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***Gyroporella lukicae* n. sp. (Dasycladaceae)
from the Lower Aptian of the surroundings of Jajce**

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A new species, *Gyroporella lukicae* is described. It is characterized by a tendency to a whorl arrangement of the branches and their, not always clearly delineated, alternation. Stratigraphically located in the Lower Aptian (Bedoulian), it represents the youngest species of this genus known so far.

Opisana je nova vrsta *Gyroporella lukicae*, koja se odlikuje tendencijom pršljenastog rasporeda ogranaka i njihovom ne uvijek jasno izraženom alternacijom. Sa stratigrafskim položajem u donjem aptu (bedulij) predstavlja do sada najmlađu poznatu vrstu ovoga roda.

Specimens of biointrasparrudite limestone with fragments of shells, a few abraded orbitolinids and frequent and rather large algae in places, were collected on the north-eastern slopes of the Janj rivulet valley. Several thin sections made from them have shown that the alga belongs to the genus *Gyroporella*. The find is of particular significance in view of the fact that, with the exception of the find of *Gyroporella* aff. *vesiculifera* Gümbel from the Lower Lias recorded by Cross & Lemoine (1967), it has not been known in the deposits younger than the Upper Triassic. Several complete, variously arranged and comparatively well preserved cross-sections of the skeleton of this alga were obtained from thin sections of numerous fragments. They are presented here in the description of the species *Gyroporella lukicae*, n. sp.

Family: *Dasycladaceae* Kützing, 1843

Tribus: *Diploporeae* Pia, 1920

Genus: *Gyroporella* Gümbel, 1872 (em. Benecke, 1876)
Gyroporella lukicae n. sp.

Origin of the name: the species is dedicated to Slavica Lukić, preparator in the Institute of Geology in recognition of her 20-year co-operation in making micropaleontologic thin sections.

Typical locality: north-eastern slopes of the Janj rivulet valley, on the road east of the village of Greda, in the surroundings of Jajce (Bosnia).

Age: specimens of partly recrystallized biointrasparrudite containing the alga come from the deposits of the Lower Aptian (Bedoulian).

Holotype: oblique section shown in Plate I, Fig. 1 derives from thin section BM-5548/8. The material is kept at the Institute of Geology, Zagreb.

Diagnosis: The cylindrical nonsegmented skeleton has a spacious axial cavity and is perforated by pores of vesicular branches. The branches are placed vertically or subvertically to the surface of the skeleton, tending to be arranged in more or less clearly marked whorls, with approximately alternating neighbouring whorls which are not always clearly visible.

Description: The cylindrical nonsegmented skeleton is characterized by a spacious axial cavity and thin walls. The outer surface is outlined rather regularly as indicated by the almost flat parts of the plates between the pores of the distal parts of the branches. The inner surface also appears to be regular, although the outlet of the branches from the stem cell is blurred, as it is in most species of this genus. The axial cavity takes up slightly less than 4/5 of the total diameter. The branches are not separated, and are of a markedly vesicular type variable in shape, as can be noticed from a more or less clear stem. In some specimens, the branches clearly differentiate into stems, whose canals are always eroded, at least partly, and into the distal, roundish, considerably expanded cavity. Other specimens give an impression of gradual spread of the branches from the base with a blurred passage to the distal cavity. The end of the branch seems to have widened to such a degree that the neighbouring branches were crammed against each other, thus disturbing their regular roundish shape. However, the invariably abraded outer surfaces do not allow the outer end parts of the branches to be seen. It seems that they pierced in slight protrusions through the carbonaceous sheath and were covered by a thinner carbonaceous membrane. The branches are vertical or more frequently subvertical to the surface and are arranged into rarely visible whorls, which are more clearly marked along the outer surface. The arrangement of branches of the neighbouring whorls is approximately alternating. Rarely preserved spores have been noticed in distal bubbly widenings.

Dimensions in mm:

maximal length observed	12.00
inner diameter	1.11 — 2.48
outer diameter	1.75 — 3.07
length of branch	0.30 — 0.40
number of branches in a whorl	23 — 30
distance between whorls	0.11 — 0.25
diameter of branch pores at the base	0.05
diameter of bubbly branch widenings	0.18 — 0.30
diameter of spore	0.08

Similarities and differences: In addition to the basic characteristics of the genus, namely the well marked vesicular branches and a spacious axial cavity, *Gyroporella lukicae*, n. sp. has features differentiating it

from *G. vesiculifera* Gümbel, which is closest to it by its stratigraphic position. In relation to the Upper Triassic species mentioned, to which an aspondyle branch arrangement is ascribed (Pia, 1920) and occasionally present traces of annulation, *G. lukicae* has a simple cylindrical skeleton with somewhat thicker carbonaceous walls and quite frequently noticeable parts of branch handles. Our species differs from *G. vesiculifera* by a greater diameter of the distal branch cavities which are slightly deformed owing to the contact with the neighbouring ones and often polygonal in shape, as well as by a clearly noticeable — though not always — whorl arrangement of branches and their alternating position.

