AULACOSTEFANIDS SPECIES (*SUTNERIA* GENUS) FROM "ACANTHICUM BEDS" OF GHILCOŞ MASSIF (THE EASTERN CARPATHIANS – ROMANIA)

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Abstract. *The paper describes the species of Sutneria ZITTEL genus recently discovered in Ghilcoş Massif (the Hăşmaş Mountains-the Eastern Carpathians) in Upper Jurassic deposits ("Acanthicum Beds") and the authors reviews specimens previously collected by forerunners (NEUMAYR, 1873, HERBICH, 1878 and PREDA, 1973). There are reviewed the groups of the species S. platynota (Reinecke) and S. eumela (D'Orbigny) and three new species: Sutneria (S.) spinata, S. (S.) carpathica and S. (Enosphinctes) zeissi.*

Keywords: *Sutneria, Palaeontology, Hăşmaş, Ghilcoş, Kimmeridgian.*

Rezumat. Specii de Aulacostefanide (genul *Sutneria* ZITTEL) din „Stratele cu Acanthicum" de la Ghilcoş (Carpaţii Orientali-România). *În lucrare sunt descrise speciile genului Sutneria ZITTEL recent descoperite în regiunea muntelui Ghilcoş (Masivul Hăşmaş-Carpaţii Orientali) în depozite jurasic superioare („Stratele cu Acanthicum") şi sunt revizuite exemplarele autorilor anteriori (NEUMAYR, 1873, HERBICH, 1878 şi PREDA, 1973). Sunt revizuite aici grupurile speciilor S. platynota (REINECKE) şi S. eumela (D'ORBIGNY) şi descrise trei specii noi: Sutneria (S.) spinata, Sutneria (S.) carpathica şi Sutneria (Enosphinctes) zeissi.*

Cuvinte cheie: *Sutneria, Paleontologie, Hăşmaş, Ghilcoş, Kimmeridgian.*

INTRODUCTION

Exposures of Upper Jurassic deposits are located on the upper slopes and walls in the western side of Ghilcoş Massif, a large area with blocks, almost systematically studied in the past 20 years. It provided one of the richest Kimmeridgian ammonite fauna (GRIGORE, 2000a, 2002).

From the "Acanthicum Beds" from Ghilcoş only two *Sutneria* species were known until now by few specimens, pertaining only to *S. platynota* and *S. eumela*. This study reveals for the first time in this region of the Eastern Carpathians the presence of other 11 species of this genus, three of them new for science: *Sutneria* (*S.*) *spinata, S.* (*S.*) *carpathica* and *S.* (*E.*) *zeissi.*

The presence of 13 species (revealed now) of this genus among the other species from the Aulacostephanidae Family and a relatively dense population of *Sutneria* found in this area, are good reasons to re-evaluate the position of Ghilcoş fauna (and region) between the Submediterranean and Mediterranean ones.

SYSTEMATICS

Abbreviations for the measurements and collections:

Dmax = maximal diameter
D = measured diameter
U = diameter of umbilicus
H = height
W = width
N_i = number of inner ribs (over one whorl ore a half of this)
N_e = number of external ribs (over the same one whorl as N_i ore a half of this)
Geological Institute of Austria (Bundesanstalt)-Vienna = GIA
"Babeş Bolyai" University from Cluj Napoca = BB
Geologic Laboratory of Bucharest University = LGB
Palaeontology Laboratory of Bucharest University = LPB
Natural Science Museum-Piatra Neamţ = NSMPN

The "Acanthicum Formation" and location for the studied outcrops and different profiles in GRIGORE (2000a and 2002).

Order Ammonoidea ZITTEL, 1884
Family Aulacostephanidae SPATH, 1924
Genus *Sutneria* ZITTEL, 1884

Type species: *Ammonites platynotus* REINECKE, 1818

Subgenus *Sutneria* (ZITTEL, 1884) emended GEYER, 1961

Small ammonites with irregular coiling and different morphology from inner to outer whorls, the ornamentation changing from ribbed to tuberculated one. Until now this subgenera comprise only three species: *S.*

platynota (REINECKE), *S. galar* (OPPEL) and *S. cyclodorsata* (MOESCH); SCHAIRER (1970) and ZEISS (1979) separated some subspecies from *S. platynota* ("A" "B" and "C" morphotypes) and *S. galar thieli* ZEISS. Here is revised once again this group and described other new species: *S. spinata* and *S. carpathica.*

