher, previously held at Herb. Rabenhorst (G024669) and at Herb. I(?)ope (first letter illegible) (G024670) as 'original' and rewrote the labels in his own hand. Both these specimens are now housed in G (from whence the herbarium numbers). He was followed in his treatment by Sim (1926), Arnell (1963), Sérgio (1985) and Scott & Pike (1988). Scott & Pike (1988) misidentified the collections on the BM sheet with incompletely reticulate spores (6A, B, D) as *F. pusilla* and the duplicate of one of them (6B) in S (as well as several other specimens) as *F. capensis* Arnell.

Fossombronia zeyheri Steph. is considered to be identical to the earlier *F. crispa* and is hereby placed in synonymy under *F. crispa* Nees. Scott & Pike (1988) cited



FIGURE 6.—Photograph of herbarium sheet of *Fossombronia crispa* ex Herb. Hampe 1881 held at BM.

specimen 1:3 (6C) on the said BM sheet as the type of *F. crista*, even though it has dentate leaves and spinose spores. It was most probably collected by Ecklon, but it could not be ascertained which collection series the number 64 on the label refers to. Gunn & Codd (1981) remark that 'it may be difficult to determine whether a given specimen is collected by Ecklon, Zeyher, or both, or whether it is part of a type gathering or not'. The original plant name on the label, '*S. ... subtilis*' Hedw. (the genus name is illegible), has been scored through and *Jungermannia* is written above it and below it *Fossombronia crista*. Details of the collection site and date are as follows, 'Feuchte Stellen an der Erde, 2^e Höhe des Teufelsberges', 'cfr.' and the date 'Aug. 14, 1825' were added. In a footnote in Lehmann (1829: 358), reference is made to 'die zweite (Höhe) oder die Region der Silberbäume (*Leucadendron argenteum*) bis zu 1000 Fuss' (i.e. above 500 feet; the 'erste Höhe' being below 500 feet). As mentioned before, since Stephani (1900) the epithet *F. crista* has been wrongly applied to specimen 6C and others like it. Stephani did not explicitly mention the leaf margins, but the spinose spores are described by him as 'papillis longiusculis confertis hispidissimae' (very hispid with longish crowded papillae). He cited an Ecklon specimen (apparently specimen 6C); a MacOwan collection (G024668) (evidently misnamed since it has entire leaf margins and is sterile); and a specimen of *Breutel* (G024665) from Genadendal, which has spinose spores and dentate leaves. Sim (1926) described the leaf margins of *F. crista* as 'not dentate, the lower margin usually inflexed'. Some sterile Sim specimens at PRE, 7582 & 8024, have initially been identified by him as *F. zeyheri* and later as *F. crista*, so his concept of the species may not always have been clear. According to Arnell (1963) the leaves of *F. crista* are usually entire.

In the protologue of *J.* (= *F.*) *leucoxantha* (Lehmann 1829) the following is stated: 'foliis imbricatis horizontalibus subquadrato-rotundis involutis repando-crenatis inciso-dentatisque' (leaves imbricate, horizontal, subquadrate-rotund, rolled inwards, repand-crenulate and incised-dentate). It is stated to grow 'ad latus orientale et boreale montis Tafelberg, ad radicem montis Teufelsberg et in monte Löwenschwanz humi inter arbuscula'. I consider, *Ecklon 64* (specimen 6C), collected at Teufelsberg (Devil's Peak), to be a syntype of *F. leucoxantha*.

As already noted by Scott & Pike (1987), Stephani treated *F. leucoxantha* as a tumid-leaved plant (i.e. *F. tumida* Mitt.), because he studied a mixed collection of

these two species. The specimens he examined lacked spores, therefore he was unaware that the true *F. leucoxantha* (with incised dentate leaves) has spinose spores. My SEM micrographs of the spore ornamentation of the specimen *Ecklon L.29* (S) (Figure 5E, F), are slightly different from those published by Scott & Pike (1987), who selected it as the lectotype of *F. leucoxantha*, but they are nevertheless still within the acceptable range of variation in spore ornamentation for this species.

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