

Geol. vjesnik	34	39—46	3 table	Zagreb, 1981
---------------	----	-------	---------	--------------

UDK: 56.02:5 82.26:551.763

## New Calcareous Algae (*Dsycladaceae*) from the Berriasian of Biokovo Mountain (Croatia)

Branko SOKAČ and Ivo VELIĆ

*Geološki zavod, Sachsova 2, p.p. 283, YU—41000 Zagreb*

New species of calcareous algae are described. One of these is grouped with the generally little known genus *Coniporella* (*C. piriformis* n. sp.), and the other with the genus *Clypeina* (*C. delmatarum* n. sp.). The new species were found in the same specimen of algal biosparite in Biokovo Mountain. They are determined stratigraphically as belonging to the Berriasian.

When columns of the terminal part of the Upper Malm and the Lower Cretaceous of Mountain Biokovo were examined in detail, specimens of fossiliferous limestone were systematically collected in order to analyze these deposits biostratigraphically. A micropaleontologic investigation of one of the specimens from the lower part of the Neocomian brought forth an unusual form of a recrystallized skeleton, pear-like in shape, among the remains of several calcareous algae. A further analysis of a number of sections of this specimen has led to the conclusion that this alga may be described as new, and that it belongs to the genus *Coniporella* according to its morphological features. Unfortunately, our knowledge of this genus and its species is rather limited, and based mainly on the general appearance of the complete skeletons found singly. In view of the fact that the species known so far were described from complete skeletons, the material presented here leaves room to open questions concerning, for instance, the appearance of the outer surface of the skeleton or some dimensions cited for these surfaces. Nevertheless, it seems that it is the general appearance of the skeleton that was decisive in the considerations on the genus *Coniporella* and in the determination of its species. The appropriate number of sections available to us has enabled us to visualize the basic characteristics and describe the new species of the genus. The material, which included numerous remains of the species *Salpingoporella katzeri* Conrad & Radoičić, and a number of undetermined ones, contained another alga presented by what looked at first like ill-preserved fragments. In preparing a large number of thin sections, a few were obtained of apparently a very rare alga; its morphological features have been determined on this evidence and the new species of the genus *Clypeina* has been described.

Family Dasycladaceae Kützing 1843

Genus *Coniporella* Fischer & Thierry 1971

*Coniporella piriformis* n. sp.

Plate I, Plate III, Fig. 2

Origin of name: after the pear-like shape of the calcareous skeleton.

Typical locality: on the old road connecting Podgora with Kozica over Biokovo, about 2.5 km west of Saranač, below Stratinovac peak.

Typical deposits: the specimen with the new species described belongs to algal biosparite originating from the Lower Neocomian — Berriasian.

Holotype: the longitudinal section of the upper swollen part of the alga and part of its stem, shown in Plate I, Fig. 2, was determined in specimen B—43.

Diagnosis: the recrystallized skeleton consists of a clearly differentiated swollen upper part and a narrow stem directed downwards. The swollen part has a slightly flattened upper end and combined with the initial part of the stem it makes a pear-like shape.

Description: the new calcareous alga is represented in the material examined by a considerable number of variously oriented sections, according to which the characteristic shape of its calcareous skeleton can be determined. The skeleton consists of a narrow stem which is continued by a swollen ball-shaped upper part. The skeleton built of recrystallized calcite has a thin sheath slightly thicker at the end of the swollen part, and somewhat thinner at the lower narrowed end of the stem. In a number of specimens the swollen part of the skeleton shows a slight flattening of the upper surface, which generally gives it the pear-like shape.

The thin calcareous wall is broken by the pores of the branches; owing to recrystallization and abrasion of the outer surface, the pores remain visible in a small number of specimens. The branches are undivided, very short and widen up outwards. In view of the relatively considerable widening of the branches in relation to the length, it may be assumed that they appeared in the form of knobs at the outer surface. The distal widening of the branches suggests their possible alternating position and irregular shape at the outer end.

