

Bijlage 3 Description and illustrations of some non-pollen palynomorphs

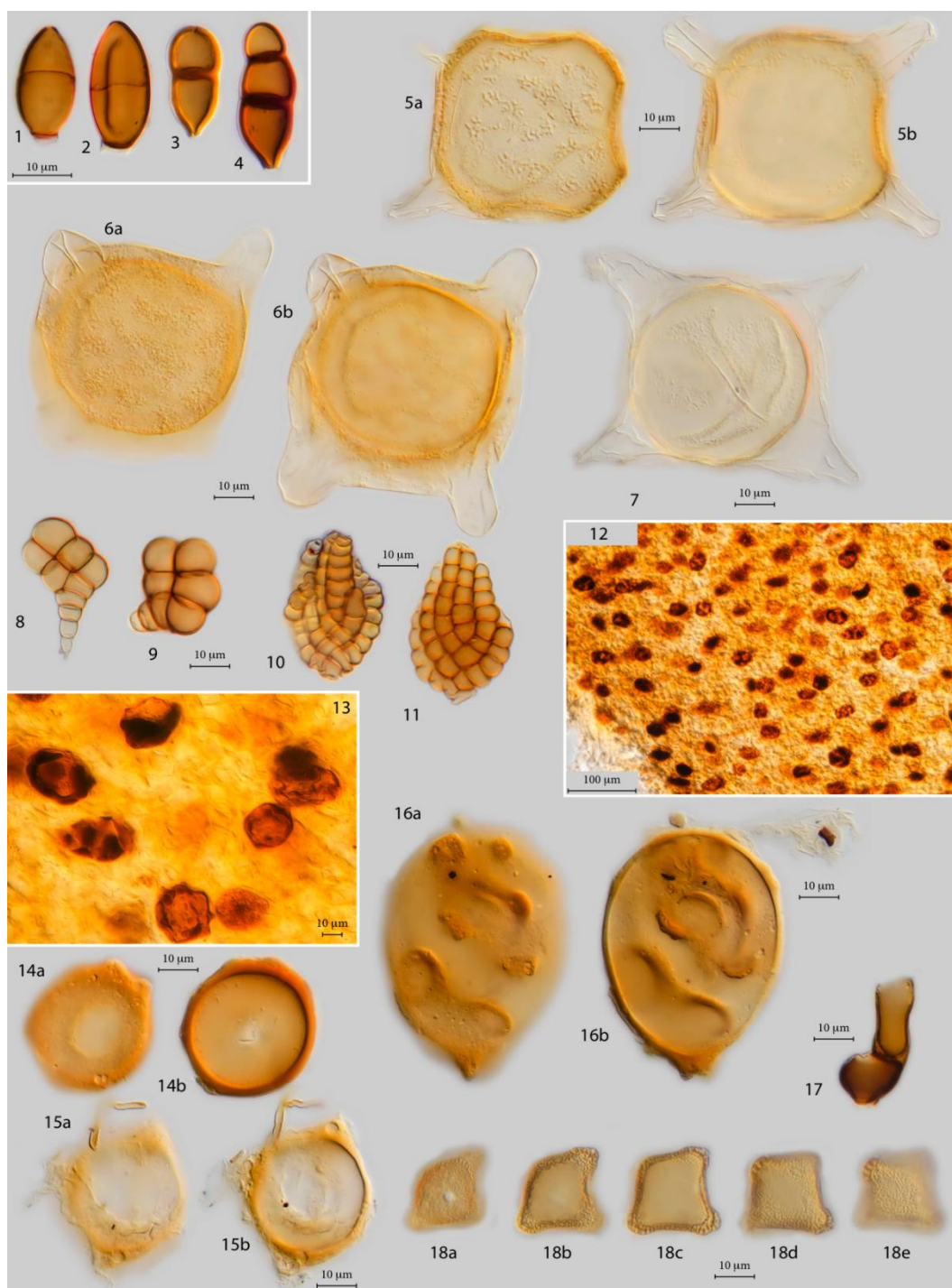


Figure B1: Some NPPs found in the Stobbenribben and Westbroekse Zodden cores. 1 and 2: *Cercophora*-type ascospores; 3 and 4 : Type HdV-173; 5-7: Type HdV-822; 8 and 9: Type HdV-823; 10 and 11: *Dictyosporium toruloides*-type (HdV-824); 12-16: Type HdV-825; 17: Type HdV-826; 18: Type HdV-827.

Type HdV-112C: Cercophora-type (Plate I, figs 1 and 2; compare van Geel et al., 1983).

