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SALOPEKIELLA ? KOCHANSKAE N. SP. (DASYCLADACEAE) FROM THE PERMIAN OF THE VELEBIT MOUNTAIN

With 4 plates

A new species of Dasycladaceae, *Salopekiella? kochanskae,* from the Middle Permian deposits has been described. The fossil remain had been found on several finding sites. Here is presented a comparison of 3 hitherto known species of *Salopekiella.*

During geological researches made for the purpose of producing the Basic Geological Map of the Socialist Federal Republic of Yugoslavia, samples of Permian rocks have been collected besides others. The above mentioned new species has then been discovered by means of micropaleontological analysis of the samples.

I am grateful to Professor M. Herak who has superrised this work and to my colleagues Mr. A. Šušnjara and Mr. M. Posavec for the very interesting material they were so kind to lend me.

Familia Dasycladaceae
Tribus Diploporeae ? Pia, 1927
Genus *Salopekiella* Milanović, 1965
Salopekiella ? kochanskae n. sp.

Pl. I — IV

Origin of the name: The species has been named after Professor Dr. V. Kochansky-Devidé, the well known Yugoslav researcher in Permian microfossils.

Type locality: NE slopes of the mountain Velebit, below Veliki Bešlinac, near Brezik (N of Medak), Okić and Međuvođe.

Type stratum: Middle — Upper Permian, equivalents of Upper Artinskian — Lower Kazanian. Dolomites with: *Mizzia velebitana* Schubert, *M. yabei* (Karpinski), *M. cornuta* Kochansky & Herak, *Velebitella triplicata* Kochansky-Devidé, *Salopekiella velebitana* Milanović, *Likanella spinosa* Milanović, *Goniolinopsis hexagona* Milanović, *Neoschwagerina craticulifera* (Schwager), etc.

Holotype: Specimen in pl. I, fig. 3, thin-slide No. 8 b/2. All preparations are kept in the collection of the Geological Institute in Zagreb.

Diagnosis: *Salopekiella* with sphaerocylindric segments and 4 whorls of branches in each segment.

Description: The skeleton is made up of a series of loosely connected segments. Therefore mostly two segments only are found together, a larger number of them is less frequent. The upper spheric or cylindric part of each segment gradually changes into a much narrower cylindric extension below. With this extension the segment leans on the dishlike hollowed out part of the lower segment (pl. I, fig. 3, pl. III fig. 4). As the segments in the upper part of the talus are narrower, the L/D relation varies from 0.9—1.1, usually about 1.1.

The main stem is more or less cylindric in shape. In each segment 4 whorls of branches fork from the main stem. The first whorl is likely to have openings in the dishlike indentation, which are concentrically placed round the widening for the next segment (pl. I figs. 3,4, pl. III fig. 6). The pores of the other branches are placed on the outer wide part of the segment. The pores do not touch, and the branches of consecutive whorls are placed in alternating positions. Some specimens look as if they had branches of adjacent whorls on the lower part, near the main stem, connected, in which they resemble the species of *Diploporae.* This can be explained by the much closer position to each other of the branches in the lower parts of the segments, which is due to the narrowing of the segments in those parts. Moreover the branches are in an alternating position in longitudinally diagonal sections, the level of the section passing over single branches, placed at a various angles to the axis of the main stem. Because of that it looks as if (in longitudinally diagonal sections) the branches of adjacent whorls were connected. The longitudinal section proper however, shows the actual arrangement of the branches. As the new material will finally confute or confirm the doubt concerning the connection of branches (*Diploporae*), we inserted an ? after the name of the genus.

The angle between the axis of the branches and the axis of the main stem makes 30 — 60°. The number of branches in one whorl is 20 — 40.

Dimensions in mm:

Length of segments	0.52—0.90	(0.70)
Maximum diameter of segments	0.57—1.11	(0.85)
Diameter of main stem	0.12—0.40	(0.30)
Diameter of branches	0.03—0.08	(0.04)

Similarities and differences: *Salopekiella kochanskae* is, due to two of its main characteristics, similar to two of the species of the genus *Salopekiella* hitherto known, i. e. *S. velebitana* Milanović and *S.*

inopinata Gušić. However, a difference in the structure is immediately recognisable. The segments of the above mentioned species are conic, wider or narrower, while those of the *S. kochanskae* are spherocylindric. Both of the known species have two whorls of branches to one segment, while the new one has four. There is also a difference in the L/D relation and in the diameter of pores.

It should be noted that the position of branches in all the three species is rather interesting. In *S. velebitana* one whorl of branches would have pores in the wide part of the segment, while another one would have them on the upper, dishlike part, placed concentrically round the indenture for the next segment. In. *S. kochanskae* it is most likely that one whorl will be placed on the upper, hollowed out part, while the other three will undoubtelly be placed on the lateral part of the segment, although it would be possible for all the four whorls of branches to have pores on the outer, lateral part. Taking this into consideration we could conjecture about intermediate forms as regards the position of pores; that is to say that *S. velebitana* could be regarded sa an intermediary type between the probably oldest *S. kochanskae* with pores on the lateral parts of the segments, and the *S. inopinata* with pores on its upper, dishlike part.