Sutneria (*Sutneria*) *platynota* (REINECKE, 1818)
Pl. I, Figs. 1, 2, 5

1818 *Nautilus platynotus* - REINECKE in R.C.Moore; p. L327; Figs. 419/ 2 a, b, c
1873 *Perisphinctes platynotus* REINECKE-NEUMAYR; p. 184
1877 *Ammonites* (*Perisphinctes*) *platynotus* REINECKE-FAVRE; p. 47; pl. 5, Fig. 2
1878 *Perisphinctes platynotus* REINECKE-HERBICH; p.166; pl. 11, Fig. 3
1878 *Ammonites* (*Perisphinctes*) *platynotus* REINECKE-LORIOL; p. 91; pl. 15, Figs. 1, 2
1888 *Ammonites Reineckianus*-QUENSTEDT; p. 1000; pl. 112, Figs. 8-15 and 18
1961 *Sutneria* (*Sutneria*) *platynota* (REINECKE)-GEYER; p. 131; pl. 3, Figs. 11bis, 12
1970 *Sutneria* (*Sutneria*) *platynota* (REINECKE) B morphotype-SCHAIRER; p. 155; pl. 1, Figs. 2-12; pl. 2 , Figs. 1-13
1973 *Perisphinctes platynotus* (REINECKE)-PREDA; pl. 10, Figs. 1, 2
1975 *Sutneria* cf. *platynota* (REINECKE)-DRAGASTAN; pl. 3, Figs. 1, 2
1978 *Sutneria platynota* (REINECKE)-OLORIZ; p. 371; pl. 39, Fig. 2
non 1888 *Ammonites platynotus*-QUENSTEDT; p. 999; pl. 112, Fig. 6; (= *S. spinata*)
non 1888 *Ammonites Reineckianus*-QUENSTEDT; p.1002 ; pl. 112 , Figs. 16, 17; aff. (= *S. carpathica*)
non 1888 *Ammonites Reineckianus evolutus*-QUENSTEDT; p.1003; pl. 112, fig. 19
non 1970 *Sutneria* (*Sutneria*) *Platynota* (REINECKE) form A-SCHAIRER; p. 158; pl. 1, Fig. 1; (= *S. spinata*)
non 1970 *Sutneria* (*Sutneria*) *Platynota* (REINECKE) form C-SCHAIRER; p. 158; pl. 2, Figs. 6-13 (= *S. carpathica*)

Material: LRs1E1, LRs2E1, LRs3F1, LRs4F2, LRs5F5, LRs6F5, LRs7W0,1, LRs8W0.5. Neumayr's specimen: Collection of GIA; it originates from red nodular limestone of Ciofronca outcrop. Herbich's specimen: Collection of BB; it originates from red nodular limestone of Ciofronca outcrop. Preda's specimens: two specimens in the Collection of NSMPN; they originate from the green nodular limestone of Ghilcoş outcrop (Inv. 69A MPN, 69B MPN) and one in the Collection of LGB (inv. 1s LGB); it originates from the reddish nodular limestone of Ghilcoş outcrop. Dragastan's specimen: the Collection of LPB (inv. 3284); it originates from the reddish nodular limestone of Ghilcoş outcrop.

Diagnosis: globular conch-convolute with irregular coiling, straight deep umbilicus (U/D= 0.20) and large tabulate venter. Carenate umbilicus wall. Depressed whorl-section, with the maximum width in the external third of the flanks on the body chamber. Ornamentation with polyploce and falcoid ribs in the inner whorls and simple rare and more powerful ribs, ending in small tubercles tangent to the venter on the body chamber.

Discussion: the large amount of specimens known until now, reported by former authors (QUENSTEDT, SCHAIRER) included more aberrant individuals, which are exceeding an intraspecific variability. For that reason, Schairer in 1970 divided this species in three groups, named morphotypes "A" "B" and "C" each one based on morphological, morphometrical and biostratigraphic features. This was the base for this new revision on the *S. platynota* species.

Remarks: only seven of my specimens are complete, the last one representing a body chamber. All specimens have morphological and morphometrical parameters comparable with those of the type species; the density of ornamentation on the body chambers is the only different feature, the LRs4F2 being the most ornamented one.

Occurrence: Early Kimmeridgian-Platynota Zone in the Acanthicum Formation ("E" "F" "W" profiles), from the Ghilcoş and Ciofronca-Hăşmaş Mts., Romania; Early Kimmeridgian-Platynota Zone in Europe (Spain, France, Germany) and East Africa (Ethiopia).

Sutneria (*Sutneria*) *spinata* nov. sp.
Pl. I, Fig. 3 (Holotype)

1888 *Ammonites platynotus*-QUENSTEDT; p. 999; pl. 112, Fig. 6
1970 *Sutneria* (*Sutneria*) *platynota* (REINECKE) A morphotype-SCHAIRER; p. 158; pl. 1, Fig. 1
Holotypus: specimen LRs9F1 exemplified in pl. I, Fig. 3
Derivatio nominis: *"spinatus"*= with spines (in Latin)-after its ornamentation with external spines on the last whorl.
Locus tipicus: Haghimas Massif-*Acanthicum Beds*-Lacu Roşu, outcrop Ghilcoş.
Stratum tipicum: F1 level-in the base of Platynota Zone

Material: LRs9F1 and LRs10X1

Description: globular conch - convolute with irregular coiling, straight deep umbilicus (U/D= 0.25) and normal round venter. The whorl section is isometric, round with maximum width on the 1/3 of flanks height and slowly depressed on the body chamber. The umbilical wall is high and oblique. The Holotype preserves half of a whorl from the body chamber, devoid of the aperture region. The ornamentation well preserved is makeup in the inner whorls of fine dense ribs, bifurcated and trifurcated ones (divided at 2/3 of flanks), slowly falcoid. On the body chamber, the ribs

transformed in bullae knee like, more rare and ended in large spines on the imaginary limit with the venter. The spines have an elliptic base and are oblique with the venter.

