

NEW UPPER JURASSIC APTYCHI FROM THE SVINITA AREA (SOUTH CARPATHIANS, ROMANIA)

NOI APTIHI JURASSIC SUPERIORI DIN REGIUNEA SVINIȚA (CARPAȚII MERIDIONALI, ROMÂNIA)

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Rezumat

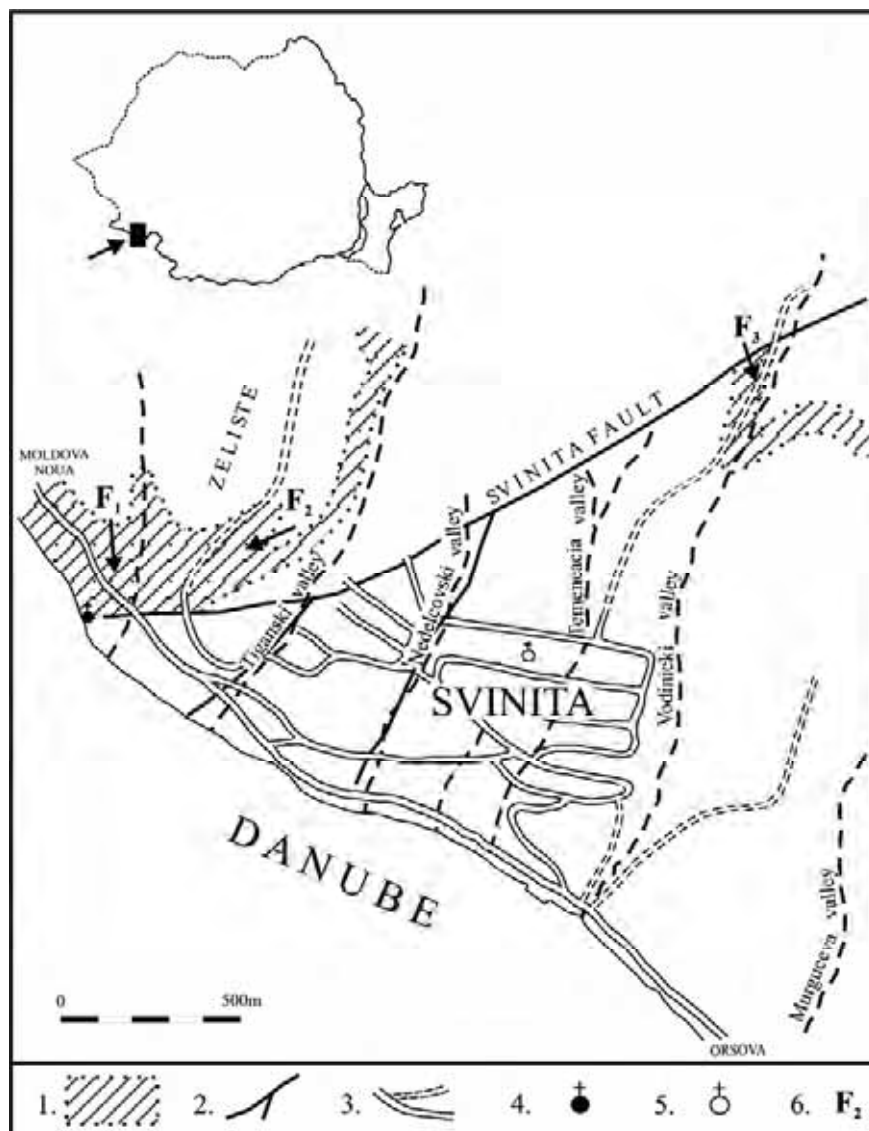
În lucrare sunt descrise 16 paraspecii de aptychi ce aparțin paragenurilor *Laevaptychus* și *Lamellaptychus*. Patru dintre ei sunt noi pentru știință: *Laevaptychus (Obliquuslaevaptychus) obliquus uhlandi*, L. (*O.*) *obliquus subrimosus*, L. (*O.*) *obliquus taxoporus* și *Lamellaptychus (Lamellosulamellaptychus) beyrichi zigzagocinctus* și mai sunt revizuite și alte specii, descrise anterior din această regiune, într-o nouă sistematică. Toate exemplarele provin din Formațiunea de Greben, deschisă în regiunea Svinița (Carpații Meridionali, România).

Abstract

In this paper are described 16 aptychi para-subspecies, which belongs to the para-genera *Laevaptychus* and *Lamellaptychus*, from which four are new: *Laevaptychus (Obliquuslaevaptychus) obliquus uhlandi*, L. (*O.*) *obliquus subrimosus*, L. (*O.*) *obliquus taxoporus* and *Lamellaptychus (Lamellosulamellaptychus) beyrichi zigzagocinctus*; some of the other species described before are revised here, in a new systematic. All specimens proceeds from the Greben Formation (Svinița area, South Carpathians).

Key words: South Carpathians, Upper Jurassic, Aptychus, Laevaptychus, Lamellaptychus.

Cuvinte cheie: Carpații Meridionali, Jurassic superior, Aptychus, Laevaptychus, Lamellaptychus.



INTRODUCTION

The aptychi fauna described in this paper proceeds from the Greben Formation (upper Kimmeridgian – Tithonian) of the Svinița area. (SW part of the South Carpathians). This area, named Sirinia (sedimentary) Zone by Codarcea (1940), belongs to the Danubian Domain, or Marginal Dacids (SÂNDULESCU, 1984).

The outcrops with fossils (ammonites and aptychi) are located near to the Svinița village (Fig. 1):

Fig. 1. The outcrop locations in the Svinița area (topography and tectonic after AVRAM, 1995).

Legend: 1) the Greben Formation – Late Jurassic;
2) fault;
3) roadway and village streets;
4) the ancient church ruin;
5) the new church;
6) outcrops: F1- “Biserica Veche” (the ancient church); F2 – on the Zeliste slope; F3 – on the Vodinicki valley.

Fig. 1. Localizarea aflorimentelor in regiunea Svinița (topografia si tectonica dupa AVRAM, 1995).

Legenda: 1) Formatiunea de Greben – Jurassic superior; 2) falie; 3) șosea si strazi locale; 4) ruine – Biserica Veche; 5) biserica nouă; 6) aflorimente: F1- “Biserica Veche”; F2 – pe versantul dealului Zeliște; F3 – pe valea Vodinicki.

Among the geologist who investigated this outcrops worth to be mentioned: TIETZE (1872), SCHAFARZIK (1894), ROTH VON TELECD (1894), KUDERNATH (1852), SCHOENBACH (1869), CODARCEA (1940), RĂILEANU (1853, 1959), RĂILEANU et al. (1956), RĂILEANU and NĂSTĂSEANU (1960), AVRAM (1976, 1994) and POP (1995, 1996). We have a special mention for the paper of RĂILEANU et al. (1956) were described 21 aptychus species, some of them revised here.