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SALOPEKIELLA? KOCHANSKAE N. SP. (DASYCLADACEAE) IZ PERMA VELEBITA

U permskim sedimentima NE padina Velebita, čiji su uzorci sakupljeni tokom terenskih istraživanja, otkrivena je nova vrsta roda Salopekiella.

Salopekiella kochanskae n. sp. pokazuje osnovne karakteristike roda *Salopekiela*. Skelet alge je sastavljen od niza sferično-cilindričnih segmenata. Gornji dio svakog segmenta je polukuglast, sa zdjeličastim udubljenjem na koje naliježe donji, cilindrični dio slijedećeg segmenta. Matična stanica je cilindrična. Četiri pršljenasta i alternirajuća niza ogranaka imaju nepromijenjen dijametar cijelom dužinom. Pore

prvog pršljena ogranaka nalaze se najvjerojatnije na gornjem zdjeličastom dijelu segmenata, koncentrično oko udubljenja za slijedeći segment, a ostalih triju pršljena, na bočnom dijelu. Kut osi ogranaka i osi matične stanice iznosi 30—60°. Broj ogranaka u jednom pršljenu varira od 20—40.

Kod nekih primjeraka izgleda kao da se ogranci susjednih pršljenova dodiruju, što podsjeća na rod *Diplopora*. Ovo se objašnjava time što, se segmenti na svom donjem dijelu sužuju, usljed čega su ogranci bliži jedan drugom. Uz to su oni u alternirajućem položaju, te kod uzdužno-kosih presjeka, ravan presjecanja zahvata ogranke koji stoje pod različitim kutem sa osi matične stanice. Zbog toga izgleda (kod uzdužno-kosih presjeka) da se ogranci mjestimično dodiruju, dok se kod pravih uzdužnih presjeka vidi njihov pravi poredak. Novi materijal će kasnije pokazati definitivni položaj ogranaka, a dotle je iza roda stavljen?

Nova vrsta se od do sada poznatih vrsta roda *Salopekiella* — *S. velebitana* Milanović i *S. inopinata* Gušić, razlikuje oblikom segmenata, a osobito brojem pršljena. Kod poznatih vrsta segmenti imaju oblik širih ili užih konusa, sa dva pršljena ogranaka, dok su kod *S. kochanskae* sferično-cilindrični i imaju po četiri pršljena ogranaka.

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PLATE — TABLA I

1—6 Salopekiella kochanskae n. sp.

1 Nearly longitudinal section.
Skoro uzdužni presjek (Br-8 b/2) × 60

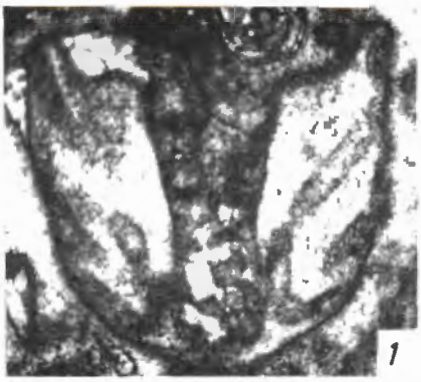
2,4 Longitudinal sections. Uzdužni presjeci.
(U-4012/2, U-4012/1) × 60, × 62.

3 Oblique-longitudinal section through two segments. Uzdužno kosi presjeci kroz 2 segmenta. (U-4012/5) × 62

5 Oblique-longitudinal section. Uzdužno kosi presjek (Br.-8 b/3) × 60

6 Oblique-longitudinal section through three segments. Udužno-kosi presjek kroz 3 segmenta. (U-4012/11) × 30.

Foto: V. Matz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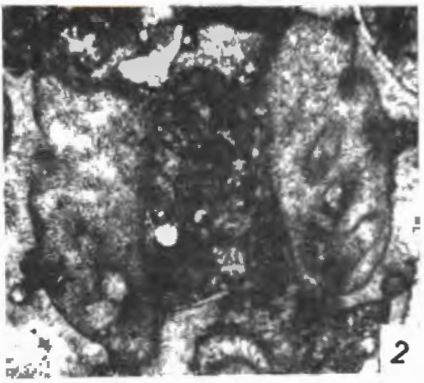
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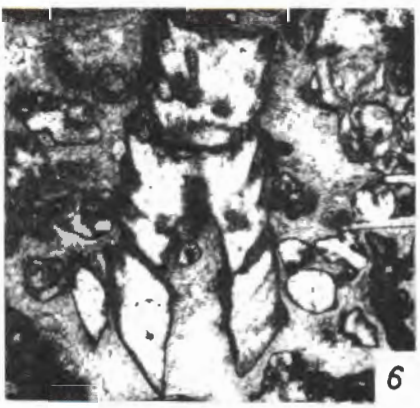
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PLATE — TABLA II

1—6 *Salopekiella kochanskae* n. sp.

