

Geol. vjesnik	Vol. 42	str. 29—31	Zagreb 1989.
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UDC 551.736.1:561.26

Izvorni znanstveni članak

Hexaella heraki n. gen., n. sp., a new problematical (incertae sedis) microfossil from the Lower Permian of the Gorski Kotar region (Croatia, Yugoslavia)

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A new incertae sedis microfossil genus of probably algal affinity has been described. The cylindrical »thallus« contains peculiar »components« that are hexagonal in both longitudinal and transversal sections.

Opisan je novi rod problematičnog mikroorganizma sličnog algi. Cilindrični »talus« ima niz heksagonalnih oblika u uzdužnom i poprečnom presjeku.

Lower Permian deposits in the Gorski Kotar region are very rich in various microfossils, that are under study. In the present paper a microfossil form will be described, which was at first thought to belong to the Codiaceae and briefly mentioned in Milanović (1986), but the absence of many features typical of that algal family made it necessary to classify it as a microproblematicum (incertae sedis).

Genus *Hexaella* n. gen.

The generic name invokes the resemblance to hexagonal forms of this microfossil, that appear in both longitudinal and transverse sections.

Because only one species is described, the generic diagnosis is the same as the specific diagnosis, which is given below.

Hexaella heraki n. gen., n. sp.

Plate I

Origin of the name: The species is named in honour of Professor Milan Herak, Member of the Yugoslav Academy of Science and Arts, who has made significant contributions in studying fossil calcareous alge from Yugoslavia and elsewhere.

Type locality: Ciganski jarak (Gypsy creek), north of Mrzle Vodic, southeast of the spot height 862 meters.

Type stratum: Dark grey, oolitic limestone. Microfossils are coated with oolitic envelopes, cemented by sparitic or micritic matrix. These deposits are equivalent to the Troglkofel beds.

Holotype: Longitudinal section figured in Plate I, Fig. 4, thin section MV-62/27, deposited with the Institute of Geology, Zagreb.

Diagnosis: Cylindrical »thallus« filled with elongated prismatic forms with pointed apices at the basis of the »prisms«. The walls are also represented by polygonal forms.

Description: The elongated, cylindrical »thallus« of that organism is filled up with prism-shaped, pentagonal or hexagonal, forms, which are densely squeezed together. In more elongated parts of the »prisms« they pass into corresponding »pyramids«. Perhaps these forms were in the early stages of life originally tubular with dome-shaped extensions? Later they assumed polygonal shape, probably due to mutual lateral pressure. Sometimes they are very densely squeezed and worn, so that the joints of the »prism« cells cannot be observed (Pl. I, Figs. 4, 6) and such forms look like having a sort of a »main stem«. The wall also consists of numerous small polygonal forms, densely squeezed together. In general one can distinguish three rows of larger prismatic forms in the central part of the organism, then surrounded by concentrically arranged one or two rows of distinctly smaller »prisms« and finally the peripheral, smallest row. In some specimens not all the rows can be distinguished, due to the recrystallization of the sediment.

Dimensions:

Outer diameter	0.80—1.10 mm
Diameter of the »main stem«	0.57—0.69 mm
Length of hexagonal forms	0.60—0.75 mm
Diameter of hexagonal forms	0.10—0.30 mm

Similarities and differences: Due to its peculiar structure, *Hexaella heraki* is distinguished from all hitherto known microfossils (at least according to the literature which was available to the author).

Stratigraphic position: Lower Permian, equivalent to the Trogkofel beds; oolitic limestones with *Bivaella europaea* Kochansky-Devide & Milanović, *Schubertella australis* Thompson & Miller, *Epimastopora alpina* Kochansky & Herak etc.

Received: 26. 12. 1988.

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Novi problematični mikrofosil iz donjeg perma Gorskog kotara

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Donjopermske naslage Gorskog kotara veoma su bogate raznovrsnim mikrofosilima, čija obrada je u toku. Ovdje je izdvojen jedan oblik za koga sam u početku mislio da pripada kodiacejama, što sam i spomenuo (1986), ali odsustvo mnogih elemenata karakterističnih za ovu familiju, uvjetovalo je, da spomenuti oblik opišem kao problematika.

Genus *Hexaella* n. gen.

Ime roda dano je prema heksagonalnim presjecima, kako u uzdužnim, tako i u poprečnim presjecima.

Opisana je samo jedna vrsta i dijagnoza je dana pri njenom opisu.

Hexaella heraki n. sp.

Porijeklo imena: Ime vrste dano u čast akademika, prof. dr. Milana Heraka, koji godinama istražuje mikrofosile Jugoslavije.

Tipičan lokalitet: Ciganski jarak, sjeverno od Mrzlih Vodica odnosno jugoistočno od kote 862.

Tipični slojevi: Tamnosivi, oolitni vapnenci. Mikrofosili okruženi oolitnim ovojem, povezani su sparitskim ili mikritskim matriksom. Naslage su ekvivalent trogkofelskih slojeva.

Holotip: Uzdužni presjek prikazan sl. 4 na tabli I, sadržan u preparatu MV-62/27. Materijal se čuva u Geološkom zavodu, Zagreb.

Dijagnoza: Izduženi, cilindrični »talus« ispunjen izduženim prizmatskim oblicima s ušiljenim vrhovima na bazama »prizama«. Stijenke mikroorganizma, također predstavljaju niz poligonalnih oblika.

Opis: Izduženi, cilindrični »talus« ovog mikrofosila ispunjen je gusto stisnutim, prizmatskim (petero ili šesterostranim) oblicima, koji se na dužim dijelovima »prizama« nastavljaju u odgovarajuće »piramide«. Možda su spomenuti oblici u ranom stadiju življenja bili valjkasti s kupastim nastavcima na bazama? Kasnije su vjerojatno, zbog bočnih pritisa poprimili poligonalne forme. Mjestimično su jako stisnuti, uz to su i trošni, tako da se ne zamjećuje spoj stranica »prizama« (tab. I, sl. 4 i 6), te izgleda da ti primjerci imaju neku vrstu »matične stanice«. Stijenke također predstavljaju niz sitnih poligonalnih oblika, tijesno priprijenih jedni uz druge. Općenito bi se moglo zamijetiti dva do tri niza većih prizmatskih oblika u centralnom dijelu mikrofosila, zatim koncentrično jedan ili dva niza izrazito manjih »prizama« i najzad periferni, najmanji niz. U pojedinim primjercima nije moguće pratiti sve nizove zbog rekristalizacije sedimenata.

Dimenzije su dane u engleskom tekstu.

Sličnost i razlike: Svojom oblikom *Hexaella heraki* nije slična nijednom poznatom mikrofosilu (obzirom na literaturu koja mi je bila dostupna).

Stratigrafski položaj: Donji perm, ekvivalent trogkofelskih naslaga. Oolitni vapnenci s *Bivaella europea* Kochansky-Devidé & Milanović, *Schubertella australis* Thompson & Miller, *Epimastopora alpina* Kochansky & Herak i dr.

PLATE — TABLA I

Hexaella heraki n. gen., n. sp

- 1, 2, 8, Oblique-transversal sections. Uzdužno kosi presjeci. X 27, X 21,5,
X 23,5.
- 3, 4, 5, 6, 7, Longitudinal sections. Uzdužni presjeci.
Fig. (sl.) 4. Holotype (holotip).
X 21,5, X 27, X 23,5, X 25, X 26.
- 9, 10, 11, 12, Transversal sections. Poprečni presjeci.
X 27, X 28, X 27, X 27.

Milanović, M.: *Hexaella heraki* n. gen., n. sp.