Comparison: *S.* (*S.*) *platynota* has the ornamentation on body chamber with more prominent ribs (bullae), knee like, grate spines (spatulate) periventrally and a less larger venter; the new species has more affinities with that figured by Schairer in 1970 (pl. 1, Fig. 1).

Discussion: the specimens presented by Schairer (1970) as *S. platynota* form "A" have a grate variations over the features (whorl section, ornamentation) of the body chamber and they can be put in isomorphic series type with *S. spinata* and *S. platynota* as extreme ones. I remind that the specimen here discussed was only figured by QUENSTEDT (1888 pl. 112, Fig. 6), for the first time. As long as we have two specimens in our region, it could give a possible biostratigraphic value fore this species (as a subzone one).

Occurrence: Early Kimmeridgian-in the base of Platynota Zone (Spinata Subzone nov.sz.) in the Acanthicum Formation ("F" and "X" profiles) from the Ghilcos-Hasmas Mts., Romania; Early Kimmeridgian-Platynota Zone (Polygyratus Subzone) in Germany (Francoia) and France.

Sutneria (*Sutneria*) *carpathica* nov.sp
Pl. I, Fig. 4 (Holotype)

aff 1888 *Ammonites Reineckianus*-QUENSTEDT; p.1002; pl.112 , Figs. 16,17
1970 *Sutneria* (*Sutneria*) *Platynota* (REINECKE) C morphotype-SCHAIRER; p. 159; pl. 2, Figs. 6-13
Holotypus: specimen LRs11F4 figured in pl. I, Fig. 4
Derivatio nominis: "*carpathicus*" = carpathian (from Latin); which are meaning "specific to Carpathian Mts".
Locus tipicus: Haghimas Masiff -„*Acanthicum Beds"*- Lacu Rosu, outcrop Ghilcos
Stratum tipicum: level E_3-in the top of Platynota Zone

Material: LRs11F4, LRs12F5

Description: globular conch - convolute with irregular coiling, straight umbilicus (U/D= 0.23) and large round venter. The whorl section is isometric, round with maximum width on the middle flanks. Ornamentation with fine dense ribbing which are bifurcated and trifurcated on the inner coiling; the ribs' profile is slowly flexuous and divided from the 2/3 of its height (radiate secondary); on the body chamber the ornament became more rare, with rectiradiate lateral ribs thin tuberculation (peryventral) and a thin ribbing on the venter (which are specific).

Comparison: this taxon has many affinities with *S. platynota*, differing by its round venter and less powered ornamentation on the body chamber only.

Discussion: this taxon was separate as *S. platynota* form **C** by SCHAIRER (1970; pl. 1, Fig. 1) in its revision. The specimens figured by QUENSTEDT (1888, pl. 112, Fig. 16, 17) can also be attached to this species, the differences being small ones.

Occurrence: Early Kimmeridgian-top of Platynota Zone (Guilherandense Subzone) in the Acanthicum Formation from the Ghilcoş-Hăşmaş Mts., Romania; Early Kimmeridgian-top of Platynota Zone (Guilherandense Subzone) in Germany (Franconia) and France.

Sutneria (*Sutneria*) *cyclodorsata* (MOESCH, 1867)
Pl. I, Figs. 13, 18, 23

1867 *Ammonites cyclodorsatus*-MOESCH; p. 292; pl. 1, Fig. 1
1878 *Ammonites* (*Perisphinctes*) *cyclodorsatus* MOESCH-LORIOL; p. 93; pl. 15; Fig. 3 (*non* Fig. 4)
1929 *Sutneria* cf. *cyclodorsata* (MOESCH)-WEGELE; p. 94
1958 *Sutneria cyclodorsata* (MOESCH)-ZIEGLER; p. 188

Material: LRs13D2, LRs14D2; *S.* cf. *cyclodorsata*: LRs15W4

Remarks: the two specimens (LRs13D2, LRs14D2) preserve well the specific peristome with apophasis and partly the ornamentation with short, geniculate primary ribs (polyploce).

Occurrence: Late Kimmeridgian-Acanthicum Zone in the Acanthicum Formation („D" profile) from the Ghilcos - Hasmas Mts., Romania; Early Kimmeridgian-in Germany, Switzerland, Spain and France.

Subgenus *Enosphinctes* (SCHINDERWOLF, 1925)
Type species: *Ammonites eumelus* D'ORBIGNY

Sutneria (*Enosphinctes*) *pedinopleura* SEEGER, 1961
Pl. I, Fig. 7

1979 *Sutneria pedinopleura* SEEGER-ZEISS; p. 262; pl. 2, Figs. 6, 14

Material: LRs16E2

Remarks: my specimen is a small-sized one, more compressed and dense ribbed than the specimen figured by Zeiss in 1979 (fig. 6).

Occurrence: Early Kimmeridgian-Hypselocyclum Zone in the Acanthicum Formation ("E" profile) from the Ghilcoş-Hăşmaş Mts., Romania; Late Kimmeridgian-Eudoxus Zone in France and Germany.