Dimensions in mm:

outer diameter of the swollen part of the skeleton	1.19—1.55
inner diameter of the swollen part of the skeleton	0.97—1.33
maximal wall thickness	0.07—0.22
maximal pore diameter	0.1
distance from centre to pore centre	0.08—0.18
outer diameter of stem	0.25—0.33
inner diameter of stem	0.15—0.21

Similarities and differences: The species *Coniporella piriformis*, as mentioned earlier, has been classified in this genus because of the shape

of its skeleton, which makes it similar to other species of the genus *Coniporella*. However, in spite of the general similarity marked by the existence of the head and the clearly defined stem, lesser or greater differences are noticeable in the shape of the skeleton. The species described previously, *Coniporella clavaeformis* (D'Archiac) Fischer & Thierry, *C. micromera* (De Saporta) Fischer & Thierry, and *C. subtilis* (Steinmann) Fischer & Thierry, have ellipsoidal upper parts, which are spindle-shaped and generally more drawn out longitudinally in the direction of the longitudinal axis, while in the species *C. piriformis* it is more rounded and generally drawn out in the direction of the shorter axis. The difference is obvious even in considerably smaller dimensions of the species described here.

A comparison of the outer surface and some features, such as the layout of the branches, the shape of their sections at the surface, and their number in sq mm, is not feasible, i.e. it could only offer assumptions, since *C. piriformis* has been examined in sections only.

Stratigraphic position: *Coniporella piriformis* n. sp. was found in Mountain Biokovo, in the deposits of algal limestone whose overall thickness amounts to 25 m. It was determined in the biosparites of the beginning and terminal parts of the algal limestone mentioned, among the remains of various calcareous algae, of which it was possible to determine only the species *Salpingoporella katzeri* Conrad & Radoičić as the only one known so far, from the numerous remains. Since this species of the genus *Salpingoporella* is attributed to the Berriasian-Valanginian range, it is necessary to define the position of these algal limestones in the continuously observed and analyzed column of the top parts of the Jurassic and the lower parts of the Lower Cretaceous. Algal limestones containing *C. piriformis* lie between established deposits of the Upper Malm, specifically about 80 m above the last finds of *Clypeina jurassica* Favre and about 15 m below the first finds of *Pseudotexturiella salevensis* Charollais & al. and the first occurrences of *Cuneolina*, as safe marks for the Valanginian in this region. Owing to this position in the column with documented and stratigraphically determined deposits in the base and the roof, algal limestones containing *C. piriformis* n. sp. in this locality are attributed to the Berriasian.

Genus *Clypeina* Michelin 1845

*Clypeina delmatarum* n. sp.

Plate II, Figs. 1—6, Plate III, Fig. 1

Origin of name: after the Illyrian tribes Delmatae, who populated a wide region in which the species was found.

Typical locality: this species was found in the same specimen with the one described above, on the old road leading from Podgora over Biokovo to Kozica, south of the peak Stratinovac.

Typical deposits: algal biosparite from the Lower Neocomian-Berriasian.

**Holotype:** the longitudinal-oblique section shown in Plate II, Fig. 1, was determined in specimen B-43.

**Diagnosis:** The comparatively large calcareous skeleton is of a cylindrical, mildly undulating shape, covered with tiny pores of sterile branches all over the surface. Undivided fertile branches are set at relatively distant whorls which occur in the flat parts of the widened part of the thallus.

**Description:** The new species is characterized by a calcareous skeleton with comparatively thin walls. The mainly cylindrical skeleton has mildly undulating outer and inner surfaces. The undulation of the skeleton results from regularly alternating slight narrowings at places without branches with mild widenings where the branches grew. This is the reason why the values of the ratio between the outer and the inner diameter vary depending on the place of the section's plane. Thus, calcareous walls of equal thickness are covered with tiny pores, which seem to be present also on the sheaths of the branches.

