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THEODOR NEAGU

DUŻE OTWORNICE AGLUTYNUJĄCE Z KAMPANU KARPAT RUMUŃSKICH

(Tabl. XXVI—XXVII i 5 fig.)

Large size agglutinated Foraminifera from the Campanian of Rumania

(Pl. XXVI—XXVII and 5 figs.)

STRESZCZENIE

Autor opisał 3 nowe gatunki otwornic aglutynujących: *Psammatodendron dichotomicum* n. sp. (z rodziny *Hyperamminidae*), *Aschemonella carpathica* n. sp., *Aschemonella moniliformis* n. sp. (z rodziny *Reophacidae*).

Wymienione otwornice pochodzą z pstrych margli i wapieni marglistych (kampan) z okolicy Braszowa ze strefy fliszu wewnętrznego rumuńskich Karpat Wschodnich. Okazy otwornic dochodzą do długości kilkunastu centymetrów przy grubości skorupki około 1 mm, gdy, jak wiadomo, we fliszu rurkowate skorupki otwornic są z reguły połamane. Tak dobry stan zachowania skamieniałości otwornic rurkowatych należy do wyjątków w Karpatach i umożliwił autorowi rozpoznanie cech morfologicznych istotnych w diagnostyce tych gatunków otwornic. Pracę uzupełniają sporządzone przez autora fotografie i rysunki otwornic.

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Abstract. A rich and very well preserved material containing tests of agglutinated Foraminifera was obtained from Cretaceous Flysch deposits of Eastern Carpathians. The Foraminifera belong to the genera Psammatodendron and Aschemonella. Three new species: Psammatodendron dichotomicum n. sp., Aschemonella carpathica n. sp., and Aschemonella moniliformis n. sp. are described.

INTRODUCTION

The Upper Senonian of the internal Flysch zone of Eastern Carpathians is represented by brick-red, green or stained marls and marly limestones, containing an abundant fauna of *Inoceramus* sp., *Belemnitella* sp. and Foraminifera. A rich fauna of agglutinated foraminifers belonging to the genera *Psammatodendron* and *Aschemonella* was encountered in the described series in the Ulves Valley, Brașov County, Rumania. The macrofauna occurring together with the foraminifers is represented by *Inoceramus balticus* Boehm, *Inoceramus salisburgensis* (Fug. and

K a s t.) and *Belemnitella mucronata* (S c h l o t h). This assemblage points out undoubtedly to a Campanian age. The exceedingly good preservation of the large foraminifers made possible an ample investigation which provided detailed data on the taxonomic position of these Foraminifera so distinct by their dimensions, and commonly met with in the Upper Cretaceous Flysch of the Carpathians. Till the findings described in the present paper the taxonomic affiliation of these foraminifers remained obscure because of bad state of preservation of the specimens from earlier collections.

SYSTEMATIC DESCRIPTION

Ordo Foraminifera
Subordo Biloculinidea
Familia *Hyperamminidae*

Psammatodendron dichotomicum n. sp.

Pl. XXVI. fig. 1—4, Fig. 1/1—4, Fig. 2/1

H o l o t y p u s : L.P.B. 5003; pl. XXVI, fig. 1.
P a r a t y p u s : L.P.B. 5388; Pl. XXVI, fig. 2—4, Fig. 1/1—4, Fig. 2/1.
S t r a t u m t y p i c u m : Campanian.
L o c u s t y p i c u s : Intorsura Buzăului-Valea Mare, Brașov County
D e r i v a t i o n o m i n i s : dichotomous

D e s c r i p t i o n : Test free, laterally slightly flattened, rarely branched dichotomously, tube diameter nearly constant, with small constrictions and dilatations situated at unequal distances, but mainly at the proximity of ramification points. Test wall 0,16—0,19 mm thick formed of quite large quartz grains, mica flakes, rare fragments of sponge spicules etc. Small amounts of siliceous cement are present. Tube filled with dark-greenish argillaceous very fine-grained material.

D i m e n s i o n s : length: not determined (length of specimens examined varies from 2 cm to 15 cm); Thickness: 0,9 mm—1,1 mm,

R e m a r k s : Generally speaking, specimens encountered in the Senonian of Intorsura Buzăului can be assigned either to the genus *Psammatodendron* or to the genus *Dendrophrya*. In order to select the right alternative it is necessary to resort to studies of Recent Foraminifera. J. A. C u s h m a n (1918) indicates the following diagnoses for these two genera: Genus *Psammatodendron*: „test attached by the bulbous proloculus, remainder of the test free and erect, dichotomously branching, tubular; of even diameter throughout, wall arenaceous with ferruginous cement, open ends of the tubes serving as apertures".

Genus *Dendrophrya:* „Test attached consisting of a single chamber erect or with spreading arms, tubular, irregular or branching, wall arenaceous, with a chitinous base; aperture at the ends of the arms".