Sutneria (*Enosphinctes*) *eumela* (D'ORBIGNY, 1847) emended ZEISS, 1979
Pl. I, Figs. 12, 14, 16, 20

1847 *Ammonites Eumelus*-D'ORBIGNY; p. 554; pl. 216, Figs. 1, 2, 3
1873 *Perisphinctes Eumelus* D'ORBIGNY-NEUMAYR; p. 184
1878 *Perisphinctes Eumelus* D'ORBIGNY-HERBICH; p. 166; pl. 11, Figs. 3 a, b
1971 *Sutneria eumela* (D'ORBIGNY)-CALLOMON & COPE; p. 161; pl. 10, Figs. 4, 5
1975 *Sutneria eumela* (D'ORBIGNY)-CONTINI & HANTZPERGUE; p. 11; pl. 4, Figs. 1, 2
*1979 *Sutneria eumela* (D'ORBIGNY)-ZEISS; p. 263; pl. 3, figs. 1-13 *non* Figs. 16, 17 (= *S. zeisii*)

Material: LRs17T3,0, LRs18T5,0, LRs19D3, LRs20D3, LRs21D3, LRs22D4, LRs23D4, LRs24D10, LRs25K10, LRs26K18, LRs27A7, LRs28A9, LRs29A9; Neumayr's specimens: two in the Collection of GIA; they originate from green sandstones of Ghilcoş outcrop; Herbich's specimen: Collection of BB; it riginates from red nodular limestone of Ciofronca outcrop.

Remarks: all specimens are comparable with the type species emended by Zeiss, with a variable ribbing alternant of the bi-or triplicates (intraspecific spectra). Only one specimen preserves the aperture lappets.

Occurrence: Kimmeridgian-the interval of Uhlandi to Eudoxus zones/subzones in the Acanthicum Formation ("A" "D" "K" and "T" profiles) from the Ghilcoş-Hăşmaş Mts., Romania; Late Kimmeridgian-Acanthicum and Eudoxus zones in Europe (France, England, Spain, Switzerland, Poland, Bulgaria, Germany).

Sutneria (*Enosphinctes*) *lorioli* ZEISS, 1979
Pl. I, Figs. 8, 17, 22

1872 *Ammonites eumelus* D'ORBIGNY-LORIOL in Zeiss; p. 272, Fig. 5
1979 *Sutneria lorioli* nov. nom.-ZEISS; p. 272; pl. 2, Fig. 1

Material: LRs30D14, LRs31D18, LRs32H11; *S.* cf. *lorioli* ZEISS: LRs33D3

Remarks: damaged specimens: the LRs30D14 - the peristome and the ornamentation; the LRs31D18 and LRs32H11-are more or less fragmentary, but all these have preserved some specific features in the ornamentation or the aperture lappets. In the measurements, only LRs30D14 specimen have a more closed umbilicus than the type one. The specimen LRs33D3 is comparable with that of Zeiss figured in 1979 (Fig. 6), with a thin secondary ribbing stile.

Occurrence: Late Kimmeridgian-Eudoxus and Beckeri zones in the Acanthicum Formation ("D" and "H" profiles) from the Ghilcoş - Hăşmaş Mts., Romania; Late Kimmeridgian-Eudoxus Zone in Poland and Germany.

Sutneria (*Enosphinctes*) *hoelderi* ZEISS, 1979
Pl. I, Figs. 10, 15

1959 *Sutneria cyclodorsata* (MOESCH)-HOLDER & ZIEGLER; p. 186; pl. 21, Fig. 4
1961 *Sutneria* (*S.*) *cyclodorsata* (MOESCH)-GEYER; p. 132
1979 *Sutneria hoelderi* nov. nom.-ZEISS; p. 268; pl. 2, Fig. 3

Material: LRs34A6, LRs35A8, LRs36A9

Remarks: specimen LRs34A6 has its morphological features and measurements close to those of the type species. The other specimens have the umbilicus more closed and the secondary ribs powerful on the LRs36A9.

Occurrence: Kimmeridgian-Divisum and Acanthicum zones in the Acanthicum Formation ("A" profile) from the Ghilcoş-Hăşmaş Mts., Romania; Kimmeridgian-on the interval of Hypselocyclum to Acanthicum zones in Ethiopia, Germany, and France.

Sutneria (*Enosphinctes*) *weidmanni* ZEISS, 1979
Pl. I, Fig. 19

1979 *Sutneria weidmanni* n. sp.- ZEISS; p. 271; pl. 3, Figs. 19, 20, text Fig. 4

Material: LRs37A7

Remarks: all the features of my specimen are comparable with those of the type species, the final sector with bifurcated start at 6 mm diameter; my specimen does not preserve the peristome and a part of the outer whorl.

Occurrence: Early Kimmeridgian-Divisum Zone in the Acanthicum Formation ("A" profile) from the Ghilcoş-Hăşmaş Mts., Romania; Kimmeridgian-Divisum and Acanthicum zones in Djibuti Republic and Yemen (East Africa and South Arabia).

Sutneria (*Enosphinctes*) cf. *batalleri* GEYER, 1963
Pl. I, Fig. 6

cf 1963 *Sutneria* (*Enosphinctes*) *batalleri* n. sp.-GEYER; p. 189; pl. 18, Figs. 2, 3

Material: LRs38G6, LRs39A7

Remarks: the specimens' features are comparable with the type species one, for the **stile** of ribbing but more powerful and rigid one. From the biostratigraphic point of view, they are founded in the same level.

