

3. PALEONTOLOGIE

PALEOZOOLOGIE



Project 262 : Tethyan Cretaceous Correlation

PATRULIUSICERAS, A NEW GENUS OF THE FAMILY SILESITIDAE HYATT, 1900 (AMMONITINA)¹

by

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Ammonoidea. Barremian. New taxa. Biometry. Range. Phylogeny. South Carpathians — Danubian Sedimentary Domain — Svinița-Svinecea Zone.

Abstract

A new genus of the family Silesitidae is proposed: *Patrulusiceras* n.g. This genus is characterized by an almost desmoceratid lateral aspect, due to the higher whorls than those from the typical silesitids. Along with Karakasch' species, *P. sulcistriatum* and *P. tenue*, it comprises 11 more new species and subspecies with the range from the terminal Lower Barremian to the middle part of the Upper Barremian (Fig. 3).

Résumé

Patrulusiceras, nouveau genre de la famille des Silesitidae Hyatt, 1900 (Ammonitina). Le nouveau genre a été proposé pour des Silesitidae de taille plutôt mince, à aspect latéral presque desmoceratide. Leur aspect est dû aux tours plus hautes que chez les Silesitidae typiques, à cause de l'ombilic plus étroit et de la section plus comprimée des tours. Il inclut, outre les espèces de Karakasch, P. sulcistriatum et P. tenue, d'autres 11 espèces et sous-espèces nouvelles. Ces taxa se développent dans l'intervalle compris entre la partie terminale du Barrémien inférieur et la partie moyenne du Barrémien supérieur (Fig. 3).

Introduction

The Barremian ammonite faunas from the Svinița region (Banat), from the Dîmbovicioara Couloir and also from the Perșani Mts (East Carpathians) offered numerous specimens of a silesitid group, already

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known only by two Crimean species : "*Silesites*" *sulcistriatus* Karakasch (1907) and "*Silesites*" *tenuis* Karakasch (1907).

This group, well defined from the other genera of the family Silesitidae, constitutes a new genus : *Patrulusiceras*, named in the memory of the late Dr. Dan Patrulius, great Romanian paleontologist and stratigrapher. It comprises some ammonite species of relatively small size, with compressed whorls and a lateral view almost desmoceratid because

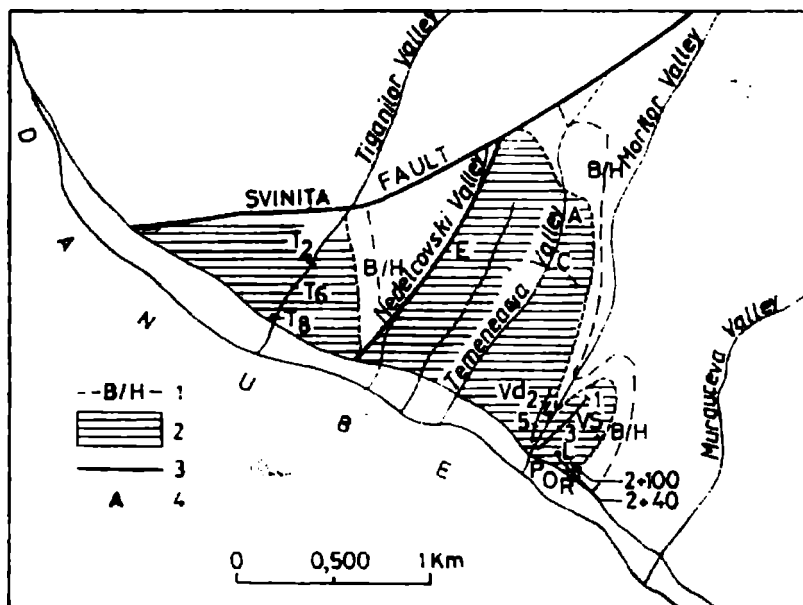


Fig. 1. Fossiliferous sites with *Patrulusiceras*, in the Svinița village area. 1, Hauterivian-Barremian boundary ; 2, Temeneacia member of the Svinița Formation ; 3, fault ; 4, fossiliferous sites : A — left bank of the Temeneacia Valley near the water reservoir of the village ; C — left slope of the same valley above the uppermost street of the village ; E — left slope of the Nedelkovski Valley in the cutting of the same street ; P — the Danube bank, some 150-170 m downstream from the Morilor Valley mouth ; L=2+40=O — the left slope of the Danube, 175 m downstream from the Morilor Valley mouth (above the route Orșova-Svinița, in the cutting of the route and, respectively, on the Danube side) ; R — the same slope, some 200 m downstream from the Morilor Valley mouth ; 2+100 — the same slope, on the route, 235 m south-east from the Morilor Valley ; Vd2-k — the path on the right slope of the Morilor Valley ; Vd4, Vd5 — area between the same path and the Morilor Valley th.veg ; VS1-3 — the path on the left slope of the same valley ; T2, T6, T8 — Tiganilor Valley.

of the narrower umbilicus and, correlatively, higher whorls than in the typical representatives of the genus *Silesites*. They have constrictions almost straight, more or less prorsiradiate on the sides and strongly projected on the venter and, in some species, bear a weak lateral ribbing

on the body chamber, like in immature true *Silesites*; the suture-line is also typical of a silesitid type by the wide body of the lobes and by the radial or ascendent auxiliaries.

The whole well preserved ammonite material of the genus *Patrulusiceras* — mostly as pyritised nuclei — comes from the Svinița region; so, all the Romanian species of the genus are referred to this material, gathered in the Svinița village area, from the Temeneacia member deposits of the Svinița Formation (Avram, 1976), as noticed in the text-Fig. 1.

The type species of the genus *Patrulusiceras* is *P. crenelatum* n.sp. — p. 2, Pl. II, Figs. 1-5 here below —, recorded in the Barremian strata from Svinița.

Description of species

Patrulusiceras crenelatum n.g., n.sp.

This species includes 22 specimens, preserved in most cases as pyritised nuclei; they have in common the number and the shape of the constrictions, the sloped umbilical area and the crenellated umbilical border. On the other hand these specimens are partly different in the whorl section shape and in the measurements of the shells; on this ground they constitute three groups of specimens, here considered to be different subspecies, as follows:

Patrulusiceras crenelatum crenelatum n.g., n.sp., n.ssp.
text-Fig. 2/1-4; Pl. I, Figs. 7-10; Pl. II, Fig. 1-6

Holotypus: the specimen figured in Pl. I, Fig. 7, Pl. II, Fig. 1 and text-Fig. 2/1 (I.G.G. P 17198).

Derivatio nominis: from the crenellated umbilical border.

Stratum typicum: the lower part of the Upper Barremian sequence, within the Temeneacia member of the Svinița Formation.

Locus typicus: Svinița (Banat), the left bank of the Danube, some 190 m downstream from the Morilor Valley mouth (O-R).

