

COMASPHAERIDIUM

Staplin et al. 1955

COMASPHAERIDIUM Staplin et al. 1955, p. 192: "Vesicles spherical to ellipsoidal, sometimes of large size; with densely crowded, thin, solid, usually simple, more or less flexible hair-like spines". (Microhystridium (= Comasphaeridium) cometes: Valensi 1949, p. 545, Pl. 5:6).- text-fig.3:38.

Remarks: The fineness of the hair-like spines and their crowding are characteristic. *Filizphaeridium* has less crowded, stiffer and firmer spines, often thickened at their bases

JARJEANT & VAVRDOVÁ 1997

Remarks: The very numerous thin and hair-like processes, typically unbranched, differentiate this genus from the genera of the *Multiplicisphaeridium* group.



* *C. cometes* (Valensi) Staplin, Gansow & Pocock. 1965

C. caesariatum Wicander 1974

COMASPHAERIDIUM

Staplin, Jansonius & Pocock 1965

emend Sarjeant & Stancliffe 1994 p.25

Genus *Comasphaeridium* Staplin, Jansonius and Pocock 1965, p. 192; **emend.**

Comasphaeridium Staplin, Jansonius and Pocock 1965, p. 31-32; Cramer 1970, p. 120; Eisenack, Cramer and Díez 1976, p. 125; Cramer and Díez 1979, p. 70; Moczydlowska 1988, p. 5; Fensome et al. 1990, p. 149.

Junior synonyms:

Elektoriskos Loeblich Jr. 1970a, p. 717. [See Eisenack, Cramer and Díez 1976, p. 245]

Globosphaeridium Moczydlowska 1991, p. 54; designated herein.

Heliosphaeridium Moczydlowska 1991, p. 58; designated herein.

Original diagnosis: (Staplin, Jansonius and Pocock 1965, p. 31-32). Vesicles spherical to ellipsoidal, sometimes of large size; with densely crowded, thin, solid, usually simple, more or less flexible hair-like spines.

Emended diagnosis: Vesicle spherical to ellipsoidal. Eilyma smooth to granular, thin, with a dense covering of spines. Spines solid or apparently so, thin and often hairlike and undulose. Proximally, the spines join the body at a sharp angle. Distally they are closed and normally do not branch. The spine length is over 25% of the body diameter and their number exceeds 35.

Remarks: Staplin, Jansonius and Pocock (1965, p. 31-32) distinguished the genus from *Filisphaeridium* by the latter having "less crowded, stiffer and firmer spines, which are often thickened at their bases". The limits between the two genera were not defined and their morphological differences from *Micrhystridium* were also left vague. Our emendation places a lower limit on the number of spines and quantifies the vesicle diameter-process length ratio. No vesicle opening has been recorded.

Moczydlowska's diagnosis (1988, p. 5), though not proposed as an emendation, included forms with spines "agglutinated" proximally and anastomosing distally. These characters do not appear typical of *Comasphaeridium* and are not incorporated into our emendation. Her genus *Heliosphaeridium* (1991, p. 58) straddles in morphology *Micrhystridium* and *Comasphaeridium*, as herein

emended; since the type species falls within the latter genus, we consider it a taxonomic junior synonym of *Comasphaeridium*. Another genus she proposed, *Globosphaeridium* (1991, p. 54), is discussed herein in relation to *Baltisphaeridium* but is considered likewise to be a taxonomic junior synonym of *Comasphaeridium* (see p. 6 and p. 68). Its single constituent species is herein returned to *Comasphaeridium*.

Colbath argued (1990, p. 116) that, since "the type specimen of *C. cometes* was illustrated only by a drawing" which, in his view, indicated "two distinct types of simple hairlike processes," the name should not be applied to Palaeozoic species. His argument is here not found acceptable. Publication of the species *Micrhystridium* (now *Comasphaeridium*) *cometes* was in full accord with the requirements of the *I.C.B.N.*; moreover Valensi, an acute observer, recognized only a single type of process—he described the ornament as a "head of hair" of undulating spines without any order of placement. Similar forms are common in the Paleozoic; to erect a new genus to accommodate such species would be unjustifiable. The problems resulting from such procedures have been illustrated by Sarjeant (1984, p. 144-146) in his discussion of the *Pterospermella* controversy created when Eisenack adopted a similar procedure.

The genus is differentiated from *Micrhystridium* by having densely set, solid, thin spines and by having a vesicle diameter that can

range from 9 to 40+ μ m. *Filisphaeridium* has shorter spines in relation to the body diameter, the spines being often more numerous and stiffer. *Barathrisphaeridium* is distinguished by its foveolate vesicle.

Elektoriskos Loëblich Jr. (1970a, p. 717) was recognized from the outset as being closely similar to both *Filisphaeridium* and *Comasphaeridium*, with spines likewise solid and flexible; it was differentiated from *Comasphaeridium* only because the spines were less densely crowded. We concur with Eisenack, Cramer and Diez (1976, p. 245) in regarding this as insufficient for generic differentiation and consequently treat *Elektoriskos* as a taxonomic junior synonym of *Comasphaeridium*.

Type species: Comasphaeridium cometes (Valensi 1948, p. 547, fig. 5.6) Staplin, Jansonius and Pocock 1965, p. 192. Middle Jurassic, France. Originally *Micrhystridium*. [Text-figure 2b].

COMASPHAERIDIUM

Genus *Comasphaeridium* STAPLIN, JANSONIUS & POCOCK 1965 emend. SARJEANT & STANCLIFFE 1994

1965 *Comasphaeridium* STAPLIN, JANSONIUS & POCOCK, p. 192.

1970 *Elektoriskos* LOEBLICH, p. 717. [1970a]

1991 *Globosphaeridium* MOCZYDŁOWSKA, p. 54.

1991 *Heliosphaeridium* MOCZYDŁOWSKA, p. 58.

1994 *Comasphaeridium* STAPLIN, JANSONIUS & POCOCK emend. SARJEANT & STANCLIFFE, pp. 25–28.

For further synonymy see SARJEANT & STANCLIFFE (1994: 25).

Type species: *Comasphaeridium cometes* (VALENSI 1949) STAPLIN, JANSONIUS & POCOCK 1965 [OD]

Discussion: In agreement with SARJEANT & STANCLIFFE (1994: 26), *Elektoriskos* LOEBLICH 1970, *Globosphaeridium* MOCZYDŁOWSKA 1991, and *Heliosphaeridium* MOCZYDŁOWSKA 1991 are accepted herein as junior synonyms of *Comasphaeridium* STAPLIN, JANSONIUS & POCOCK 1965 emend. SARJEANT & STANCLIFFE 1994. *Elektoriskos* was instituted by LOEBLICH (1970a: 717) to differentiate forms morphologically intermediate between *Comasphaeridium* and *Filisphaeridium* STAPLIN, JANSONIUS & POCOCK 1965 (p. 192) on the basis of relatively sparse "spines" (= processes). However, as noted by EISENACK, CRAMER & Díez (1976: 245), less closely spaced processes are insufficient criterion for generic discrimination. Thus, we accept SARJEANT & STANCLIFFE's (1994) reallocation to either *Comasphaeridium* or *Filisphaeridium* of those species originally assigned to *Elektoriskos*.

Quintavalle & Playford 2006a p. 29