

In 1822 the botanical collector Carl Zeyher arrived at the Cape of Good Hope with the purpose of collecting mainly higher plants (Gunn & Codd 1981). Although he initially had no interest in fungi, he amassed a fairly extensive collection of macrofungi during his sojourn in Uitenhage (near Port Elizabeth), Eastern Cape, during the 1830s. Most of Zeyher's fungal material was later studied by the Rev. M.J. Berkeley in England, but some specimens also found their way to E.M. Fries in Uppsala, Sweden. It was from the latter material [*Zeyher 106 sub herb. E. Fries* (UPS)] that Fries (1848) established *Lycoperdon capense*, a new species accompanied by a brief and rather ambiguous description. In a review of South African Gasteromycetes, Bottomley (1948) was unable to ascertain the identity of *L. capense* Fr. and included it in her list of 'Doubtful, unknown and insufficiently described species'.

In his classic monograph of the genus *Lycoperdon* Pers.: Pers., Demoulin (1971) correctly excluded *Lycoperdon capense* from that genus and speculated that it probably represented a species of *Vascellum* F.Šmarda. He overlooked the fact, however, that earlier, Kreisel (1967: 106) had pointed out that *Zeyher 106* at UPS is a mixed collection, consisting of a *Bovista* Pers.: Pers. as

well as a *Calvatia* Fr. element. The two elements of *Zeyher 106* have subsequently been split and are now filed in separate folders at UPS, with the *Bovista* and *Calvatia* parts having been assigned the numbers *Zeyher 106a* and *Zeyher 106b* respectively. The numbers on *Zeyher* specimens can be a source of confusion (Gunn & Codd 1981). In some cases the number on the label may be *Zeyher's* collecting number but, most commonly, the number refers to the collecting locality, with the second part (if a double number) referring to the month of collection. Therefore, specimens from the same locality may belong to different gatherings, as seems to be the case with *Zeyher 106*. Locality 106 is listed in Gunn & Codd (1981) as 'Uitenhage, Zuureberg, 2-3000'. [Note: in addition to the specimens at UPS, *Zeyher 106* consists also of a third element, on which Berkeley (1843) based the genus *Scolecioarpus* (= *Arachnion* Schwein.) and species *Scolecioarpus tener* Berk. This third element, originally from the herbarium of W.J. Hooker, has not been examined by us but is in all probability still at K, where it had been studied by Demoulin (1972).]

Despite the inadequacy of the original diagnosis of *Lycoperdon capense*, reading it creates the distinct impression that it applies to the *Bovista* part of *Zeyher 106* rather

than the *Calvatia* part. Bottomley (1948) provided the following translation of Fries's original diagnosis: 'Peridium has the habit of *L. gemmatum* but the structure rather of *L. pusillum*. Exoperidium granular. Endoperidium membranous, flaccid, opening by a small, obtuse mouth. Sterile base wanting. Capillitium threads very lax. Spores brown, not becoming olivaceous'. This description also corresponds well with that provided by Kreisel (1967) for the *Bovista* element (now *Zeyher 106a*): 'Endoperidie papierstark, bräunlich, glanzlos; Öffnung unregelmässig eingerissen, ca. 4 mm weit.' and '... Sporenstaub umberbraun ohne Olivton'. A recent examination of the two elements comprising *Zeyher 106* at UPS convinced us that the impression created by Fries's diagnosis is correct and that the original description does indeed apply to the *Bovista*, and not the *Calvatia* gathering. The *Calvatia* element of *Zeyher 106* consists of three specimens, all of which dehisce irregularly in typical *Calvatia* style, not at all by means of 'small mouths' (= pore; ostiole) and with peridial characters irreconcilable with Fries's description. *Zeyher 106a*, however, corresponds well with Fries's original diagnosis, both in terms of the roughness of the exoperidium and the way the endoperidium dehisces. The name *Lycoperdon capense* Fr. therefore clearly applies to the *Bovista* element of *Zeyher 106* and not to *Zeyher 106b*, and in view of that, *Zeyher 106a sub herb. E. Fries* is here designated as lectotype of *Lycoperdon capense* Fr.

In 1967 the *Zeyher 106a* element at UPS served as the basis for the description of a new species, *Bovista promontorii* Kreisel. In his publication, Kreisel (1967) does not refer to the work of Fries (1848), which suggests that he was not aware of Fries's earlier name, *L. capense*. In the light of the above discussion, the new combination *Bovista capensis* is here proposed as the correct name for the *Bovista* element of *Zeyher 106* at UPS and Kreisel's superfluous name is reduced to synonymy:

***Bovista capensis* (Fr.) J.C.Coetzee & A.E.van Wyk, comb. nov.**

Lycoperdon capense Fr. in J.A. Wahlbergii Fungi natalenses, adjectis quibusdam capensibus: 30 (1848). *Bovista promontorii* Kreisel: 225–226 (1967). Type. South Africa, Pr. B. Sp. [= Promontorium Bonae Spei; = Cape of Good Hope], Uitenhage, *Zeyher 106a sub herb. E. Fries* (UPS!), lecto., here designated).

L. oblongisporum auct. non Berk. & Curt.: Lloyd: 235 (1905). [Teste Kreisel (1967) & Ortega & Buendia (1985).]

L. polymorphum auct. non Vitt.: Bottomley: 557 (1948). [Teste Kreisel (1967) & Ortega & Buendia (1985).]

Illustrations: Kreisel: figs 17c, 27b¹ & 58 (1967); Ortega & Buendia: figs 3, 4, 9, 10, 13, 14 (1985).

According to Kreisel (1967) and Ortega & Buendia (1985) the 'South African form' of *Lycoperdon polymorphum* Vitt. [= *Bovista polymorpha* (Vitt.) Kreisel, the correct name of which is *Bovista aestivalis* (Bonord.) Demoulin] *sensu* Bottomley (1948) is conspecific with *Bovista capensis*. Neither Kreisel nor Ortega & Buendia have examined any of the specimens cited in Bottomley (1948), however, and a re-examination of the South African material is required to confirm their assertion. *B. capensis* is separated from *B. aestivalis* only by the shape of its spores (Kreisel 1967), and considering the opinions

of Calonge & Demoulin (1975) and Moyersoen & Demoulin (1996), that in Europe, spore shape does not allow the discrimination of taxa in the *B. aestivalis* complex, the need for a re-assessment of *B. capensis* becomes even more evident. The same applies to the specimens referred to *Lycoperdon oblongisporum* Berk. & Curt. by Lloyd (1905).

Kreisel (1994) cited *Zeyher 106b* under *Calvatia rugosa* (Berk. & M.A.Curtis) D.A.Reid. However, the complete absence of a subgleba and prominent slit-like capillitial wall perforations clearly exclude it from that taxon. We have little doubt that *Zeyher 106b* actually represents an undescribed, but not at all uncommon, South African species belonging to *Calvatia* sect. *Macrocalvatia* Kreisel *sensu* Coetzee & Van Wyk (2003). Followers of Kreisel (1989) would, however, prefer to treat this fungus in the segregate genus *Handkea* Kreisel.

ACKNOWLEDGEMENTS

We are indebted to the director of UPS for the loan of the herbarium specimens in his care. The friendly assistance of Dr S. Ryman of the same institution is acknowledged with gratitude.

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J.C. COETZEE* and A.E. VAN WYK**

*Department of Horticulture and Food Technology, Bellville Campus, Cape Peninsula University of Technology, P.O. Box 1906, 7535 Bellville.

**H.G.W.J. Schweickerdt Herbarium, Department of Botany, University of Pretoria, 0001 Pretoria.

MS. received: 2004-06-07.