Material: 13 pyritised nuclei and a complete specimen preserved as an impression in limy-marls, recorded in the fossiliferous sites 2+100, R, Vs, O, L, O-P, T8, E (in stratigraphical order) (I.G.G. 17199-17202).

Description. (a) The holotype and its closely related specimens (Pl. II, Fig. 2 and another one) constitute a mean group, characterised by the trapezoidal whorl section, with flat sides, shouldered external and umbilical border and also, with the umbilicus as a funnel because of its sloped wall. The constrictions (8 on the last whorl) are prorsiradiate, gently sigmoidal on the sides and strongly projected on the ventral region. Its suture-line is shown in Pl. I, Fig. 7.

<i>Measurements</i> :		∅	U	H	W	W/H
holotype	(O-R)	25.5 mm	8 (0.31)-10	(0.39)-7.3	(0.28)	0.73
Pl. II, Fig. 2	T8	23.6	7.8(0.33)-	9.3(0.39)-	6.3(0.26)	0.67
	T8/10	21	6.4(0.30)-	8.6(0.41)	—	—

Variability. (b) Four specimens can be distinguished from the holotype by the broader whorl sections, by the narrower umbilicus and the

irregular disposition of the constrictions (Pl. I, Fig. 8, Pl. II, Fig. 4, text-Fig. 2/2). They are intermediate between the above described specimens and the subspecies *P. crenelatum robustum* n.ssp.

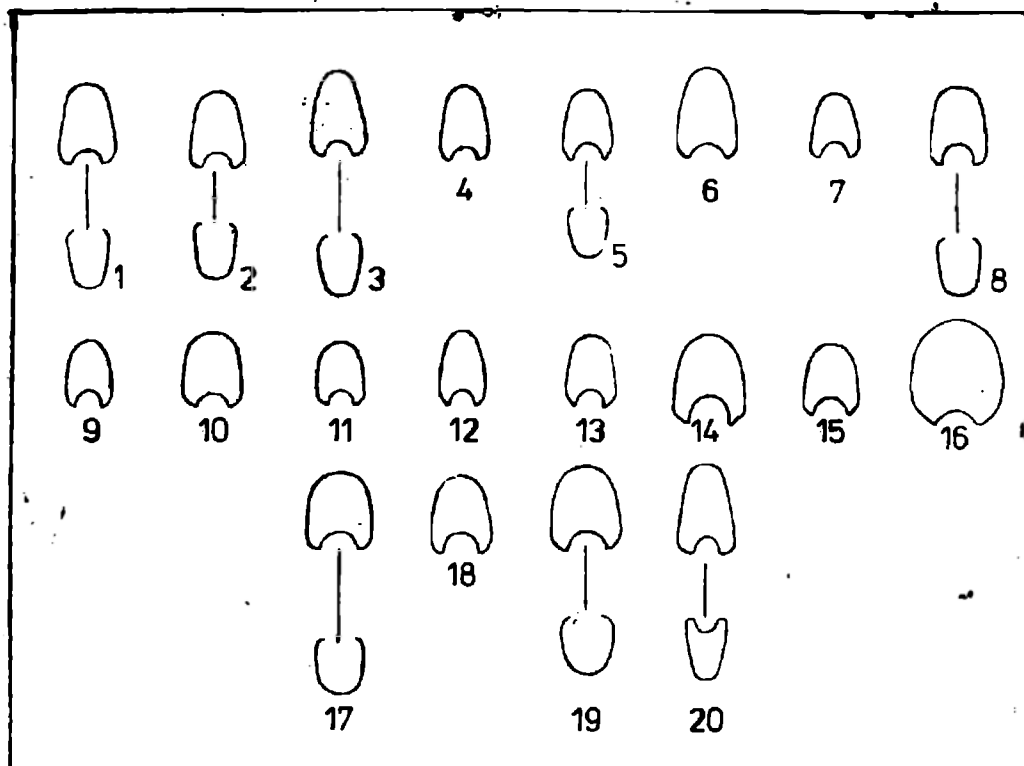


Fig. 2. Whorl sections of the *Patruclusiceras* species. 1-4, *P. crenelatum* n.sp.: 1 = holotype (Pl. II, Fig. 1); 2 = Pl. II, Fig. 4; 3 = Pl. II, Fig. 3; 4 = Pl. II, Fig. 6; 5, 6, *P. crenelatum plurisulcatum* n.ssp.: 5 = holotype = Pl. II, Fig. 7; 6, Pl. II, Fig. 8; 7, *P. crenelatum robustum* n.ssp., holotype (Pl. II, Fig. 10); 8, *P. sulcistriatum* (Kar.) = Pl. II, Fig. 11; 9, *P. aff. sulcistriatum* (Kar.) = Pl. II, Fig. 13; 10, 11, *P. aff. sulcistriatum* (Kar.): 10 = Pl. II, Fig. 15; 11 = Pl. II, Fig. 16; 12, *P. gracile* n.sp., holotype = Pl. II, Fig. 17; 13, *P. lateumbilicatum* n.sp., holotype = Pl. II, Fig. 15; 14, 15, *P. uhligi* n.sp.: 14 holotype (Pl. III, Fig. 1), 15 = Pl. III, Fig. 4; 16, *P. aff. uhligi* n.sp. = Pl. III, Fig. 5; 17, *P. rigidum* n.sp., holotype (Pl. III, Fig. 6); 18, *P. striatum* n.sp., holotype (Pl. III, Fig. 9); 19, *P. ? crassum* n.sp., holotype (Pl. III, Fig. 11); 20, *P. ? trapezoidale* n.sp., holotype (Pl. III, Fig. 13).

Measurements:

Pl. II, Fig. 4	T8	22.8 mm	6.5(0.28)-9.8(0.43)-7 (0.30)	0.70
	E	16	4.2(0.26)-6.7(0.42)4.8(0.30)	0.72
	E	16	4.8(0.28)-7 (0.43)-5.1(0.32)	0.73
	VS	15.6	4.5(0.25)-6.7(0.43)-4.8(0.30)	0.71

(c) Other 5 specimens (one of them figured in Pl. II, Fig. 6. Pl. I, Fig. 9 and text-Fig. 2/4) have a thinner and higher, with gently convex sides, whorl section. They bear 6 to 9 constrictions and their

values of the measurements seem to change with the age to the thinner whorl sections and to the broader umbilicus :

Pl. II, Fig. 6	2+100	22 mm	6.7(0.30)-9.2(0.42)-6	(0.27)	0.65
	O-P	19.1	6	(0.31)-8.2(0.42)-5.2(0.27)	0.64
	L+O	14.3	4	(0.28)-6.1(0.42)-4.1(0.29)	0.66
	E	14.5	3.7(0.25)-6.5(0.45)-4.3(0.30)		0.66
	L	13	3.2(0.24)-6	(0.46)-4 (0.30)	0.66

(d) The last two specimens (Pl. II, Fig. 3, 5, Pl. I, Fig. 10, text-Fig. 2/3) have plane sides, more evident umbilical and ventro-lateral borders and also, broader umbilicus. The most complete of them (Fig. 5) preserves the body chamber on a half of the last whorl. Their measurements are :

Pl. II, Fig. 3	T8	27.7 mm	9.4(0.34)-10.6(0.38)-7	(0.25)	0.66
Pl. II, Fig. 5	T8/7	47.6	16	(0.33)-19 (0.39)	—

Patrulusiceras crenelatum plurisulcatum n.g. n.sp. n.spp.
text-Fig. 2/5-6 ; Pl. I, Fig. 16 ; Pl. II, Figs. 7-9

Holotypus : the specimen figured in Pl. I, Fig. 16, Pl. II, Fig. 7 and text-Fig. 2/5 (I.G.G. P 17203).