Undivided branches, almost vertical or slightly turned upwards from the longitudinal axis of the thallus, are situated in whorls, spaced at regular and comparatively wide intervals along the thallus. Each branch stands single from the base (Plate II, Fig. 2) and is wrapped by its own calcareous sheath, whose thickness roughly equals those of other parts of the skeleton. Unfortunately, since there are very slight chances for this fragile skeleton to be preserved complete, and even less to obtain a horizontal section of the whorl, in view of the fact that the whorls are set out sparsely, it is not possible to gain a better insight into their outer end and their full number in a whorl. The section (Plate II, Fig. 1) suggests that the branches are comparatively short and that they widen at the outlet from the stem-cell and narrow down towards the distal end. The calcareous skeleton cells as well as the sheaths of single-standing branches are perforated by tiny pores widened and more noticeable at their outer side. The existence of the pores is assumed on the evidence of sterile branches mentioned for the genus *Clypeina* (Radoičić, 1969) in some better preserved specimens of the species *Clypeina jurassica* Favre and *C. inopinata* Favre.

Dimensions in mm:

maximal length observed	4.4
outer diameter at the level of whorls	1.8
inner diameter at the level of whorls	1.11
outer diameter at the level between whorls	1.12
inner diameter at the level between whorls	0.96
distance between neighbouring whorls	1.11
number of branches in a whorl	8—10

**Similarities and differences:** *Clypeina delmatarum* n. sp. belongs to comparatively large forms of this genus; its whorls are clearly differentiated and set at comparatively wide but regular interstices. Undoubtedly related by its features to other species of the genus *Clypeina*, this species belongs to that rare group in which there is evidence of tiny pores along

with the fertile branches in the structure of the thallus; these pores in the skeleton are indicative of the existence of sterile branches. This feature makes it similar to the species *C. jurassica* and *C. inopinata*, for which it has been clearly noted (Radoičić, 1969), and to *C. zumatae* Jaffrezo & Fourcade (Jaffrezo & Fourcade, 1973, Plate A, Fig. 9) for which the same feature has been suggested. Our species differs from these by a considerably wider main stem, a greater interstice between the neighbouring whorls, branches which stand single from the base, and by an undulating cylindrical skeleton which is its specific feature and distinguishes this species from other species of the genus *Clypeina* described so far.

Stratigraphic position: *Clypeina delmatarum* n. sp. was found together with *Coniporella piriformis* n. sp. and *Salpingoporella katzeri*, so that it is considered as belonging to the Berriasian.

#### REFERENCES

- Bassoullet, J. P., Bernier, P., Conrad, M. A., Deloffre, R. & Jaffrezo, M. (1978): Les Algues Dasycladacées du Jurassique et du Crétacé. *Geobios, Mém. spéc.* 2, 1—330, Lyon.
- Conrad, M. A. & Radoičić, R. (1978): *Salpingoporella katzeri* n. sp., une Dasycladacée (Algue calcaire) nouvelle du Berriasien et du Valanginien de la région Méditerranéenne. *Geol. vjesnik*, 30/1, 69—72, Zagreb.
- Jaffrezo, M. & Fourcade, E. (1973): Deux nouvelles espèces de Clypeines de la limite Jurassique-Crétacé du Sud-Est de l'Espagne. *Geobios*, 6, 65—72, Lyon.
- Radoičić, R. (1969): A new Lower Cretaceous Dasycladacea, *Clypeina pejovici*, and note on some Clypeinae. *Geol. Romana*, 8, 71—84, Roma.

### Nove vapnenačke alge (*Dasycladaceae*) iz berijasa planine Biokova (Hrvatska)

B. SOKAČ i I. VELIĆ

Opisane su nove vrste vapnenačkih alga od kojih je jedna pribrojena općenito slabo poznatom rodu *Coniporella* (*C. piriformis* n. sp.), a druga rodu *Clypeirza* (*C. delmatarum* n. sp.). Nove vrste nađene su u istom uzorku algalnog biosparita u planini Biokovo. Određena im je stratigrafska pripadnost barijasu.