STRATIGRAPHY

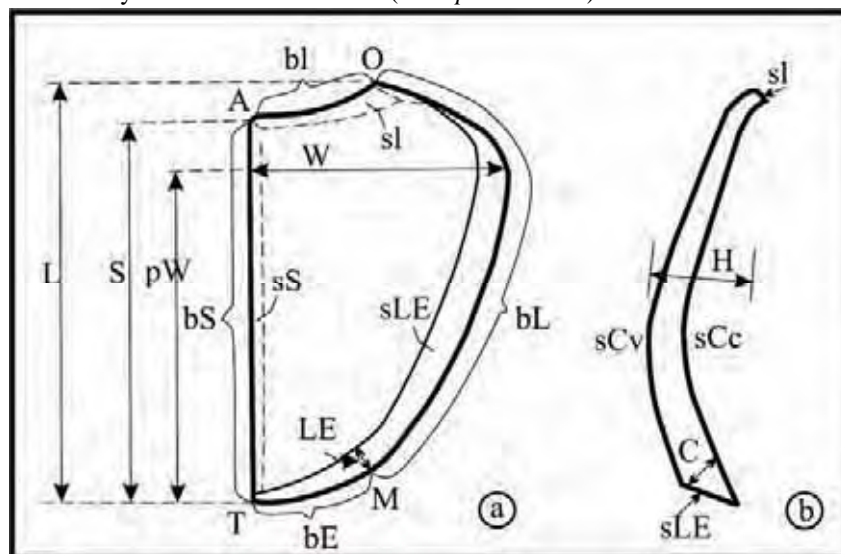
The Greben Formation was described previously by Raileanu (1953) as: “upper nodular limestone’s horizon” and “the compact limestone’s horizon”. The deposits of this formation are made up mainly by red nodular and sub-nodular limestone’s (20 to 30 meter thickness), with various textural and structural features, displayed in beds of 10 to 150 cm thickness. At the upper part the grey sub-nodular and fine limestone’s (5 to 10 meter thickness), with thin marls inter-beds more frequent; beds thicknesses is between 5 and 40 cm. At certain levels some cherty nodules or lens occur.

The Greben Formation overlain the pelagic and turbidity deposits of Zeliste Formation (Upper Callovian – Lower Kimmeridgian) and underlies the Murguceva Formation limestone’s of Majolica type (Uppermost Tithonian – Lower Hauterivian; POP, 1996).

From the nodular limestone’s an ammonite fauna which proves the Late Kimmeridgian and Early Tithonian age was described by RĂILEANU and NĂSTĂSEANU (1960). Recently was separated the ammonite zones: Acanthicum, Cavouri, Beckeri and Hybonotum (GRIGORE, 1998). Our aptychi fauna proceeds from the above mentioned nodular limestone’s.

PALEONTOLOGY

The systematic nomenclature (with *para-nomen*) is conformable to the recommendations of the International



Nomenclature Code (for a part of the body). The terms of the morphological nomenclature used for the aptychi are presented in the figure 2.

All the specimens are housed in the Iasi University repository, the collection indicatives (ex.: SV-BV-5) follows the system: region (SV) – outcrop (BV) – number of the specimen (5); the abbreviations utilized in this indicatives are: SV – for the Svinița village; Vod – for Vodinicki Valley; BV – for the “Biserica Veche” (the ancient church of the village); Zel – for Zeliste slope.

Fig. 2. Morphological nomenclature of aptychi: a) projection of a valve – the convex surface; b) cross-section of the valve: A – apex; O – umbilical point; T – terminal point; bs – symphysal edge; bl – internal edge; bL – lateral edge; bE – external edge; sS – symphysal surface; sl – internal surface; sLE – lateral-external surface. Parameters: L – maximum length of valve; S – distance between apex and terminal point; W – maximum width of valve; pW – width projection (distance between terminal point and maximum width of valve); LE – width of lateral-external surface in a median region of valve; G – thickness of valve in the same place with (LE); H – maximum height of valve; AA – apical angle; sCv – convex surface of valve; sCc – concave surface of valve.

Fig. 2. Elemente morfologice si morfometrice ale aptihilor: a) proiectia valvei – fata convexa; b) sectiune transversala prin valva: A – apex; O – punct ombilical; T – punct terminal; bs – margine simfizala; bl – margine interna; bL – margine laterala; bE – margine externa; sS – suprafata simfizala; sl – suprafata interna; sLE – suprafata lateral-externa. Parametrii: L – lungimea maxima; S – lungimea suprafetei simfizale; W – maxima latime; pW – proiectia latimii (distanta intre punctul T si punctual de proiectare a latimii maxime); LE – latimea suprafetei lateral-externe intr-o regiune mediana; G – grosimea valvei in acelasi loc cu (LE); H – maxima inaltime a valvei; AA – unghi apical; sCv – suprafata convexa; sCc – suprafata concava.

SYSTEMATICS

Paragenus *Laevaptychus* TRAUTH, 1927Parasubgenus *Latuslaevaptychus* GASIOROWSKI, 1960*Laevaptychus (Latuslaevaptychus) latus latus* (PARKINSON, 1811)

Pl. 1, fig. 3

1831 *Laevaptychus latus* (PARK.) TRAUTH, pg. 66 – 74, fig. C, 1 – 3; pl. I, fig. 3 (*cum syn*)1952 *Laevaptychus latus* (PARK.) VALDUGA, pg. 31; pl. VIII, figs. 6 – 111958 *Laevaptychus latus* (PARK.) SCHINDEWOLF, pl. IX, figs. 1 – 4; pl. VIII, figs. 1, 2, 7; pl. V, figs. 1 – 4.

Material: one valve (SV-BV-5)

Morphometry (mm)

specimen	L	S	W	pW	LE	G	H	S/L	pW/L	G/W	LE/L	H/W	W/L	AA
SV-BV-5	35	27.8	24.9	27	5	5.2	7.2	0.79	0.77	0.21	0.14	0.29	0.71	112

Remarks: the morphometric parameters of the specimen correspond with those of the para-species (the type described by Parkinson), while the ornamentation of its external convexes surface is characteristic for this para-subspecies.

Occurrence: the specimen proceed from the nodular limestone's of the Greben Formation; outcrop "Biserica Veche" (ancient church), Svinita.

Age: Late Kimmeridgian – Early Tithonian.

Laevaptychus (Latuslaevaptychus) latus meyrati TRAUTH, 1931

Pl. 1, fig. 1, 2.

1931 *Laevaptychus latus* (PARK.) var. nov. MEYRATI TRAUTH, pg. 75 – 77; pl. 1, fig. 4 (*cum syn*)1960 *Laevaptychus latus* (PARK.) var. *meyrati* TRAUTH RĂILEANU et al., pg. 24; pl. IX, fig. 30.