Derivatio nominis : the constrictions are significantly more numerous than at the nominal subspecies.

Stratum typicum : Upper Barremian, Temeneacia member of the Svinița Formation.

Locus typicus : Svinița (Banat), route Orșova-Svinița 175 m south-east from the Morilor Valley (2+40).

Material. 5 pyritised nuclei (I.G.G. P 17204), found in the sites 2, 2+40, L, T8/10, E (see text-Fig. 1).

Description. The holotype preserves the whole phragmocone, having oval whorl section with gently convex sides and sloped, relatively low umbilical wall ; there are 10 constrictions on the last whorl. The largest specimen (Pl. II, Fig. 8), almost 30 mm in diameter, shows the half a whorl long body chamber. The measurements of the shells are :

Pl. II, Fig. 8	T8/10	29.6 mm	9.0(0.30)-11.8(0.40)-/8.4(0.30)/		0.71
holotype	2+40	20.4	5.8(0.28)- 8.6(0.42)- 6.3(0.30)		0.73
Pl. II, Fig. 9	E	16.6	4.3(0.26)- 7.3(0.44)- 5.3(0.32)		0.72
	L	16.2	4.7(0.28)-7.0(0.43)- 5.2(0.32)		0.73
	2	14.1	3.9(0.27)- 6.3(0.44)- 4.6(0.32)		0.73

Remarks. The subspecies here described is distinguished from the nominal subspecies by its more numerous constrictions and by the oval whorl section, with rounded ventro-lateral border and with open-obtuse umbilical edge.

Patrulusiceras crenelatum robustum n.g. n.sp. n.ssp.

text-Fig. 2/7 ; Pl. I, Fig. 15 ; Pl. II, Fig. 10

Holotypus : the only specimen figured (I.G.G. P 17205).*Derivatio nominis* : from the relatively bulky shells, owing to the wider whorls than in the above described subspecies.*Stratum typicum* : Upper Barremian, Temeneacia member of the Svinița Formation.*Locus typicus* : Svinița (Banat), the Danube bank, some 170 m downstream from the Morilor Valley mouth (O-P).*Material* : Three small nuclei, gathered from the sites T8/10, O-P, VS.*Description*. The holotype has thick whorls, trapezoidal in section, with flat, strongly convergent sides and abrupt umbilical wall. There are 8 gentle sinuous, irregularly disposed constrictions on the last whorl.*Measurements* :

holotype	O-P	18.7 mm	5.8(0.31)-7.6(0.40)-6 (0.32)	0.78
	T8/10	14.3	4.2(0.29)-6.1(0.42)-4.6(0.32)	0.75
	VS	11.8	3.4(0.28)-5.1(0.43)-3.9(0.33)	0.76

Remarks. *Patrulusiceras crenelatum robustum* is different from the nominal subspecies by its thicker whorls, with gently convergent sides. It seems to arise from the first representatives of the subspecies *P. crenelatum crenelatum*, which appear earlier within the Barremian intervals.*Patrulusiceras sulcistriatum* (Kar.)

text-Fig. 2/8 ; Pl. I, Fig. 13 ; Pl. II, Figs. 11, 12

Type reference : *Silesites sulcistriatus* Karakasch, 1907, Pl. 101, Pl. II, Fig. 5 a, b, Pl. XXIV, Fig. 9.*Other references* : *Silesites sulcistriatus* Kar., Fallot in Kilian, 1920, p. 220.*Material* : two specimens (I.G.G. P 17207), gathered from the sites T6/5 and T8/10.*Description*. Medium-sized specimens, moderately evolute, septate to a diameter of 25 mm (Fig. 11) and with half a whorl long body chamber (Fig. 12). The whorl section is trapezoidal-rounded, almost oval, with gently convergent flat sides. The Romanian specimens present the constrictions identical in shape and number with those of the holotype.*Measurements* :

Pl. II, Fig. 12 T6/5	34.5 mm	12 3(0.35)-12.2(0.35)	—	—
Pl. II, Fig. 11, T8/10	25.5	9.1(0.35) 9.6(0.37)-6.9(0.27)	0.72	

Remarks. The above described specimens are almost identical with the holotype ; but in my collection there are other four specimens (I.G.G. P 17209-17210), gathered from the lower part of the Temeneacia member, in the sites Vd4, Vd5, F, which are different from the holotype in the

narrower umbilicus, the wider and with more convergent sides whorl section and also, more numerous constrictions. They are presented as *Patrulusiceras* aff. *sulcistriatum* (Kar.) in Pl. I, Fig. 5, Pl. II, Figs. 15, 16 and text-Fig. 2/10, 11. Their measurements are :

Pl. II, Fig. 15	Vd5	23.4 mm	7.9(0.33)-9.1(0.38)	-7 (0.30)	0.77
Pl. II, Fig. 16	F	22.4	7.1(0.30)-9.3(0.41)	-7 (0.30)	—
	F	20.6	5.9(0.28)-8.7(0.42)	-6.4(0.31)	0.73
	Vd4	17.6	5.2(0.29)-7.5(0.42)	-5.8(0.32)	0.77

Another group of six pyritised nuclei (*Patrulusiceras* aff. *sulcistriatum* — Pl. I, Fig. 6, Pl. II, Figs. 13, 14 and text-Fig. 2.9), all found in the site A (I.G.G. P 17208), is distinguished from the typical specimens by the oval, relatively higher whorl sections and by fewer constrictions. They are probably the first representatives of the species, in the upper part of the Lower Barremian deposits. Their measurements are :

Pl. II, Fig. 13	20.6 mm	6.8(0.33)-8 (0.39)	-5.7(0.27)	0.71
	20	6.7(0.33)-8 (0.40)	-5.7(0.28)	0.71
Pl. II, Fig. 14	19.1	6.8(0.35)-7.6(0.39)	-5.3(0.27)	0.70
	17.8	6 (0.33)-6.8(0.38)	-4.8(0.28)	0.70
	16	4.9(0.31)-6.1(0.38)	-4.3(0.27)	0.70

Occurrence : *Patrulusiceras sulcistriatum* is known in the Barremian from Crimea. In the Svinița region the typical specimens were found in the middle Upper Barremian (T8), but those here described as *P.* aff. *sulcistriatum* appear at the top of the Lower Barremian (A) and in the whole lower half of the Upper Barremian (Vd4, Vd5, F).