Stratigraphic position: *Gyroporella lukicae* was found in a sample of biointrasparrudite in an association containing *Sabaudia minuta* (Hofker), *Pseudotextulariella? scarsellai* (De Castro), *Coptocampylodon fontis* Patrušius, *Lithocodium aggregatum* Elliott, *Bacinella irregularis* Radoičić and unoriented orbitolinidas which, according to the composition of the shell probably belong to palorbitolinas and preorbitolinas. In the somewhat higher superposed layers of the uncovered column, *Salpingoporella dinarica* Radoičić was, determined in a great number of specimens, above which lie limestones containing *Orbitolina (Mesorbitolina) texana* (Roemer) in an association with *Cuneolina laurentii* Sartoni & Crescenti, *C. pavonia parva* Henson, *Dictyoconus* sp. and *Orbitolinopsis* sp. On the basis of the microorganisms mentioned and their vertical arrangement in the column where *O. (M.) texana* with accompanying forms proves the Lower Albian, and *Salpingoporella dinarica* with a mass of individuals evidences the Upper Aptian, the species *Gyroporella lukicae* is ascribed to the Lower Aptian.

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Gyroporella lukicae n. sp. (Dasycladaceae) iz donjeg apta okolice Jajca

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Na sjeveroistočnim padinama doline rječice Janj, pritoci Pive u okolici Jajca, prikupljeni su uzorci biointrasparruditnih vapnenaca s fragmentima školjkaša, malobrojnim abradiranim orbitolinidama te mjestimice učestalim i dosta krupnim algama. Izradom većeg broja izbrusaka utvrđeno je da spomenuta alga pripada rodu *Gyroporella*. Ovo je bilo posebice značajno budući da predstavnici ovoga roda, izuzme li se nalaz *Gyroporella aff. vesiculifera* Gümbel iz donjeg lijasa kojega navode Cross & Lemoine (1967), gotovo i nisu bili poznati u naslagama mlađim od gornjega trijasa. Među obilnim fragmentima u izbruscima dobivano je i više cjelovitih, različito orijentiranih i relativno dobro usčuvanih presjeka skeleta ove alge, koji su ovdje prezentirani opisom vrste *Gyroporella lukicae*, n. sp.

Familija: *Dasycladaceae* Kützing, 1843
 Tribus: *Diploporeae* Pia, 1920
 Rod: *Gyroporella* Gümbel, 1872 (em. Benecke, 1876)
Gyroporella lukicae n. sp.

Table I—II

Podrijetlo imena: vrsta je posvećena Slavici Lukić, preparatoru u Geološkom zavodu iz zahvalnosti na 20-godišnjoj suradnji u izradi mikropaleontoloških izbrusaka.

Tipični lokalitet: sjeveroistočne padine rijeke Janj, na cesti istočno od sela Gređa, okolica Jajca (Bosna).

Starost: uzorci djelomice rekristaliziranog biointrasparrudita s ovom algom počeju iz naslaga donjeg apta (bedulij).

Holotip: kosi presjek prikazan na tabli I sl. 1 iz izbrusbruska BM — 5548/8. Materijal je pohranjen u Geološkom zavodu, Zagreb.

Dijagnoza: Cilindričan neseegmentirani skelet prostrane je aksijalne šupljine i perforiran je porama vezikulifernih ogranaka. Ogranci su okomiti do subokomiti na površinu skeleta, s tendencijom smještanja u više ili manje izražene pršljene i s približno alternirajućim rasporedom susjednih ne uvijek jasno vidljivih pršljena.