Occurrence: Early Kimmeridgian-in the base of Divisum Zone in the Acanthicum Formation ("A" and "G" profiles) from-the Hăşmaş Mts., Romania; Early Kimmeridgian-at the limit of Hypselocyclum / Divisum zones in France.

Sutneria (*Enosphinctes*) *zeissi* nov. nom.
Pl. I, Figs. 9, 11

*1878 *Ammonites cyclodorsatus* MOESCH-LORIOL; p. 93; pl. 15, Fig. 4
1979 *Sutneria* cf. *lorioli* n. nom.-ZEISS; p. 273; pl. 2, Figs. 4, 5, 6
Holotypus: specimen LRs40D2 figured in pl. I, Fig. 9
Derivatio nominis: "*zeissi*" = dedicated to Prof. Arnold Zeiss
Locus tipicus: Hăghimaş Masiff-*Acanthicum Beds*-Lacu Roşu, outcrop Ghilcoş.
Stratum tipicum: D 2 level-in the base of Acanthicum Zone.

Material: LRs40D2, LRs41D3; *S.* cf. *zeissi*: LRs42K10

Description: medium-sized species convolute with a round whorl section. Ornamental features: with bifurcated and simple ribs (by the ending) and slow flexure of middle flanks-with the most rigid ribbing from this group (with equal power of the secondary and primary too). The peristome and suture are unknown.

Discussion: the features are compellable with that of *S. lorioli* ZEISS and *S. eumela* D'ORBIGNY; the first has a pronounced flexure of the ribs, while in the second case, the ribs are powerful and some trifurcate are present. The third specimen (LRs42K10) is ventrally compressed and preserves a similar ribbing **stile** on a half of the whorl.

Occurrence: Late Kimmeridgian-Acanthicum Zone in the Acanthicum Formation ("D" profile) from the Ghilcoş - Hăşmaş Mts., Romania; Kimmeridgian-Divisum and Acanthicum zones in Ethiopia.

Sutneria (*Enosphinctes*) *subeumela* SCHNEID, 1915
Pl. I, Fig. 21

1915 *Sutneria subeumela*-SCHNEID; p. 124; pl. 6, Figs. 7, 7 a
1959 *Sutneria subeumela* SCHNEID-BARTHEL & ZIEGLER; p. 139; pl. 21, Figs. 6, 7
1978 *Sutneria subeumela* SCHNEID-SAPUNOV; p. 74; pl. 6, Fig. 1

Material: LRs43D30

Remarks: the single specimen available represents 2/3 of a whorl originating from a small individual, well preserving the specific ornamentation; compared with the type specimen, its ribbing is more powerful on the venter and the siphonal groove less evident, on its smaller diameter.

Occurrence: Late Kimmeridgian-Beckeri Zone in the Acanthicum Formation ("D" profile) from the Ghilcoş-Hăşmaş Mts., Romania; Late Kimmeridgian-Beckeri Zone (Subeumela Subzone) in France, Germany, Bulgaria and Ethiopia.

Sutneria (*Enosphictes*) *hararina* (VENZO, 1959)
Pl. I, Fig. 24

1959 *Enosphinctes hararinus* VENZO-VENZO; p. 38; pl. 4, Figs. 4 a, b
1979 *Sutneria* aff. *hararina* (VENZO, 1959)-ZEISS; p. 264; pl. 2, Figs. 13, 15

Material: LRs44T7.0

Remarks: my specimen is broken of 1/5 on the last coiling but it preserves the peristome with its long lappets. The ribbing stile on the last quarter of whorl is less flexuous than in the type specimen; the other features-morphologically and morphometrically-are comparable with that of the type species.

Occurrence: Late Kimmeridgian-Beckeri Zone in the Acanthicum Formation ("T" profile) from the Ghilcoş-Hăşmaş Mts., Romania; Late Kimmeridgian-Eudoxus and Beckeri zones (-Pedinopleura Subzone) in Germany and Tanzania.