Patrulusiceras gracile n.g. n.sp.

text-Fig. 2/12 ; Pl. I, Fig. 12 ; Pl. II, Fig. 17

Holotypus : the only pyritised nucleus I have (I.G.G. P 17213).

Derivatio nominis : from the narrow whorl section.

Stratum typicum : the upper part of the Lower Barremian, the base of the Temeneacia member.

Locus typicus : Svinița (Banat), near the water reservoir of the village (A).

Description. Smooth, moderately evolute phragmocone, with compressed narrow-high oval whorl section and gently convex whorl sides. The last whorl bears 7 constrictions, arched forward from the umbilical edge and strongly projected on the ventral side. The suture-line is figured in Pl. I, Fig. 12.

Measurements : 24 mm 8.8 (0.33-9)(0.37)-5.6(0.23) 0.62

Remarks. The above described species is apart from *Patrulusiceras sulcistriatum* by the shape of the whorl section and of the constrictions. On the other hand, it is different from *Patrulusiceras tenue* (Kar.) in the completely smooth shell and in the very compressed, with lower and convergent sides whorl section.

Patrulusiceras lateumbilicatum n.g. n.sp.

text-Fig. 2/13; Pl. I, Fig. 4; Pl. II, Figs. 18, 19

Holotypus: the specimen figured in Pl. I, Fig. 4, Pl. II, Fig. 18 and text-Fig. 2/6 (I.G.G. P 17211).

Derivatio nominis: from the broad umbilicus of the type specimens.

Stratum typicum: upper part of the Lower Barremian, the base of the Temeneacia member, Svinița Formation.

Locus typicus: Svinița (Banat), near the water reservoir of the village (A).

Material: the holotype and another pyritised nucleus (I.G.G. P 17212), from the same strata.

Description. The holotype is a completely septate specimen, with compressed whorls surrounding a very broad and shallow umbilicus. The whorl section is trapezoidal-oval, with flat, convergent sides and sloped umbilical wall. The last whorl bears 7 gently sinuous prorsiradiate constrictions, irregularly disposed and strongly projected on the venter. Body chamber unknown. The suture-line is figured in Pl. I, Fig. 4.

The second specimen has an identical view of the shell, at a smaller diameter.

Measurements:

holotype 24.7 mm	9.7(0.39)-8.6(0.34)-6 (0.24)	0.70
paratype 16	6.4(0.40)-6 (0.37)-4.4(0.27)	0.73

Remarks. *Patrulusiceras lateumbilicatum* is very related with *P. aff. sulcistriatum* (Pl. II, Figs. 13, 14) described here above, but is different in the larger umbilicus and the lower whorls. The whorl section shape — very compressed — permits the discrimination from the true *Silesites* ex gr. *S. vulpes* (Coq.). So, this species seems to be the first representative of an evolutionary stem which continues within the Upper Barremian with *Patrulusiceras uhligi* n.sp., *P. rigidum* n.sp. and *P. striatum* n.sp.

Patrulusiceras uhligi ng. n.sp.

text-Fig. 2/14, 15; Pl. I, Figs. 1, 2; Pl. III, Figs. 1-4

References: *Silesites* aff. *vulpes* Coquand, Uhlig, 1883, p. 237, Pl. XVIII, Fig. 2.

Holotypus: the specimen figured in Pl. I, Fig. 1, Pl. III, Fig. 1 and text-Fig. 2/14 (I.G.G. P 17214).

Derivatio nominis: from the name of the famous Austrian paleontologist Victor Uhlig, who published the first specimen of the species.

Stratum typicum: the middle Upper Barremian, Temeneacia member.

Locus typicus: Svinița (Banat), Țiganilor Valley (T8).

Material: The holotype and other three pyritised nuclei (I.G.P. 17215-17216), and also, three crushed specimens, preserved as impressions in limy-marls, all of them gathered from the same level — in the sites T2/3, T8 and VS.

Description. The holotype is a pyritised specimen, partly crushed. It has the orientative measurements and the lateral ornamentation identical with Uhlig's specimen described as *Silesites* aff. *vulpes* Coq. Besides, it preserves the whorl section — oval, with $W/H = 0.82$ at a diameter of 32 mm, with almost flat slightly convergent sides, rounded venter and a sloped, gently concave umbilical wall (the last feature seems to appear also on Uhlig's specimen and on the specimens from Svinîța preserved as impressions). The constrictions (only four on a whorl) are gently sigmoidal on the sides and strongly projected on the venter, where they appear like a sharp V. The ribbing is visible only on the last whorl, with simple or in pairs ribs, rising from the umbilical edge; on the only interval undeformed there are 12-13 ribs ending at the ventral border.

Variability. The three crushed specimens preserve the lateral ornamentation almost identical with that of the holotype, but having fine, projected striae on the external side. The largest of them (Pl. III, Fig. 2) preserves the body chamber a third of the last whorl long; its last ribs are progressively stronger to the external border where they are biplicate. The pyritised nuclei have the same measurements values but are completely smooth to a diameter of 26 mm except the constrictions; their constrictions are more numerous than those of the holotype (the last feature appears also on the specimen figured by Uhlig, which presents five constrictions on the last whorl). The suture-lines are figured in Pl. I, Figs. 1, 2.

Measurements:

Pl. III, Fig. 2	T2/3	50 mm	20.5(0.41)-17 (0.34)	—	—
holotype	T8	46	18.0(0.39)-17.0(0.36)	—	—
		31	13.4(0.43)-11.0(0.39)-9 (0.29)	—	0.82
Pl. III, Fig. 4	T8/4	25.7	10.3(0.40)- 9.0(0.35)-6.9(0.26)	—	0.77
		13.5	4.9(0.36)- 5.0(0.37)-4.3(0.31)	—	0.86
Pl. III, Fig. 3	T8	19.8	6.9(0.34)- 7.3(0.37)-5.8(0.29)	—	0.79
		VS	15.2	5.3(0.32)- 5.5(0.36)-4.7(0.31)	—

Besides the above described specimens, in the Svinîța pyritised material there is another nucleus gathered from the site 2+40 (I.G.G. P 17217), with the same ribbing but with 6 constrictions or so on a whorl and having oval whorl section — with convex sides; this specimen is here figured (Pl. I, Fig. 2; Pl. III, Fig. 5) as *Patrulusiceras* aff. *uhligi* n.sp.