These diagnoses as well as C u s h m a n ' s illustrations indicate that the genus *Psammatodendron* is characterized by a much thinner test,

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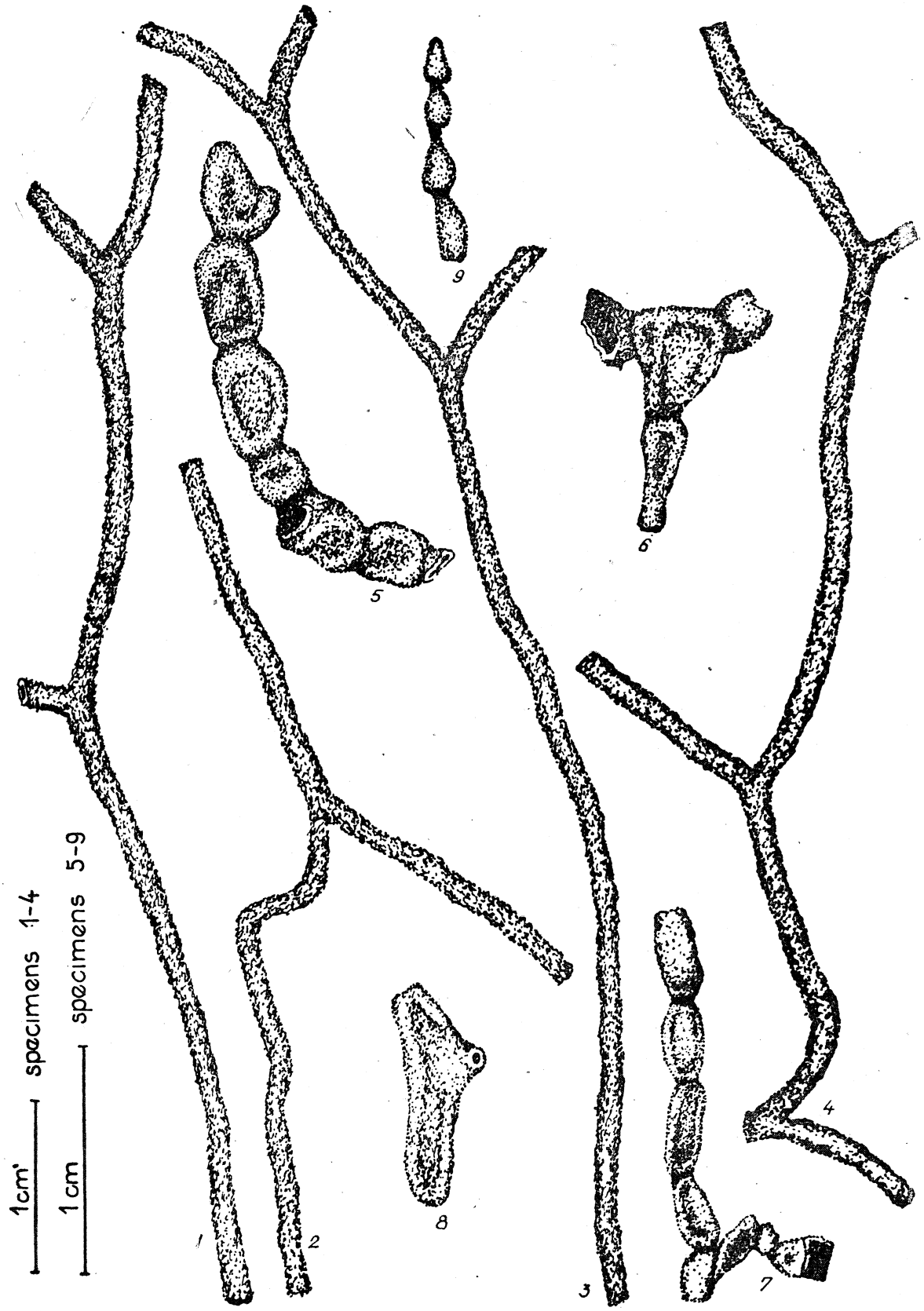
Fig. 1. 1—4 — *Psammatodendron dichotomicum* n. sp., Paratypus; Campanian, Intorsura Buzăului-Valea Mare, Brașov County, Carpathians, Rumania; 5—8 — *Aschemonella carpathica* n. sp., Paratypus; Campanian, Locality as above; 9 — *Aschemonella moniliformis* n. sp., Paratypus; Campanian, Locality as above


1cm
specimens 1-4
1cm
specimens 5-9
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2
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9

dichotomously branching, while the genus *Dendrophrya* has a massive dichotomic aspect. These differences entitle the specimens of the Campanian of Intorsura Buzăului-Valea Mare to be assigned to the genus *Psammatodendron*. It seems that *D. robusta* Grzybowski (1897) described from the Carpatian Flysch in Poland differs from *Ps. dichotomicum* n. sp. by its test somewhat more robust, thicker and not branched. *D. robusta* is known from small fragments only, the specimens being damaged probably by the action of deep-sea currents.

