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## ADDITIONAL GEOGRAPHICAL AND GEOLOGICAL DATA FROM THE POLISH-MONGOLIAN PALAEOONTOLOGICAL EXPEDITIONS

(Plate III)

*Abstract.* — The localities, at which the field work of the Polish-Mongolian Palaeontological Expeditions was carried out in 1970 and 1971 are described. The position and morphology of the localities and geological profiles are given. On schematic maps and generalized profiles, the main fossiliferous sites are shown.

### INTRODUCTION

The Polish-Mongolian Palaeontological Expeditions organized in 1970 and 1971 carried out field-work at Bayn-Dzak, Toogreeg, Khermeen Tsav and in the Nemegt Basin (KIELAN-JAWOROWSKA & BARSBOLD, 1972). In the Nemegt Basin fossils were prospected and excavated in Upper Cretaceous deposits (in the Upper and Lower Nemegt Beds). In 1970 the investigations were concentrated in the region of the locality Nemegt and their geological description is due to the first author.

In 1971 the excavatory work was continued in the Nemegt Basin in the localities of Khulsan, Nemegt, Altan Ula II, III and IV. In the locality of Toogreeg situated north-east from the Nemegt Basin the excavatory work has been also performed. The locality of Khermeen Tsav situated south-westward from the Nemegt Basin has been only visited. The geological description of the localities prospected in 1971 is due to the second author.

The present description forms a continuation of a paper by GRADZIŃSKI *et al.* (1968/69) and should be read in conjunction with that paper. It contains data concerning the position of the excavation sites worked in 1970 and 1971. Only some geological data are presented, and to some extent supplement the earlier publications (GRADZIŃSKI *et al.*, 1968/69; GRADZIŃSKI, 1970). The results of sedimentological investigations of the Lower Nemegt Beds carried out during the 1970 and 1971 expeditions will be published separately.

The geological profiles were drawn on the basis of detailed profiles, but they are generalized in most cases, and present an overall picture of the lithology of the beds in particular outcrops. Different resistance to weathering of particular beds is reflected in the morphology of slopes. The maps of the localities were made with the use of the measuring instrument „Teletop” of Zeiss Co. and of a geological compass „Meridian”. The locations of the individual specimens and areas of detailed prospection are marked by numbers on the maps and on the profiles.

ADDITIONAL GEOGRAPHICAL AND GEOLOGICAL DATA

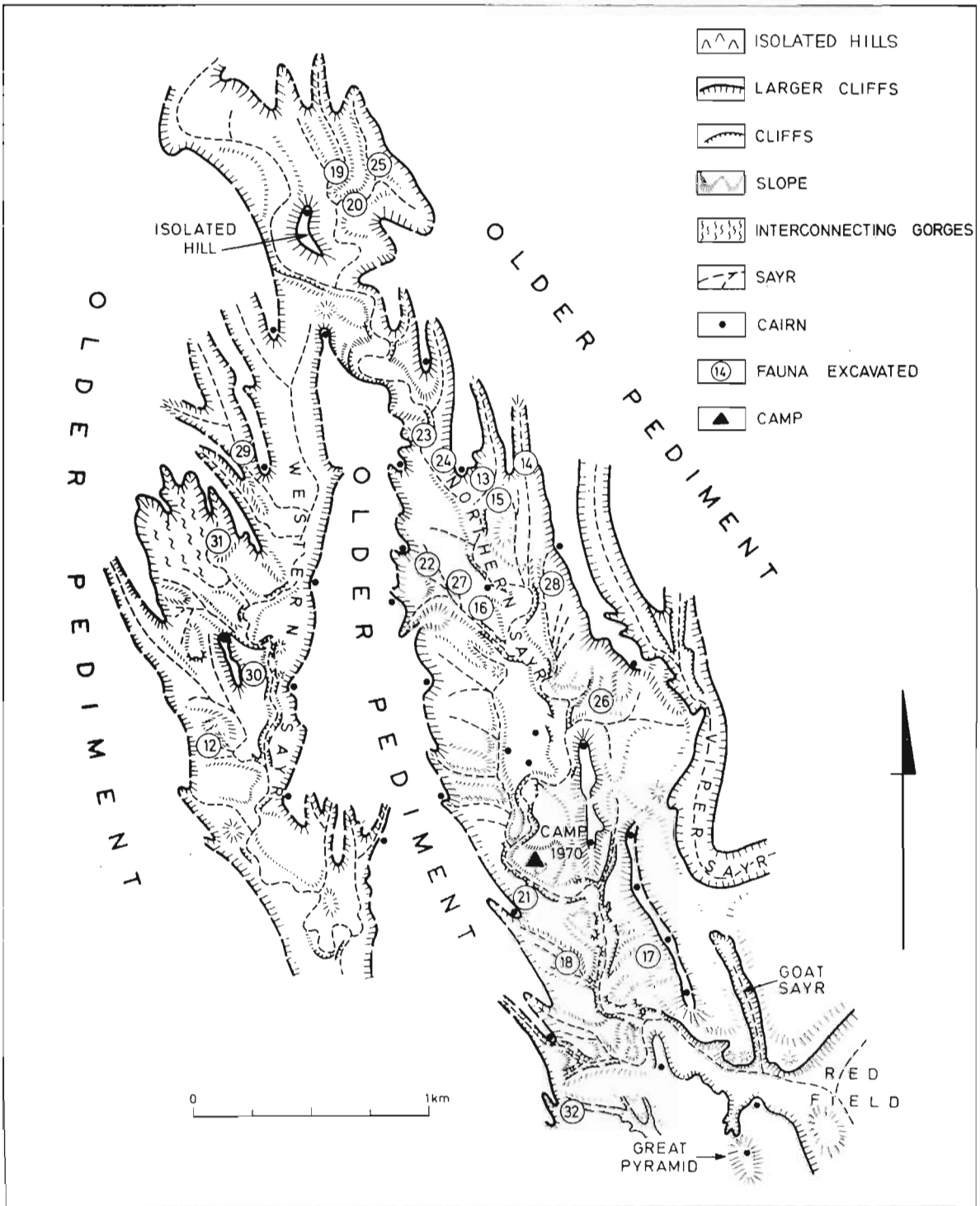


Fig. 1

Map of northern part of locality Nemegt. Excavated fauna indicated by numbers: 12 — incomplete skeleton with part of the skull of *Tarbosaurus bataar* (part of the skeleton was excavated in 1965, see GRADZINSKI *et al.*, 1968/69, Text-fig. 2);