Prilikom detaljne obrade profila kroz završni dio gornjeg malma i donju kredu u planini Biokovo, sistematski su prikupljeni uzorci fosilifernih vapnenaca s ciljem biostratigrafske analize spomenutih naslaga. Mikropaleontološkom obradom u jednom od uzoraka iz nižeg dijela neokoma među ostacima više vapnenačkih alga zapažena je i neobična forma rekristaliziranog skeleta i kruškastog oblika. Daljnjom obradom ovog uzorka na većem broju dobivenih presjeka moglo se zaključiti da se ova alga na osnovi morfoloških odlika može opisati kao nova, pripadnosti rodu *Coniporella*. Na žalost, naše poznavanje ovog roda i njegovih vrsta prilično je manjkavo i dobrim je dijelom osnovano na općem izgledu dosada pojedinačno nađenih cjelovitih skeleta. U odnosu na dosada poznate vrste opisane na cjelovitim skeletima prikaz ovog materijala ostavlja i neka otvorena pitanja, kao što je to izgled vanjske površine skeleta ili nekih dimenzija koje se navode s ove površine. Unatoč ovome stječe se dojam da je baš opći izgled skeleta bio presudan u razmatranju roda *Coniporella* i determinaciji njegovih vrsta. Dovoljan broj presjeka s kojima smo raspolagali omogućio je da se sagledaju te osnovne karakteristike i opiše nova vrsta ovog roda. Među ostalim materijalom uz mnogobrojne ostatke vrste *Salpingoporella*

katzeri Conrad & Radoičić, kao i neke još nedeterminirane, bila je prisutna jedna druga alga predstavljena u prvom momentu slabo očuvanim fragmentima. Izradom većeg broja preparata dobiveno je nekoliko presjeka, čini se vrlo rijetke alge, na osnovi kojih su utvrđene njezine morfološke karakteristike i opisana nova vrsta roda *Clypeina*.

Familija *Dasycladaceae* Kützing 1843

Rod *Coniporella* Fischer & Thierry 1971

*Coniporella piriformis* n. sp.

Tab. I, Tab. III, sl. 2

Porijeklo imena: prema kruškastom obliku vapnenačkog skeleta.

Tipični lokalitet: na staroj cesti koja preko Biokova povezuje Podgoru s Kozicom, oko 2,5 km zapadno od Saranča, ispod vrha Stratinovac.

Tipični slojevi: uzorak s novo opisanom vrstom pripada algalnom biosparitu i potječe iz donjeg neokoma — berijasa.

Holotip: uzdužni presjek kroz gornji napuhnuti dio alge i dijela njezine stapke, prikazan na tab. I, sl. 2, utvrđen je u preparatu B-43.

Dijagnoza: rekristalizirani skelet sastoji se iz jasno diferenciranog napuhnuto gornjeg dijela i uske stapke prema dolje. Napuhnuti dio slabo je spljoštenog gornjeg kraja, pa s početnim dijelom stapke poprima oblik kruške.

Opis. Nova vapnenačka alga predstavljena je u obrađenom materijalu većim brojem različito orijentiranih presjeka na osnovi kojih je moguće zaključiti na karakterističan oblik njezinog vapnenačkog skeleta. Skelet se sastoji od uske stapke na koju se nastavlja napuhnuti — loptasti gornji dio. Skelet izgrađen od rekristaliziranog kalcita odlikuje se tankim ovojem neznatno odebljalim na gornjem kraju napuhnuto dijela i lagano stanjenim na donjem suženom kraju i stapci. Napuhnuti dio skeleta kod većeg broja primjeraka pokazuje laganu spljoštenost gornje površine što mu općenito daje oblik kruške.

