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AMMONITES, NAUTILOIDS AND DAONELLES FROM THE UPPER SUBTATRIC TRIASSIC IN THE TATRA MTS.

(Pl. XLI—XLVI)

Amonity, łodziki i daonelle z triasu płaszczowiny reglowej górnej w Tatrach

(Tabl. XLI—XLVI)

Abstract: First ammonites, nautiloids and daonelles from the Middle Triassic (Upper Anisian) of the Tatra Mts. are described. They occur in the upper subtatric series forming the separate nappe of the most southern origin. Ammonites belong to the Paraceratites trinodosus zone (Upper Illyrian), but the daonelles suggest a little younger age (Anisian, Ladinian passage beds) of the Partnach Beds with the described fauna.

GENERAL PART

The Triassic fauna and flora in the Tatra Mts. show distinct facies differentiation according to the series (nappe) in which they occur. The hightatric and lower subtatric fauna and flora have the Briansonian and lower East-Alpine character, respectively, and are characterized by the complete absence of the Mediterranean forms. Quite different character possesses the Triassic fauna and flora found by the present author some years ago (comp. Z. Kotański, 1961) in the upper subtatric nappe. Their nature is true Mediterranean, what is connected with peculiar facies development analogically as in the upper East-Alpine nappes (Z. Kotański, 1965, 1967). On the west slope of the Chochołowska Valley in the West Tatra Mts. the succession of beds in the upper subtatric nappe is (from top to down)

Wetterstein Dolomite
Partnach Beds
Reifling Limestone
Ramsau Dolomite

The ammonites, nautiloids and daonelles were found in the Partnach Beds (Z. Kotański, 1965, 1967) in the Wielkie Koryciska (for precise localization see Z. Kotański, 1971); the ammonites occur together with the teutloporellas also in the Wetterstein Dolomite, besides (Z. Kotański, 1967). The determined Triassic fauna and flora are quite rich. Their shortened list

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and full list together with the illustrations were published (Z. Kotański, 1973a, 1973b, respectively).

In the present paper the descriptions and more full illustrations of the most important, in consideration of stratigraphy and zoogeography, fauna: ammonites, nautiloids and daonelles, are presented. The described fauna derives from the Partnach Beds, consisting of grey-green marles with limestone intercalations. The accumulations of the cephalopods and daonelles occur on the surfaces of the limestone layers. Cephalopods occur in masses, are small and very difficult to prepare because of the rock hardness. Their state of preservation is not a good one, but the unique nature of this fauna is why the present author takes in upon himself to determine provisionally. The state of preservation of the daonelles is satisfactory.

The determined ammonites belong to the following families: Ceratitidae (Mojsisovics, 1879), Dinaritidae (Mojsisovics, 1882), Arcestidae (Mojsisovics, 1875), Ptychitidae (Mojsisovics, 1882), and Gymnitidae (?) (Waagen, 1895). They define the age of the Partnach Beds in the Wielkie Koryciska accurately as the Paraceratites trinodosus zone (Upper Illyrian). Fauna in this zone is well known from Slovak Carpathians (V. Kollárová-Andrusovová, 1964, 1967) but only from the upper subtatric nappe. The determined nautiloid also belongs to the Paraceratites trinodosus zone. The daonelles seem to indicate some earlier age of the Partnach Beds in the Wielkie Koryciska, because they are typical of the Anisian-Ladinian passage beds and even of Lower Ladianian. However, because the ammonites contained in these strata are distinctly the Upper Anisian ones and the Lower Ladinian (Fassanian) age of the higher lying Wetterstein Dolomite is unquestionable because of occuring of the teutloporelles in them, one ought to accept the Partnach Beds in the Wielkie Koryciska belong to the Uppermost Anisian (Upper Illyrian) and to the Anisian-Ladinian border.

The characteristic sequence of beds, notably Mediterranean Triassic fauna and flora composition and the tectonic conditions justify the including of the Triassic beds of the Furkaska and Koryciska scales among the upper subtatric nappe — the higher one than the middle subtatric (Choč) nappe (comp. Z. Kotański, 1973a, 1973b).

PALEONTOLOGICAL PART

Ammonites

Ceratitidae, Mojsisovics 1879
Semiornites, Arthaber 1912

Semiornites lennanus (Mojsisovics) 1882

(Pl. XLI, Fig. 1 and 2)

Ceratites lennanus Mojsisovics 1880, p. 710.
Ceratites lennanus Mojsisovics 1882, p. 22, Pl. XXXVIII, Figs. 10—12; Pl. XL, Fig. 15.

Ceratites cf. *lennanus* Toula 1913, p. 653, Pl. XXIII, Fig. 8.
Ceratites cf. *lennanus* Pilger and Schönenberg 1958, p. 207, Pl. 9, Fig. 4.
Semiornites cf. *lennanus* Assereto 1963, p. 43

Material. One specimen preserved as an incomplete mould and cast, which comprises half of a whorl, mainly with phragmocon, but also with the initial part of body chamber.
Measurements (in mm): D = 23,6; d = 23,6; H = 10 = 47%; L = ?; l = ?; O = 6,2 = 27%

Description. It is compressed discoidal and involute form with rapidly incressing whorls and the little umbilicus. The ultimate whorl is distinctly higher than it is thick and has flattened, subtabulate sides. The ventral side is subquadrate. Umbilical wall is vertical and its upper margin is sharp and ornamented by nodules. Ornamentation is composed of sigmoidal relatively large and distinct ribs and nodules. Ribs are divergent mainly from the umbilical margin; the second divergation is observed near the ventral side, but in the middle of the lateral side, it exists, too. Intercalated ribs are also present. There are two rows of nodules — umbilical one and the ventral (marginal) one. The marginal nodules are very distinct and denie. One can mark the lateral nodules too, but they are very rare and do not form the defined row. On the chamber body ribs are distinctly flattened and they pass into the flat folds. Lateral nodules disapear here completely.

Remarks. Involution, subtabulate whorls, lobe line and mainly ornamentation is typical to the Arthaber's genus *Semiornites*. The described specimen is similar to the representatives of the species *Ceratites lennanus* figured by E. Mojsisovics (1882; Pl. XXXVIII, Figs. 10—12 and Pl. XL, Fig. 15). There are rather large differences among the Mojsisovics specimens. The described specimen is most similar to that figured on Pl. XXXVIII, Fig. 11. The character of ornamentation is the same and the lateral row of nodules do not exists. Ribs divergent near the umbilicus margin, similarly as on the described specimen. Dimensions of described specimens are comparable with the little specimens of Mojsisovics. The lack of lateral row of nodules during the stages of individual development is described by Mojsisovics in the text. About the divergence of ribs near the umbilical margin mentions also R. Assereto (1963) in the description of his species *Semiornites* cf. *lennanus* (Mojs.). The damaged specimen of A. Pilger and R. Schönenberg (1958) determined as *Ceratites* cf. *lennanus* v. Mojs. is similar in general aspect to the described specimen, too. One can observe the flatteness of ribs on the body chamber and disappearance of marginal nodules, as well as complete lack of the later nodules. The sigmoidal ribs are the same in character and they divergent from the umbilical margin. The character of suture lines is the same.