Material: one specimen which preserve two valves (paired) (SV-Vod-6)

Morphometry (mm)

specimen	L	S	W	pW	LE	G	S/L	pW/L	G/W	LE/L	W/L	AA
SV-Vod-6	68.5	63.5	49.4	47	9.5	78	0.93	0.69	0.16	0.14	0.72	100

Remarks: big, massif individuals, with paired valves; the left one is intact, men time the right one is fragmentary. The values of the morphometric indexes stay within the limits of this para-species; the ornamental pattern on the external surface, with concentric folded rings of unequal width, corresponds to the *meyrati* para-subspecies.

Occurrence: proceeds from the red nodular limestone's of the Greben Formation; outcrop Vodinicki valley, Svinita.

Age: ? Oxfordian – Early Tithonian.

Laevaptychus (Latuslaevaptychus) longus longus (MEYER, 1829)

Pl. I, figs. 4 to 7

1931 *Laevaptychus longus* (MEYER) TRAUTH, pg. 40 – 44, fig. B, 4 – 7 (*cum syn*)1958 *Laevaptychus longus* (v. MEYER) SCHINDEWOLF; pl. V, figs. 6, 7.1960 *Laevaptychus longus* MEYER RĂILEANU et al., pg. 26; pl. IX, fig. 41.1970 *Laevaptychus longus* (MEYER) BARBERA LAMAGNA, pg. 223 – 224; pl. III, figs. 3, 4; pl. IV, fig. 1.

Material: four specimens, one of them with paired valves (SV-Vod-11, SV-BV-1, SV-BV-2, SV-BV-4)

Morphometry (mm)

specimen	L	S	W	pW	LE	G	H	S/L	pW/L	G/W	LE/L	H/W	W/L	AA
SV-BV-1	55.2	49.5	36	39	8	6	13	0.90	0.71	0.17	0.14	0.36	0.65	115
SV-BV-2	75.8	74.8	37	37.5	8.5	6	11	0.83	0.65	0.16	0.15	0.30	0.64	115
SV-BV-4	34.2	29.7	22.5	24.4	3.3	3.5	?	0.87	0.71	0.16	0.1	?	0.66	110

Remarks: from a morphometric point of view, the characters of all specimens correspond with the para-subspecies ones; the W/L rapport stays closely under 0.67 and the other indexes enhance the correspondence with the above mentioned parataxis. The ornamentation consists of simple, circular and sub-polygonal pores.

Occurrence: the specimens proceeds from the nodular limestone's of the Greben Formation; three of theme from the "Biserica Veche" (ancient church) outcrop and one, from the Vodinicki valley.

Age: ? Oxfordian – Early Tithonian.

Laevaptychus (Latuslaevaptychus) longus serioporus TRAUTH, 1931
Pl. 1, figs. 8 and 9

1931 *Laevaptychus longus* (MEYER) var. nov. *seriopora* TRAUTH, pg. 49 – 50.

Material: two specimens (SV-Vod-5, SV-BV-7)

Morphometry (mm)

specimen	L	S	W	pW	LE	G	H	S/L	pW/L	G/W	H/W	W/L	AA
SV-Vod-5	51	42.6	27	37	-	4.5	6	0.84	0.73	0.17	0.22	0.53	115
SV-BV-7	21.5	19	14.2	16.4	73	-	-	0.88	0.76	-	-	0.66	115

Remarks: the morphometric indexes of this specimens fits with the main para-species, the specimens are ornamented with more or less irregular disposed pores. However, a slight distribution in concentric rings, with regard to the apex can be ascertained, especially in the central-terminal area; thus, the close relationship with the *serioporus* para-species is demonstrated.

Occurrence: the specimens proceeds from the nodular limestone's of the Greben formation; one of the "Biserica veche" (ancient church) outcrop and another, from the Vodinicki valley.

Age: Kimmeridgian – Early Tithonian.

Parasubgenus *Meneghinillaevaptychus* GASIOROWSKI, 1960
Laevaptychus (Meneghinillaevaptychus) meneghinii meneghinii (ZIGNO, 1870)
Pl. 1, figs. 10 and 11

1931 *Laevaptychus meneghinii* (ZIGNO) TRAUTH, pg. 83 – 86, figs. C, 5, 6 (*cum syn*)

?1960 *Laevaptychus meneghinii* (ZIGNO) RĂILEANU et al., pg. 23; pl. X, fig. 38

1970 *Laevaptychus meneghinii* (ZIGNO) BARBERA LAMAGNA, pgs. 224 – 225; pl. III, fig. 9; pl. IV, fig. 6

Material: two valves; one is fragmented (SV-Vod-1, SV-Vod-4)

Morphometry (mm)

specimen	L	S	W	pW	LE	G	H	S/L	pW/L	G/W	LE/L	H/W	W/L	AA
SV-Vod-4	?50	?43	35.7	?35	6	5	6.5	0.86	0.70	0.14	0.12	0.18	0.71	115
SV-Vod-1	64.8	56.4	45	47.4	7.3	6.4	9.3	0.87	0.73	0.14	0.11	0.21	0.69	110

Remarks: the specimens (one incomplete) have the morphometric indexes of the main of para-subspecies. The ornamentation with pores, sub-seriated in places, provides no clue at the para-subspecific level.

The para-species has been mentioned in the area by RĂILEANU in RĂILEANU et al. (1960), but without characteristic indexes (G/W, LE/L), so a little caution is necessarily.

Occurrence: Our specimens proceed from the red nodular limestone's of the Greben Formation; outcrop – Vodinicki valley, Svinița.

Age: Late Kimmeridgian – Early Tithonian.

Laevaptychus (Meneghinillaevaptychus) tennilongus heteroporus-zonophorus TRAUTH, 1931
Pl. 1, fig. 12

1931 *Laevaptychus tennilongus* n.f. var. nov. *heteropora-zonophora* TRAUTH, pg. 55 – 56 (*cum syn*)

Material: one valve (SV-Vod-2)

Morphometry (mm)

specimen	L	S	W	pW	LE	G	H	S/L	pW/L	G/W	LE/L	H/W	W/L	AA
SV-Vod-2	50.2	44.5	33	35	?	5	6.2	0.89	0.70	0.09	0.10	0.19	0.65	105

Remarks: the specimen represents a right valve, with the morphometric indexes certainly corresponding with those of the main para-species. The ornamentation consists in pores, with various width, shape and orientations. On a significant percent of the lateral-median area, these pores are displaced in sub concentric rings; thus, the specimen has the para-subspecies characters.

Occurrence: the specimen proceeds from the red nodular limestone's of the Greben Formation; outcrop – Vodinicki valley.

Age: Kimmeridgian – Early Tithonian.