Remarks. *Patrulusiceras uhligi* is related to two other species also derived from *P. lateumbilicatum* n.sp.: *P. rigidum* n.sp. and *P. striatum* n.sp., all of them found practically in the same strata. It is different from the former especially in the measurements values, and from the latter in the shell proportions, in its coarser ribbing and also in the shape of the constrictions.

Patrulusiceras rigidum n.g. n.sp.

text-Fig. 2/17; Pl. I, Fig. 11; Pl. III, Figs. 6, 7

Holotypus: the pyritised nucleus figured in Pl. I, Fig. 11, Pl. III, Fig. 6 and text-Fig. 2/11 (I.G.G. P 17218).

Derivatio nominis : from the shape of the constrictions, almost straight on the whorl sides.

Stratum typicum : middle Upper Barremian, Temeneacia member.

Locus typicus : Svinița (Banat), the Danube slope some 180 m downstream from the Morilor Valley mouth (L).

Material : the holotype and two other specimens (I.G.G. P 17219), the last gathered from the sites T8/8 and T8/10.

Description. The holotype preserves the phragmocone and the beginning of the body chamber (at a diameter of 26 mm). It presents an almost rectangular whorl section, with flat, gently convergent sides, shouldered latero-ventral and umbilical border and abrupt umbilical slope. On the last whorl there are 6 constrictions risen almost radially, rectilinear from the umbilical edge and strongly projected on the venter. On the sides, the shell bears fine, dense (12-14 on the interval between two constrictions) ribs; the external side is smooth. The suture line is almost identical with that of *Patrulusiceras uhligi* (Pl. I, Fig. 11). The crowding of the last septa proves that the specimen is gerontic.

The other specimens, preserved as impressions in limy-marls, have the same measurements values and the same shape of the constrictions as the holotype and, in addition, preserve the last (mature) part of the body chamber; on this part of the shell, the ribbing crosses over the external side. The body chamber is almost half a whorl long.

Measurements :

Pl. III, Fig. 7	T8/10	39.8 mm	15.6(0.39)-14.0(0.35)	—	—
holotype	L	26.5	10.9(0.41)-9.2(0.34)	-7.8(0.29)	0.84

Remarkc. *Patrulusiceras rigidum* is comparable with its ancestor *P. lateumbilicatum* by the broad umbilicus and the low whorl sides, but it is different in its wider whorl section, in the rectilinear constrictions and in the presence of the lateral ribbing.

A single large specimen, gathered also from the Țiganilor Valley (T8/13 — I.G.G. P 17220), is almost identical with the type specimens to a diameter of 40 mm; over that, its lateral ribs are prolonged on the ventral side and, between them, appear numerous short intercalatories; the umbilicus is notably broader. Its measurements are :

55 mm	25.5(0.46)-16.8(0.32)	—	—
45	20.5(0.40)-14.2(0.31)	—	—

This specimen, significantly larger than the other above described, seems to be the macroconch of the species : it comes from the same strata with the type specimens and has the same ontogenetic development to a diameter of 40 mm, when those are already gerontic.

Patrulusiceras striatum n.g. n.sp.

text-Fig. 2/18; Pl. I, Fig. 17; Pl. III, Figs. 9, 10

Holotypus : the pyritised nucleus figured in Pl. I, Fig. 17, Pl. III, Fig. 9 and text-Fig. 2/18 (I.G.G. P 17221).

Derivatio nominis : from the fine ornamentation of the shell.

Stratum typicum: Upper Barremian, Temeneacia member of the Svinița Formation.

Locus typicus: the left slope of the Danube, some 175 m downstream from the Morilor Valley mouth (0).

Material: the holotype and another specimen (I.G.G. P 17222), gathered from the same site and almost the same level as that.

Description. The holotype is a completely septate pyritised nucleus, with trapezoidal-rounded whorl section having almost flat, convergent whorl sides, rounded venter and sloped umbilical wall. There are 6 prorsiradiate, gently sinuous constrictions on the last half of the whorl, strongly projected on the venter. Each interval between constrictions bears sigmoidal stria, especially visible on the inner half of the sides. The suture is shown in Plate I, Figure 17.

The paratype, also incomplete, preserves better the shell surface and it is almost identical with the holotype in having the same density and shape of the constrictions and of the stria.

Measurements:

holotype	0	24 mm	7.6(0.31)-9.6(0.40)-7.2(0.30)	0.74
paratype	0	21	6.7(0.32)-8.7(0.41)-6.3(0.30)	0.72

Remarks. *Patrulusiceras striatum* is related to the species *P. ? crassum* n.sp. by its ribbing, but it has very different measurement values and a different shape of the whorl section; it partly reminds also the species *Patrulusiceras tenue* (Kar.) which, however, has a more compressed whorl section, with almost vertical umbilical wall.

Patrulusiceras ? crassum n.g. n.sp.
text-Fig. 2/19; Pl. I, Fig. 14; Pl. III, Figs. 11, 12

Holotypus: the pyritised specimen figured in Pl. I, Fig. 14, Pl. III, Fig. 11 and text-Fig. 2/19 (I.G.G. P 17223).

Derivatio nominis: from the "thick" whorl section.

Stratum typicum: Upper Barremian, Temeneacia member of the Svinița Formation.

Locus typicus: the left slope of the Danube, some 180 m downstream from the Morilor Valley mouth (O-R).

Material: the holotype and two other small nuclei, the last gathered from the sites T8 and VS (I.G.G. P 17224).

Description. The holotype is an almost complete phragmocone (with the crowding last septa), having wide trapezoidal-rounded whorl section, with gently convergent sides, rounded venter and sloped umbilical wall. On its shell surface there are 8 prorsiradiate, almost rectilinear on the sides constrictions, which are strongly projected on the venter. A weak ribbing is visible only on the sides. The suture-line (Pl. I, Fig. 14) is of a silesitid type in having ascendent auxiliaries, but it is apart by the longer ventral lobe.

The other specimens present only a very young smooth stage.

Measurements :

holotype	O-R	24.8 mm	8.5(0.34)-9.5(0.38)-8.6(0.34)	0.90
		20.0	6.7(0.34)-7.8(0.39)-6.7(0.34)	0.86
Pl. III, Fig. 12	VS	13.2	4.3(0.32)-5.3(0.40)-4.3(0.32)	0.81
	T8	10 9.5	3.3(0.34)-4.4 (0.46)-3.6(0.37)	0.82

Remarks. *Patrulusiceras? crassum* is very near to *P. uhligi* n.sp. by the general morphology of the shell, except the number of the constrictions, the width of the whorls and also, the suture line with a longer ventral lobe. The last feature situates the described species in an uncertain generic position — near to the true *Silesites*.