Ps. dichotomicum n. sp. differs by its slightly flattened tubular test and much greater diameter from *Ps. arborescens* Norman with which it has some similitudes concerning the general appearance of test, as it can be noted from the figures given by Cushman (1918).

Subordo: Pluriloculinidea
Superfamilia *Lituolidea*
Familia *Reophacidae*
Genus *Aschemonella* Brady 1879

Aschemonella carpathica n. sp.

Pl. XXVII, Fig. 1—3; Fig. 1/5—8, Fig. 2/2—4, Fig. 3/1—3, Fig. 4/1—6.

1960 *Aschemonella* sp. Geroch p. 41, 90, 122, Pl. I, fig. 24, 25
Holotypus: L.P.B. 5002, Plate XXVII, Fig. 1
Paratypus: L.P.B. 5009, Pl. XXVII, Fig. 2, 3; Fig. 1/5—8; Fig. 2/2—4; Fig. 3/1—3; Fig. 4/2—6
Stratum typicum: Campanian
Locus typicus: Intorsura Buzăului-Valea Mare, Brașov County
Derivatio nominis: Carpathians

Description: Test free, moniliform, with an articulate aspect, dichotomically branched, consisting of numerous chambers with an oval-truncated-glandular contour. Parts connected with both the precedent and subsequent chamber nearly identical. Dimensions of chambers gradually but irregularly increasing.

Test wall formed of quartz grains, mica flakes, sponge spicules etc. of varying size, bound by an abundant siliceous cement. Wall thickness ca 0,12 mm. Chambers filled with a dark greenish argillaceous material.

Apertures circular, situated on small necks either at the end of terminal chambers or on the sides of the chambers.

Dimensions: Length not determined (in the specimens examined the length varies from 2 to 7 cm), thickness — 1—3 mm.

Remarks: The described specimens are similar to the genus *Thomasinella* (*Bireophax*), but the presence of secondary apertures situated on the sides of the chambers points out to their affiliation to the genus *Aschemonella*.

The fact that the chambers are loosely connected and easily broke apart during fossilisation or preparation caused that undamaged specimens were not known before. That is the case of the material collected from the Flysch of the Polish Carpathians (Geroch, 1960, p. 41, 90, 122, Pl. I,

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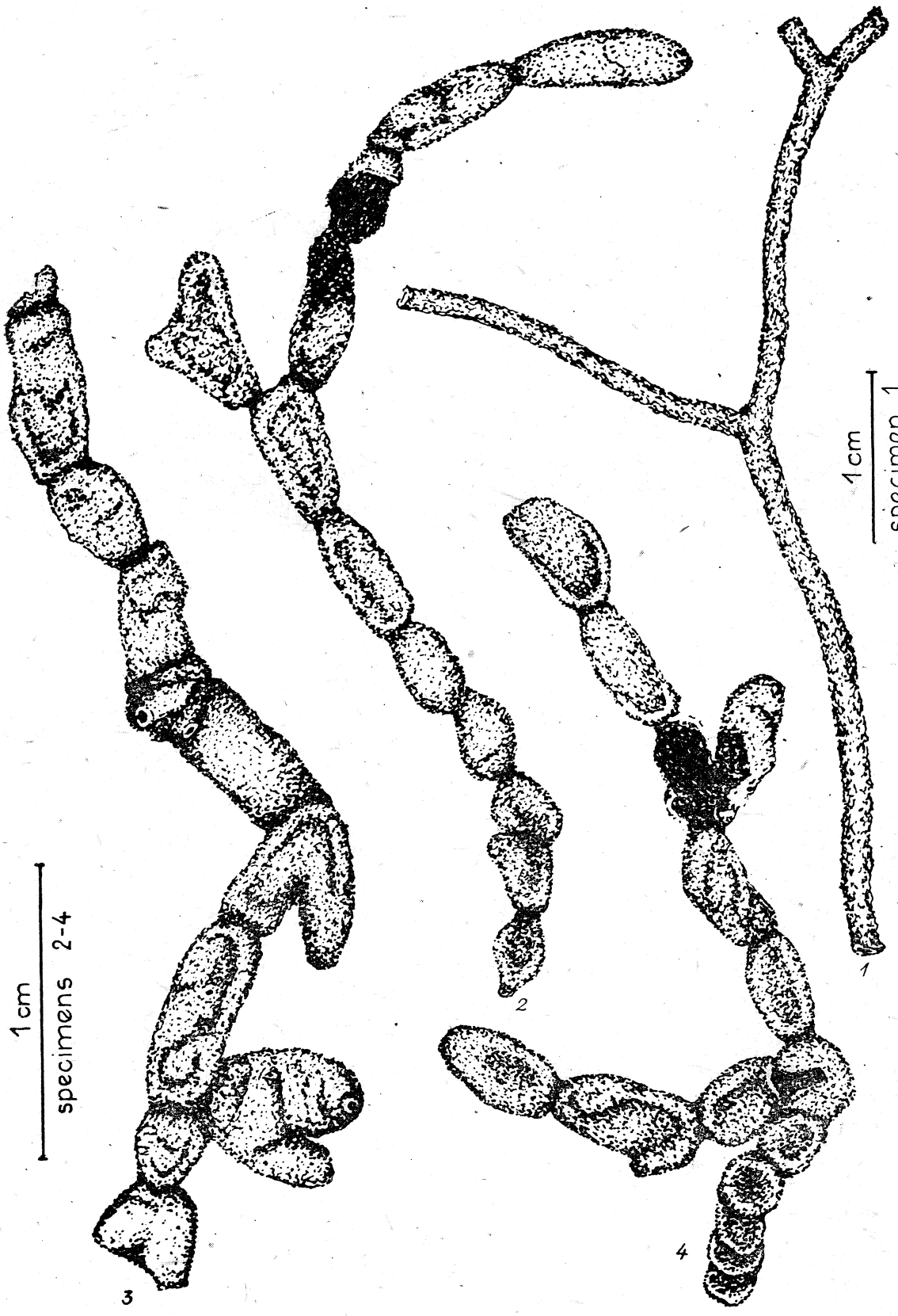
Fig. 2. 1 — *Psammatodendron dichotomicum* n. sp., Paratypus; Campanian, Intorsura Buzăului-Valea Mare, Brașov County, Carpathians, Rumania; 2—4 — *Aschemonella carpathica* n. sp., Paratypus; Campanian, Locality as above


