

MICROSTRUCTURES OF THE
MESOZOIC MEGASPORE *TASMANITRILETES* N.G.

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ABSTRACT

Jux, U. & Kempf, E. K. (Dept. Geol., Univ. Cologne, W. Germany). *Microstructures of the Mesozoic megaspore Tasmanitriletes* n.g. Grana 11: 95-100, 1971.—The Mesozoic megaspore *Trileites pedinacron* has been studied by transmission electron microscopy. The wall consists of one relatively thick layer (perine) which is perforated by radial tubes. This wall structure is compared with similar wall patterns of the zoosporangia of marine planctonic algae (*Tasmanites*, *Pleurozonaria*, *Pachysphaera*). Essential differences are pointed out. With *T. pedinacron* as type species a new form genus is established: *Tasmanitriletes*.

INTRODUCTION

Among the dispersed megaspores which were collected from the Cape Stewart Formation (Rhaetic and Lower Liassic) of Scoresby Sound in East Greenland (Harris, 1931: 3) two specimens of a somewhat strange appearance attracted the special interest of T. M. Harris. He described them as *Triletes pedinacron* n.sp. and indicated them as almost spherical smooth megaspores with only slightly developed triradiate germination marks (Harris, 1935: 165). The latter feature is indicated in the name of the species which means "flat top", referring to the absence of a marked triradiate tectum.

Later on the species was identified from lacustrine deposits of similar age in Sweden, Denmark, Germany, Poland and USSR. In his dissertation H.-J. Will (1953, published 1969) mentions *T. pedinacron* Harris 1935 from the Upper Triassic ("Triletes-Schichten") and the Lower Liassic ("Praeplanorbis-Schichten") of Northwestern Germany. In 1970 F. Bertelsen described identical material from the boring Rødby 1, Denmark, under the form genus *Trileites* with which the species had been combined by R. Potonié (1956).

T. pedinacron had its problems right from the beginning. Harris (1935: 154) considered the megaspores probably to be derived from the Lycopodiales; Dijkstra (Dijkstra & van Vierssen Trip 1946, p. 52) linked them with Selaginellites. There are two major features which separate them from other Mesozoic megaspores: a faintly developed triradiate germination mark and radial structures within the wall.

MATERIAL AND METHODS

Several specimens of *T. pedinacron* from the boring Rødby 1 in Denmark were sent to us by F. Bertelsen. The sediment was disintegrated in boiling water and kerosene, followed by drying, sieving and gravity separation in bromoform plus alcohol (specific gravity 2.0). The isolated megaspores were cleaned in HF and HCl. There was no further chemical treatment. After embedding and sectioning (for details of the methods applied the reader is referred to Kempf 1971) the ultra-thin sections were studied in the electron microscope without staining.

RESULTS

A longitudinal section through the megaspore *T. pedinacron* (Fig. 2) reveals a one-layered wall of considerable and almost equal thickness (20-25 μm) as well as smooth outer and inner surfaces. Towards the proximal pole only a slight marginal swelling in the dehiscence region can be recognized. There is certainly no external flange as in many other megaspores like, for instance, the tectum of *Horstisporites semireticulatus* (Kempf, 1971).

The wall appears to be quite homogeneous.