Ascospores ca. 22 x 10 µm. Truncate at the basal side and a ca. 1 µm wide pore at the top. One septum without constriction. Fragments of the hyaline appendage at the basal side still preserved in some spores. According to van Geel et al. (1983, 1989), Cercophora species occur on feces or decaying wood, and on herbaceous stems and leaves. In the present study the Cercophora-type ascospores were recorded in a peat layer dominated by *Juncus subnodulosus* at the Westbroek site (zone WB-4, on top of the hiatus) under moist, mesotrophic conditions, together with the fungi HdV-173, HdV-823 and HdV-824.

Type HdV-173A (Plate 1, figs 3 and 4; compare van Geel et al., 1989). Conidia or chlamydospores ca. 18-25 x 8-10 µm (length depending on number of septa), transversally one-septate or two-septate, brown, slightly constricted at the septa. Basal cell provided with a protruding ca. 1 µm wide pore (possibly a former point of attachment with a mycelium). Van Geel et al. (1989) recorded Type HdV-173A in *Carex*-peat of Allerød age. In the present study, it was recorded in a peat layer dominated by *Juncus subnodulosus* at the Westbroek site (zone WB-4, on top of the hiatus) under relatively moist and mesotrophic conditions, together with the fungi HdV-112, HdV-823 and HdV-824.

Type HdV-822 (Plate 1, figs 5-7; morphologically closely related to HdV-208, compare van Geel et al., 1989).

X-shaped or H-shaped thin-walled, hyaline microfossils, ca. 70-75 x 50-55 µm (H-shaped) or 70-75 x 70-75 µm (X-shaped) containing a round or quadrangular (square-shaped with blunt corners), light-brown spore of ca. 45 µm in diameter. According to van Geel et al. (1989), these microfossils are probably fossilized conjugating filament cells of a zygnemataceous taxon, showing the zygospore inside. In the present study Type HdV-822 occurs in peat material in Westbroek under relatively moist, meso- to eutrophic conditions (Zones WB-4 and WB-5).

Type HdV-823 (Plate 1, figs 8 and 9).

Conidia multiseptate, composed of two juxtaposed brown rows of three cells, each one 7-10 µm in size, and a more hyaline row of 4 to 5 cells, connected with one of the main two rows and becoming smaller (from 7 to 2 µm) towards the former attachment to mycelium.

The HdV-823 conidia were recorded in peat material in Stobbenribben under base-rich and mesotrophic conditions and in Westbroek under relatively moist and mesotrophic conditions. At both sites, Type HdV-823 occurs together with *Typha angustifolia* and *Juncus subnodulosus*.

Type HdV-824: *Dictyosporium toruloides*-type (Plate 1, figs 10 and 11; cf. Ellis, 1971, fig. 26).

Conidia flattened in one plane, multiseptate and composed of 6 rows of cells of unequal length, the middle rows being the longest. The rows of cells develop as a branched system and a conidium looks like a hand with fingers held close together. The cells of the conidia are brown with hyaline terminal cells. Width of the conidia is ca. 25 µm and the longest branch of cells is ca. 40 µm. Each cell ca. 5 µm in size with a total number of ca. 38 cells.

In the present study the conidia were recorded at the Stobbenribben and at the Westbroek site. They occur under various environmental conditions: relatively wet and mesotrophic (Westbroek), drier, base-rich and mesotrophic conditions (Stobbenribben) and acidic and oligotrophic conditions (Stobbenribben).

Type HdV-825 (Plate 1, figs 14-16).

Rounded to oval-shaped or pear-shaped light to dark brown microfossils, 35-40 x 35-55 µm, cell walls with characteristic, irregularly placed thickenings. During the macrofossil analysis the HdV-825 microfossils appeared to be embedded in a hyaline to light brown, probably parenchymatic plant tissue (figs 12 and 13). Type HdV-825 mainly occurs in the aquatic phase of the Westbroek succession under nutrient-poor and base-rich conditions. Among the possible local species with parenchymatic tissue were *Juncus subnodulosus* and *Carex pseudocyperus*, but a specific link could not yet be established

Type HdV-826 (Plate 1, fig. 17).

Microfossils composed of two (fungal ?) cells. One dark, rounded cell, 13 x 15 µm, with one distal and one proximal ca. 5 µm wide pore and a septum next to the proximal pore, separating it from a second, tube-like, less dark cell, 20 x 8 µm, with a wide opening at the end.

It occurs in the Stobbenribben site but does not seem to have a limited preference concerning environmental conditions as it occurs in the aquatic phase under base-rich and nutrient-poor conditions, during the transition from brown moss to *Sphagnum* under base-rich and mesotrophic conditions, and in the *Sphagnum*-dominated phase under acidic and oligotrophic conditions.

Type HdV-827 (Plate 1, figs 18a-18e).

Square-shaped algal (zygnemataceous?) spores, 18-20 x 18-20 µm in size, with concave sides and a characteristic sponge-like structured brown wall, thickened at the corners.

In the present study, this spore occurs at the Stobbenribben site during the transition to the *Sphagnum* phase, in mesotrophic and still rather alkaline conditions.