1 cm
specimen 1
1 cm
specimens 2-4
1
2
3
4

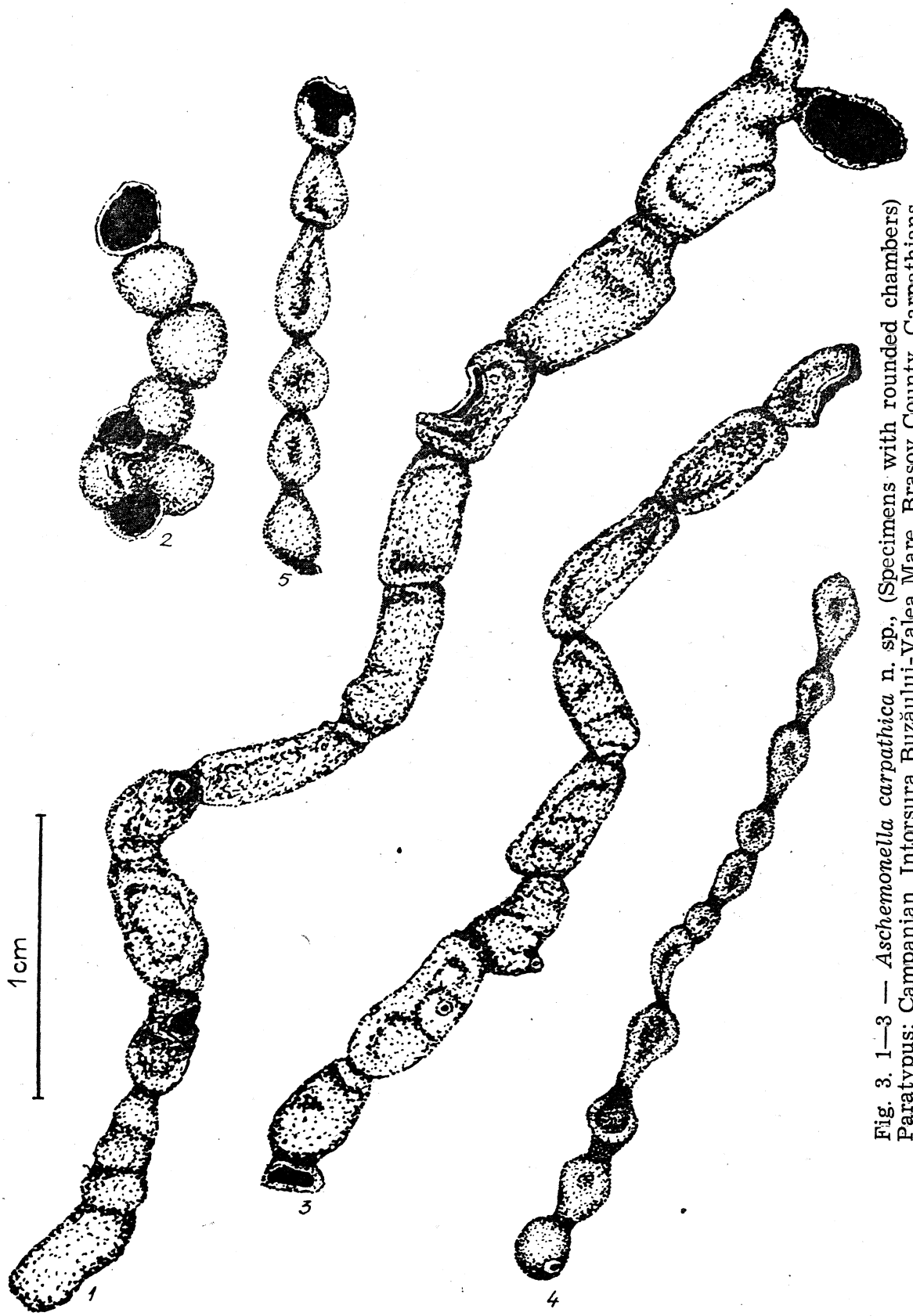


Fig. 3. 1—3 — *Aschemonella carpathica* n. sp., (Specimens with rounded chambers) Paratypus; Campanian, Intorsura Buzăului-Valea Mare, Brașov County, Carpathians, Rumunia; 4, 5 — *Aschemonella moniliformis* n. sp., Paratypus; Campanian, Locality as above