Parasubgenius *Obliquuslaevaptychus* GASIOROWSKI, 1960
Laevaptychus (Obliquuslaevaptychus) obliquus uhlandi nov.pssp.
 Pl. 2, fig. 1

Material: one left valve (SV-Vod-3)

Holotypus: pl. 2, fig. 1 (SV-Vod-3, Paleontology Museum of Univ. "Al. I. Cuza" – Iași)

Derivatio nominis: from the Latin *obliquus* (=oblique), defining the general shape of the valve;

Stratum typicum: red nodular limestone's of the Greben Formation (lower part);

Age: Late Kimmeridgian, Acanthicum Zone;

Locus typicus: Vodinicki valley, north of Svinita village, Mehedinți District, South Carpathians.

Diagnosis: strong valve, with the morphometric indexes of the main species and a flat groove standing in a parallel way with the lateral-external margins.

Morphometry (mm)

specimen	L	S	W	pW	LE	G	H	S/L	pW/L	G/W	LE/L	H/W	W/L	AA
SV-Vod-3	50.3	38	37.4	34	7.2	7	10	0.76	0.68	0.19	0.14	0.27	0.74	130

Description: left valve with smooth external surface and sparse, unequal and irregularly displacement of the pores. A somewhat shallow groove, parallel to the lateral and external edges, can be drawn out from the lateral edge of the internal edge, to the end of the symphical edge.

Remarks: the lateral-external groove is not a characteristic feature of the main para-species.

Laevaptychus (Obliquuslaevaptychus) obliquus subrimosus nov.pssp.
 Pl. 2, fig. 2

Material: one right valve (SV-BV-6)

Holotypus: pl. 2, fig. 2 (SV-BV-6; Paleontology Museum of Univ. "Al. I. Cuza" – Iași)

Derivatio nominis: after the ornamentation feature on the central-median area of the shell

Stratum typicum: red nodular limestone's of the Greben Formation

Age: Kimmeridgian

Locus typicus: outcrop Biserica Veche (ancient church), western of Svinita village, Mehedinți District, South Carpathians.

Diagnosis: strong valve, with morphometric indexes corresponding with the main para-species. The new para-subspecies condition is fulfilled by the ornamentation pattern of unequally displacement pores. In the central-median convex area of the valve the pores are longitudinally elongated, in the manner of curved grooves. These pores are the characteristic feature of the para-subspecies.

Morphometry (mm)

specimen	L	S	W	pW	LE	G	H	S/L	pW/L	G/W	LE/L	H/W	W/L	AA
SV-BV-6	40.6	30.7	29.9	28.4	8	6.8	10	0.76	0.70	0.23	0.20	0.33	0.74	120

Remarks: the slight development of this kind of serrated ornamentation brings this shape more close to the *rimos* type, separated by Trauth (1931) at the other para-species of *Laevaptychus (latus, latissimus)*. This proves again that homeomorphism does exist for this aptychus para-subgenius.

Laevaptychus (Obliquuslaevaptychus) obliquus taxoporus nov.pssp.
 Pl. 2, fig. 4

Material: one right valve (SV-Zel-1) – Col. Grigore Raileanu; Pal. Museum – Lab. Pal. – Univ. "Al. I. Cuza" – Iași.

Holotypus: pl.2, fig. 4 (SV-Zel-1; Pal. Museum of Univ. "Al. I. Cuza"- Iași)

Derivatio nominis: from combined *taxo* (=closely) and *porus* (=pore), showing its surface characteristic

Stratum typicum: red nodular limestone's of the Greben Formation

Age: Early Tithonian

Locus typicus: Zeliste hill, Svinita village, Mehedinți District, South Carpathians.

Diagnosis: the specimen has the morphometric indexes of the main para-species (*Laevaptychus (O.) obliquus*), but the *taxoporus* para-subspecies that of *Laevaptychus (L.) latus*.

Morphometry (mm)

specimen	L	S	W	pW	S/L	pW/L	W/L	AA
SV-Zel-1	31.5	24	23.2	23.3	0.76	0.73	0.73	120

Remarks: clearly oblique valve with the convex external surface completely covered by pores. They are less evident only along the symphical edge. The pores are quite wide and of a polygonal or sub polygonal shape, in places, and

elongated; when they are elongated, follows a certain direction. The thickness (G), height (H) and lateral-external surface (LE) were not measured, because the specimen was strongly embedded in the rock.

Laevaptychus (Obliquuslaevaptychus) latobliquus latobliquus TRAUTH, 1931
Pl. 2, fig. 3

1931 *Laevaptychus latobliquus* n.f. TRAUTH, pg. 18 – 120, figs. 13 – 17 (*cum syn.*).

Material: one valve (SV-Vod-10)

Morphometry (mm)

specimen	L	S	W	pW	LE	G	H	S/L	pW/L	G/W	LE/L	H/W	W/L	AA
SV-Vod-10	39.6	30.5	37	30	9	7.5	9	0.76	0.76	0.20	0.23	0.25	0.93	118

Remarks: strong valve with strongly increase in the lateral-oblique direction; the morphometric indexes fits with the main para-species. The external surface is smooth, wide-convex, the symphical edge in the terminal zone being internal curved back, the lateral-external (LE) edge appear truncated internally.

Occurrence: the specimen proceed from the nodular limestone's of the Greben Formation; outcrop Vodinicki valley.

Age: Early Tithonian.

Parasubgenius *Hoplisuslaevaptychus* GASIOROWSKI, 1960
Laevaptychus (Hoplisuslaevaptychus) hoplisus hoplisus (SPATH, 1925)
Pl. 2, fig. 5

1931 *Laevaptychus hoplisus* (SPATH) TRAUTH, pg. 91 – 94; fig. C, 8, 9 (*cum syn.*)

Material: one left valve (SV-BV-3)

Morphometry (mm)

specimen	L	S	W	pW	LE	G	H	S/L	pW/L	G/W	LE/L	H/W	W/L	AA
SV-BV-3	40.8	35.8	28.5	27.4	10	9	13	0.88	0.67	0.32	0.25	0.44	0.70	118

Remarks: thick, massif valve, with wide lateral-external (LE) edges: external surface wide convex and smooth. The ornamentation consists in circular pores in the lateral-umbilical area; the pores are sparse and disappear towards the center of the valve. The morphometric indexes overlap the characteristic values of this para-subgenera and para-species. Occurrence: the specimen proceeds from the nodular limestone's of the Greben Formation; outcrop Biserica Veche (ancient church), Svinița.

Age: Late Kimmeridgian – Early Tithonian

Paragenius *Lamellaptychus* TRAUTH, 1927
Parasubgenius *Lamellosulamellaptychus* TURCULEȚ, 1995
Lamellaptychus (Lamellosulamellaptychus) sparsilamellosus sparsilamellosus (GUEMBEL, 1861)
Pl. 2, figs. 6, 7 and 8.

1938 *Lamellaptychus sparsilamellosus* (GUEMBEL) f.typ TRAUTH; pg. 165 – 167; pl. XI, figs. 23 – 27 (*cum syn.*)

?1956 *Lamellaptychus sparsilamellosus* (GUEMBEL) TRAUTH (*sic!*) RĂILEANU et al.; pg. 225; figs. 5, 8 (non figs. 9, 10, 12, 15 = undeterminable)

1961 *Lamellaptychus lamellosus* (PARK.) CLOSS; pg. 135; pl. IV, figs. 4, 5.