Occurrence. The Partnach Beds in the Wielkie Koryciska valley, in marly intercalations. *Semiornites lennanus* is the typical meridional specimen, charac-

teristic to the southern Tethyan province. It occurs in the Lombard Alps — Lenna in Val Brembana (E. Mojsisovics, 1880, 1882, and R. Assereto, 1963), in the Gailtal Alps (A. Pilger and R. Schönenberg, 1958), in the Schreyeralm Limestone near Gosau (E. Mojsisovics, 1882), in the Northern Alps (Hallstatt nappe of the Oberostalpine units) and in the Dinarides (Bosnia — F. Toula, 1913). In the Carpathian Mts. this species was described from Rumania (E. Jekelius, 1936) in the Braşov zone. In all these localities this specimen is found in the zone Paraceratites trinodosus only (Upper Illyrian). Even the genus *Semiornites* is characteristic for this zone (R. Assereto, 1966, A. A. Shevyriev, 1968).

Dinaritidae Mojsisovics, 1882
Dinarites Mojsisovics, 1882

Dinarites (Ceratites) cf. *hoerichi* Salomon, 1895
(Pl. XLII, Fig. 1 and 2)

Very good, although fragmentary, preserved ammonite may be tentatively determined as *Dinarites (Ceratites)* cf. *hoerichi* Salomon (1895, Pl. VI, Fig. 6). It is nude ammonite (E. Mojsisovics, 1882), laterally compressed, without traces of ornamentation.

Dimensions (in mm): D = 11,0; H = 5,5 = 50%; O = 1,6 = 15%.

Breadth is not known, but it is probably rather narrow ammonite. Whorls are very rapidly expanced. Umbilicus with steep wall. Two last features approach described specimen with Salomon's species, but the last has probably a little larger ventral side. All other proportions are comparable with Salomon's specimen, which is a little greater.

Described specimen represents phragmocone with perfectly preserved suture line. It consits of shallow ventral lobe, of deep and indented first lateral lobe and of two other lateral lobes, also with minute dents. It is typical ceratitic suture. The general character of suture is the same, but on the Salomon's specimen suture is not sufficiently preserved, and the minute dents of lobes are not observable. According to the E. Mojsisovics's description of the genus *Dinarites* (1882, p. 9), some species have the typical ceratitic suture with indented lobes (e.g. Campilian species *Dinarites licanus* Mojs., op. cit., Pl. IV, Fig. 1). The same conception of the *Dinarites* genus is by Shevyriev (1968, p. 163).

The described species may represent the transitional form from *Dinarites* to *Ceratites*, similarly as another analogous Mojsisovics's specimens, and represents probably the new species.

Ammonites of the genus *Dinarites* occur mainly in the Campilian stage, but some species reach also the Anisian stage. This is the case of the *Dinarites hoerichi* Salomon, which occurs probably in the Upper Anisian limestones of the Marmolada Massif (Southern Alps in Northern Italy). Described

specimen occurs in the passage Anisian-Ladinian Partnach Beds in the Wielkie Koryciska Valley.

Arcestidae Mojsisovics, 1875
Arcestes Suess, 1865

Arcestes cf. *bramantei* Mojs.
(Pl. XLII, Fig. 3)

One cross section of ammonite with very deep umbilicus and perfectly involuted whorls. Umbilical wall is steep and perpendicular to the surface of symmetry. Four whorls are descernible of extremally thin dimension, resulting the undulation of the upper umbilical wall. Suture line can not be described in this section, but its traces are visible in the undulated line at the base of the last whorl. The last feature and a general view of the described specimen unable even the tentative specific determination. The described specimen possesses some features of *Arcestes* cf. *boeckhi* Mojs. (W. Salomon, 1895, Pl. VI, Fig. 20 and particularly Fig. 21), but is also very similar to the *Arcestes bramantei* Mojs. (E. Mojsisovics, 1882, Pl. XLVI, Figs. 3—6). Very low whorls are characteristic for the both mentioned species and the specific determination is not quite sure.

Arcestes bramantei Mojs. is a species occuring in the Paraceratites trinodosus zone, and *A. boecki* Mojs. occurs a little higher, in the Lower Ladinian. In the Tatra Mts. this species occurs in the passage Anisian — Ladinian Partnach Beds.

Ptychitidae Mojsisovics, 1882
Ptychites Mojsisovics, 1875

Ptychites cf. *oppulentus* Mojs. 1882
(Pl. XLIII, Fig. 5b)

The portraited specimen distinguishes from all the other described species by its perfectly preserved septa. In this case one can study not only suture line in its contact with a shell, but a stereoscopic view of different septa. Suture line possesses all the characteristic features for the genus *Ptychites* in general. Its shape, the amount of elements and details of ornamentation are typical for this genus. Lobes and saddles are subordinately complicated. Particularly the saddles separating the first and second lateral lobes are perfectly preserved and discernible on the photo.

The general shape of described species is globose, with very large ventral side. Ornamentation is not recognizable, but it may be surely only very delicate.

In this state of preservation the specific determination is not possible. From the general shape and details of the sutural line this specimen reminds *Ptychites oppulentus* Mojs. (E. Mojsisovics, 1882, Pl. LXXIII, Figs. 1—4). This group of *Ptychites* species occurs in the Upper Anisian horizon Paraceratites trinodosus. The age of described specimen is the same or a little younger.

Nautiloids

Liroceratidae (?) Miller and Younquist, 1949

Nautilus cf. *tintoretti* Mojs., 1869

(Pl. XLII, Fig. 6)

One of the longitudinal sections shows the characteristic features, permitting even the tentative specific determination. Moderately involute, subglobose, smooth unornamented nautilicone, rapidly expanding. Whorl is broadly rounded ventrally and impressed dorsally. Umbilicus rather small, but the inner whorls are unknown. Position of siphuncle unknown. Suture generally strait, of the Paranautilus type, forming over venter as well as on the flank broad shallow lobe. The most characteristic is the dorsal lobe — very deep and linguloid. In that part septa are very closely mutually approached and distance between them is rapidly enlarged in the lateral part. This feature is particularly characteristic for the Mojsisovics species *Nautilus tintoretti* (1882, Pl. XCI, Figs. 1 and 2).

On the preserved section of whorl the phragmocone is preserved with the basal part of the body chamber, nevertheless the sure specific determination is impossible.

Dimensions (in mm):

D = 27,3; H = 22 = 53,6%; O = 6,6 = 24,4%.

Dimensions of described specimen are considerable smaller than at the Mojsisovics's specimens, but the proportions are comparable.

Nautilus tintoretti Mojs. occurs in the Paraceratites trinodosus zone in the Schreyer Alpe red limestone at Gosau, in the black limestone of Reutte in the Northern Tyrol, as well as in the black limestone of Predazzo and Strada in the Southern Alps (Northern Italy). Its age in the Partnach Beds at Wielkie Koryciska is the same or a little younger.