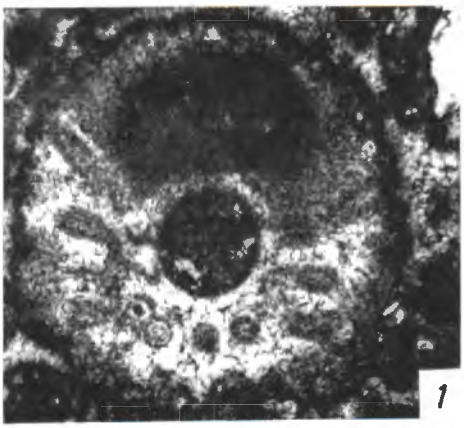
1, 3, 5, 6 Slightly oblique transversal sections.
Malo kosi poprečni presjeci. (Br. -8 b/3, U-4012/8, U-4012/6, U-4012/3) × 62, × 62, × 64, × 60.

2 Nearly transversal section. Skoro poprečni presjek. (U-4012/5) × 63.

3 Transversal section. Poprečni presjek. (U-4012/3) × 60.

Foto: V. Matz

PLATE — TABLA II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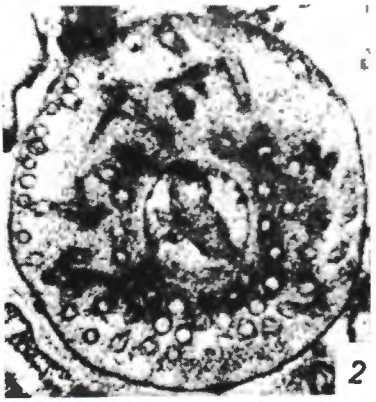
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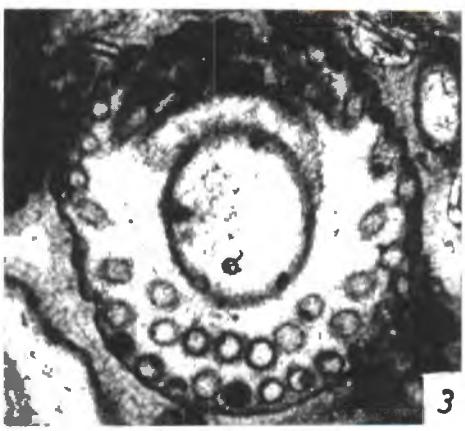
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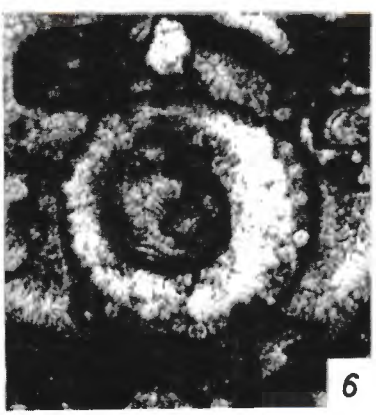
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PLATE — TABLA III

1—6. *Salopekiella kochanskae* n. sp.

Various longitudinal-tangential sections through: 1. two segments, 2,5. three segments, 4,6. four segments and 3. five segments.
Različiti uzdužno-tangencijalni presjeci kroz: 1. dva segmenta, 2,5. tri segmenta, 4,6. četiri segmenta i 3. pet segmenata.
(U-4012/1, U-851, U-3437, U-4263/1, Br.-8 b/1, U-4001/2) × 60, × 32, × 30, × 30, × 40, × 30.

Foto: V. Matz

PLATE — TABLA III


1


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PLATE — TABLA IV

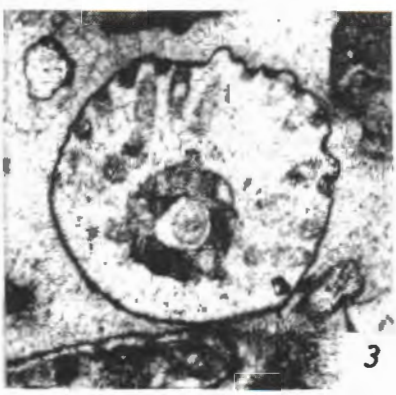
1—6 *Salopekiella kochanskae* n. sp.

Various oblique sections through; 1,3, 5,6. two segments and 2,4, one segment. Različiti kosi presjeci kroz: 1, 3, 5, 6. dva segmenta i 2,4. jedan segment (Br. - - 8 b/1, U-4012/4, U-4012/10, Br. - 8 b/6, U-4012/3, Br - 8 b/2) × 40, × 30, × 62, × 65, × 62, × 54.

Foto: V. Matz


1


2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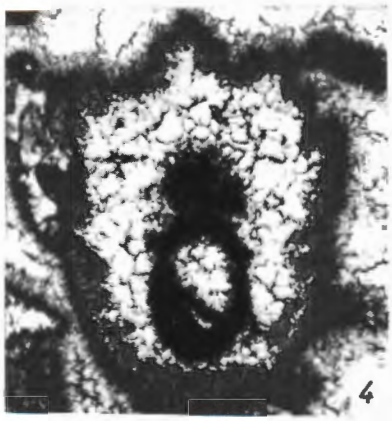
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