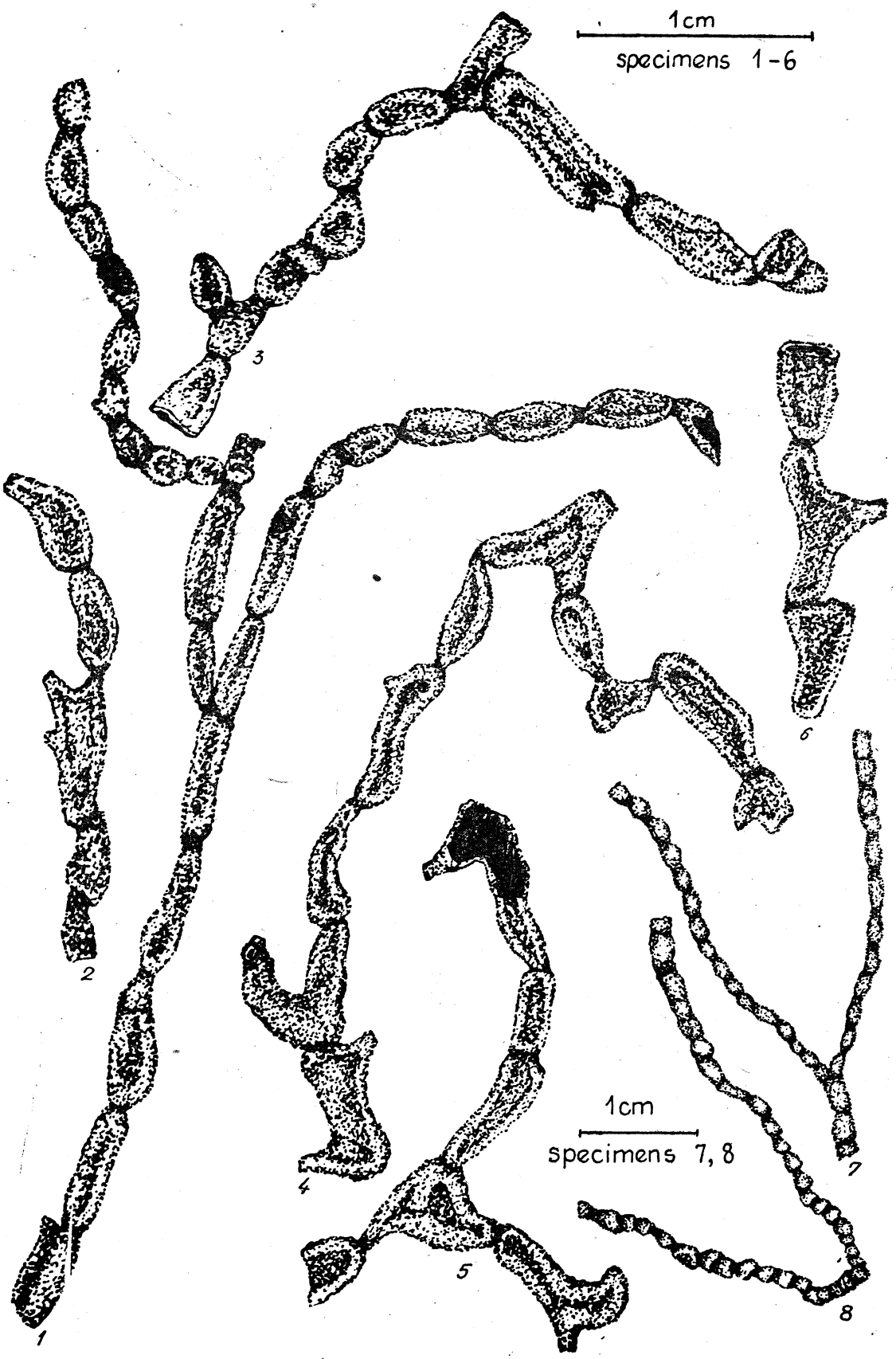


Fig. 4. 1—6 — *Aschemonella carpathica* n. sp., Campanian; Intorsura Buzăului-Valea, Mare, Brașov County, Carpathians, Rumania. 1 — Holotypus; 2—6 — Paratypus 7,8 — *Aschemonella moniliformis* n. sp., Paratypus, Campanian: Locality as above