Patrulusiceras? trapezoidale n.g. n.sp.

text-Fig. 2/20 ; Pl. I, Fig. 18 ; Pl. III, Figs. 13-15

Holotypus : the pyritised specimen presented in Pl. I, Fig. 18, Pl. III, Fig. 13 and text-Fig. 2.20 (I.G.G. P 17225).

Derivatio nominis : from the trapezoidal whorl section.

Stratum typicum : Upper Barremian, Temeneacia member of the Svinița Formation.

Locus typicus : the Svinița village area (F).

Material : the holotype and 14 other nuclei, gathered from the sites Vd2, VS2.2, VS3, F, C, A and P (I.G.G. P 17226).

Description. The holotype is the largest but incomplete specimen ; it is entirely septate, with high trapezoidal whorl section having almost flat, strongly convergent sides, rounded-narrow venter and sloped umbilical wall. The constrictions (3-4 on the last half a whorl) are sigmoidal, gently prorsiradiate and strongly projected on the ventral side. The suture-line has ascendent auxiliaries, but narrower and more denticulate elements than in the above described species.

The other specimens are variable by the depth and by the size of first appearance of their constrictions.

Measurements :

holotype	F	26.2 mm	8 (0.30)-11 (0.42)-6.9(0.26)	0.63
		18	5.4(0.30)- 7.7(0.42)-5.1(0.28)	0.66
	A	21.3	5.8(0.27)- 9.5(0.44)-6.0(0.28)	0.63
	VS3	21	6.4(0.30)- 8.6(0.40)-5.4(0.26)	0.63
	VS2	19.7	5.7(0.28)- 8.3(0.42)-5.3(0.27)	0.64
	VS2a	18.7	5.5(0.29)- 7.9(0.42)-5.2(0.27)	0.65
Pl. III, Fig. 15	C	18.6	5.0(0.26)- 8.3(0.44)-5.2(0.28)	0.63
Pl. III, Fig. 14	C	18.5	5.0(0.27)- 8.3(0.44)-5.3(0.29)	0.64
	VS3	17.5	4.6(0.27)- 7.6(0.43)-5.0(0.28)	0.65
	VS1/2	17.4	4.9(0.28)- 7.5(0.43)-5.0(0.28)	0.66
	C	17	4.4(0.26)- 7.6(0.44)-4.9(0.29)	0.64
	A	16.5	4.5(0.27)- 7.2(0.43)-4.9(0.29)	0.63
	VS	14	3.8(0.27)- 6.4(0.45)-4.3(0.30)	0.66
	P	13	3.7(0.28)- 5.7(0.44)-4.0(0.30)	0.61

Remarks. It is not possible to place surely the above described species within the genus *Patrulusiceras*: on the one hand its constriction shape — strongly projected on the ventral side — and the suture-line with ascendent auxiliaries — are features of the genus here proposed; on the other hand, the very compressed whorls and the first lateral lobe, more dissymmetric than at the other here described species, relate *Patrulusiceras? trapezoidale* with some desmoceratids (for instance *Melchiorites blayaci* Kilian.).

Stratigraphical distribution, phylogeny

The fossiliferous sites with *Patrulusiceras* spp. from the Svinița village area are uppermost Lower Barremian — middle Upper Barremian in age, as follows: A — the upper subzone of the Lower Barremian (*Pulchellia compressissima* subzone — Avram, 1983); C=2+100=Vd4 — the boundary between the Lower and the Upper Barremian (with the last *Holcodiscus* ex gr. *caillaudianus* (d'Orb.), with *Silesites vulpes* (Coq.), *Dissimilites trinodosus* (d'Orb.) and the last *Leptoceras*); 2+40=R=VS1-3? — the lowermost Upper Barremian, with *Macroscaphites tirolensis* Uhl. and *Carstenia? subcaicedi* (Sayn) (*Heinzia provincialis* subzone — Avram, 1983); 2=P=L+O=Vd2 (partly) and T2, T6, T8 — “Crio-ceratites” ex gr. *barremensis-orbignyi* subzone — Avram, 1983); Vd2 (upper part)=E=F — *Imerites giraudi* and *Eristavia dichotoma* subzone — Avram, 1983). Every species occurrence interval is shown in Fig. 3.

The early representatives of the genus *Patrulusiceras* (*P. aff. sulcistriatum*, *P. gracile* and *P. lateumbilicatum*) coexist with *Silesites vulpes* — from which they probably arose — in the subzone with *Pulchellia compressissima*. *Patrulusiceras aff. sulcistriatum* “a” (Pl. II, Figs. 13, 14) continues into the Upper Barremian with *P. aff. sulcistriatum* “b” (Pl. II, Figs. 15, 16) from which branch out the typical *P. sulcistriatum* (Pl. II, Fig. 11) in the middle Upper Barremian.

The *Patrulusiceras crenelatum* group starts very probably from *P. aff. sulcistriatum* “a” at the top of the Lower Barremian with *P. crenelatum* “c” (Pl. II, Fig. 6) and *P. crenelatum* type (Pl. II, Fig. 1), on the one hand, with *P. crenelatum plurisulcatum* (Pl. II, Fig. 7) and *P. crenelatum robustum* (Pl. II, Fig. 10) as two separate branches, on the other hand; in this phylogenetic sketch *P. crenelatum* “b” (Pl. II, Fig. 4) has an uncertain position between *P. crenelatum s. str.* and *P. crenelatum robustum*.

Patrulusiceras lateumbilicatum (Pl. II, Figs. 18, 19) is probably the ancestor of the Upper Barremian species *P. rigidum* (Pl. III, Figs. 6, 7)