Daonelles

Daonella Mojsisovics, 1874

Daonella (Daonella) lommeli (Wissm.), 1841

(Pl. XLI, Figs. 1—5)

Halobia lommeli Wissman, in Münster, 1841, p. 22, Pl. 16, Fig. 11.
Daonella lommeli, Mojsisovics, 1874, p. 19, Pl. 11, Figs. 13—14.
Daonella lommeli, Salomon, 1895, pp. 83, 114, 154, Pl. V, Figs. 2, 3.
Daonella lommeli, Stefanov, 1963, p. 91, Pl. II, Figs. 1—2.
Daonella lommeli, Scandone and de Capoa, 1966, Pl. III, Fig. 1.
Daonella lommeli, Scandone, 1967, Pl. III, Figs. 1—2.
Daonella (Daonella) lommeli, Speciale, 1967, p. 1100, Pl. 81, Fig. 5.
Daonella (Daonella) lommeli, de Capoa Bonardi, 1970, p. 46, Pl. V, Figs. 1—18.

Material. Four specimens from the surface of the calcareous intercalations in the Partnach Beds, Wielkie Koryciska Valley in the Western Tatra Mts.

Dimensions. The fragmentary state of preservation, mainly without the cardinal margin, does not permit to take all the measurements. Nevertheless the dimensions and ratio length to breadth is similar as in the Mojsisovics's original specimen (46×29 mm and 1,48). The two cardinal margins are not preserved on the same specimen and the second ratio is not possible to compute.

Description. The shell is evidently plate, more long as wide, with depressed umbo and rather very small and badly preserved apex. The cardinal margins are a little inequilateral, what results from the comparison of figured specimens with anterior or posterior margins preserved. Very characteristic and perfectly preserved on all the specimens is the radial ornamentation, very characteristic and discernible. It consists of whorls or bundles of ribs with repetition of subdivisions, generally dichotomic, in three or more altitudes of the shell. In the umbonal region they are junct and form one main rib, but in the younger part of shell the bundles of little ribs of a progressively increasing order are discernible. Rib whorls are separated by deep grooves of equal width through the shell. Concentric markings are very rare and are restricted to the umbonal region.

When the anterior margin is preserved, the subcardinal zone without the ribs is visible just on the anterior hinge line. This feature permits to differentiate the species *Daonella* in comparison with *Halobia.*

Variability. It consists in the number of singular ribs in the lower portion of the shell and in the consequence in the distance between the main grooves. Number of singular ribs varies from three to six and even to eight.

Remarks. All the described specimens have dimensions, general shape and particularly the character of ornamentation (whorls of ribs separated by the deep furrows) the same as all the cited specimens described in the literature. The determination of this species is quite sure. The specimens from Wielkie Koryciska are similar to the *Daonella esinensis* Salomon (1895, p. 114, Pl. IV, Figs. 47—49 and Pl. V, Fig. 1), particularly by the more pronounced ribs and furrows. This specimen is considered by P. de Capoa Bonardi (1970) as a variation of *Daonella (Daonella) lommeli* (Wissm.).

Stratigraphic and geographic distribution. *Daonella (Daonella) lommeli* is the very common species and is widely distributed in the Ladinian of the southern part of the Mediterranean province. It was found in the Northern and particularly in the Southern Calcareous Alps — in Austria and Italy, in Dinarides, in Hungary, Bulgaria, Greece, Turkey, and Himalaya. In Carpathians this species is described from Rumania in the Braşov zone (comp. D. Patrulius, 1967). It is considered as the Ladinian index fossil, and even as the fossil characteristic for the Upper Ladinian (Longobard) (P. de Capoa Bonardi, 1970). Nevertheless this species or its varieties were found in the Upper Anisian beds, too. In the Wielkie Koryciska profile this

species occurs in the Partnach Beds together with *Daonella (Daonella) tyrolensis* Mojs. var. *parthanensis* (Schafhäutl) and *Daonella (Daonella) taramelli* Mojs., but also with the ammonite fauna characteristic for the Paraceratites trinodosus zone. The age of these beds must be Upper Anisian, or they represent the passage beds from Illyrian to Fassanian. It results also from the superposition of these Partnach Beds by the Wetterstein Dolomite with *Teutloporella herculea* (Stopp.) Pia and *Teutloporella aequalis* (Gümb.) Pia.

Daonella (Daonella) cf. *taramelli* (E. Mojsisovics, 1874)
(Pl. XLI, Fig. 6)

Only one fragment of shell was found in the Wielkie Koryciska Valley together with the other *Daonella* and ammonite fauna. The shape of shell is unknown, similarly as the proportions of the cardinal margin. Only the ornamentation is very characteristic, permitting the determination of species. There are discernible ribs of two generations — the main ribs and intercalated secondary ribs. Their arrangement is very similar to arrangement of *D. (Daonella) taramelli* by P. de Capoa Bonardi (1970, Pl. II, Fig. 1), as well as by A. Speciale (1967, Pl. 81, Fig. 7).

The stratigraphic position is generally a little lower than *D. (Daonella) lommeli* in the passage Anisian — Ladinian (comp. P. de Capoa Bonardi, 1970). In the Partnach Beds of Wielkie Koryciska they occur together in the Uppermost Anisian-Lowermost Ladinian passage beds. *D. taramelli* Mojs. occurs in the Codru series of the Apuseni Mts. in Rumania (comp. D. Patrulius and M. Bleahu, 1967), where it indicates Lower Ladinian age.

Daonella (Daonella) tyrolensis Mojs. var. *parthanensis* Schafhäutl
(Pl. XLVI, Fig. 1a, b)

Posidonomya parthanensis, Schafhäutl, 1863, p. 367, Pl. 69a, Figs. 6, 7.
Daonella parthanensis, Mojsisovics, 1874, p. 13.
Halobia parthanensis (= *tyrolensis* Mojs.), Salomon, 1895, p. 154, Pl. V, Figs. 5—8.

Material. Two incomplete specimens from the surface of the calcareous intercalations in the Partnach Beds, Wielkie Koryciska Valley, Western Tatra Mts.

Dimensions. It is very high specimen (Pl. XLVI, Fig. 1a) — the approximal measurements are 43 mm height and 48 mm length. Length-height ratio is 1,2. This feature agrees with the numerical data including in the P. de Capoa Bonardi's (1970, p. 62) description of the very similar species *Daonella (Daonella) tyrolensis* Mojs. The two cardinal margins are not preserved — the anterior margin is damaged — and the second ratio is not possible to compute. Nevertheless one can consider, that two margins were probably of comparable length.

Description. The shell is plate. Its most remarkable feature is the very great height, comparable with its length. Cardinal margins are almost of the same length and a little apex is situated in approximately in the middle part of

cardinal margin. The ornamentation is very simple. It consists of the radial ribs, relatively rare and undivided. Ribs are of equal breadth, but grooves separating them are enlarged in the outer part of shell. Concentred markings are very rare and are restricted to the umbonal region.