Tanka vapnenačka stijenka probijena je porama ogranaka koje su zbog rekristalizacije i abrazije vanjske površine vidljive na vrlo malom broju primjeraka. Ogranci su nepodjeljeni, vrlo kratki i prema vani prošireni. S obzirom na relativno znatno proširenje ogranaka u odnosu na dužinu pretpostavlja se njihovo lagano ispušćenje na vanjskoj površini. Na osnovi spomenutog distalnog proširivanja ogranaka pretpostavlja se i njihov približno naizmjeničan položaj i nepravilan oblik na vanjskom kraju.

Dimenzije u mm:

vanjski dijametar napuhnuto dijela skeleta	1,19—1,55
unutrašnji dijametar napuhnuto dijela skeleta	0,97—1,33
maksimalna debljina stijenke	0,07—0,22
maksimalni dijametar pora	0,1
udaljenost od centra do centra pora	0,08—0,18
vanjski dijametar stapke	0,25—0,33
unutrašnji dijametar stapke	0,15—0,21

Sličnost i razlike: Vrsta *Coniporella piriformis* n. sp., kao što je već spomenuto, pribrojena je ovom rodu na osnovi oblika skeleta čime je ujedno izražena sličnost s ostalim vrstama roda *Coniporella*. Međutim, unatoč generalne sličnosti izražene postojanjem glave i jasno diferencirane stapke, zapaža se i veća ili manja razlika u obliku skeleta. U prethodno opisanih vrsta *Coniporella clavaeformis* (d'Archiac) Fischer & Thierry, *C. micromera* (De Saporta) Fischer & Thierry i *C. subtilis* (Steinmann) Fischer & Thierry gornji dio je elipsoidalan, vretenast ili općenito izrazitije izdužen smjerom uzdužne osi, dok je u vrste *C. piriformis* više okrugao ili općenito nešto više razvučen smjerom kraće osi. Razlika je vidljiva i u znatno manjim dimenzijama ovdje opisane vrste od prethodnih.

Usporedba vanjske površine i nekih karakteristika, kao što je međusobni raspored ogranaka, oblik njihovog presjeka na površini, kao i njihovog broja na mm<sup>2</sup> nije moguća ili bi to bila samo pretpostavka, s obzirom da je *C. piriformis* promatrana isključivo u presjecima.

Stratigrafski položaj: *Coniporella piriformis* n. sp. nađena je u planini Biokovo u naslagama algalnih vapnenaca kojih ukupna debljina iznosi 25 m. Utvrđena je u biosparitima početnog i završnog dijela spomenutih algalnih vapnenaca među ostacima različitih vapnenačkih alga od kojih se kao dosada poznata jedino mogla mnogobrojnim ostacima odrediti vrsta *Salpingoporella katzeri* Conrad & Radoičić. S obzirom da se spomenutoj vrsti roda *Salpingoporella* pridaje raspon berijas—valendis potrebno je definirati položaj ovih algalnih vapnenaca u kontinuirano promatranom i analiziranom stupu vršnih dijelova jure i nižih dijelova donje krede. Algalni vapnenci s *C. piriformis* leže između dokazanih naslaga gornjeg malma i to oko 80 m iznad zadnjih nalaza *Clypeina jurassica* Favre i oko 15 m ispod prvih nalaza *Pseudotextulariella salevensis* Charollais & al. i prvih pojava *Cuneolina* kao sigurnih indikatora za valendis u ovom području. Na osnovi ovakvog položaja u stupu s dokumentiranim i stratigrafski determiniranim naslagama u podini i krovini, algalnim vapnencima s vrstom *C. piriformis* n. sp. pridaje se na ovom lokalitetu pripadnost berijas.

Rod *Clypeina* Michelin 1845.

*Clypeina delmatarum* n. sp.

Tab. II, sl. 1—6, tab. III, sl. 1

Porijeklo imena: prema Ilirskim plemenima Delmatae koji su nastanjivali šire područje u kojem je nađena ova vrsta.

Tipičan lokalitet: ova vrsta je nađena u istom uzorku s prethodno opisanom na staroj cesti što od Podgore preko Biokova vodi u Kozicu, južno od vrha Stratinovac.