## ACKNOWLEDGEMENTS

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## LOCALITY NEMEGT

This locality name was introduced previously (GRADZIŃSKI *et al.*, 1968/69) to denote a large group of exposures situated on the northern pediment of the Nemegt Basin, SSE of the Khoboor Mt. (2768 m). The exposures are situated 12—18 km south of the margin of the Nemegt Massif, and are concentrated around several large sayrs, viz. the Western, Central, Northern and Eastern Sayr. All these join into one Broad Sayr which is a tributary of the main sayr of the Nemegt Basin extending in the E-W direction. The excavations carried out by the 1964 and 1965 expeditions were concentrated in the central part of the exposures of this locality. During the 1970 expedition the northern part of the Nemegt locality was worked, while prospection for fossil mammals was carried out in 1970 and 1971 in its south-eastern part. For practical reasons these two regions are described below separately.

**Northern part of Nemegt locality**

The area of excavations carried out in 1970 is shown in Text-fig. 1. This area adjoins directly from N and NW the area of works of the 1964 and 1965 expeditions, the plan of which was published earlier (GRADZIŃSKI *et al.*, 1968/69, Text-fig. 2). The area described here lies between 101°02'—101°03'30" longitude E and 43°30'30"—43°32'30" latitude N, at altitude 1550—1600 m above sea level.

In the area shown on the plan, the older pediment is dissected by two large sayrs, named previously the Northern Sayr and the Western Sayr. The floor of the first one lies ca. 45 m below the older pediment surface. The sayr bed is 10—40 m wide and accessible for field motor vehicles on the whole area shown on the plan. Rock terraces bordering the sayr bed on both sides are up to 25 m high and dissected by numerous smaller gorges. The latter are usually narrow and mostly inaccessible for motor vehicles. The lower part of the valley of the Northern Sayr (beginning with the Red Field) is relatively narrow and bordered by high, generally vertical walls. Farther north it widens into a large depression, then again it narrows (near the Isolated Hill), and then widens again. The Isolated Hill lies approximately in the centre

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13 — fragment of the postcranial skeleton of the coeluroid dinosaur; 14 — complete postcranial skeleton of ornithomimid dinosaur; 15 — tortoise; 16 — tortoise; 17 — skull of a tortoise; 18 — fish remains; 19 — skull and fragments of the postcranial skeleton of pachycephalosaurid dinosaur; 20 — pelvis of ornithomimid dinosaur; 21 — fragments of the limbs of ornithomimid dinosaur; 22 — tortoise; 23 — incomplete backbone, fragments of the pelvis and tarsus of *Saurolophus angustirostris*; 24 — incomplete skeleton with the fragmentary skull of *Tarbosaurus bataar*; 25 — pelvis of ornithomimid dinosaur; 26 — fragments of the postcranial skeleton of coeluroid dinosaur; 27 — fragments of the tail and hind limbs of *Saurolophus angustirostris*; 28 — fragmentary skull and postcranial skeleton of *Saurolophus angustirostris*; 29 — incomplete skull and fragments of the backbone of *Tarbosaurus bataar*; 30 — seven vertebrae and fragments of the metatarsus of *Tarbosaurus bataar*; 31 — fragmentary tail, pelvis and hind limb of *Tarbosaurus bataar*; 32 — mudstone with ostracods, characeans and pelecypods.

of this wide section of the sayr valley. A depression in the surface of the older pediment is situated immediately to the south. From that place the Western Sayr extends southward.

The large Viper Sayr is situated immediately east of the Northern Sayr. These two sayrs join at the Red Field. The short but deep Goat Sayr is situated between the two sayrs described above in the southern part of the area.

The exposures situated within the Western Sayr form the western periphery of the Nemegt locality. Farther west extends the surface of the older pediment covered by very shallow sayr beds. The Western Sayr joins the Central Sayr near the camp site of the 1964 expedition (see Text-fig. 2 in GRADZIŃSKI *et al.*, 1968/69). This sayr is accessible for field motor vehicles on its entire length. Numerous and fairly extensive exposures are grouped in the northern part of the Western Sayr (i. e. in the area shown on the plan, Text-fig. 1). The floor of the sayr is lying 25—30 m below the surface of the older pediment.

### Researches in 1970

The 1970 expedition worked at the locality Nemegt in the area shown on the plan (Text-fig. 1; see also Text-fig. 2). Moreover, prospection for skeletons was carried out in the northern part of the Viper Sayr and in the northern part of the Central Sayr, west of the Great Pyramid (see GRADZIŃSKI *et al.*, 1968/69, Text-fig. 2).