Remarks. *Daonella parthanensis* (Schafhäutl) and *D. tyrolensis* Mojs. were described by E. Mojsisovics (1874) separately. W. Salomon (1895, p. 155) compares the differencies between two species. These differencies consist mainly on the character of ornamentation (density of ribs, their breadth and differentiation and eventually occurrence of secondary ribs). W. Salomon was of the opinion that these differencies are not very important and two differenciated species form in reality one species *Halobia parthanensis* Schafh sp. (*-tyrolensis* Mojs.). Differencies are surely not sufficient to two separate species, but they permit to differenciate the varietas *parthanensis* Schafh. The species *Daonella tyrolensis* Mojs. was retained by the later author and in consequence ought be the following: *Daonella (Daonella) tyrolensis* Mojs. var. *parthanensis* Schafh. The simple, undivided ribs, without intercalated secondary ribs it is the most characteristic feature of the *D. (Daonella) tyrolensis* Mojs. var. *parthanensis* Schafh.

Stratigraphic and geographic distribution. *Daonella tyrolensis*, as well as the *D. parthanensis* are the species characteristic to the passage beds between Anisian and Ladinian (E. Mojsisovics, 1874), but other authors have found these species in the Upper Anisian beds (fide P. de Capoa Bonardi, 1970), but in the Lower Ladinian (Fassanian) beds, too (Lucania — P. de Capoa Bonardi, op. cit.). *Daonella tyrolensis* is the most characteristic for the Southern Alps (Marmolada and Wetterstein Limestones and associate tuff horizons). *Daonella parthanensis* occurs mainly in the Northern Alps ("Upper Muschelkalk" nodular limestones and lower limestone intercalations in the Partnach Beds in Northern Tyrol and Upper Bayern — even in the type locality of the Partnach Beds in the Partnachklamm near Partenkirchen). Our specimens have similar stratigraphic position (Uppermost Anisian) and occur together with *Daonella (Daonella) lommeli* (Wissm.) on the same rock-specimen (Pl. XLIV, Fig. 2a) and with the Upper Anisian ammonites. *Daonella* cf. *tyrolensis* was determined from the Wetterstein Limestone of the Choč series in Slovakia (comp. J. Bystrický, 1967). In Rumania it occurs in the Bihar autochthone of the Apuseni Mts. (comp. D. Patrulius and M. Bleahu, 1967).

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STRESZCZENIE

Fauna i flora triasu tatrzańskiego wykazuje wyraźne zróżnicowanie facjalne, w zależności od serii (płaszczowiny), w której występuje. Fauna i flora wierchowa i križniańska ma odpowiednio charakter briansoński i dolno-wschodnio-alpejski i charakteryzuje je zupełny brak medyterańskich elementów alpejskich. Zupełnie odmienny charakter posiada fauna i flora triasowa, znaleziona przez autora przed kilkoma laty (por. Z. Kotański, 1961) w płaszczowinie reglowej górnej. Ma ona wybitnie medyterański charakter i związana jest ze specyficznym wykształceniem facjalnym osadów o analogiach górno-wschodnio-alpejskich (Z. Kotański, 1965, 1967). Na zachodnim zboczu Doliny Chochołowskiej w Tatrach Zachodnich następstwo warstw w płaszczowinie reglowej górnej jest następujące (od góry):

dolomit z Wetterstein
warstwy z Partnach
wapień z Reifling
dolomit z Ramsau

Amonity, łodziki i daonelle zostały znalezione w warstwach z Partnach (Z. Kotański, 1965, 1967) w Wielkich Koryciskach. Dokładna lokalizacja podana jest in Z. Kotański (1971). Amonity występują wraz z teutloporellami również i wyżej, w dolomicie z Wetterstein (Z. Kotański, 1967). Oznaczona fauna i flora triasowa jest dość bogata. Jej skrócona lista podana jest w krótkim komunikacie (Z. Kotański, 1973a), a pełna lista wraz z ilustracjami została opublikowana osobno (Z. Kotański, 1973b). W niniejszym opracowaniu podane są opisy i pełniejsze ilustracje najważniejszej pod względem stratygraficznym i zoogeograficznym fauny — amonitów, łodzików i daonell. Opisana fauna znajduje się w warstwach z Partnach, składających się z szarozielonkawych margli z przewarstwieniami wapieni. Nagromadzenia głowonogów i daonell znajdują się na powierzchniach ławic wapiennych. Głowonogi występują masowo, są drobne i bardzo trudne do wypreparowania z powodu twardości skały. Ich stan zachowania nie jest dobry, jednak ze względu na unikalny charakter tej fauny, podjęto się jej tymczasowego oznaczenia. Stan zachowania daonell jest dobry. Oznaczone amonity należą do następujących rodzin: Ceratitidae (Mojsisovics, 1879), Dinaritidae (Mojsisovics, 1882), Arcestidae (Mojsisovics, 1875), Ptychitidae (Mojsisovics, 1882) i Gymnitidae (?) (Waagen, 1895). Precyzują one wiek warstw z Partnach w Wielkich Koryciskach na poziom Paraceratites trinodosus (górny illyr). Fauna z tego poziomu jest znana z Karpat słowackich (V. Kollárová-Andrusovová, 1964, 1967), lecz tylko z płaszczowiny reglowej górnej. Oznaczony łodzik też należy do poziomu Paraceratites trinodosus. Daonelle zdają się wskazywać na nieco młodszy wiek warstw z Partnach w Małych Koryciskach, gdyż są one charakterystyczne dla warstw przejściowych od anizyku do ladynu, a nawet dla dolnego ladynu. Ponieważ jednak amonity zawarte w tych warstwach są wyraźnie górnoanizyjskie, a wiek leżących wyżej dolomitów z Wetterstein

jest niewątpliwie dolnoladyński (fassański) ze względu na występujące w nich teutloporelle, należy uznać, że warstwy z Partnach w Wielkich Koryciskach należą do najwyższego anizyku (górny illyr) i do pogranicza anizyku z ladynem.

Charakterystyczne następstwo warstw, wybitnie medyterański skład fauny i flory triasowej oraz warunki tektoniczne uzasadniają zaliczenie warstw triasowych łuski Furkaski i Korycisk do płaszczowiny reglowej górnej, wyższej od płaszczowiny reglowej środkowej (choczańskiej) (por. Z. Kotański, 1973a, b).