Tipični slojevi: algalni biosparit iz donjeg neokoma—berijasa.

Holotip: uzdužno-kosi presjek prikazan na tab. II, sl. 1, utvrđen je u preparatu B-43.

Dijagnoza: Razmjerno krupan vapnenački skelet cilindričnog je, blago valovitog oblika i po cijeloj površini prekriven sitnim porama sterilnih ogranaka. Nepodijeljeni fertilni ogranaci smješteni su u relativno udaljenim pršljenovima koji se nalaze u ravninama proširenog dijela talusa.

Opis. Nova vrsta odlikuje se krupnim vapnenačkim skeletom relativno tankih stijenka. Generalno cilindričan skelet blago je valovite vanjske i unutrašnje površine. Valovitost skeleta je posljedica pravilnog smjenjivanja njegovog laganog sužavanja u intervalima bez ogranaka i laganog proširivanja na mjestima izrastanja ogranaka. Iz ovog razloga varira i vrijednost odnosa vanjskog i unutrašnjeg dijametra, ovisno o mjestu ravnine presjeka. Tanke vapnenačke stijenke podjednake debljine pokrivene su sitnim porama, čini se prisutnim i na ovojnica ogranaka.

Nepodijeljeni ogranaci, približno okomiti ili neznatno povijeni na gore u odnosu na uzdužnu os talusa nalaze se u pršljenima, koji su u pravilnim i relativno međusobno širokim razmacima smješteni duž talusa. Svaki ogranak potpuno individualiziran od same baze (tab. II, sl. 2) obavijen je vlastitom vapnenačkom ovojnicom koje je debljina približno jednaka ostalim dijelovima skeleta. Na žalost, mala mogućnost da se očuva cjeloviti ovako nježno građeni skelet i još manja mogućnost da se s obzirom na rijetko postavljene pršljene dobije horizontalni presjek kroz pršljen ne omogućuje potpuniji uvid u njihov vanjski završetak i njihov puni broj u jednom pršljenu. Iz presjeka (tab. II, sl. 1) može se zaključiti da su ogranaci relativno kratki i da se izlaskom iz matične stanice proširuju i ponovno prema vanjskom kraju sužuju. Vapnenačke stijenke skeleta kao i ovojnice individualiziranih ogranaka perforirane su sitnim porama proširenim i jasnije izraženim s njihove vanjske strane. Porijeklo ovih pora pretpostavlja se postojanjem sterilnih ogranaka koji se kod roda *Clypeina* navode (Radoičić, 1969) za neke bolje očuvane primjerke vrsta *Clypeina jurassica* Favre i *C. inopinata* Favre.

## Dimenzije u mm:

maksimalno promatrana dužina	4,4
vanjski dijametar u ravnini pršljena	1,8
unutrašnji dijametar u ravnini pršljena	1,11
vanjski dijametar u ravnini između pršljena	1,12
unutrašnji dijametar u ravnini između pršljena	0,96
udaljenost susjednih pršljena	1,11
broj ogranaka u pršljenu	8—10

Sličnosti i razlike: *Clypeina delmatarum* n. sp. pripada krupnim oblicima ovoga roda s jasno diferenciranim i relativno znatno ali pravilno razmaknutim pršljenima. Osnovnim karakteristikama nesumljivo srodna ostalim vrstama roda *Clypeina*, ova vrsta pripada onoj malobrojnoj skupini kod kojih je u građi talusa uz fertile ogranke evidentna prisutnost sitnih pora na skeletu koje su indicacija postojanja i sterilnih ogranaka. Ovom karakteristikom ona se približava vrstama *C. jurassica* i *C. inopinata* kod kojih se to jasno navodi (Radoičić, 1969) a što se donekle nazire i kod *C. zumatae* Jaffrezo & Fourcade (Jaffrezo & Fourcade, 1973, tab. A, sl. 9). Međutim, od ovih vrsta naša se razlikuje znatno širom matičnom stanicom, većom međusobnom udaljenošću susjednih pršljena, potpunom individualizacijom ogranaka od same baze, pa valovito cilindričnim skeletom kao specifičnom karakteristikom, čime se jasno razlikuje i od ostalih opisanih vrsta roda *Clypeina*.