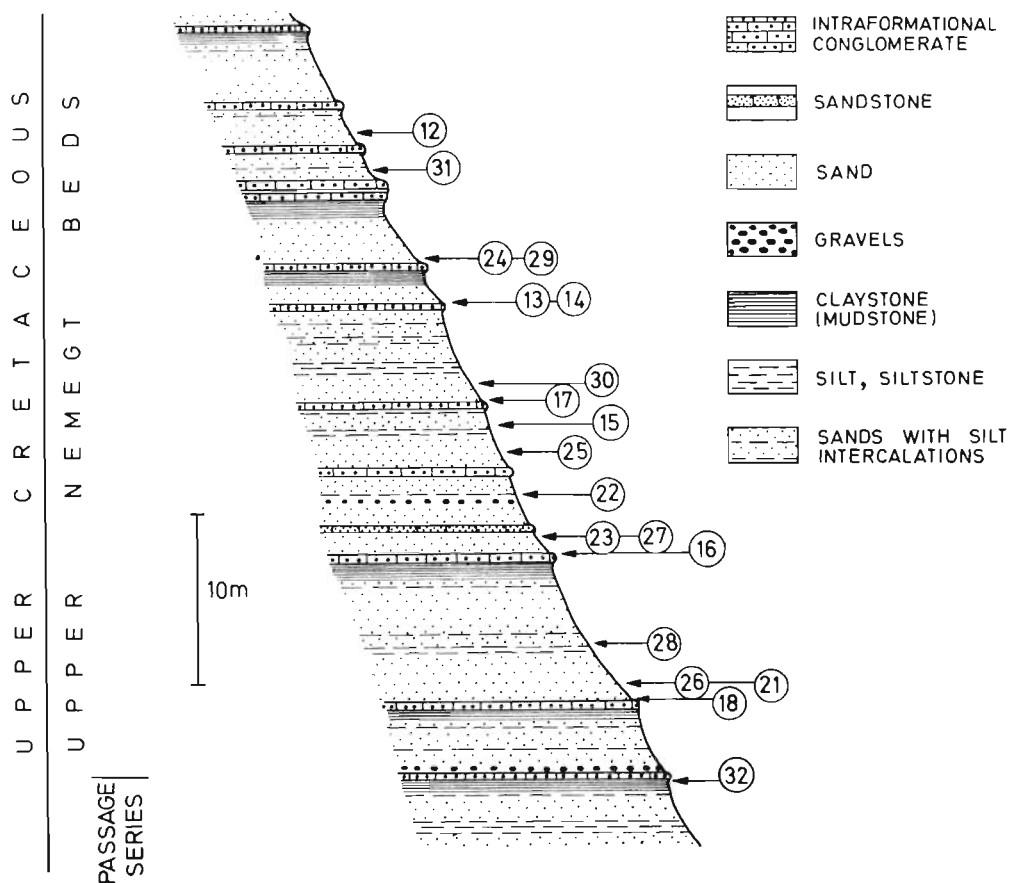


Fig. 2

Geological profile of Upper Cretaceous sediments at northern part of Nemegt locality. For explanation of numbers see Text-fig. 1.

## Geology

The excavations in the northern part of the locality Nemegt were carried out only in the Upper Nemegt Beds. These beds were described elsewhere (GRADZIŃSKI *et al.*, 1968/69, pp. 40—42; GRADZIŃSKI, 1970). The deposits of the Passage Series and of the overlying beds are exposed in the region of the Northern Sayr in the area shown on the plan (Text-fig. 1). Their total exposed thickness amounts to ca. 40 m. Only the beds overlying the Passage series are exposed in the Western Sayr; their visible thickness amounts to ca. 30 m.

All of the 15 fragments of dinosaur skeletons excavated in this locality at sites shown on the plan were found, with one exception, in sandy deposits. In four cases the bones occurred in fine-grained sands with inclined stratification. In the remaining cases the dinosaur bones were found in fine- and medium-grained sands, containing single siltstone fragments or thin lenses of intraformational conglomerates. Only the specimen of *Saurolophus angustirostris* (No. 28) occurred partly in a sandy deposit and partly (a minor part of the skeleton only) in siltstone. This part of the skeleton was in a distinctly poorer state of preservation.

Observations carried out during the 1970 expedition suggest that in the region of the Viper Sayr within the Passage Series the deposits of the lithological type of the Upper Nemegt Beds pass laterally into deposits of the Lower Nemegt Beds type. In the region of the Northern Sayr and in the northern part of the Central Sayr fairly numerous small gastropod shells and fish remains were found in sandy siltstones.

Detailed observations led to the conclusion that trace fossils present in the Upper Nemegt Beds are in fact more diversified than it was described by GRADZIŃSKI (1970, p. 222).

## SOUTH-EASTERN PART OF THE LOCALITY NEMEGT

### Location and morphology

Prospection for fauna was carried out in this part of the locality Nemegt in two areas (Text-fig. 3). The first one comprises the southern slopes of the Red Walls and the isolated hills situated immediately south-east and called Red Monadnocks. This area is shown by GRADZIŃSKI *et al.* (1968/69, Text-fig. 2). Approximate geographic coordinates of this area are: 101°4' longitude E and 43°30'20" latitude N, and the altitude is c. 1500 m above sea level. The described hills are situated in the northern part of the Saksaoöl Field extending NW-SE. Their height amounts to 10—20 m and the slopes are strongly dissected by small erosional forms.

The second prospected area comprises the isolated hills called Southern Monadnocks, situated 3—4 km SSE of the Red Walls, near the conjunction of the Western, Northern and Eastern Sayrs into one Broad Sayr. The majority of these hills lie east of this sayr. The approximate geographic coordinates of this area are 101°5' longitude E and 43°29' latitude N, and the altitude is ca. 1450 m above sea level. The height of the hills above the floor of the sayrs ranges from 10 to 35 m. The slopes of the hills are dissected by numerous erosional forms: furrows, short ravines and recesses.

