

HALINA KOTAŃSKA

A NEW GENUS OF SPOROMORPHS  
FROM THE ZECHSTEIN DEPOSITS OF POLAND

*Abstract.*—Pollen grains, unknown so far and which have been assigned by the present writer to *Parmasporites unicus* n. sp. and *P. spectabilis* n. sp. of the new genus *Parmasporites*, were found in the Zechstein deposits of cyclothem Z<sub>3</sub> from borings in the Holy Cross Mountains and Lower Silesia.

During my palynological studies on samples from Zechstein, made available by Dr. J. Krasoń, in addition to numerous sporomorphs from Upper Permian deposits described by various authors (cf. Kotańska & Krasoń, 1966), I came across new forms never described so far. They come from borings in Gałęzice (the south-western part of the Holy Cross Mts.) and Lubin (the Pre-sudetic monocline). In both cases, the new genus is of Middle Zechstein age (Z<sub>3</sub> — Leine cyclothem).

The specimens are housed at the Micropalaeontological Laboratory of the Polish Academy of Sciences, Department of Geological Sciences in Warsaw (abbr. ZNG).

I would like to express my thanks to Professor O. Pazdro (Micropalaeontological Laboratory of the Polish Academy of Sciences, Department of Geological Sciences, Warsaw) for his care of the entire study, to Dr. J. Krasoń (Department of Stratigraphic Geology, University, Wrocław) for making available the samples and to Miss L. Łuszczewska (Department of Palaeontology of the Warsaw University) for taking photographs.

## DESCRIPTIONS

- Anteturma **Pollenites** R. Potonié, 1931  
Turma **Saccites** Erdtman, 1947 (= **Saccata** Naumova, 1937)  
Subturma **Disaccites** Cookson, 1947  
Infraturma **Striatiti** Pant, 1954  
Genus *Parmasporites* n. gen.

*Type species:* *Parmasporites unicus* n. sp.

*Derivation of the name:* Lat. *parma* = a small round shield.

*Diagnosis.* — Pollen grains bisaccate. Air-bladders more or less converging on the distal side. Shape of bladders varying from more than hemispherical to hemispherical. Central body, in polar position, is circular in outline. A proximal laesura of exoexine, running perpendicularly to the attachment line of air-bladders is marked on the central body. In polar position of a pollen grain, a round, dark shield (parma) is visible in the middle of central body. The size of parma is variable (mostly its "diameter" equals about 1/3 of the "diameter" of central body). Parma almost completely smooth in outline.

*Remarks.* — The new genus *Parmasporites* displays greatest analogies to the genus *Lueckisporites* (R. Potonié & Klaus, 1954) emend. W. Klaus, 1963 (cf. Grebe, 1957, Klaus 1963; Clarke, 1965). Common characters of both genera: pollen grains bisaccate and laesura occurring on the proximal (dorsal) side of central body. Differences: in *Lueckisporites*, a straight, longitudinal fissure (monoletes figure) is marked in intexine. No such fissure is recorded in *Parmasporites*. In *Parmasporites*, a parma (a thickened part of exine) occurs on the distal pole of the central body. In *Lueckisporites* it is absent.

Parma is a new morphological element of pollen grain, never described before and makes up the most characteristic feature of the new genus *Parmasporites*. Most likely, it is a thickened part of exine situated on the distal pole of central body.

It is not certain whether parma is situated on the proximal or distal side of the central body, but its situation on the distal side seems to be more likely, as results from the fact that in the polar (proximal) position of the pollen grain, parma occurs under laesura (Pl. I, Figs. 1-3).

Two species have been established within the genus *Parmasporites*. They differ from each other in the shape and reticulation of air-bladders and in the sculpture of exine of central body. These same characters are the basis for distinguishing species of the genus *Lueckisporites* (cf. Klaus, 1963). In the sporomorph assemblage of Gałęzice and Lubin the genus *Parmasporites* occurs together with *Lueckisporites* (Pl. I, Figs. 4, 5.)

*Stratigraphic range and geographical distribution.* — The genus *Parmasporites* has so far been found only in Poland in the Zechstein deposits of cyclothem Z<sub>3</sub> (Leine) from the Holy Cross Mts. (Gałęzice) and from the Pre-sudetic monocline (Lubin).

*Parmasporites unicus* n. sp.

(Pl. I, Figs. 1, 2)

*Holotype:* Specimen from preparation ZNG (P) No. 13b; Gałęzice; Pl. I, Fig. 1.

*Type horizon:* Zechstein, cyclothem Z<sub>3</sub> (Leine).

*Type locality:* Gałęzice, Holy Cross Mts.

*Derivation of the name:* Lat. *unicus* = unique, peculiar, uncommon.

*Material.* — Ten well preserved specimens.