Stratigrafski položaj: *Clypeina delmatarum* n. sp. nađena je u zajednici s vrstama *Coniporella piriformis* i *Salpingoporella katzeri*, pa se i njoj pripisuje stratigrafska pripadnost berijasju.

Primljeno: 30. 5. 1980.

## PLATE — TABLA I

1—10. *Coniporella piriformis* n. sp.

1. Oblique section through the head (kosi presjek kroz glavu), x16.
2. Longitudinal section, Holotype (uzdužni presjek, holotip), x16.
- 3—5. 7—8. Longitudinal sections (uzdužni presjeci), x16.
6. Oblique sections through the head (kosi presjeci kroz glavu), x12,4.
9. Cross section through the head (poprečni presjek kroz glavu), x12,4.
10. Oblique section through the head (kosi presjek kroz glavu), x20.



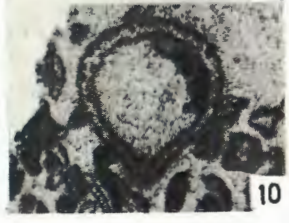
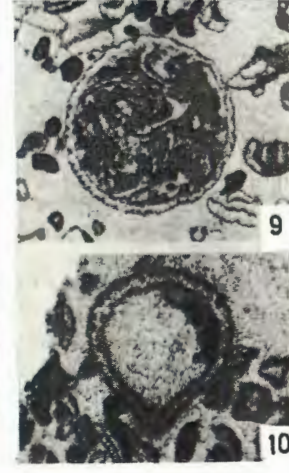
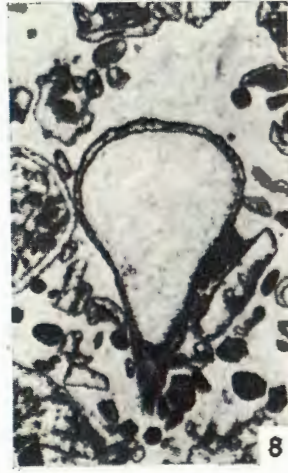
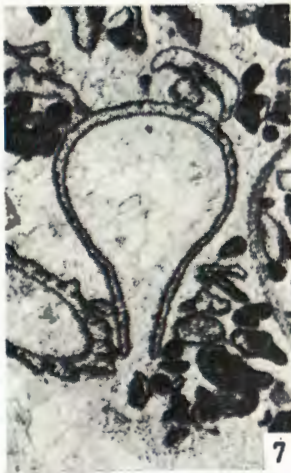
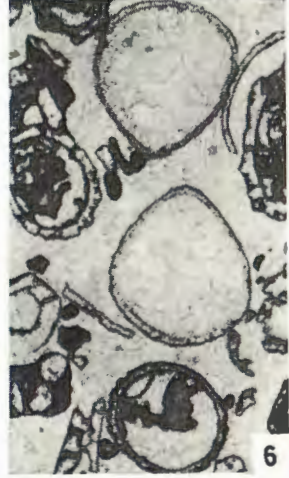
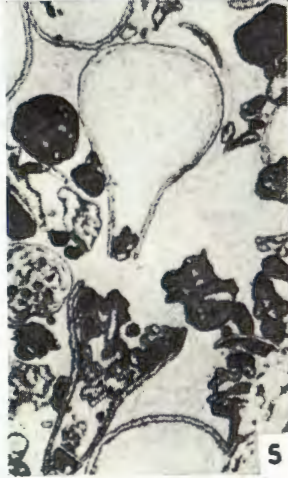
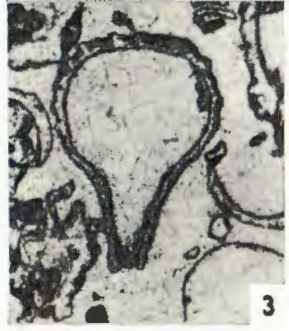
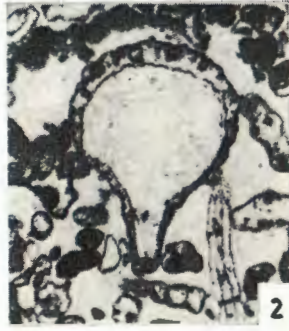