fig. 24, 25) [1]. Some specimens consisting only of a few connected chambers were confounded with Algae and assigned to the genera *Halimeda* and *Halisium* (Algae?).

In 1937 a fossil of dubious taxonomic affiliation was described by Professor H. Świdziński (1937) from the Late Cretaceous Inoceramian beds of the Polish Flysch Carpathians as *Halysium problematicum*. The description (l.c., p. 146) is following:

„Ce sont comme des chapelets composés de sacoches ovales aplaties à écorse ruguese, calcareuse, renfermant, en général à l'interieur une matière carbonisée".

From this rather general description one can assign the described fossil to Algae, on account of its calcareous character. The loss of the holotype during the war makes impossible direct comparison, so that the problem cannot be elucidated finally.

Professor M. Książkiewicz (1959) described similarly shaped specimens as *„Halimeda"* with questionable affiliation to this genus, from the Upper Cretaceous of the Polish Flysch Carpathians.

The specimens from Intorsura Buzăului-Valea Mare is entirely different from the species of genus *Aschemonella* known till now mainly from the Recent seas.

Aschemonella moniliformis n.sp.

Pl. XXVII, Fig. 4—7; Fig. 1/9; Fig. 3/4, 5; Fig. 4/7—8; Fig. 5/1—7

Holotypus: L.P.B. 5001, Pl. XXVII, Fig. 4
Paratypus: L.P.B. 5010, Pl. XXVII, Fig. 5—7; Fig. 1/9; Fig. 3/4,5 Fig. 4/7, 8; Fig. 5/1—7
Stratum typicum: Campanian
Locus typicus: Intorsura Buzăului-Valea Mare, Brașov County.
Derivatio nominis: Monile = necklace

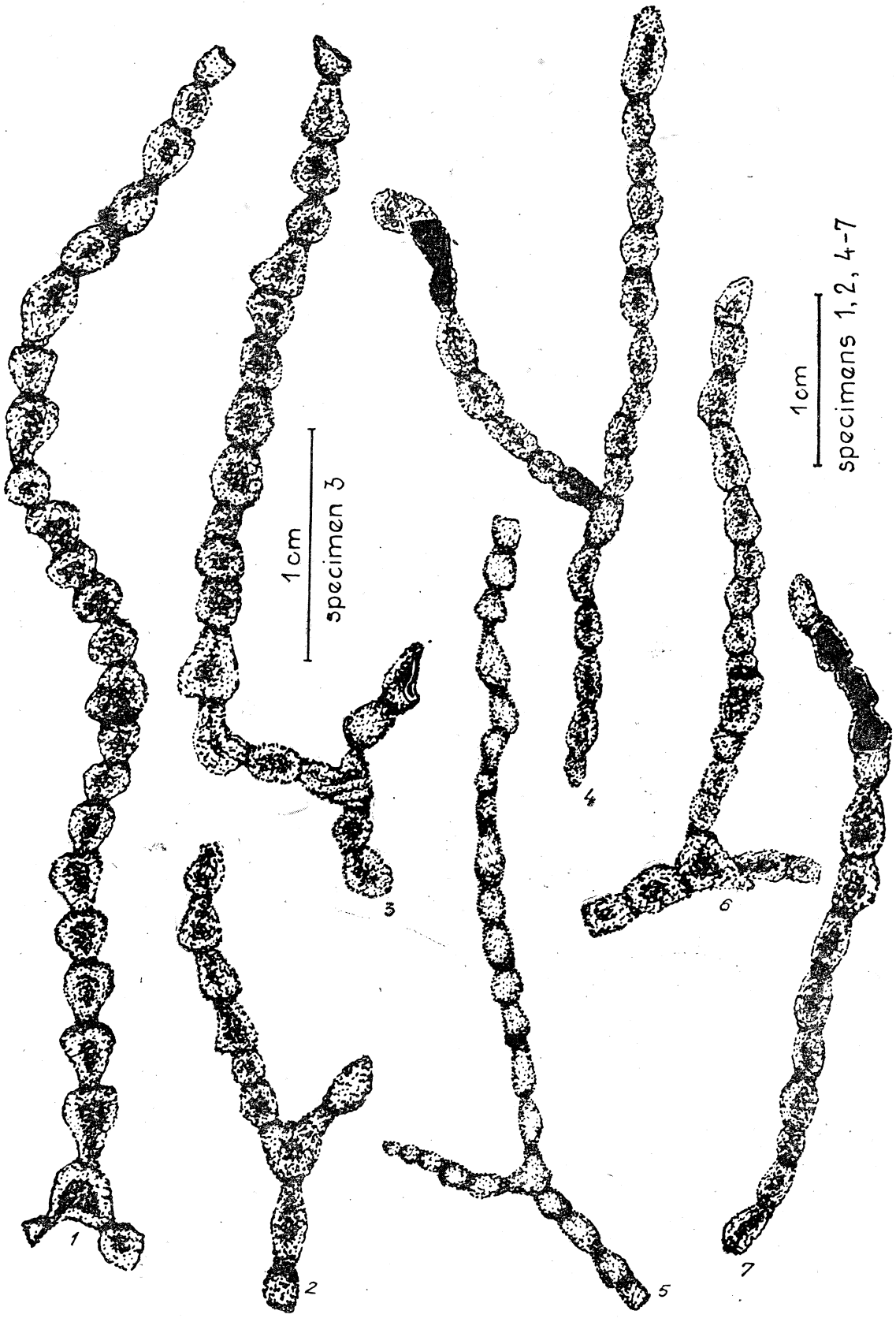
Description: Test free, moniliform, dichotomically branched, consisting of more or less oval chambers, with a pronounced globular shape, giving the test an articulate appearance. Chambers broader in their lower part and elongated strongly in the upper one. The chambers from which the ramification are branching are more widened allowing space for the articulation of the two branches. Thickness of test wall ranging from, 0,09 to 0,11 mm. Test wall consisting of detrital particles bound by siliceous cement. Aperture on the last chamber of each branch. On the whole the test is much thinner than in *Aschemonella carpathica* n.sp.