1971 *Lamellaptychus sparsilamellosus* (GUEMBEL) GRASU; pg. 31; pl. X, fig. 4; pl. XI, fig. 1.

1976 *Lamellaptychus spasilamellosus* (GUEMBEL) PREDA et al.; pg. 174; pl. I, figs. 1, 2, 3.

Material: three valves (SV-BV-9, SV-BV-11, SV-BV-13)

Morphometry (mm)

specimen	L	S	W	pW	S/L	pW/L	W/L	AA
SV-BV-11	44.5	37.2	22	34	0.84	0.76	0.49	120

Description: valves quite large and elongated, ornamented with a few strong ridges, separated by wide spaces. The ridges do not reach the symphical and external edges, so a smooth area appears along those edges.

Remarks: in RĂILEANU et al. was pointed out the existence of this para-species in the Svinița area, but the diagnosis was quite problematic because, the symphical-terminal edges of the specimens was lacking or embedded in rock.

Occurrence: all the specimens proceeds from the nodular limestone's of the Greben Formation; outcrop Biserica Veche (ancient church), Svinița.

Age: Late Kimmeridgian – Early Tithonian.

Paragenius *Beyrichilamellaptychus* TURCULET, 1995
Lamellaptychus (Beyrichilamellaptychus) beyrichi beyrichi (OPPEL, 1865) emended TRAUTH, 1938
 Pl. 2, figs. 9 and 10

1938 *Lamellaptychus beyrichi* (OPPEL) em. TRAUTH, f.typ Trauth; pg. 134 – 138; pl. IX, fig. 5; pl. X, figs. 5 – 9 (*cum syn*)

1977 *Lamellaptychus (Beyrichilamellaptychus) beyrichi* (OPPEL, 1965) em. TRAUTH TURCULET; pg. 83; pl. I, figs. 2 – 15; pl. II, figs. 1 – 4 (*cum syn*)

Material: two valves (SV-Vod-12, SV-Vod-7)

Morphometry (mm)

specimen	L	S	W	pW	LE	S/L	pW/L	LE/L	W/L	AA
SV-Vod-12	43	35.5	24.7	30	4	0.85	0.70	0.09	0.57	115

Remarks: specimens with ribbed ornamentation like beyrichid type one, with a characteristic general and normal inflexion, the ribs extremity have a parallel ending on the external edge.

Occurrence: the specimens proceeds from the red nodular limestone's of the Greben Formation; outcrop Vodinicki valley, Svinița.

Age: Late Kimmeridgian

Lamellaptychus (Beyrichilamellaptychus) beyrichi zigzagocinctus n.pssp.

Pl. 2, figs. 11 and 12

Material: two valves: one left valve, complete (SV-Vod-8) and another valve, fragmentary (SV-Vod-9).

Holotypus: pl.II, fig. 11 (SV-Vod-8; Pal. Museum of Univ. "Al. I. Cuza" – Iași).

Derivatio nominis: after the discordant structure of the ribs on the median-external zone of the shell.

Stratum typicum: grey nodular limestone's of the Greben formation.

Age: Early Tithonian.

Locus typicus: Vodinicki valley, Svinița village, Mehedinți District, South Carpathians.

Diagnosis: valves quite large with beyrichid ribs until the first unconformity and lamellar-thoroidal type after that; its two unconformities are characteristic: generally one- embraced and the other non-embraced; the ribs between the two unconformities have median-external ends.

Morphometry (mm)

specimen	L	S	W	pW	G	H	S/L	pW/L	G/W	H/W	W/L	AA
SV-Vod-8	44	37	24	36	4	78	0.84	0.82	0.17	0.33	0.55	120

Description: elongated valves, slightly curved on the symphical edge. The straight edge symphical is strongly ribbed, the lateral-external (LE) edge is oblique, with a polygonal-pores structure; the external surface, wide-convex, is ribbed too. The median-external ends of the ribs, between the two unconformities, have a zigzag way structure.

Remarks: this para-subspecies is much more similar to the one which GASIOROWSKI (1960) described as "Lamellaptychus aux cotes discordantes" (see also GASIOROWSKI, 1962a, p 251-252, fig. 14/26) from the Piennid klippen (Kimmeridgian) of Poland.

Discussion: as the median-zone ribs have an irregular displacement, the hypothesis of an accidental character of its ornamental patterns can be envisaged. However, the fact that we find this particular kind of structure on other specimens, both from this area and from others, also, does not verify it.

Lamellaptychus (Beyrichilamellaptychus) beyrichi undocostatus TRAUTH, 1938

Pl. 2, fig. 13

1938 *Lamellaptychus beyrichi* (OPPEL) var.nov. *undocostata* TRAUTH, pg. 139; pl. X, fig. 1.

1987 *Lamellaptychus (Beyrichilamellaptychus) beyrichi undocostatus* TRAUTH TURCULET, pg. 89; pl. III, fig. 2 (*cum syn*)

Material: one complete valve (SV-Vod-15)

Morphometry (mm)

specimen	L	S	W	pW	S/L	pW/L	W/L	AA
SV-Vod-15	25.5	22.5	14	18	0.88	0.70	0.55	98

Description: valve with typical beyrichid ribbing, with a general median-terminal inflexion and an sub-retroversion character (especially to the apex). Also, it was observed a second inflexion, that crosses the lateral edge – only local – diminishing to the exterior.

Remarks: compiled with *Lamellaptychus (B.) carpathicus* TURCULEȚ, this para-species is different by its retroversion in ribbing inflexions and the particularities of the second inflexion.

Occurrence: the specimen proceeds from the red nodular limestone's of the Greben Formation; outcrop Vodiniciki valley, Svinița village, Mehedinți District, South Carpathians.

Age: Late Kimmeridgian.

Lamellaptychus (Beyrichiamellaptychus) beyrichi aff. *Fractocostatus* TRAUTH, 1938
Pl. 2, fig. 14

1938 *Lamellaptychus beyrichi* (OPPEL) var. *fractocosta* TRAUTH, pg. 138 – 139; Pl. X, fig. 10 – 11 (*cum syn*)

Material: one fragmentary valve (SV-Vod-9a)

Morphometry (mm)

specimen	L	S	W	pW	S/L	pW/L	W/L	AA
SV-Vod-9a	?26	22	14	17	0.84	0.65	0.53	108

Remarks: valve with typical beyrichid ribbing. At the end of the valve, the ribs are fractioned by a transversal line (from the median symphial edge across to the ending of the lateral edge); this character approaches the specimen (precarious conserved) to the para-subspecies *fractocostatus* Trauth.

Occurrence: red and grey nodular limestone's of the Greben Formation; outcrop Vodiniciki valley, Svinița.