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EXPLANATION OF PLATES
OBJAŚNIENIA TABLIC

Plate XLI — Tablica XLI

Fig. 1. *Semiornites lennanus* (Mojs.), × 4; details of ornamentation
Fig. 1. *Semiornites lennanus* (Mojs.), × 4; szczegóły rzeźby
Fig. 2. *Semiornites lennanus* (Mojs.), × 2; general view of the same specimen as in Fig. 1
Fig. 2. *Semiornites lennanus* (Mojs.), × 2; ogólny widok tego samego okazu co na fig. 1
Fig. 3. Oblique section of an indeterminable ammonite of the *Ptychites* type, × 2,9
Fig. 3. Ukośny przekrój nieoznaczalnego amonita typu *Ptychites*, × 2,9
Fig. 4. Longitudinal vertical section of an indeterminable ammonite of the *Gymnites* type (?) with deformed whorls, × 2,5
Fig. 4. Podłużny przekrój pionowy nieoznaczalnego amonita typu *Gymnites* (?) ze zdeformowanymi skrętami; × 2,5
Fig. 5. Several whorls of phragmocone with rudimentary preserved sutural lines of *Ptychites* type and with degradated ornamentation; × 2,3
Fig. 5. Kilka skrętów ze szczątkowo zachowaną linią przegrodową typu *Ptychites* i ze zniszczoną rzeźbą; × 2,3

Plate XLII — Tablica XLII

Fig. 1. *Dinarites (Ceratites)* cf. *hoerichi Salomon*, general view; × 10
Fig. 1. *Dinarites (Ceratites)* cf. *hoerichi* Salomon, widok ogólny; × 10
Fig. 2. *Dinarites (Ceratites)* cf. *hoerichi* Salomon — the same specimen as on the Fig. 1; phragmocone with perfectly preserved sutures of ceratitic type; × 6
Fig. 2. *Dinarites (Ceratites)* cf. *hoerichi* Salomon — ten sam egzemplarz jak na fig. 1; skręt z doskonale zachowaną linią przegrodową typu ceratytowego; × 6
Fig. 3. *Arcestes* cf. *bramantei* Mojs., transversal vertical section of globular ammonite with detectable whorls and the very deep and narrow umbilicus; × 3
Fig. 3. *Arcestes* cf. *bramantei* Mojs., poprzeczny przekrój pionowy kulistego amonita z rozpoznawalnymi skrętami i z bardzo głębokim i wąskim pępkiem; × 3
Fig. 4. Two transversal longitudinal sections of indeterminable ammonites of the *Ptychites* type; × 1,5
Fig. 4. Dwa poprzeczne przekroje pionowe nieoznaczalnych amonitów typu *Ptychites*; × 1,5
Fig. 5. Longitudinal vertical oblique section of an indeterminable ammonite with three preserved whorls, several septa, and multilobate sutural line; × 4,4
Fig. 5. Podłużno-ukośny przekrój pionowy nieoznaczalnego amonita z trzema zachowanymi skrętami z wieloma przegrodami i ze szczątkowo zachowaną wielozatokową linią przegrodową; × 4,4

Fig. 6. *Nautilus* cf. *tintoretti* Mojs., longitudinal vertical section of a whorl with phragmocone and a part of a body chamber; × 1,5
Fig. 6. *Nautilus* cf. *tintoretti* Mojs., podłużny przekrój pionowy skrętu z przegrodami i z częściowo zachowaną komorą mieszkalną; × 1,5

Plate XLIII — Tablica XLIII

Fig. 1. Two indeterminable sections of the *Ptychites* type ammonites; × 4,4
Fig. 1. Dwa nieoznaczalne przekroje amonitów typu *Ptychites*; × 4,4
Fig. 2. Indeterminable section of an ammonite of the *Ptychites* type; × 4,4
Fig. 2. Przekrój nieoznaczalnego amonita typu *Ptychites*; × 4,4
Fig. 3. Accumulation of indeterminable ammonites of the *Ptychites* and *Arcestes* types; × 1,5
Fig. 3. Skupienie nieoznaczalnych amonitów typu *Ptychites* i *Arcestes*; × 1,5
Fig. 4. Accumulation of indeterminable ammonites; × 1,5
Fig. 4. Skupienie nieoznaczalnych amonitów; × 1,5
Fig. 5. Accumulation of ammonites; × 4,4: a — *Flexoptychites* sp., b — *Ptychites* cf. *oppulentus* Mojs. with perfectly preserved septa and sutural lines, c — *Ptychites* sp.
Fig. 5. Skupienie amonitów; × 4,4: a — *Flexoptychites* sp., b — *Ptychites* cf. *oppulentus* Mojs. z doskonale zachowanymi przegrodami i linią przegrodową, c — *Ptychites* sp.

Plate XLIV — Tablica XLIV

Fig. 1a. *Daonella (Daonella) lommeli* (Wissm.), general view, × 1
Fig. 1a. *Daonella (Daonella) lommeli* (Wissm.), widok ogólny, × 1
Fig. 1b. The same specimen, details of ornamentation, × 2
Fig. 1b. Ten sam okaz; widoczne szczegóły urzeźbienia, × 2
Fig. 2a. *Daonella (Daonella) lommeli* (Wissm.), general view, × 1; in the left upper corner a fragment of *Daonella (Daonella) tyrolensis* Mojs. var. *parthanensis* Schafhäutl
Fig. 2a. *Daonella (Daonella) lommeli*, widok ogólny, × 1; w lewym górnym rogu widoczny jest fragment skorupki z gatunku *Daonella (Daonella) tyrolensis* Mojs. var. *parthanensis* Schafhäutl
Fig. 2b. Ditto, details of ornamentation, × 2
Fig. 2b. Te same okazy z widocznymi szczegółami ornamentacji, × 2