Opis: Cilindričan neseegmentirani skelet odlikuje se prostranom aksijalnom šupljinom i tankim stijenkama. Vanjska površina ocrtana je relativno pravilno na što upućuju gotovo ravni dijelovi ploha između pora distalnih dijelova ogranaka. Unutarnja površina također se čini pravilna, premda je kod ove kao i većine drugih vrsta ovoga roda izlazak ogranaka iz matične stanice nejasan. Aksijalna šupljina zaprema nešto manje od 4/5 ukupnog dijametra. Ogranci su nepodijeljeni, izrazito vezikulifernog tipa s varijabilnim oblikom, što je vidljivo više ili manje izraženom stapkom. Kod pojedinih primjeraka ogranaci su jasno diferencirani na stape, kojih su kanalići barem djelomice, ali redovito erodirani i distalnu okruglastu naglašeno proširenu šupljinu. Kod drugih primjeraka dobiva se dojam postupnog širenja ogranaka već od same baze s nejasnim prijelazom u distalnu šupljinu. Kraj ogranka u nekim je slučajevima čini se bio proširen do te mjere da su susjedni ogranaci međusobno stiskali jedan drugoga pa je bio narušen njihov pravilan okruglasti oblik. Međutim, u pravilu abradirane vanjske površine onemogućavaju da se vidi završni vanjski dio ogranaka. Izgleda da su ovi u laganim ispupčenjima izbijali izvan vapnenačkog omotača i da su bili prekriveni tanjom vapnenačkom membranom. Ogranci su okomiti ili češće subokomiti na površinu i smješteni su u rijetko vidljive pršljenove, jasnije izražene uz vanjsku površinu. Ogranci susjednih pršljena približno su alternirajućeg rasporeda. Rijetko očuvane spore zapažene su u distalnim mjehurastim proširenjima.

Dimenzije u mm:

maksimalna promatrana dužina
 vanjski dijametar

12,00
 1,75 — 3,07

unutarnji dijametar	1,11 — 2,48
dužina ogranaka	0,30 — 0,40
broj ogranak u pršljenu	23 — 30
udaljenost pršljena	0,11 — 0,25
dijametar pora ogranaka u bazi	0,05
dijametar mjehurastih proširenja ogranaka	0,18 — 0,30
dijametar spora	0,08

Sličnosti i razlike: *Gyroporella lukicae* n. sp. uz osnovne karakteristike roda, izrazito vezikulifernu ogranke i prostranu aksijalnu šupljinu ima odlike koje je diferenciraju od rjoj stratigrafskim položajem najbliže *G. vesiculifera* Gumbel. U odnosu na spomenutu gornjotrijasku vrstu kojoj se pridaje aspondilni raspored ogranaka (Pia, 1920) i ponekad prisutnih tragova anulacije *G. lukicae* jednostavnog je cilindričnog skeleta s nešto debljim vapnenačkim stijenkama i češće vidljivim dijelovima držaka ogranaka. Nadalje od *G. vesiculifera* naša vrsta razlikuje se većim dijametrom distalnih šupljina ogranaka koje su zbog međusobnog dodirivanja sa susjednima ponešto deformirane i u presjeku često poligonalnog oblika te premda ne uvijek jasno vidljivim pršljenastim rasporedom ogranaka i njihovim naizmjeničnim položajem.

Stratigrafski položaj: *Gyroporella lukicae* nađena je u uzorku biointrasparrudita u zajednici sa *Sabaudia minuta* (Hofker), *Pseudotextulariella? scarsellai* (De Castro), *Coptocampylodon fontis* Patrulius, *Lithocodium aggregatum* Elliott, *Bacinelza irregularis* Radoičić i neorijentiranim orbitolinidama koje prema građi kućice vjerojatno pripadaju palorbitolinama i preorbitolinama. U nešto višim superponirajućim slojevima otkrivenog stupa u velikom broju primjера utvrđena je *Salpingoporella dinarica* Radoičić na kojima slijede vapnenci s *Orbitolina (Mesorbitolina) texana* (Roemer) u zajednici s *Cuneolina laurentii* Sartoni & Crescenti, *C. pavonia parva* Henson, *Dictyoconus* sp. i *Orbitolinopsis* sp. Na osnovi navedenih mikroorganizama i njihovog vertikalnog rasporeda u stopu gdje *O. (M.) texana* uz prateće oblike dokumentira donji alb, *Salpingoporella dinarica* mnoštvom individua gornji apt, vrsti *Gyroporella lukicae* pridaje se pripadnost donjem aptu.