Age: Early Tithonian.

Paragenius *Punctaptychus* TRAUTH, 1927
Punctaptychus sp.
Pl. 2, fig. 16

We have one specimen, which represents a fragmentary right valve and pertains certainly of this paragenius. Because of fragmentary preservation we cannot be more precise with the systematic position of the specimen.

Occurrence: the specimen proceeds from the grey "compact limestone's horizon"; outcrop Vodiniciki valley, Svinița village.

Age: Early Tithonian.

BIBLIOGRAPHY

- AVRAM E. 1976. *La succession des dépôts tithonique supérieurs et crétacés inférieurs de la région de Svinița (Banat)*. D. S. Inst. Geol. Geofiz. **62**(4), București: 53-71.
- AVRAM E. 1995. *Svinița (Banat), regiune de importanță paleontologică și biostratigrafică internațională*. Ocrot. nat. med. înconj. **39**(1-2). Edit. Acad. Rom. București: 43-49.
- AVRAM E. 1994. *The Early Cretaceous (Berriasian-Barremian) Ammonite Assemblages in Romania*. Cephalopods-Present and Past. Wiedmann. J. & Kullmann J. (Eds.), Stuttgart: 607-619.
- BACHMAYER F. 1963. *Beiträge zur Palaeontologie oberjurassischer Riffe. I. Die Aptychen (Ammonoidea) der Oberjura von Sramberg (CSR)*. II. Die Aptychen der Klentnizer Serie Österreich. Ann. Naturhist. Muz. Wien. **66**. Wien: 125-138.
- BARBERA LAMAGNA C. 1970. *Stratigrafia e paleontologia della formazione degli scisti ad aptici dei dintorni di Bolognola (Macerata). I. Studio sistematico e strutturale degli aptici giurassici*. Mem. Soc. Natur. in Napoli, supp. Al. Boll. **78**. Napoli: 215-246.
- CLOSS D. 1960a. *Contribuicao ao conhecimento dos Aptychi (Cephalopoda-Ammonoidea)*. Esc. Geol. P. Algere. Publ. esp. **1**. Porto Algere: 1-4.
- CLOSS D. 1961b. *Los "Aptychi" (Cephalopoda-Ammonoidea) de Argentina*. Rev. Asoc. Argentina. **16**(3-4), Buenos-Aires: 117-141.
- CODARCEA A. 1940. *Vues nouvelles sur la tectonique du Banat Meridional et du Plateau de Mehedinți*. Bucuresti: 1-74.
- GASIOROWSKI S. M. 1960. *O lewptychach*. Roczn. Pol. Geol. **30**(1), Krakow: 59-97.
- GASIOROWSKI S. M. 1962a. *O aptychach zebrowanych*. Roczn. Pol. Tow. Geol. **32**(2), Krakow: 227-280.
- GASIOROWSKI S. M. 1962b. *Aptychi from the Dogger, Malm and Neocomian in Western Carpathians and their stratigraphical value*. St. Geol. Pol. **10**, Warszawa: 134 p.
- GRASU C. 1971. *Recherches géologiques dans le sédimentaire mesozoïque du Bassin supérieur de Bicz (Carpates Orientales)*. Lucr. Stat. Cerc. Biol. Geol. Geogr. "Stejarul", Piatra Neamț: 7-55.
- GRIGORE D. 1998. *Secvența Kimmeridgianului superior și Tithonicului inferior din Formațiunea de Greben din regiunea Svinița – SW Carpaților Meridionali*. An. Inst. Geol. Rom. **70**, București: 81-86.
- KUDERNATCH J. 1851. *Die Ammoniten von Swinitza*. Abhand. derk. k. geol. R. A. Bd. 1, Wien.
- POP G. 1996. *Noi apariții ale Unității de Severin în Munții Almăjului (Carpații Meridionali)*. An. Inst. Geol. Rom. **69**(1), București: 37-40.

- PREDA I., GRASU C., TURCULEȚ I. 1976. Specii de *Aptychus* din stratele cu acanthicum (Opp.) de la Lacu Rosu. An. Muz. St. Nat. Piatra Neamț. Geol. Geogr. **3**, Piatra Neamț: 171-177.
- RĂILEANU G. 1953. *Cercetări geologice în regiunea Svinița-Fața Mare*. Bul. St. Acad. R. P. R. Ser. St. Biol. Geol. **5**(2), București: 307-409.
- RĂILEANU G., BĂDĂLUȚĂ AURELIA, PELIN M. 1956. *Studiul faunei de Aptychus din calcarele jurasice superioare din zona Svinița-Svinecea Mare*. An. Univ. „C. I. Parhon”. **11**. Ser. St. Nat. București: 223-231.
- RĂILEANU G. 1959. *Recherches géologiques dans la région Svinița-Svinecea Mare*. An. Com. Geol. **26-28**, București: 347-383.
- RĂILEANU G., NĂSTĂSEANU AURELIA. 1960. *Contribuții la cunoașterea faunei de amoniți din Jurasicul superior de la Svinița (Banat)*. St. Cerc. Acad. Rom. **5**(1), București: 7-39.
- ROTH VON TELEGD L. 1894. *Der Abschnitt des Krasso-Szorenyer Gebirges langs der Donau in der Umgebung des Jeliseva-und Staristye*. Thales. Jaresber. d. k. ung. geol., A. f. 1892, Budapest: 119-139.
- SĂNDULESCU M. 1984. *Geotectonica României*. Edit. Tehn., București: 336p.
- SCHAFARZIK F. 1894. *Die geologischen Verhältnisse der Umgebungen von Eibenthal, Ujbanya, Tiszovicza und Svinyicza*. Jahrbesber. d. k. ung. geol. A. f. 1892, Budapest: 140-159.
- SCHINDEWOLF O.H. 1958. *Über Aptychen (Ammonoidea)*. Palaeontographica. A **111**, Stuttgart: 1-46.
- SCHLOEMBACH U. 1869. *Über Spaltenbildungen in dem Kalken am Rande der Predetter Hochebene nordlich von Steyerdorf im Banat*. Verh. d. k. k. geol. R. A. Wien: 269-272.
- TIETZE E. 1872. *Geologische Mittheilungen aus dem sudlichen Theil des Banater Gebirgsstokes*. Jahrbuch. d. k. k. geol. R. A. **22**, Wien: 35-142.
- TRAUTH F. 1931. *Aptychenstudien. VI-VII. Zweiter Nachtrag zu den "Aptychen I Allgemeinen". Die Aptychen des Malm und Unterkreide*. Jb. Geol. Bundesanst. **85**, Wien: 309-322.
- TRAUTH F. 1938. *Die Lamellaptychi des Oberjura und der Unterkreide*. Palaeontographica. A **88**, Stuttgart: 115-229.
- TURCULEȚ I. 1964. "*Strate cu Aptychus*" din chiuveta mezozoică a Rarăului (Carpații Orientali). An. Univ. Iași. Sect. Iib, **10**, Iași: 45-70.
- TURCULEȚ I., AVRAM E. 1995. *Lower Cretaceous Aptychus Assemblages in Romania. I. Svinita region*. An. St. Univ. Iași. Geologie, **11-12**, Iași: 87-112.
- TURCULEȚ I. 2000. *Aptihii din Romania*. Edit. Acad. Rom., București: 178p.
- VALDUGA A. 1954. *Ammoniti ed Aptici neogiurascici dell'Ogaden e della Somalia sudoccidentale*. Palaeontographica Italica. **48**, Pisa: 1-40.