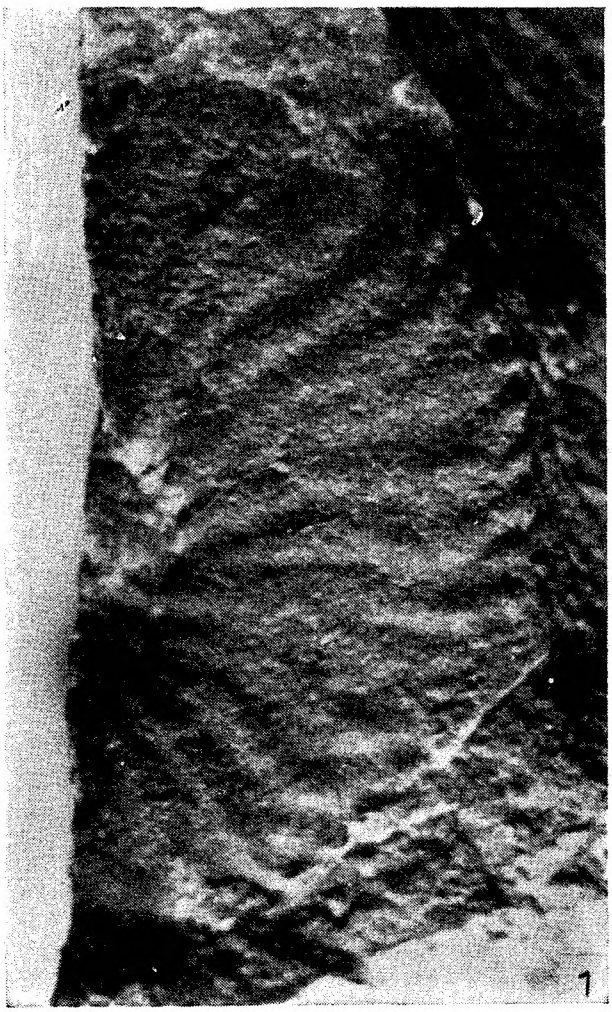
Plate XLV — Tablica XLV

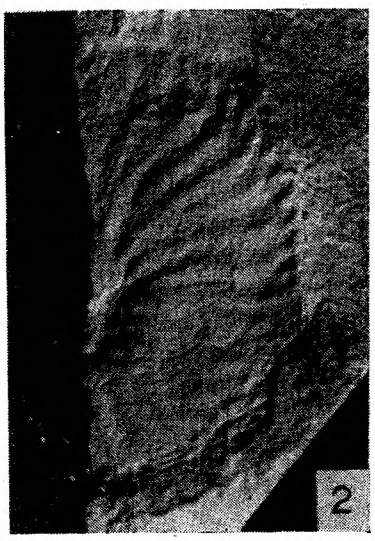
Fig. 1a, b. *Daonella (Daonella) lommeli* (Wissm.), general view of two specimens, × 1
Fig. 1a, b. *Daonella (Daonella) lommeli* (Wissm.), widok ogólny, × 1
Fig. 2 and 3. Ditto, details of ornamentation, × 2
Fig. fig. 2 i 3. Te same okazy z widocznymi szczegółami ornamentacji, × 2

Plate XLVI — Tablica XLVI

Fig. 1a. *Daonella (Daonella) tyrolensis* Mojs. var. *parthanensis* Schafhäutl; general view, × 1
Fig. 1a. *Daonella (Daonella) tyrolensis* Mojs. var. *parthanensis* Schafhäutl, widok ogólny; × 1
Fig. 1b. Ditto, details of ornamentation, × 2
Fig. 1b. Ten sam okaz z widocznymi szczegółami rzeźby, × 2
Fig. 2a. *Daonella (Daonella)* cf. *taramelli* (Mojs.), general view of preserved fragment, × 3
Fig. 2a. *Daonella (Daonella)* cf. *tarameli* (Mojs.), ogólny widok zachowanego ułamka muszli, × 3
Fig. 2b. Ditto, details of ornamentation, × 6
Fig. 2b. Ten sam okaz z widocznymi szczegółami urzeźbienia, × 6