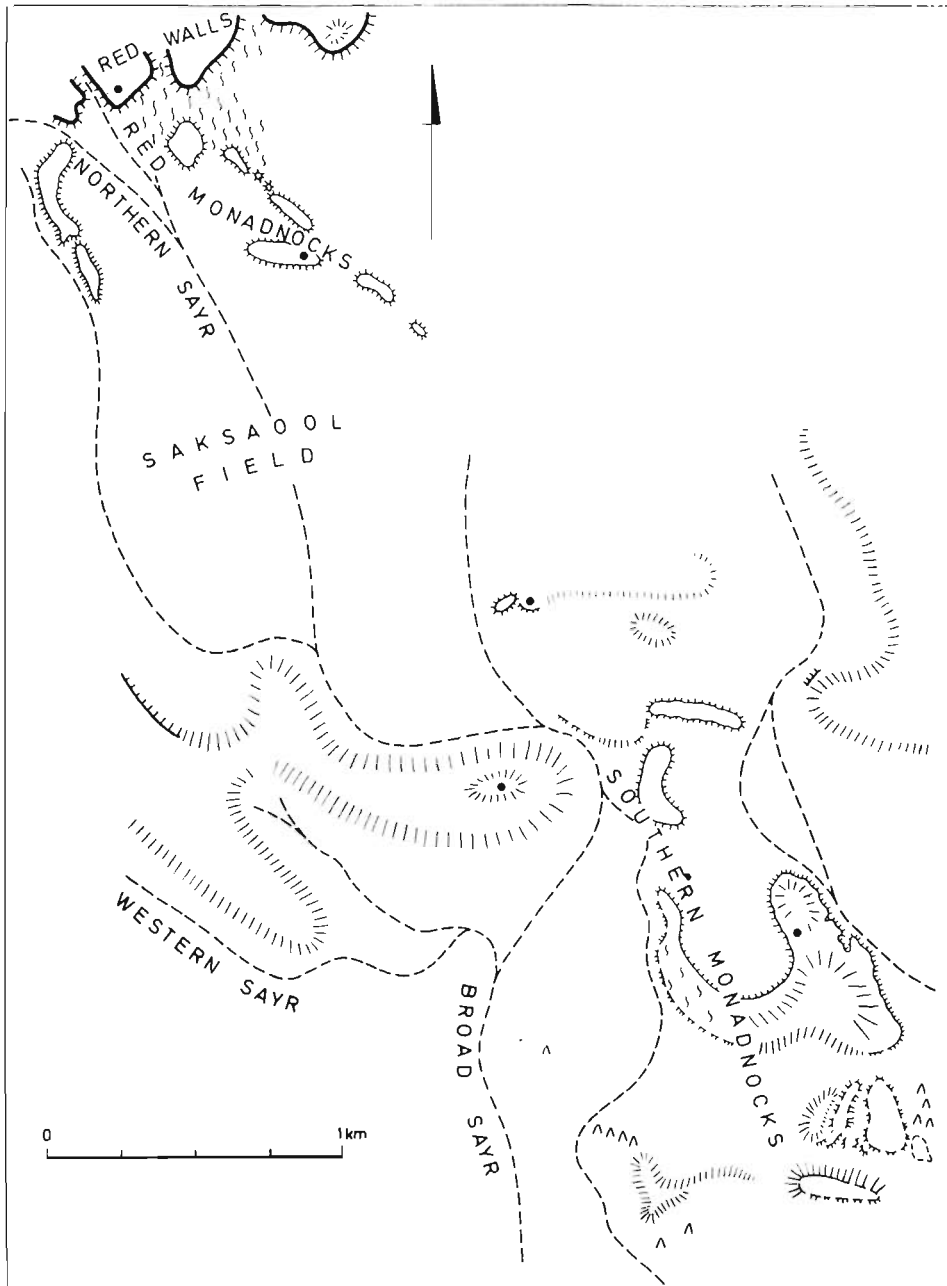


Fig. 3

Map of south-eastern part of locality Nemegt. For morphological explanation see Text-fig. 1.

### Geology

First prospection for fauna was carried out in these areas in 1965 (see GRADZIŃSKI *et al.*, 1968/69, p. 40), work was continued 1970 and 1971. In Southern and Red Monadnock mammal skulls, lizards, dinosaur eggs and tortoise remains (MLYNARSKI, 1972) were found.

Lower Nemegt Beds are exposed in the south-eastern part of the locality Nemegt (GRADZIŃSKI *et al.*, 1968/69; GRADZIŃSKI, 1970). They consist of fine-grained poorly cemented sandstones with rare intercalations of sandy mudstones. The sandstones have usually a brick-red colour, while the mudstones are of a somewhat darker reddish-brown colour.

A fairly distinct thick horizontal bedding is visible in the Lower Nemegt Beds near the Red Walls. Large-scale tabular cross-bedded units (limits for size classes of cross-bedding units after GRUMBT 1969) are present in outcrops situated farther south (Southern Monadnocks), beside thick horizontally layered or massive sandstone beds. Numerous beds or red-brown siltstones alternating with sandstone beds are present in the bluffs in the eastern part of the Southern Monadnocks. The upper surfaces of these siltstone beds are often load-deformed, and sometimes a total disruption of sandstone beds separating the siltstones has led to the formation of isolated oblong sandstone bodies and balls inside the siltstones (see ANKETELL *et al.*, 1970).

## LOCALITY KHULSAN

### Location and morphology

The exposures at this locality are situated c. 6 km ESE of the locality Nemegt. Some of them have been designated as „E Nemegt” by GRADZIŃSKI (1970, Text-fig. 1). Presently these exposures are given a separate name derived from a near-by closed depression. The major part of the exposures is concentrated in the area with coordinates 101°07'—101°09' longitude E and 43°28'—43°30' latitude N, at an altitude of 1400—1450 m above sea level. The exposures are situated on the slopes of Broad Sayr valley. This broad sayr designated as the Main Sayr (see Text-fig. 4) runs approximately North-South, is joined by several smaller ones, and turns to ESE in the southern part of the discussed area. The valley of the Main Sayr is asymmetric. East of the Main Sayr the slopes are gentle and covered by an almost continuous blanket of recent desert sediment. Outcrops of Cretaceous rocks in this part of the locality are small and rare.

The western slopes of the Khulsan Valley have a more diversified morphology. The older pediment has been dissected by numerous smaller sayrs which join the Main Sayr from the North-West. A part of the western slope of the Khulsan Valley is separated from the older pediment by a continuous escarpment up to 25 m high. Differentiated erosional retreat of this escarpment to the North-West has led to the formation of numerous ravines with wall formed of Cretaceous sandstones. Small table mountains preserved in front of the escarpment have the top surfaces covered by desert pavement while smaller mound-shaped isolated hills with steep walls are entirely composed of Cretaceous sandstones. They form a characteristic morphologic element of the Khulsan locality (Pl. III, Fig. 1).

### Geology

At the Khulsan locality occur the Lower Nemegt beds developed as pale-red, fine-grained sandstones with rare intercalations of red-brown siltstones (Text-fig. 5). Conglomerates are rare, and consist chiefly of intrabasinal pebbles of redeposited siltstones. Cherts and effusive rocks predominate among exotic pebbles. The pebbles are dispersed within the sandstone