Measurements

Species	Specimen	Dmax	D	U	H	W	O/D	H/D	W/D	H/W	*Ni	*Ne	N_e/N_i
Sutneria (*Sutneria*) *spinata* nov. sp.	Holotype (LRs9F1)	›16	14	3.5	6	6	0.25	0.43	0.43	1	7 Ni/2	7 Ne/2	-
Sutneria (*Sutneria*) *carpathica* nov. sp.	Holotype (LRs11F4)	20	17	4	6.5	6	0.23	0.38	0.35	1.08	6	10	1.7
Sutneria (*Sutneria*) *cyclodorsata*	sp. Loriol	-	17	4.3	7	9	0.25	0.41	0.53	0.78	18	47	2.6
	LRs13D2	-	16.2	4.2	7	8	0.26	0.43	0.49	0.87	7	~20	~2.8
Sutneria (*Enosphinctes*) *pedinopleura*	sp. Zeiss	-	30	7.5	12	9	0.25	0.40	0.30	1.33	12	24	2
	LRs16E2	-	18	4.3	8	5.2	0.24	0.44	0.29	1.54	8	17	2.1
Sutneria (*Enosphinctes*) *eumela*	Lectotype	-	15	4.2	6.2	5.3	0.28	0.41	0.35	1.17	10	25	2.5
	LRs17T3,0	-	15	3.8	6.5	6.3	0.25	0.43	0.42	1.03	10	27	2.7
	LRs19D3	-	15	3.8	5.9	5.9	0.25	0.39	0.39	1	4	10	2.5
	LRs29A9	-	14	3.5	5.5	5.9	0.25	0.39	0.42	0.93	10	25	2.5
	LRs27A7	-	14	3.9	6	5.5	0.28	0.43	0.39	1.09	7	16	2.3
	LRs20D3	-	16	4.5	6.2	6.7	0.28	0.39	0.42	0.92	6	14	2.3
Sutneria (*Enosphinctes*) *lorioli*	Holotype	-	20	6.6	7.6	7.6	0.33	0.38	0.38	1	7	16	2.3
	LRs30D14	-	15.5	4.8	5.5	5.5	0.34	0.35	0.35	1	9	-	-
	LRs31D18	-	15.5	5	6	6	0.37	0.39	0.39	1	7	15	2.1
Sutneria (*Enosphinctes*) *hoelderi*	Holotype	-	15	5.3	6.2	5.6	0.35	0.41	0.37	1.11	12	41	3.4
	LRs34A6	-	14	4.8	5.9	5.5	0.34	0.42	0.39	1.07	10	34	3.4
	LRs35A8	-	16	5.2	6.4	5.5	0.32	0.40	0.34	1.16	8	29	3.6
	LRs36A9	-	18	5.6	7.5	6.5	0.32	0.42	0.36	1.15	9	30	3.3
Sutneria (*Enosphinctes*) *weidmanni*	Holotype	-	18	5.4	8.5	8.3	0.30	0.47	0.46	1.02	12	26	2.1
	LRs37A7	-	15	4.5	6.7	6.5	0.30	0.45	0.43	1.03	9	18	2
Sutneria (*Enosphinctes*) *zeissi* nov.nom.	Zeiss (*S.* cf. *lorioli*)	-	19	7.4	6.7	7.4	0.37	0.36	0.37	0.90	10	19	1,9
	Holotype (LRs40D2)	-	17	6	6	6.5	0.35	0.35	0.38	0.92	9	17	1.9
	LRs41D3	-	16	6	5.5	6	0.37	0.34	0.37	0.92	10	19	1.9
Sutneria (Enosphinctes) *subeumela*	Holotype	-	22	8	8	7	0.35	0.35	0.32	1.14	10	18	1.80
	LRs43D30	-	13.5	5	5.5	4.5	0.37	0.41	0.33	1.08	9	17	1.89
Sutneria (*Enosphictes*) *hararina*	Holotype	-	36	13	13	12	0.36	0.36	0.33	1.08	10	20	2
	LRs44T7,0	-	15	5.5	5.5	5	0.37	0.37	0.33	1.10	10	21	2.1