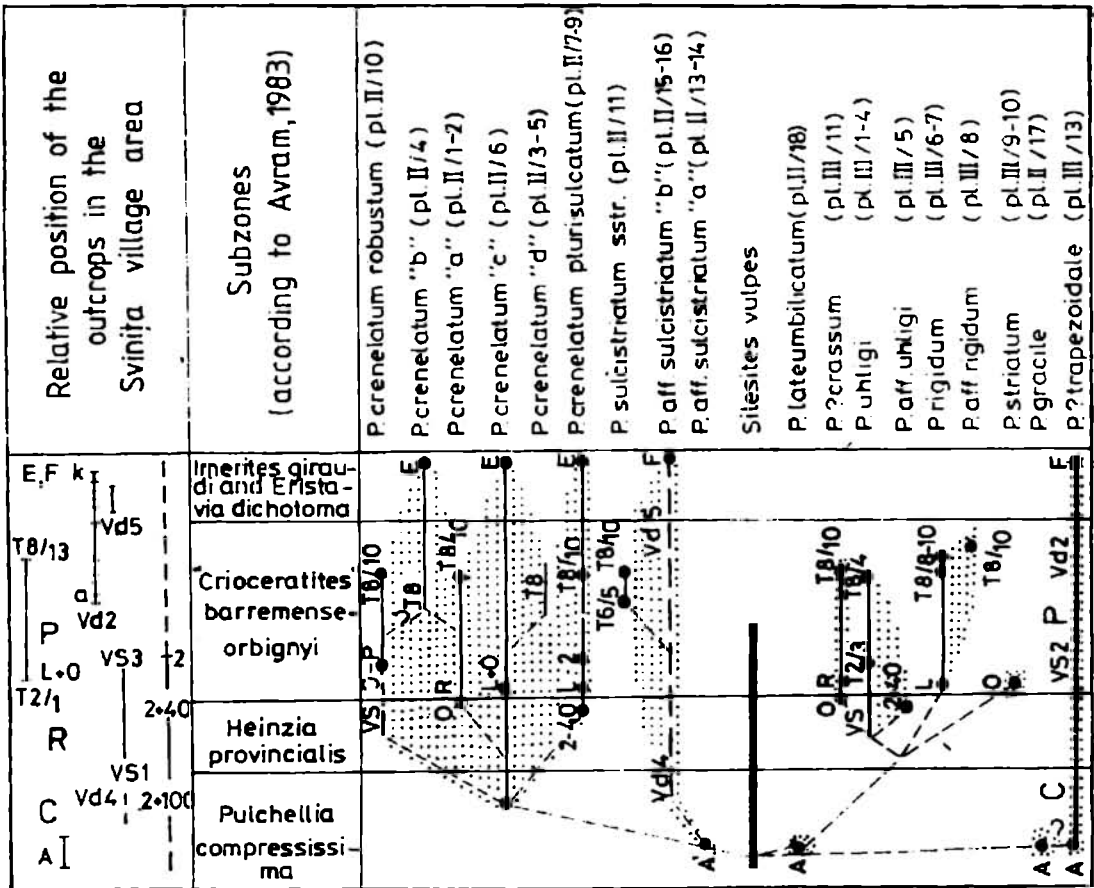


Fig. 3. The presumed evolution of the genus *Patruiliusiceras*.

with its extreme or dimorphic pair — *P. aff. rigidum* (Pl. III, Fig. 8) and of the species *P. uhligi* (Pl. III, Fig. 2, 1+4, 3, in stratigraphical order). *Patruiliusiceras aff. uhligi* (Pl. III, Fig. 5) and *P. ? crassum* (Pl. III, Fig. 11) seem to be the "bulky" extreme of the same group.

Patruiliusiceras ? trapezoidale (Pl. III, Figs. 14+15 and 13, in stratigraphical order) could be a branch of the Lower Barremian species *Patruiliusiceras gracile* (Pl. II, Fig. 17); but its sure affiliation to the family Silesitidae is an unsolved question yet.

In the Baraolt Mts. the ammonite specimens of the genus *Patruiliusiceras* were gathered from the upper part of the Lower Barremian ("*Silesites?* sp. aff. *S. ? sulcistriatus* Kar.-*S. ? tenuis* Kar." — Avram, Kusko, 1983; Avram, 1983) and in the Dîmbovicioara Couloir were found in the *Heinzia provincialis* subzone (Avram, 1983); unfortunately, they are not so well preserved to identify the species.

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PATRULIUSICERAS, GEN NOU DIN FAMILIA SILESIDAE HYATT, 1900 (AMMONITINA)

(Rezumat)

Faunele de amoniți barremieni de la Svinița (Banat), din Culoarul Dimbovicioarei și din munții Perșani (Carpații Orientali) au oferit specimene numeroase aparținând unui grup de silesitide cunoscut mai înainte numai prin două specii din Crimeea : „*Silesites*“ *sulcistriatus* Karakasch (1907) și „*Silesites*“ *tenuis* Karakasch (1907).

Acest grup, bine delimitat față de genurile cunoscute din literatura de specialitate ale familiei Silesitidae, constituie un gen nou : *Patrulusiceras*, numit astfel în memoria regretatului Dr. Dan Patrulius, reputatul stratigraf și paleontolog. El cuprinde câteva specii de amoniți de talie relativ mică, cu turele de spiră comprimate și cu aspect lateral aproape desmoceratid datorită ombilicului mai îngust și, corelativ, turelor de spiră mai înalte decât la reprezentanții tipici ai genului *Silesites*. Construcțiile acestora sînt aproape drepte, mai mult sau mai puțin proverse pe flancuri și puternic aplecate spre înainte pe regiunea ventrală, iar unele specii sînt prevăzute pe camera de habitatie cu o costatie laterală slabă, ca și adevărații reprezentanți ai genului *Silesites* în stadiile imature ; linia de sutură este de asemenea tipic silesitidă prin corpul larg al lobilor și prin dispoziția radiară sau ascendentă a elementelor auxiliare.

Intregul material bine păstrat al genului *Patrulusiceras* — în cea mai mare parte nuclei piritizați — provine din regiunea Svinița ; pentru aceasta, toate speciile românești ale genului sînt raportate la materialul recoltat în aria satului Svinița, din depozitele subformațiunii de Teme-neacia din formațiunea de Svinița (Avram, 1976).

Specia tip a genului *Patrulusiceras* este *P. crenelatum* n.sp. — recoltat din stratele de vîrstă barremiană de la Svinița.

Reprezentanții cei mai timpurii ai genului (*Patrulusiceras* aff. *sulcistriatum*, *P. gracile* și *P. lateumbilicatum*) coexistă cu *Silesites vulpes* — din care probabil s-au desprins — în subzona cu *Pulchellia compressissima* (fide Avram, 1983). *Patrulusiceras* aff. *sulcistriatum* „a” (pl. II, fig. 13, 14) continuă în Barremianul superior cu *P.* aff. *sulcistriatum* „b” (pl. II, fig. 15, 16) din care se desprinde *P. sulcistriatum* tipic (pl. II, fig. 11) la jumătatea Barremianului superior.

Grupul *Patrulusiceras crenelatum* derivă foarte probabil din *P.* aff. *sulcistriatum* „a” la limita superioară a Barremianului inferior prin *P. crenelatum* „c” (pl. II, fig. 6) și *P. crenelatum* tip (pl. II, fig. 1), pe de o parte și prin *P. crenelatum plurisulcatum* (pl. II, fig. 7) și *P. crenelatum robustum* (pl. II, fig. 10), cu două ramuri independente, pe de altă parte; în această schemă filogenetică *P. crenelatum* „b” (pl. II, fig. 4) are o poziție incertă, între *P. crenelatum* s. str. și *P. crenelatum robustum*.