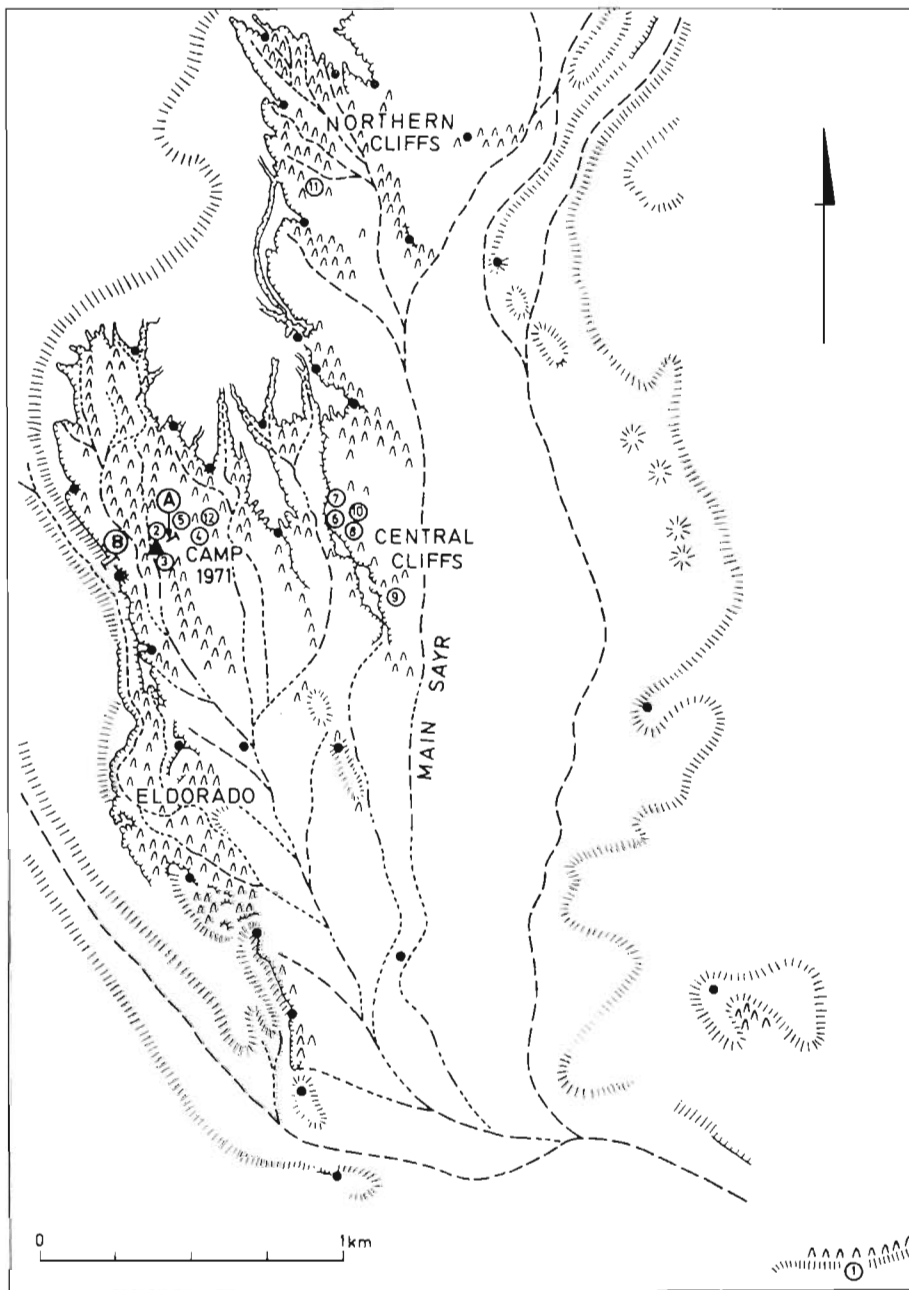


Fig. 4

Map of locality Khulsan. For morphological explanation see Text-fig. 1. Excavated fauna indicated by numbers: 1 — lower jaw of *Protoceratops* sp.; 2 — fragmentary skeleton of a small theropod dinosaur; 3 — skeleton of a lizard; 4 and 5 — two skulls of small individuals of *Protoceratops* sp.; 6 — partial skull of an ankylosaurid dinosaur; 7 — tortoise; 8 — partial skeleton of a small theropod dinosaur; 9 — several skulls and partial postcranial skeletons of amphislaenid lizards; 10 — skull of a pachycephalosaurid dinosaur; 11 — a skeleton with skull of an ankylosaurid dinosaur; 12 — skeleton of a lizard.



beds or form agglomerations with indistinct boundaries. Occasionally the pebbles are concentrated within erosional channels.

The sandstone beds are massive, horizontally stratified or cross-stratified. Tabular cross-stratification is present in thick beds, while through cross-stratification (see MCKEE & WEIR, 1953) occurs in thinner ones.

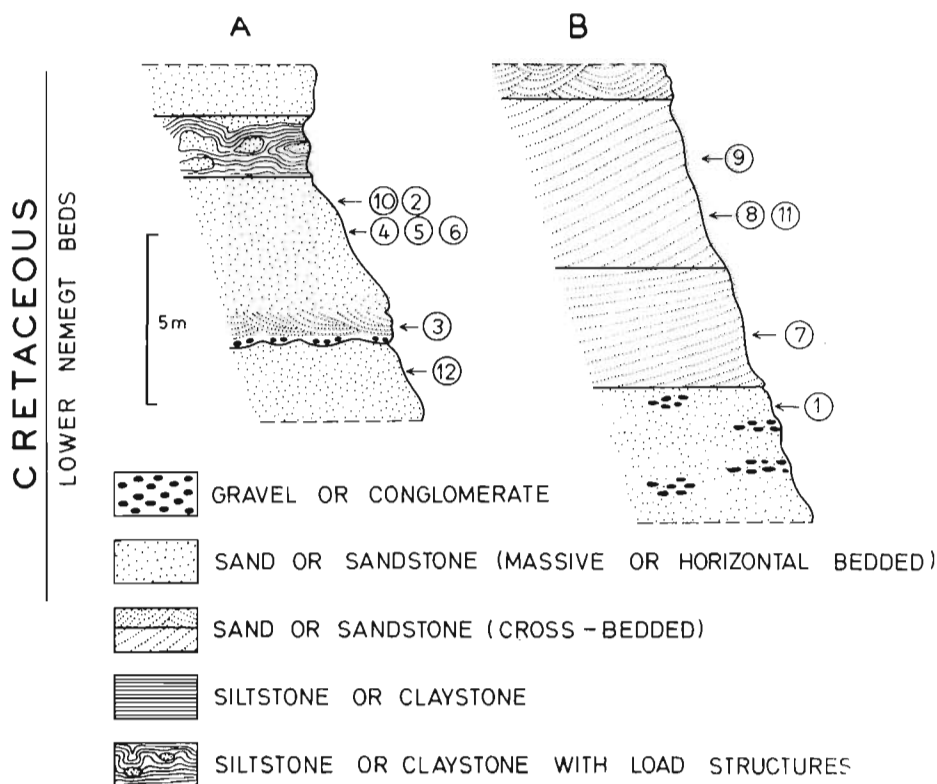


Fig. 5

Geological profiles of Upper Cretaceous sediments of Khulsan locality. For explanation of numbers see Text-fig. 4.