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PLATE I

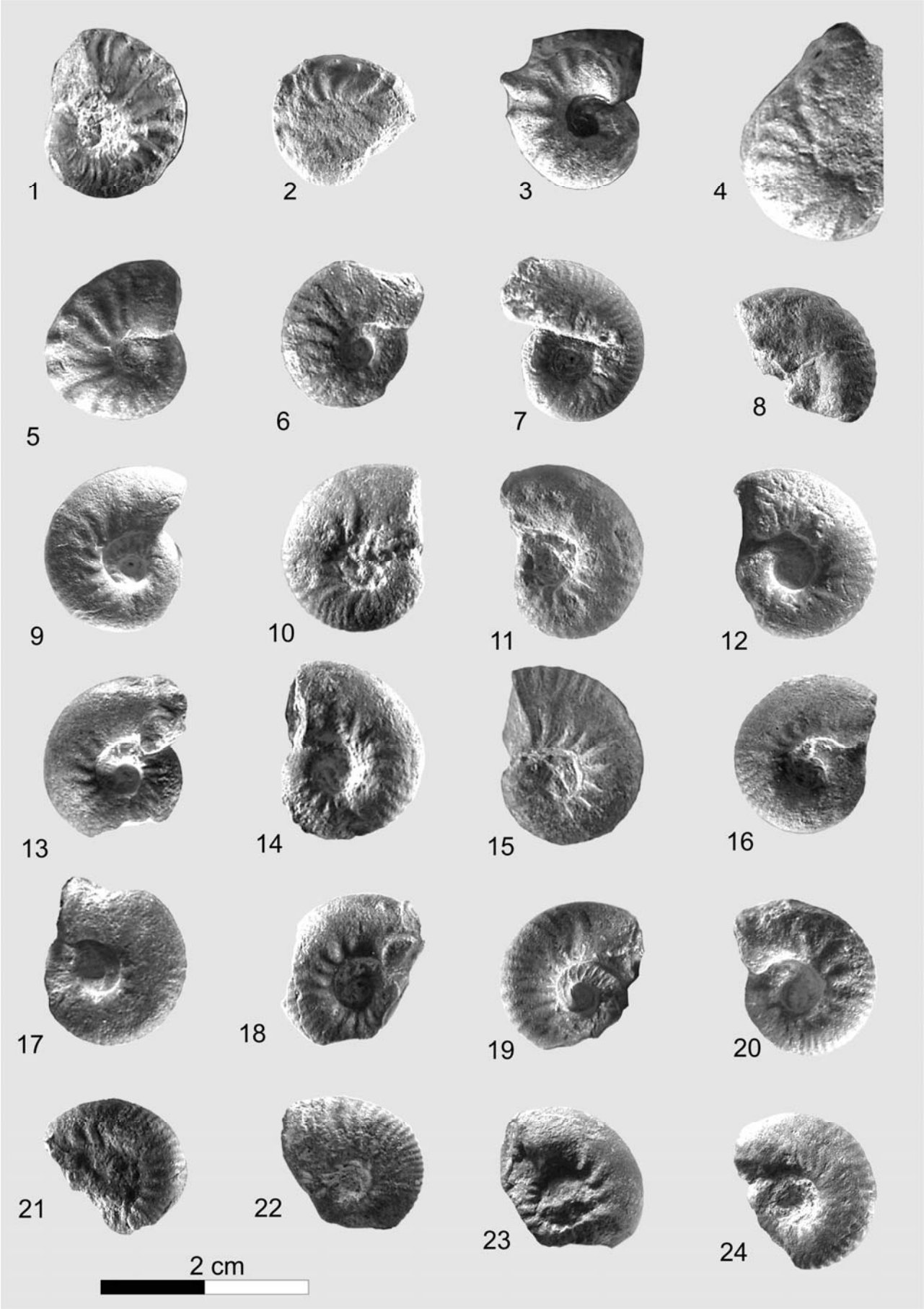

PLATE I

Figure 1. *Sutneria* (*Sutneria*) *platynota* (REINECKE) Preda's specimen (69A MPN); green nodular limestone, Early Kimmeridgian-Platynota Zone / *Sutneria* (*Sutneria*) *platynota* (REINECKE) expl. Preda (69A MPN); calcare nodulare verzui, Kimmeridgian inferior-Zona Platynota.

Figure 2. *Sutneria* (*Sutneria*) *platynota* (REINECKE) (LRs8W0.5); red and green nodular limestone, Early Kimmeridgian-Platynota Zone / *Sutneria* (*Sutneria*) *platynota* (REINECKE) (LRs8W0.5); calcare nodulare rosu/verde, Kimmeridgian inferior-Zona Platynota.

Figure 3. *Sutneria* (*Sutneria*) *spinata* nov.sp. (Holotype; LRs9F1); green nodular limestone, Early Kimmeridgian-Platynota Zone / *Sutneria* (*Sutneria*) *spinata* nov.sp. (holotip; LRs9F1); calcare nodulare verzui, Kimmeridgian inferior-Zona Platynota.

Figure 4. *Sutneria* (*Sutneria*) *carpathica* nov.sp. (Holotype; LRs11F1); green nodular limestone, Early Kimmeridgian-Platynota Zone / *Sutneria* (*Sutneria*) *carpathica* nov.sp. (holotip; LRs11F1); calcare nodulare verzui, Kimmeridgian inferior-Zona Platynota;

Figure 5. *Sutneria* (*Sutneria*) *platynota* (REINECKE) (LRs1E1); green nodular limestone, Early Kimmeridgian-Platynota Zone / *Sutneria* (*Sutneria*) *platynota* (REINECKE) (LRs1E1); calcare nodulare verzui, Kimmeridgian inferior-Zona Platynota.

Figure 6. *Sutneria* (*Enosphinctes*) cf. *batalleri* GEYER (LRs38G6); reddish limestone, Early Kimmeridgian-Divisum Zone / *Sutneria* (*Enosphinctes*) cf. *batalleri* GEYER (LRs38G6); calcarenite visinii, Kimmeridgian inferior-Zona Divisum.

Figure 7. *Sutneria* (*Enosphinctes*) *pedinopleura* SEEGER (LRs16E2); green nodular limestone, Early Kimmeridgian-Hypselocyclum Zone / *Sutneria* (*Enosphinctes*) *pedinopleura* SEEGER (LRs16E2); calcare nodulare verzui, Kimmeridgian inferior-Zona Hypselocyclum.

Figure 8. *Sutneria* (*Enosphinctes*) *lorioli* ZEISS (LRs31D18); green nodular limestone, Late Kimmeridgian-Beckeri Zone / *Sutneria* (*Enosphinctes*) *lorioli* ZEISS (LRs31D18); calcare nodulare verzui, Kimmeridgian inferior-Zona Beckeri.

Figure 9. *Sutneria* (*Enosphinctes*) *zeissi* nov.nom. (LRs40D2); green nodular limestone, Late Kimmeridgian-Acanthicum Zone / *Sutneria* (*Enosphinctes*) *zeissi* nov.nom. (LRs40D2); calcare nodulare verzui, Kimmeridgian inferior-Zona Acanthicum.

Figure 10. *Sutneria* (*Enosphinctes*) *hoelderi* ZEISS (LRs35A8); green nodular limestone, Early Kimmeridgian-Divisum Zone / *Sutneria* (*Enosphinctes*) *hoelderi* ZEISS (LRs35A8); calcare nodulare verzui, Kimmeridgian inferior-Zona Divisum.