PLATE — TABLA II

1—6. *Clypeina delmatarum* n. sp.

1. Longitudinal-oblique section, Holotype (uzdužno-kosi presjek, holotip), x22,6.
- 2—3. Oblique sections (kosi presjeci), x16.
4. Cross section (poprečni presjek), x16.
5. Oblique section (kosi presjek), x18.
6. Longitudinal section (uzdužni presjek), x18.
7. *Salpingoporella katzeri* Conrad & Radoičić, Oblique sections (kosi presjeci), x19.

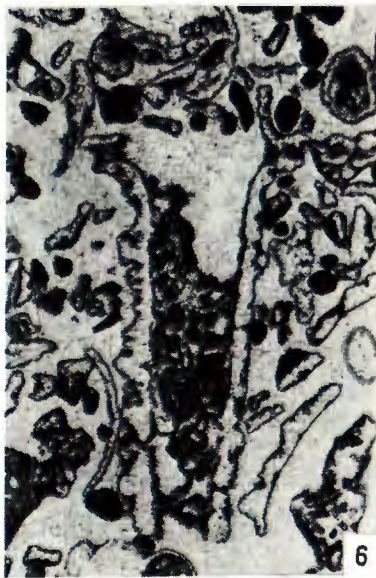
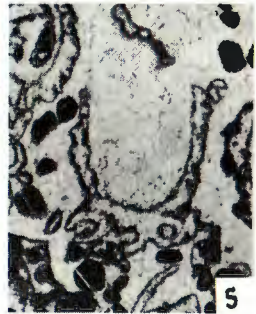
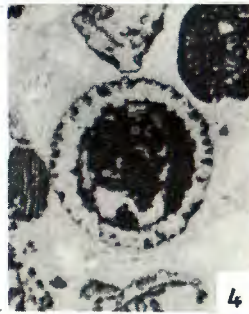
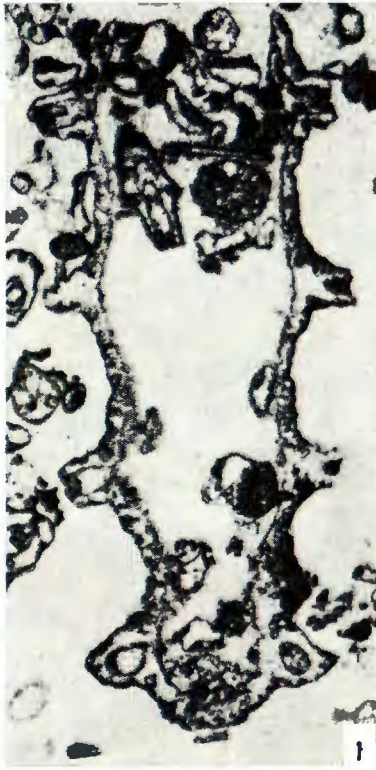


PLATE — TABLA III

1. *Clypeina delmatarum* n. sp., oblique section (kosi presjek), x16.
2. *Coniporella piriformis* n. sp., longitudinal section (uzdužni presjek), x16.
- 3—6. *Salpingoporella katzeri* Conrad & Radoičić
  3. Oblique-tangential section (koso-tangencijalni presjek), x14,5.
  - 4—6. Oblique sections (kosi presjeci), figs. 4—5, x18,5, fig. 6, x16,5.