PLATE 1

- Fig. 1, 2 *Laevaptychus (Latuslaevaptychus) latus meyrati* TRAUTH, 1931; SV-Vod-6, Vodinicki valley (F3), Late Kimmeridgian-Early Tithonian; 1) lateral view; 2) symphiscal view. (x1).
- Fig. 3 *Laevaptychus (Latuslaevaptychus) latus latus* (PARKINSON, 1811); SV-BV-5, "Biserica Veche" - ancient church (F1), Late Kimmeridgian-Early Tithonian. (x1).
- Fig. 4 *Laevaptychus (Latuslaevaptychus) longus longus* (MEYER, 1829); SV-Vod-11, Vodinicki valley (F3), Late Kimmeridgian-Early Tithonian. (x1).
- Fig. 5, 6 and 7 *Laevaptychus (Latuslaevaptychus) longus longus* (MEYER, 1829); 5) SV-BV-2; 6) SV-BV-1; 7) SV-BV-4, all specimens from the "Biserica Veche" - ancient church (F1), Oxfordian?-Kimmeridgian. (x1).
- Fig. 8 *Laevaptychus (Latuslaevaptychus) longus serioporus* TRAUTH, 1931; SV-BV-7, "Biserica Veche" - ancient church (F1), Kimmeridgian-Early Tithonian. (x1).
- Fig. 9 *Laevaptychus (Latuslaevaptychus) longus serioporus* TRAUTH, 1931; SV-Vod-5, Vodinicki valley (F3), Late Kimmeridgian. (x1).
- Fig. 10, 11 *Laevaptychus (Meneghinilaevaptychus) meneghinii meneghinii* (ZIGNO, 1870); 10) SV-Vod-4; 11) SV-Vod-1, Vodinicki valley (F3), Late Kimmeridgian-Early Tithonian. (x1).
- Fig. 12 *Laevaptychus (Meneghinilaevaptychus) tennilongus heteroporus-zonophorus* TRAUTH, 1931; SV-Vod-2, Vodinicki valley (F3), Late Kimmeridgian - Early Tithonian. (x1).

PLATE 2

- Fig. 1 *Laevaptychus (Obliquuslaevaptychus) obliquus uhlandi* nov.pssp.; SV-Vod-3, Vodinicki valley (F3), Late Kimmeridgian-Early Tithonian. (x1).
- Fig. 2 *Laevaptychus (Obliquuslaevaptychus) obliquus subrimosus* nov.pssp.; SV-BV-6, "Biserica Veche" - ancient church (F1), Kimmeridgian-Early Tithonian. (x1)
- Fig. 3 *Laevaptychus (Obliquuslaevaptychus) latobliquus latobliquus* TRAUTH, 1931; SV-Vod-10, Vodinicki valley (F3), Early Tithonian. (x1).
- Fig. 4 *Laevaptychus (Obliquuslaevaptychus) obliquus taxoporus* nov.pssp.; SV-Zel-1, Zeliște hill (F2), Kimmeridgian-Early Tithonian. (x1).
- Fig. 5 *Laevaptychus (Hoplissuslaevaptychus) hoplissus hoplissus* (SPATH, 1925); SV-BV-3, "Biserica Veche" - ancient church (F1), Kimmeridgian-Early Tithonian. (x1).

- Fig. 6, 7 and 8 *Lamellaptychus (Lamellosuslamellaptychus) sparsilamellosus sparsilamellosus* (GUEMBEL, 1861); 6) SV-BV-11; 7) SV-BV-9; 8) SV-BV-13, all specimens from the “Biserica Veche” – ancient church (F1), Kimmeridgian-Early Tithonian. (x1).
- Fig. 9, 10 *Lamellaptychus (Beyrichilamellaptychus) beyrichi beyrichi* (OPPEL, 1865) emended TRAUTH, 1938; 9) SV-Vod-7; 10) SV-Vod-12, both specimens from Vodinicki valley (F3), Late Kimmeridgian-Early Tithonian. (x1).
- Fig. 11, 12 *Lamellaptychus (Beyrichilamellaptychus) beyrichi zigzagocinctus* n.pssp.; 11) SV-Vod-8; 12) SV-Vod-9, both specimens from Vodinicki valley (F3), Early Tithonian. (x1).
- Fig. 13 *Lamellaptychus (Beyrichilamellaptychus) beyrichi undocostatus* TRAUTH, 1938; SV-Vod-15, Vodinicki valley (F3), Late Kimmeridgian-Early Tithonian. (x1).
- Fig. 14 *Lamellaptychus (Beyrichilamellaptychus) beyrichi* aff. *fractocostatus* TRAUTH, 1938; SV-Vod-9a, Vodinicki valley (F3), Early Tithonian. (x1).
- Fig. 15 *Lamellaptychus* sp.; Vodinicki valley (F3), Early Tithonian. (x1).
- Fig. 16 *Punctaptychus* sp.; Vodinicki valley (F3), Early Tithonian. (x1).

PLANȘA 1

- Fig. 1, 2 *Laevaptychus (Latuslaevaptychus) latus meyrati* TRAUTH, 1931; SV-Vod-6, valea Vodinicki (F3), Kimmeridgian superior-Tithonic inferior; 1) vedere laterala; 2) vedere simfizala. (x1).
- Fig. 3 *Laevaptychus (Latuslaevaptychus) latus latus* (PARKINSON, 1811); SV-BV-5, “Biserica Veche” (F1), Kimmeridgian superior-Tithonic inferior. (x1).
- Fig. 4 *Laevaptychus (Latuslaevaptychus) longus longus* (MEYER, 1829); SV-Vod-11, valea Vodinicki (F3), Kimmeridgian superior-Tithonic inferior. (x1).
- Fig. 5, 6 and 7 *Laevaptychus (Latuslaevaptychus) longus longus* (MEYER, 1829); 5) SV-BV-2; 6) SV-BV-1; 7) SV-BV-4, toate exemplarele de la “Biserica Veche” (F1), Oxfordian?-Kimmeridgian. (x1).
- Fig. 8 *Laevaptychus (Latuslaevaptychus) longus serioporus* TRAUTH, 1931; SV-BV-7, “Biserica Veche” (F1), Kimmeridgian-Tithonic inferior. (x1).
- Fig. 9 *Laevaptychus (Latuslaevaptychus) longus serioporus* TRAUTH, 1931; SV-Vod-5, valea Vodinicki (F3), Kimmeridgian superior. (x1).
- Fig. 10, 11 *Laevaptychus (Meneghinilaevaptychus) meneghinii meneghinii* (ZIGNO, 1870); 10) SV-Vod-4; 11) SV-Vod-1, valea Vodinicki (F3), Kimmeridgian superior-Tithonic inferior. (x1).
- Fig. 12 *Laevaptychus (Meneghinilaevaptychus) tennilongus heteroporus-zonophorus* TRAUTH, 1931; SV-Vod-2, valea Vodinicki (F3), Kimmeridgian superior-Tithonic inferior. (x1).