Patrulusiceras lateumbilicatum (pl. II, fig. 18, 19) este probabil strămoșul speciei barremian superioare *P. rigidum* (pl. III, fig. 6, 7) și formei sale extreme (sau pereche dimorfă?) *P.* aff. *rigidum* (pl. III, fig. 8) și, de asemenea, al speciei *P. uhligi* (pl. III, fig. 2, 1+4 și 3 — în ordine stratigrafică). *Patrulusiceras* aff. *uhligi* (pl. III, fig. 5) și *P. ? crassum* (pl. III, fig. 11) par să fie extremele „voluminoase” ale aceluiași grup.

Patrulusiceras ? trapezoidale (pl. III, fig. 14+15 și 13 — în ordine stratigrafică) ar putea fi o ramură derivată din specia barremian inferioară *Patrulusiceras gracile* (pl. II, fig. 17), însă apartenența sa la familia Silesitidae rămîne încă discutabilă.

Specimenele de *Patrulusiceras* recoltate în munții Baraolt de la partea superioară a Barremianului inferior („*Silesites ?* sp. aff. *S. ? sulcistriatus* Kr. — *S. ? tenuis* Kar.” în Avram, Kusko, 1983) și în Culoarul Dîmbovicioarei din subzona cu *Heinzia provincialis* — fide Avram, 1983) sînt, din păcate, de conservare submediocră, astfel că nu este posibilă determinarea lor specifică.

EXPLANATION OF PLATES

Plate I

Sutures of the taxa described in the paper

- Fig. 1, 2. — *Patrulusiceras uhligi* n.sp. 1 -- holotype (Pl. III, Fig. 1) at a diameter of 36 mm; 2 — Pl. III, Fig. 4 at a diameter of 24 mm.
- Fig. 3. — *Patrulusiceras* aff. *uhligi* n.sp. — Pl. III, Fig. 5 at a diameter of 24 mm.
- Fig. 4. — *Patrulusiceras lateumbilicatum* n.sp., holotype (Pl. II, Fig. 18), at a diameter of 24.2 mm.
- Fig. 5. — *Patrulusiceras* aff. *sulcistriatum* (Kar.) — Pl. II, Fig. 16 at a diameter of 21.5 mm.
- Fig. 6. — *Patrulusiceras* aff. *sulcistriatum* (Kar.) — Pl. II, Fig. 13 at a diameter of 19.2 mm.

- Figs. 7-10. — *Patrullusiceras crenelatum* n.sp. 7, holotype (Pl. II, Fig. 1) at a diameter of 24 mm; 8 — Pl. II, Fig. 4 at a diameter of 20 mm; 9 — Pl. II, Fig. 6, at a diameter of 21 mm; 10 — Pl. II, Fig. 3 at a diameter of 23.3 mm.
- Fig. 11. — *Patruliusiceras rigidum* n.sp., holotype (Pl. III, Fig. 6) at a diameter of 24 mm.
- Fig. 12. — *Patruliusiceras gracile* n.sp., holotype (Pl. II, Fig. 17), at a diameter of 24 mm.
- Fig. 13. — *Patruliusiceras sulcistriatum* (Kar.) — Pl. II, Fig. 11 at a diameter of 24.5 mm.
- Fig. 14. — *Patruliusiceras ? crassum* n.sp., holotype (Pl. III, Fig. 11) at a diameter of 24.2 mm.
- Fig. 15. — *Patruliusiceras crenelatum robustum* n.ssp., holotype (Pl. II, Fig. 10) at a diameter of 17 mm.
- Fig. 16. — *Patruliusiceras crenelatum plurisulcatum* n.ssp., holotype (Pl. II, Fig. 7) at a diameter of 18.5 mm.
- Fig. 17. — *Patruliusiceras striatum* n.sp., holotype (Pl. III, Fig. 9) at a diameter of 22 mm.
- Fig. 18. — *Patruliusiceras ? trapezoidale* n.sp., holotype (Pl. III, Fig. 13) at a diameter of 24 mm.

Plate II

- Figs. 1-6. — *Patruliusiceras crenelatum* n.sp. 1, holotype, left bank of the Danube, some 190 m downstream from the Morilor Valley mouth (O-R); 2-5, Țiganilor Valley (T8, T8/7); 6, Orșova-Svinița route, some 235 m south-east from the Morilor Valley (2+100).
- Figs. 7-9. — *Patruliusiceras crenelatum plurisulcatum* n.ssp. 7, holotype, Orșova-Svinița route, 175 m south-east from the Morilor Valley (2+40); 8, Țiganilor Valley (T8/10); 9, Svinița village area (E).
- Fig. 10. — *Patruliusiceras crenelatum robustum* n.ssp., holotype, the bank of the Danube, 170 m downstream from the Morilor Valley mouth (O-P).
- Fig. 11, 12. — *Patruliusiceras sulcistriatum* (Kar.). Both from the Țiganilor Valley (T8/10, T6/5).
- Fig. 13, 14. — *Patruliusiceras* aff. *sulcistriatum* (Kar.) Both, from the water reservoir of the Svinița village (A).
- Fig. 15, 16. — *Patrullusiceras* aff. *sulcistriatum* (Kar.) 15, the right slope of the Morilor Valley (Vd5); 16, the Svinița village area (F).
- Fig. 17. — *Patruliusiceras gracile* n.sp., holotype, the water reservoir of the Svinița village (A).
- Fig. 18, 19. — *Patruliusiceras lateumbilicatum* n.sp. 18, holotype; both, from the water reservoir of the Svinița village (A).

Plate III

- Fig. 1-4. — *Patruliusiceras uhligi* n.sp. 1, holotype; all of them from the Țiganilor Valley (T8, T2/3, T8, T8/10).

- Fig. 5. — *Patruliusiceras* aff. *uhlgi* n.sp. Orșova-Svinița route, 175 m south-east from the Morilor Valley (2+40).
- Fig. 6, 7. — *Patruliusiceras rigidum* n.sp. 6, holotype, the left slope of the Danube, some 180 downstream from the Morilor Valley mouth (1); 7, Țiganilor Valley (T8/10).
- Fig. 8. — *Patruliusiceras* aff. *rigidum* n.sp. Țiganilor Valley (T8/13).
- Figs. 9, 10. — *Patruliusiceras striatum* n.sp. 9, holotype; both, from the Danube bank, 175 m downstream from the Morilor Valley mouth (O).
- Figs. 11, 12. — *Patruliusiceras* ? *crassum* n.sp. 11, holotype, the left bank of the Danube, some 180 m downstream from the Morilor Valley mouth (O-R); 12, the left slope of the Morilor Valley (VS).
- Figs. 13-15. — *Patruliusiceras* ? *trapezoidale* n.sp. 13, holotype, the Svinița village area (F); 14, 15, left slope of the Temeneacia Valley, in the fossiliferous site C.

All the specimens are figured in natural size; all of them come from the author's collection and are preserved in the collections of the Institute of Geology of Geophysics.

E. AVRAM. *Patrulusiceras* n.g.