Dimensions of the holotype in polar position (in  $\mu$ ):

Width of pollen grain . . .	66.7
Depth of pollen grain . . .	46.0
Width of central body . . .	43.7
Width of saccus . . . . .	43.7
Size of parma . . . . .	18.4×13.8

(The longer "diameter" of parma is measured along the width of the central body and the shorter — along the depth of the central body).

*Diagnosis.* — Pollen grains bisaccate, oval in outline. Central body circular. Exine of central body reticulate, meshes of reticulum fine, regular. Air bladders hemispherical, with radial infrastructure, reticulation fine-meshed. A clearly visible laesura runs on the central body through proximal pole. Parma is so dark-coloured that it conspicuously stands out against the background of central body. It seems to be uniform and devoid of sculpture.

*Remarks.* — Pollen grains of *Parmasporites unicus* n. sp. are markedly smaller than those of *P. spectabilis* n. sp. In *P. unicus*, airbladders are hemispherical and in *P. spectabilis* more than hemispherical. In *P. unicus* their reticulation is fine-meshed and in *P. spectabilis* — radial-fibrillary. In *P. unicus*, exine of the central body has smaller meshes of reticulum than those in *P. spectabilis*.

*Occurrence.* — Poland, Holy Cross Mts., Gałęzice borehole, mudstones and gypsum clays of cyclothem Z<sub>3</sub> (Leine), overlaid by upper conglomerates.

*Parmasporites spectabilis* n. sp.

(Pl. I, Fig. 3)

*Holotype:* Specimen from preparation ZNG(P) No. 57b, Lubin; Pl. I, Fig. 3,

*Type horizon:* Zechstein, cyclothem Z<sub>3</sub> (Leine).

*Type locality:* Lublin, Lower Silesia.

*Derivation of the name:* Lat. *spectabilis* = spectacular.

*Material.* — Three well-preserved specimens.

Dimensions (in  $\mu$ ) of the holotype in polar position:

Width of pollen grain . . .	101.2
Depth of pollen grain . . .	57.5
Width of central body . . .	46.0
Width of saccus . . . . .	57.5
Size of parma . . . . .	23.0×20.7

*Description.* — Pollen grains bisaccate, oval in outline. Central body circular. Exine of central body reticulate; reticulation meshes fairly large, regular. Air-bladders more than hemispherical, with radial infrastruc-

ture and radial-fibrillary reticulation. A clearly visible laesura runs over the central body on the proximal side. A dark-coloured parma clearly stands out against the background of central body. It seems to be uniform and devoid of sculpture.

*Remarks.* — Cf. the previous species.

*Occurrence.* — Poland, Lower Silesia, Lubin boring, S. 172/1 borehole, gray gypsum clay of cyclothem  $Z_3$  (Leine, according to the Zechstein lithostratigraphic nomenclature, Krason, 1964).

*Micropalaeontological Laboratory  
of the Polish Academy of Sciences,  
Department of Geological Sciences,  
Warszawa, Żwirki i Wigury 93  
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HALINA KOTAŃSKA

#### NOWY RODZAJ SPOROMORF Z CECHSZTYNY POLSKI

##### *Streszczenie*

Podczas palynologicznych badań próbek skał cechsztyńskich, prócz licznych sporomorf, opisanych przez różnych autorów z osadów górnopermskich (por. Kotańska & Krason, 1966), znaleziono formy dotychczas nie opisywane. Pochodzą one z wiercenia w Gałęzicach (Góry Świętokrzyskie) i z wiercenia w Lubinie (monoklina przedsudecka). W obu przypadkach nowy rodzaj pochodzi z osadów cyklotemu  $Z_3$  (Leine). W Gałęzicach nowe formy występują w mułowcach i w ilach gipsowych,

pod zlepieńcami górnymi, w Lublinie zaś — w szarym ile gipsowym ( $E_3$  według cechsztyńskiej nomenklatury litostratygraficznej; Krasoń, 1964).

Nowy rodzaj *Parmasporites* n. gen. charakteryzuje się obecnością nowego elementu budowy tzw. tarczy (*parma*). Jest to kolisty ciemny wytwór zgrubiałej egzyny, znajdujący się zapewne na wentralnej (dystalnej) stronie korpusu, między workami powietrznymi (Pl. I, Fig. 1-3). Jest mało prawdopodobne, by tarcza znajdowała się na stronie dorsalnej, gdyż widoczna jest ona spod lezury.

Rodzaj *Parmasporites* jest najbardziej podobny do rodzaju *Lueckisporites* (Pl. I, Fig. 4, 5), różniąc się od niego obecnością tarczy i brakiem znaku monoletycznego.

W obrębie rodzaju *Parmasporites* wyróżniono dotychczas dwa nowe gatunki — *P. unicus* n. sp. (gatunek typowy) i *P. spectabilis* n. sp., różniące się od siebie wyraźnie m. in. rozmiarami, wielkością tarczy, formą worków powietrznych oraz rzeźbą worków i korpusu.

Preparaty znajdują się w Laboratorium Mikropaleontologii Zakładu Nauk Geologicznych PAN w Warszawie.