The siltstone beds are ranging in thickness from several cm up to ca. 50 cm. Usually they are wedging out on the length of several tens of metres, and sometimes the upper surfaces of beds display distinct wash-outs. Besides the deformational structures mentioned in the description of the siltstones from the Southern Monadnocks locality, desiccation cracks are locally present on the upper surfaces of siltstone beds. Numerous examples of these structures occur in the vicinity of Northern Cliffs.

The Lower Nemegt Beds exposed in the Khulsan locality are usually poorly cemented. Zones of calcareous cementation are rare and occur in the form of tough sandstone beds, or as oval-shaped bodies of tough sandstone reaching a few m in diameter distinctly standing out in semi-loose sandstone. Small white calcareous concretions are much more common.

One short reconnaissance of the area with no positive results was carried out in 1965. During 1970 and 1971 expeditions the skull of pachycephalosaurid dinosaur, the skull with the anterior part of the trunk of an ankylosaurid dinosaur, numerous lizards, tortoises skulls of mammals, diplopodes and dinosaur eggs were found in this locality.

## LOCALITY KHERMEEN TSAV

**Location and morphology**

The Khermeen Tsav Valley forms one of the largest areas of exposure of Cretaceous rocks known in Mongolia. It lies South-West of the Nemegt Basin. The coordinates of the central part of the valley are approximately  $99^{\circ}45'$  longitude E and  $43^{\circ}15'$  latitude N. The altitude is ca. 1200 m above sea level.

The pediment is dissected here by very numerous sayrs coalescing into a large valley extending WNW-ESE (Text-fig. 6). The width of the valley between the Northern Outcrops and the Southern Outcrops is ca. 5 km. The length of the largest sayr designated as the Central Sayr exceeds 15 km. The depth of the Khermeen Tsav valley measured along the profile A (see designation on Text-fig. 7) amounts to ca. 100 m.

The morphology of the Khermeen Tsav Valley is diversified (Pl. III, Fig. 2). The main valley branches into numerous ravines with steep walls and minor valleys with step-shaped slopes. Monadnocks of various sizes and usually steep slopes are common. The top surfaces of the monadnocks lying at various altitudes, and the corresponding flat zones on the valley slopes clearly indicate several phases of erosion.

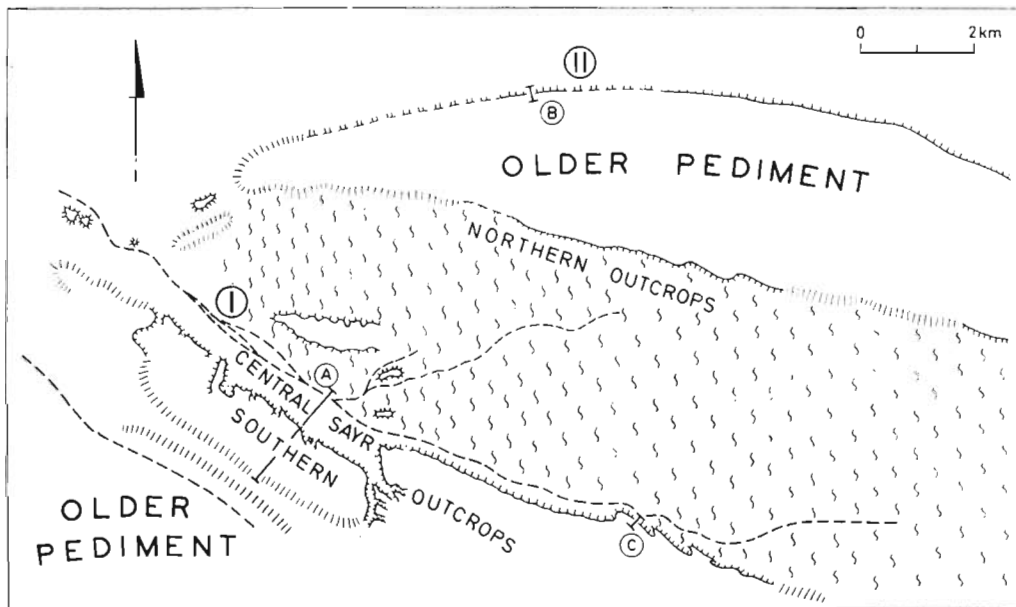


Fig. 6

Sketch-map of localities Khermeen Tsav I and II. Designations: A, B, C correspond to geological profiles in Text-fig. 7. For morphological explanation see Text-fig. 1.

**History of research**

Khermeen Tsav valley has been discovered by Dr. R. BARSBOLD and Dr. V. S. ZHEGALLO in 1969 during the work of the Soviet-Mongolian Palaeontological Expedition. The members of the Polish-Mongolian Expedition visited this locality in 1971 at three occasions.

During these excursions Cretaceous sediments exposed some 10 km North-East of the Central Sayr of Khermeen Tsav I were discovered and prospected. We designated these outcrops Khermeen Tsav II (see Text-fig. 6).

## Geology

The slopes of the Khermeen Tsav Valley are built of three lithologic complexes: the Lower White Beds, which form the base of the exposed sequence, and crop out in the Central Sayr on a stretch of ca. 1.5 km; the Red Beds, forming the middle part of the slopes along the entire valley, and the Upper White beds, forming the upper part of the slopes in the central and eastern part of the valley (see Text-fig. 7). All these complexes are lying nearly horizontally.

The Lower White Beds are ca. 30 m thick and consist of alternating sandstones, siltstones and conglomerates. The bed thickness ranges from several tens of cm to 2 m. The sandstones are usually trough-cross stratified. The dimensions of the cross-stratification range from ripple to medium scale. As a rule, the sandstone beds are wedge-shaped. Sets of sandstone beds are alternating with thinner beds of siltstones and of intraformational conglomerates. The top and base surfaces of the siltstone beds are sharply marked. Wash-outs and load-deformations are common and the beds are rapidly wedging out. Layers and lenses of conglomerates with undistinct outlines occur either within, or at the base of sandstone beds. The conglomerates consist of intrabasinal pebbles. The largest pebbles up to 30 cm in diameter are composed of red-brown siltstones, while pebbles of sandstone, and of light-coloured siltstone are smaller. Various deformational structures similar to those described by GRADZIŃSKI (1970) from the Upper Nemegt Beds are present in the Lower White Beds. Recumbent folds in cross-stratified sandstones and convolute lamination in siltstones are the most common.