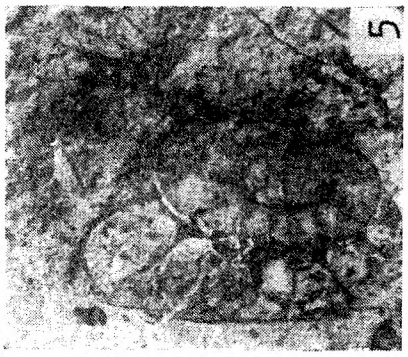
Rocznik Pol. Tow. Geol., t. XLIII, z. 4



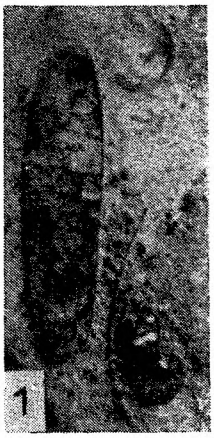


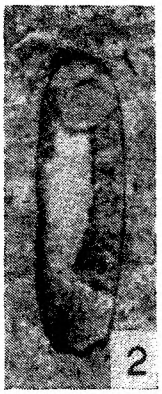
Z. Kotański

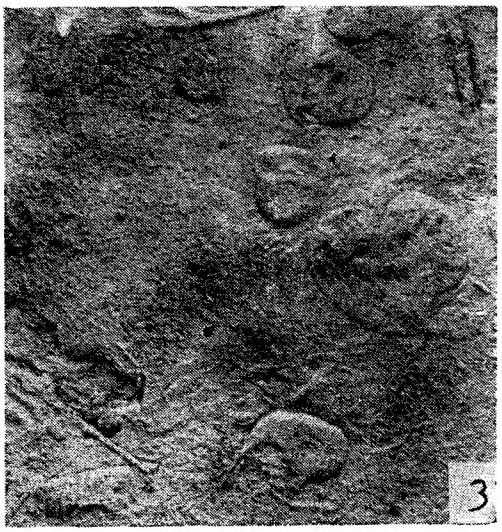
Rocznik Pol. Tow. Geol., t. XLIII, z. 4

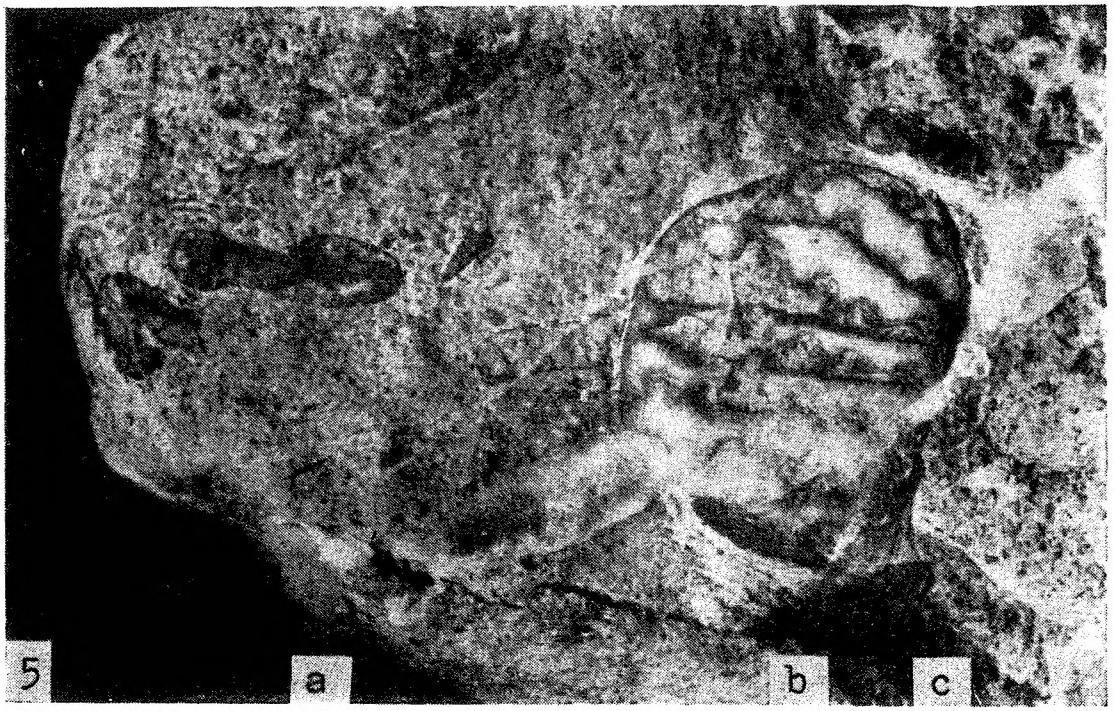


Rocznik Pol. Tow. Geol., t. XLIII, z. 4









Rocznik Pol. Tow. Geol., t. XLIII, z. 4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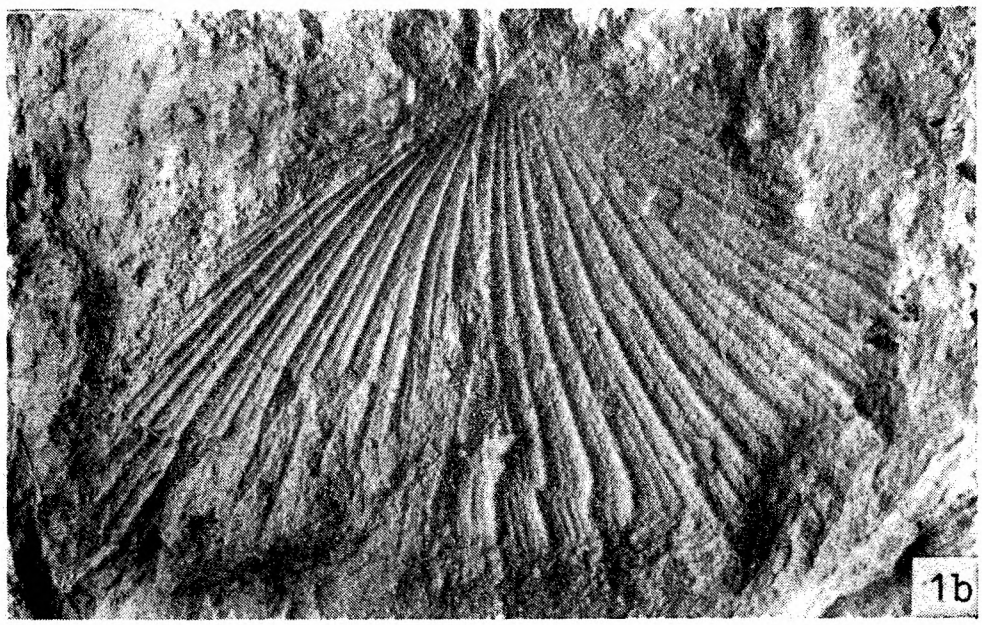
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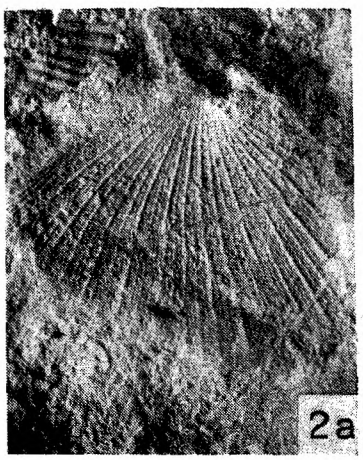
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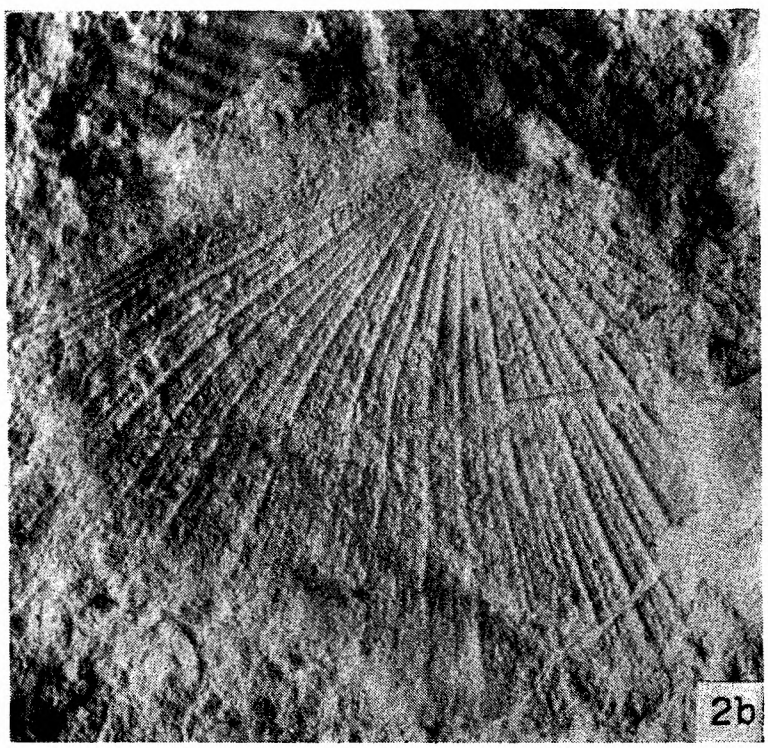
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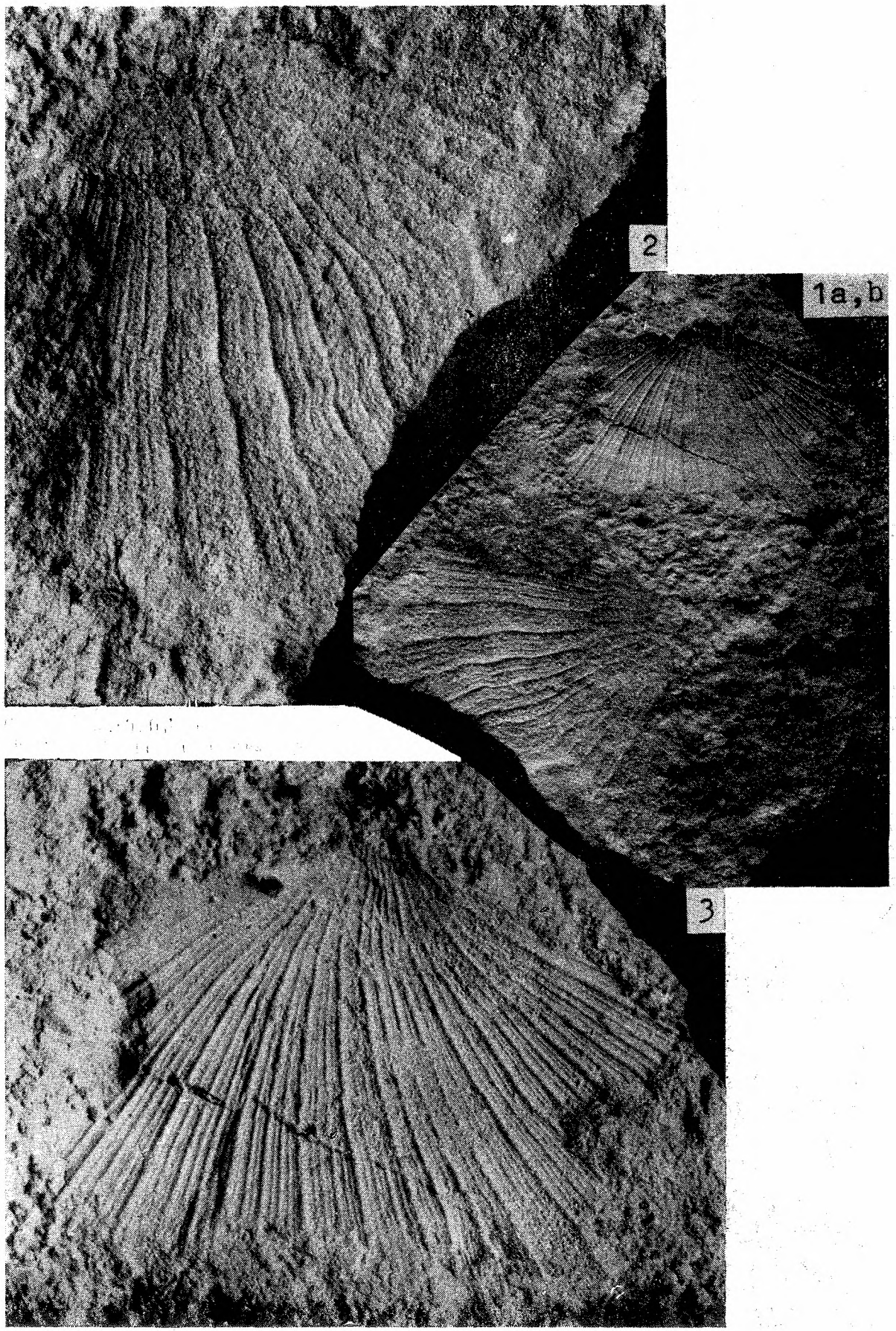