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PLATE—TABLA I

- 1—8. *Gyroporella lukicae* n. sp.
1. Holotype, oblique section
(holotip, kosi presjek), 13 ×
 2. Cross-section (poprečni presjek), 9 ×
- 4,6—7. Oblique sections (kosi presjeci)
4,6 = 11 ×, 7 = 16 ×
- 3,5,8. Tangential sections (tangencijalni presjeci)
3,5 = 11 ×, 8 = 13 ×

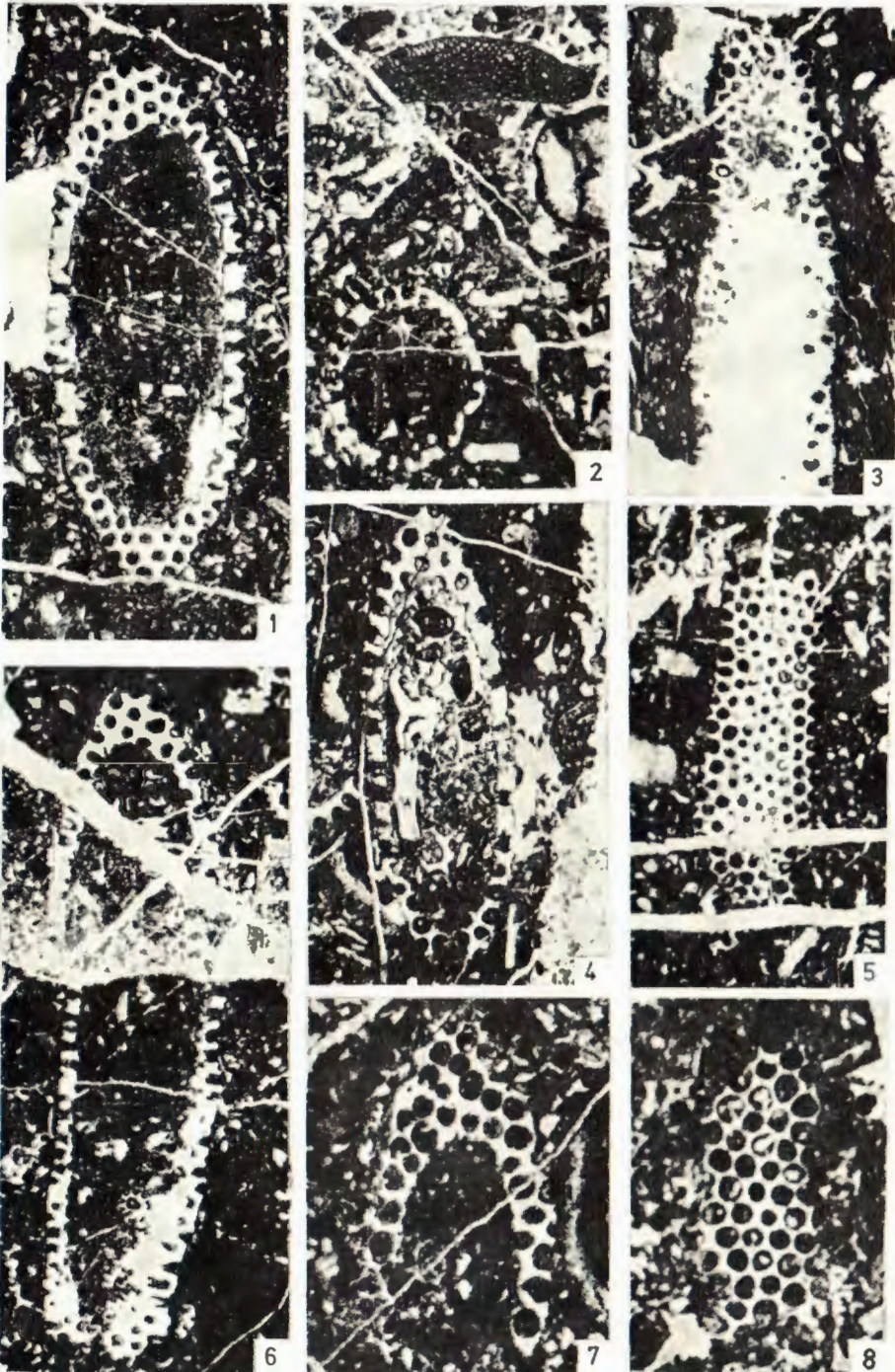


PLATE — TABLA II

1—8. *Gyroporella lukicae* n. sp.

1,6 Longitudinal sections (uzdužni presjeci)
1 = 11 x, 6 = 13 x

2—5 Oblique sections (kosi presjeci)
2,4 = 11 x, 3,5 = 20 x

7—8 Cross-sections (poprečni presjeci), 16 x