Dimensions: Length 8—10 cm, thickness 0,8—2 mm.

Remarks: The described species differs from *A. carpathica* n.sp. by much smaller dimensions of the test, a more delicate structure and moniliform arrangement of chambers which are globular in shape. From *Thomasinella* (*Bireophax*) *guaricoensis* (Bolli) it differs by multiple

[1] Dr S. Geroch kindly supplied the material from the Polish Carpathians containing fragments of *Aschemonella sp.* (Pl. XXVI, Fig. 5) which according to the present writer belongs to *Aschemonella carpathica* n. sp.

Fig. 5. 1—7 — *Aschemonella moniliformis* n. sp., Campanian, Paratypus; Intorsura Buzăului-Valea Mare, Brașov County, Carpathians, Rumania.


1cm
specimen 3
1cm
specimens 1, 2, 4-7
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7

dichotomic ramification of the test, lack of „Y" shape and size of both the whole test and chambers which are much larger than in the Bolli's species.

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OBJAŚNIENIE TABLIC
EXPLANATION OF PLATES

Tablica — Plate XXVI

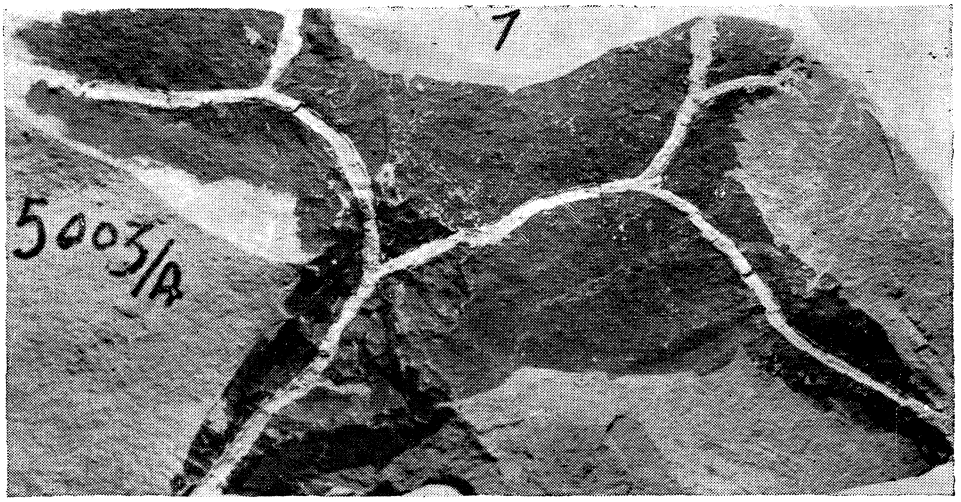
Fig. 1—4. *Psammatodendron dichotomicum* n.sp.; Campanian, Intorsura Buzăului--Valea Mare, Brașov County, Carpathians, Rumania.
Fig. 1 — Holotypus; Fig. 2—4 — Paratypus; Fig. 1, 4 — (x1); Fig. 2 — (×2); Fig. 3 — (×1,5)