The Red Beds are ca. 50 m thick. They differ from the underlying Lower White Beds by the following sedimentary features: 1) the sandstones predominate markedly over siltstones and conglomerates, 2) the thickness of the sandstone beds is greater, ranging up to several m, 3) individual sandstone and siltstone beds can be traced on distances of several hundred m, 4) the bedding planes are indistinct, 5) cross-stratification, predominantly of the large-scale planar type, occurs rarely; horizontally layered and massive beds are common, 6) the conglomerates are fine-grained and composed of pebbles of exotic rocks, intraformational conglomerates are rare, 7) deformational structures are rare, 8) trace fossils in the form of sediment-filled tubes are common.

The Red Beds show a certain degree of facial differentiation within the Khermeen Tsav locality. In the profile Khermeen Tsav II the thick-bedded sandstones are orange-coloured and numerous intercalations of light-coloured (white, yellow, pale-red and bluish-green) thin-bedded siltstones and claystones are present (see Text-fig. 7, Profile B-).

The Upper White Beds are 10—20 m thick. A bed of variegated, fine-grained conglomerate, 0.5 m thick forms the base of these beds (see Text-fig. 7 — profile C). The conglomerate is composed principally of poorly rounded pebbles of exotic rocks. The conglomerate is overlain by pale-yellow, thin-bedded fine-grained sandstones showing small- and medium-scale cross-stratification. Rare layers and lenses of intraformational conglomerates present within the sandstones are composed of pebbles of light-coloured siltstones.

The Polish-Mongolian Expedition in 1971 collected fossils only in Red Beds without conducting the excavatory work. From these beds in both Khermeen Tsav I and Khermeen Tsav II numerous fragmentary skeletons of *Protoceratops* sp., fragmentary skeletons of small

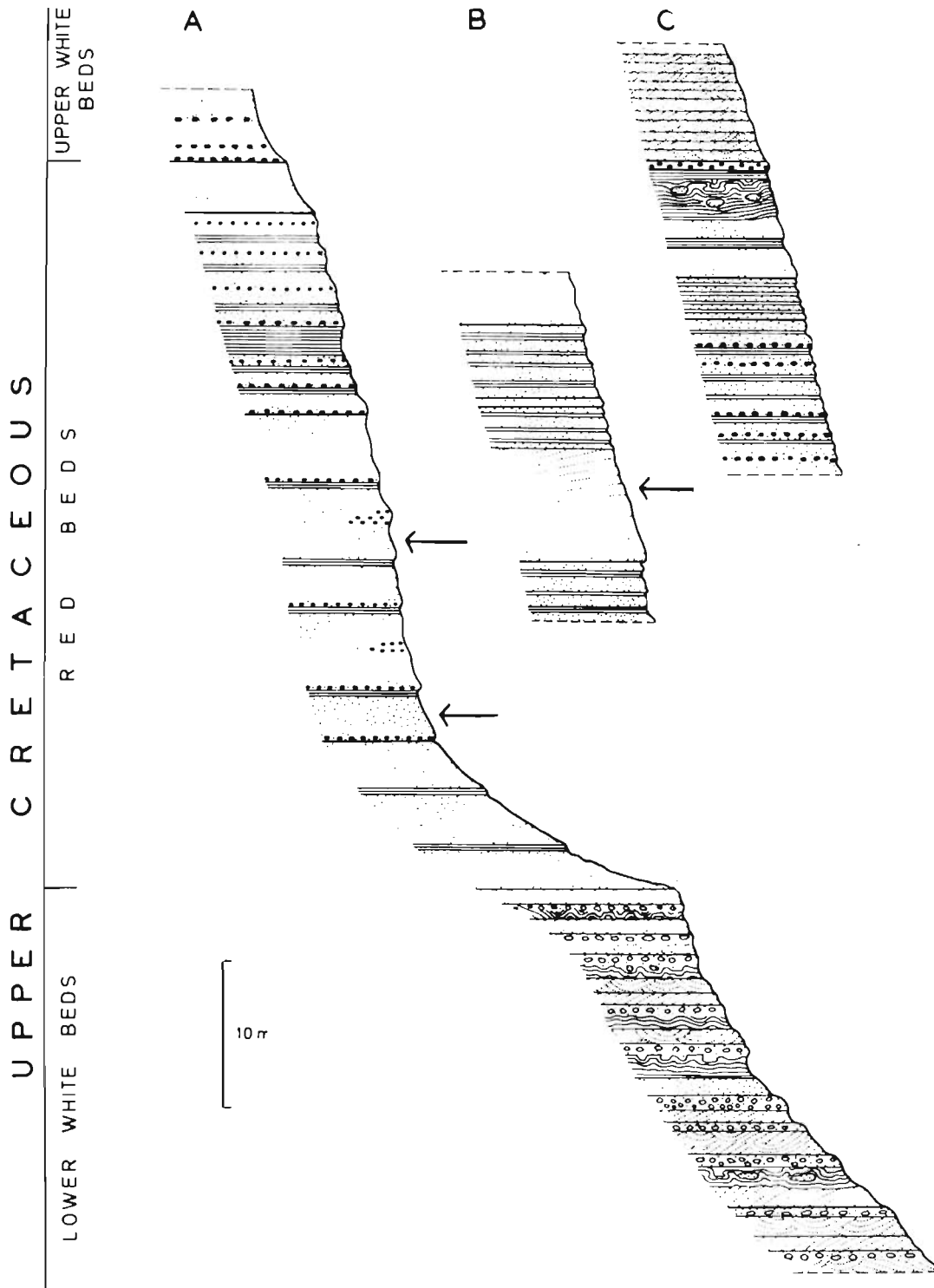


Fig. 7

Geological profiles of Upper Cretaceous sediments of localities Khermeen Tsav I and II. For lithological explanation see Text-fig. 5. The position of the profiles A, B, C is shown on Text-fig. 6. The arrows on profiles A and B indicate the horizons in which mammals were found.

carnivorous dinosaur, numerous dinosaur eggs, lizards and skull of mammals were collected. The majority of fossils was collected from the orange sandstone in Khermeen Tsav II. The preliminary investigation of mammals found in Khermeen Tsav I and II led Prof. Z. KIELAN-JAWOROWSKA (*in* KIELAN-JAWOROWSKA & BARSBOLD, 1972) to the conclusion that Red Sandstone of Khermeen Tsav I and II is contemporaneous with the Lower Nemegt Beds of Nemegt and Khulsan, being probably of Campanian age.