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ГАЛИНА КОТАНЬСКА

## НОВЫЙ РОД ПЫЛЬЦЫ ИЗ ЦЕХШТЕЙНА ПОЛЬШИ

### Резюме

В процессе палинологических исследований образцов цехштейновых пород, кроме многочисленной пыльцы, описанной разными авторами в верхнепермских отложениях Kotańska & Krasoń, 1966), были выявлены не описанные до сих пор формы. Образцы взяты из керна буровых скважин в Галэнзицах (Свентокшиские горы) и Любине (Предсудетская моноклинал). В обоих случаях новый род обнаружен в отложениях циклотемы  $Z_3$  (лейне). В разрезе Галэнзиц новые формы распространены в алевролитах и гипсовых глинах, подстилающих верхние конгломераты, в разрезе Любин — в серой гипсовой глине ( $E_3$  по литостратиграфической номенклатуре цехштейна — Krasoń, 1964).

Новый род *Parmasporites* n. gen. характеризуется наличием нового элемента строения, так называемого щита (*parma*). Он представляет собой округлое темное утолщение экзины, расположенное вероятно на вентральной (дистальной) стороне центрального тела, между воздушными мешками (табл. I, фиг. 1—3). Мало вероятно, что щит располагается на дорсальной стороне, так как он виднеется из-под лезуры.

Род *Parmasporites* наиболее сходен с родом *Lueckisporites* (табл. I, фиг. 4—5), но отличается от него наличием щита и отсутствием монолетического знака.

Внутри рода *Parmasporites* до сих пор определены два новых вида — *P. unicus* n. sp. (типичный вид) и *P. spectabilis* n. sp., которые отличаются друг от друга по размерам, величине щита, форме воздушных мешков и по скульптуре мешков и центрального тела.

Препараты хранятся в Лаборатории микропалеонтологии Отделения Геологических Наук Польской Академии Наук в Варшаве.

**PLATE**

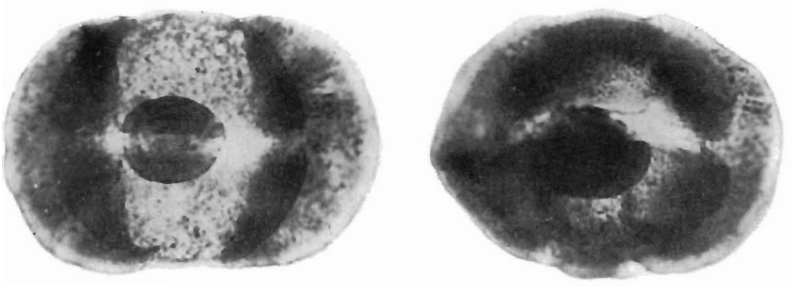
Plate I

- Fig. 1 *Parmasporites unicus* n. sp., holotype (ZNG(P) No. 13 b), Gałęzice.  
Fig. 2. *Parmasporites unicus* n. sp. (ZNG(P) No. 13 b), Gałęzice.  
Fig. 3. *Parmasporites spectabilis* n. sp. holotype (ZNG(P) No. 57 b), Lubin.  
Fig. 4. *Lueckisporites* sp. (ZNG(P) No. 13 b), Gałęzice.  
Fig. 5. *Lueckisporites* sp. (ZNG(P) No. 57 b), Lubin.

Zechstein, cyclothem Z<sub>3</sub> (Leine)

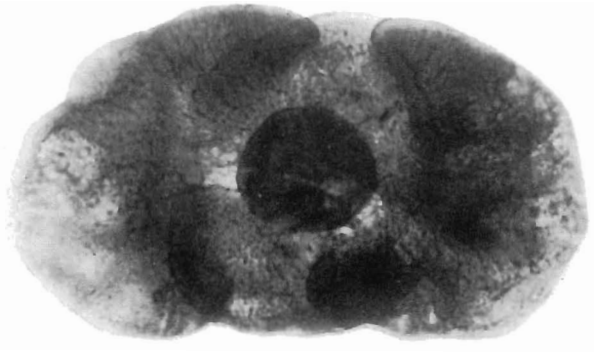
All  $\times 750$



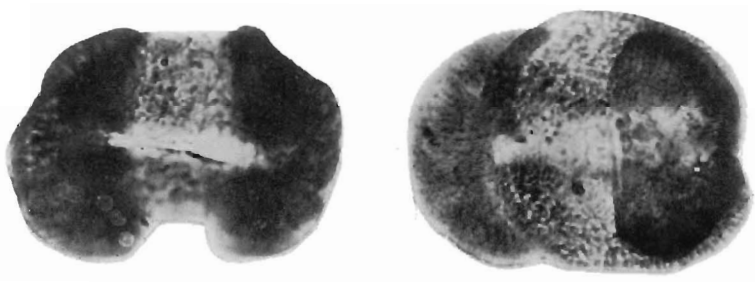


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