Figure 11. *Sutneria* (*Enosphinctes*) cf. *zeissi nov.nom.* (LRs42K10); red nodular limestone, Early Kimmeridgian-Divisum Zone / *Sutneria* (*Enosphinctes*) cf. *zeissi nov.nom.* (LRs42K10); calcare nodulare rosii, Kimmeridgian inferior -Zona Divisum.

Figure 12. *Sutneria* (*Enosphinctes*) *eumela* (D'ORBIGNY) (LRs27A7); green nodular limestone, Early Kimmeridgian-Divisum Zone / *Sutneria* (*Enosphinctes*) *eumela* (D'ORBIGNY) (LRs27A7); calcare nodulare verzui, Kimmeridgian inferior-Zona Divisum.

Figure 13. *Sutneria* (*Enosphinctes*) *cyclodorsata* (MOESCH) (LRs13D2); green nodular limestone, Late Kimmeridgian-Acanthicum Zone / *Sutneria* (*Enosphinctes*) *cyclodorsata* (MOESCH) (LRs13D2); calcare nodulare verzui, Kimmeridgian superior-Zona Acanthicum.

Figure 14. *Sutneria* (*Enosphinctes*) *eumela* (D'ORBIGNY) (LRs17T3.0); green nodular limestone, Early Kimmeridgian-Divisum Zone / *Sutneria* (*Enosphinctes*) *eumela* (D'ORBIGNY) (LRs17T3.0); calcare nodulare verzui, Kimmeridgian inferior-Zona Divisum.

Figure 15. *Sutneria* (*Enosphinctes*) *hoelderi* ZEISS (LRs36A9); green nodular limestone, Late Kimmeridgian-Acanthicum Zone / *Sutneria* (*Enosphinctes*) *hoelderi* ZEISS (LRs36A9); calcare nodulare verzui, Kimmeridgian superior-Zona Acanthicum.

Figure 16. *Sutneria* (*Enosphinctes*) *eumela* (D'ORBIGNY) (LRs29A9); green nodular limestone, Late Kimmeridgian-Acanthicum Zone / *Sutneria* (*Enosphinctes*) *eumela* (D'ORBIGNY) (LRs29A9); calcare nodulare verzui, Kimmeridgian superior-Zona Acanthicum.

Figure 17. *Sutneria* (*Enosphinctes*) *lorioli* ZEISS (LRs30D14); grey limestone, Late Kimmeridgian-Eudoxus Zone / *Sutneria* (*Enosphinctes*) *lorioli* ZEISS (LRs30D14); calcarenite cenusii, Kimmeridgian superior-Zona Eudoxus.

Figure 18. *Sutneria* (*Enosphinctes*) *cyclodorsata* (MOESCH) (LRs14D2); green nodular limestone, Late Kimmeridgian-Acanthicum Zone / *Sutneria* (*Enosphinctes*) *cyclodorsata* (MOESCH) (LRs14D2); calcare nodulare verzui, Kimmeridgian superior-Zona Acanthicum.

Figure 19. *Sutneria* (*Enosphinctes*) *weidmanni* ZEISS (LRs37A7); green nodular limestone, Early Kimmeridgian-Divisum Zone / *Sutneria* (*Enosphinctes*) *weidmanni* ZEISS (LRs37A7); calcare nodulare verzui, Kimmeridgian inferior-Zona Divisum.

Figure 20. *Sutneria* (*Enosphinctes*) *eumela* (D'ORBIGNY) (LRs20D3); green nodular limestone, Late Kimmeridgian-Acanthicum Zone / *Sutneria* (*Enosphinctes*) *eumela* (D'ORBIGNY) (LRs20D3); calcare nodulare verzui, Kimmeridgian superior-Zona Acanthicum.

Figure 21. *Sutneria* (*Enosphinctes*) *subeumela* SCHNEID (LRs43D30); green sandstones, Late Kimmeridgian-Beckeri Zone / *Sutneria* (*Enosphinctes*) *subeumela* SCHNEID (LRs43D30); gresii verzui, Kimmeridgian superior-Zona Beckeri.

Figure 22. *Sutneria* (*Enosphinctes*) *cf. lorioli* ZEISS (LRs33D3); green nodular limestone, Late Kimmeridgian-Acanthicum Zone / *Sutneria* (*Enosphinctes*) *cf. lorioli* ZEISS (LRs33D3); calcare nodulare verzui, Kimmeridgian superior-Zona Acanthicum.

Figure 23. *Sutneria* (*Enosphinctes*) cf. *cyclodorsata* (MOESCH) (LRs15W4); red and green nodular limestone, Early Kimmeridgian-?Divisum Zone / *Sutneria* (*Enosphinctes*) cf. *cyclodorsata* (MOESCH) (LRs15W4); calcare nodulare verzui/rosii, Kimmeridgian inferior-Zona ?Divisum.

Figure 24. *Sutneria* (*Enosphinctes*) *hararina* (VENZO) (LRs44T7.0); grey limestone, Late Kimmeridgian-Eudoxus Zone. All specimens are figured x2 / *Sutneria* (*Enosphinctes*) *hararina* (VENZO) (LRs44T7.0); calcarenite cenusii, Kimmeridgian superior-Zona Eudoxus. Toate exemplarele sunt figurate x2.