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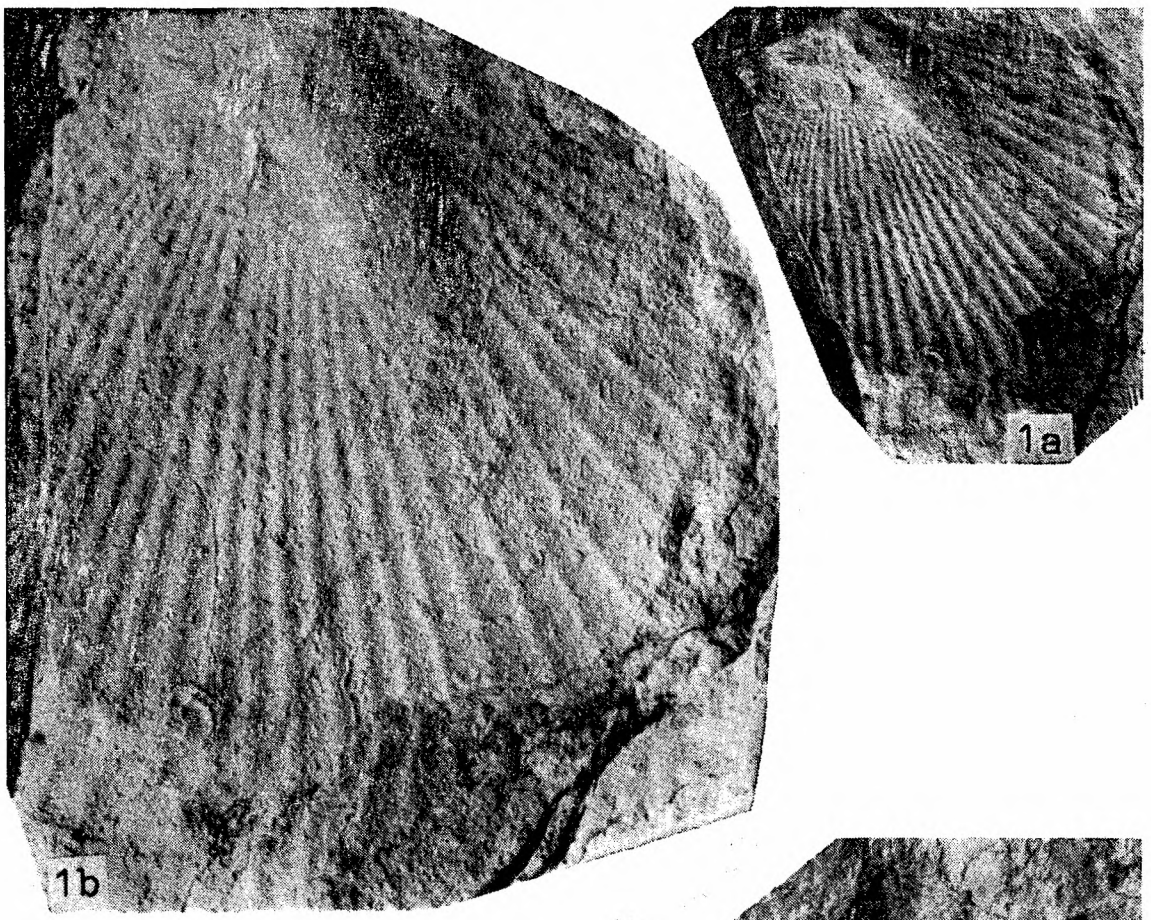

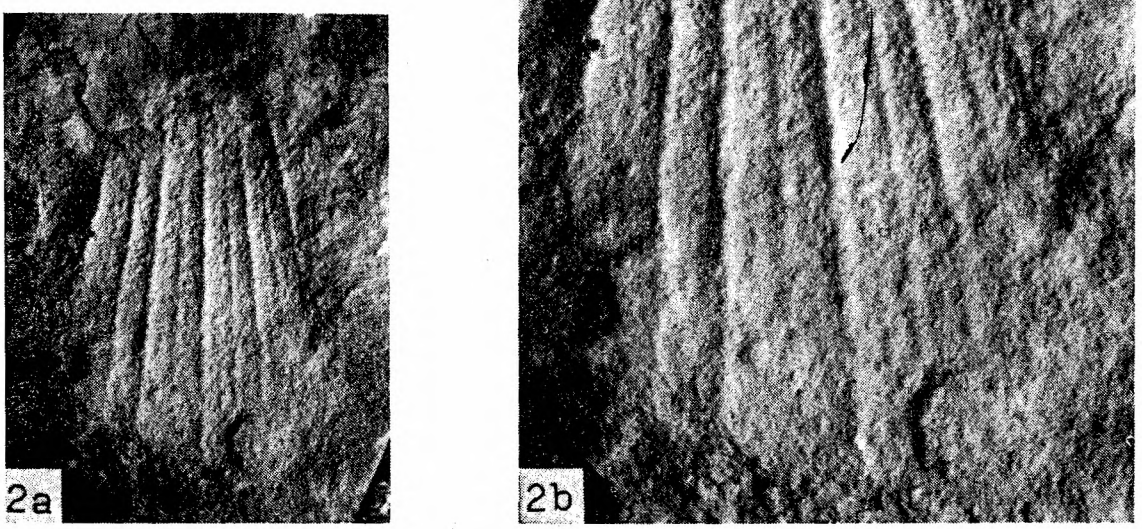

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