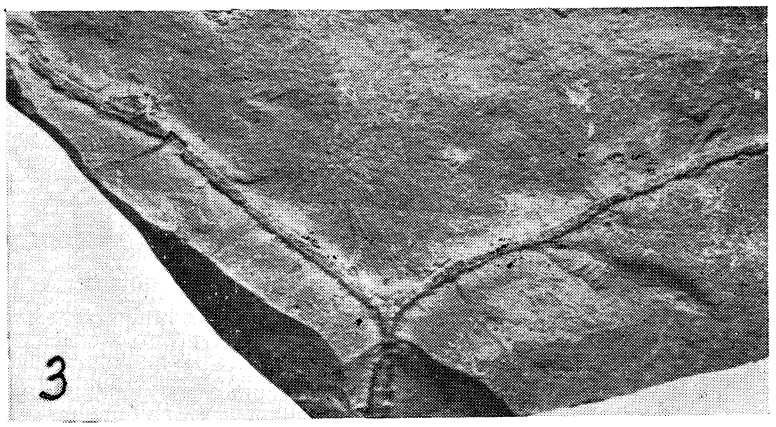
Fig. 5. *Aschemonella carpathica* n. sp.; Upper Senonian; Inoceramus-Beds, Magura Unit, Grybów, Carpathians, Poland. (× 1)

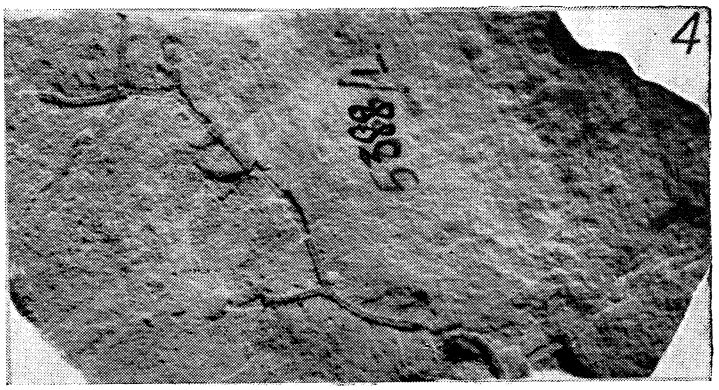
Tablica — Plate XXVII

Fig. 1—3. *Aschemonella carpathica* n. sp.; Campanian, Intorsura Buzăului-Valea Mare, Brașov County, Carpathians, Rumania.
Fig. 1 — Holotypus; Fig. 2, 3 — Paratypus; Fig. 1, 3 — (×1,9); Fig. 2 — (× 1,4)

Fig. 4—7. *Aschemonella moniliformis* n. sp.; Campanian, Intorsura Buzăului Valea Mare, Brașov County, Carpathians, Rumania.
Fig. 4 — Holotypus; Fig. 5—7 — Paratypus; Fig. 4—7 — (× 1,4)







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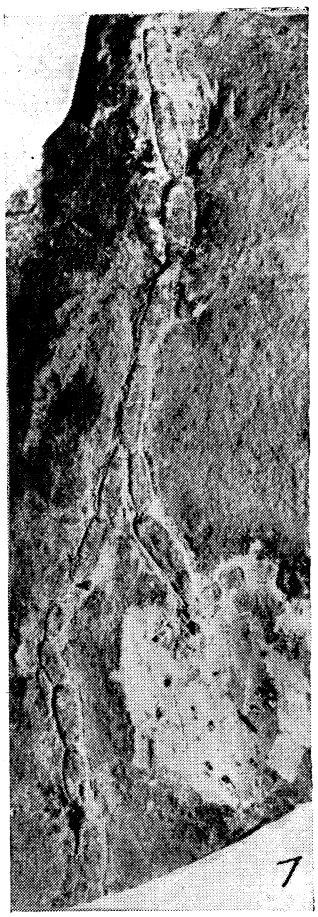

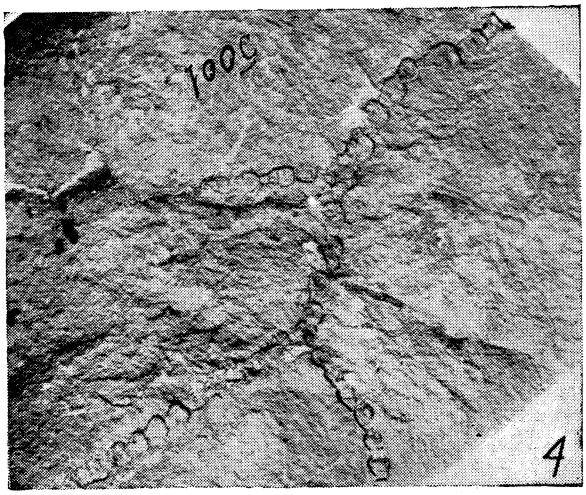

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