PLANȘA 2

- Fig. 1 *Laevaptychus (Obliquuslaevaptychus) obliquus uhlandi* nov.pssp.; SV-Vod-3, valea Vodinicki (F3), Kimmeridgian superior-Tithonic inferior. (x1).
- Fig. 2 *Laevaptychus (Obliquuslaevaptychus) obliquus subrimosus* nov.pssp.; SV-BV-6, “Biserica Veche” (F1), Kimmeridgian-Tithonic inferior. (x1)
- Fig. 3 *Laevaptychus (Obliquuslaevaptychus) latobliquus latobliquus* TRAUTH, 1931; SV-Vod-10, valea Vodinicki (F3), Tithonic inferior. (x1).
- Fig. 4 *Laevaptychus (Obliquuslaevaptychus) obliquus taxoporus* nov.pssp.; SV-Zel-1, dealul Zeliste (F2), Kimmeridgian-Tithonic inferior. (x1).
- Fig. 5 *Laevaptychus (Hoplisuslaevaptychus) hoplisus hoplisus* (SPATH, 1925); SV-BV-3, “Biserica Veche” (F1), Kimmeridgian-Tithonic inferior. (x1).
- Fig. 6, 7 and 8 *Lamellaptychus (Lamellosuslamellaptychus) sparsilamellosus sparsilamellosus* (GUEMBEL, 1861); 6) SV-BV-11; 7) SV-BV-9; 8) SV-BV-13, toate exemplarele de la “Biserica Veche” (F1), Kimmeridgian-Tithonic inferior. (x1).
- Fig. 9, 10 *Lamellaptychus (Beyrichilamellaptychus) beyrichi beyrichi* (OPPEL, 1865) emendat TRAUTH, 1938; 9) SV-Vod-7; 10) SV-Vod-12, ambele ex. de la valea Vodinicki (F3), Kimmeridgian superior-Tithonic inferior. (x1).
- Fig. 11, 12 *Lamellaptychus (Beyrichilamellaptychus) beyrichi zigzagocinctus* n.pssp.; 11) SV-Vod-8; 12) SV-Vod-9, ambele exemplare de la valea Vodinicki (F3), Tithonic inferior. (x1).
- Fig. 13 *Lamellaptychus (Beyrichilamellaptychus) beyrichi undocostatus* TRAUTH, 1938; SV-Vod-15, valea Vodinicki (F3), Kimmeridgian superior-Tithonic inferior. (x1).
- Fig. 14 *Lamellaptychus (Beyrichilamellaptychus) beyrichi* aff. *fractocostatus* TRAUTH, 1938; SV-Vod-9a, valea Vodinicki (F3), Tithonic inferior. (x1).
- Fig. 15 *Lamellaptychus* sp.; valea Vodinicki (F3), Tithonic inferior. (x1).
- Fig. 16 *Punctaptychus* sp.; valea Vodinicki (F3), Tithonic inferior. (x1).

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PLATE I

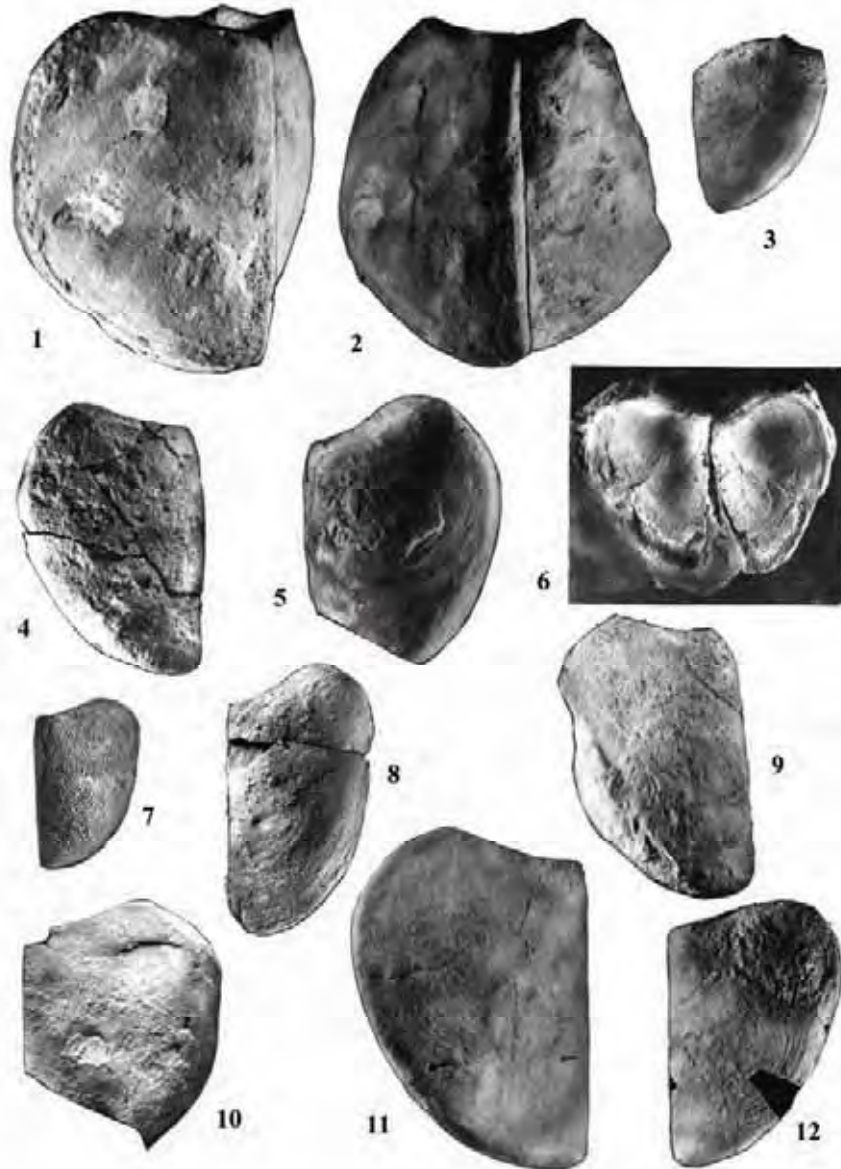


PLATE 2