## LOCALITY TOOGREEG

### Location and morphology

The exposures are situated North-East of the Nemegt Basin, c. 30 km WNW of Bayn Dzak (see GRADZIŃSKI *et al.*, 1968/69). The approximate coordinates of this locality are 103°20' longitude E and 44°15' latitude N. The altitude is 1150 m above sea level.

Cretaceous sandstones are exposed here on northern and North-Western slopes of a broad valley. They form moderately steep slopes and low escarpments separating the valley from the pediment (Text-fig. 8). In the central part of this locality small sayrs are dissecting the North-West slope of the valley.

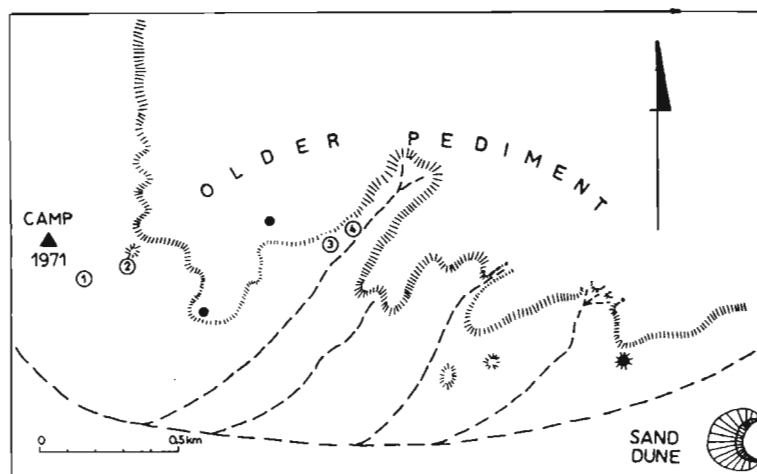


Fig. 8

Map of locality Toogreeg. For morphological explanation, see Text-fig. 1. Excavated fauna indicated by numbers: 1 — skeleton of *Protoceratops andrewsi*; 2 — skeleton of *Protoceratops andrewsi* associated with skeleton of *Velociraptor mongoliensis* in a fighting position; 3 and 4 — two skulls of *Protoceratops andrewsi*.

### History of research

The Toogreeg locality has been discovered by Dr. DASHZEWEK, who carried out there an excavatory work in 1967. In 1969 and 1970 it was visited by the Soviet-Mongolian Palaeontological Expedition. The Polish-Mongolian Expedition worked there during one week in 1971. The expedition excavated two skeletons of *Protoceratops andrewsi*, two skulls of the same species and the skeleton of *Protoceratops andrewsi* associated with the skeleton of *Velociraptor mongoliensis* in a fighting position.

## Geology

The slopes of the Toogreeg Valley are built of poorly cemented white, fine-grained sandstones. Megascopic sedimentary structures are usually absent, and only rarely medium- or large-scale cross-bedded units of tabular type can be seen. The sandstones contain very numerous oval or flat bodies of tough sandstone covered by ferruginous desert varnish and regular horizons of ferruginous cementation developed within sandstone beds. These horizons follow sometimes the planes of cross-stratification, but in most cases are developed independently and cross the stratification planes.

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## REFERENCES

- ANKETELL, J. M., CEGŁA, J. & DŻULYŃSKI, S. 1970. On the deformational structures in systems with reversed density gradient. — *Rocznik Pol. Tow. Geol.*, 40, 3-30, Kraków.
- GRADZIŃSKI, R. 1970. Sedimentation of dinosaur-bearing Upper Cretaceous deposits of the Nemegt Basin, Gobi Desert. Results Polish-Mongol. Palaeont. Exped., II. — *Palaeont. Pol.*, 21, 147-229, Warszawa.
- GRADZIŃSKI, R., KAŻMIERCZAK, J. & LEFELD, J. 1968/69. Geographical and geological data from the Polish-Mongolian Palaeontological Expeditions. Results..., I. — *Ibidem* 19, 33-82.
- GRUMBT, E. 1969. Beziehungen zwischen Korngrösse, Schichtung, Materialbestand und anderen sedimentologischen Merkmalen in feinklastischen Sedimenten. — *Geologie*, 18, 75-99, Berlin.
- KIELAN-JAWOROWSKA, Z. & DOVCHIN, N. 1968/69. Narrative of the Polish-Mongolian Palaeontological Expeditions 1963-1965. Results..., I. — *Palaeont. Pol.*, 19, 7-30, Warszawa.
- KIELAN-JAWOROWSKA, Z. & BARSBOLD, R. 1972. Narrative of the Polish-Mongolian Palaeontological Expeditions 1967-1971. Results..., IV. — *Ibidem*, 27, 5-13.
- McKEE, E. D. & WEIR, G. W. 1953. Terminology for stratification and cross-stratification in sedimentary rocks. — *Bull. Geol. Soc. Amer.*, 64, 381-390, New York.
- MLYNARSKI, M. 1972. *Zangerlia testudinimorpha* n. gen., n. sp., a primitive land tortoise from the Upper Cretaceous of Mongolia. — Results..., IV. — *Palaeont. Pol.*, 27, 85-92, Warszawa.

## PLATES

R. GRADZIŃSKI & T. JERZYKIEWICZ: ADDITIONAL GEOGRAPHICAL AND GEOLOGICAL DATA

PLATE III

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Fig. 1. Locality Khulsan — fragment of the western slope of the valley in the vicinity of the camp. Lower Nemegt Beds . . . . .	23
Fig. 2. Locality Khermeen Tsav I — eastern part of the valley. Northern outcrops in the background. . . .	26

*Photo: T. Jerzykiewicz*







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