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Trogontherium cuvieri Fischer od Přezletic (Střední Čechy) a porovnání s ostatními známými nalezišti Trogontherií v Evropě.

Trogontherium cuvieri Fischer from Přezletice (Central Bohemia) and a comparison with the other known localities of Trogontherium in Europe.

(S 1 tabulkou a 1 obrázkem v textu.)

(Předloženo 31. ledna 1938.)

Na buližnickém suku pod \ominus 248 m n. m., v lomu pana Ant. Nedosta z Veleně (lom je na katastru obce Přezletic), nalezl jsem roku 1934 šterky a písky říční terasy s úlomky kostí a zubů.

Lom je přístupen stěnou, obrácenou k severovýchodu. Na nerovném povrchu algonkických buližníků je žlutavě zelená vrstva jemnozrnných písků s ojedinělými ostrohrannými kousky podložní horniny. V této vrstvě jsou placoidní obratlíčky i zlomky velkých kostí. Nad ní leží nepravidelně vrstva rezavě hnědých písků s velmi hojnými ostrohrannými kousky a s balvany buližníku. V této vrstvě jsou kousky otlučených kostí. Kostí jsou značně fossilisovány, jsou velmi tvrdé, těžké a hnědě zbarveny. Nad vrstvou rezavě hnědých písků leží asi $\frac{1}{2}$ m ostrohranné buližnickové ssuti. Nad ssutí je asi $\frac{1}{2}$ m spraše a nad touto asi 10 cm ornice.

Ve východní části stěny je v buližníku kapsa vyplněná šedozeleňými jílovitými písky. V nich jsem nalezl placoidní obratel a kus otlučené kosti.

Kapsa v západní části buližnickové stěny je vyplněna spodnoturonskými písčítými slinitými jíly se spoustou žraločích zoubků, placoidních obratlíčků

a drobných koprolitků (stejně jsou o něco níže v téže stěně lomu, zachovány ve větší mocnosti). Nad křídovými sedimenty je vrstva žlutých písků s cicváry, mocná asi 1 m, nad nimi vrstva rezavých písků, mocná asi 1/2 m, pak ssuť, spraš a ornice.

Ve zbytcích zvířeny, nalezených v píscích v lomu pod ϕ 248, jsou zastoupeny následující formy: 1. *Elephas* sp. 2. *Cervid*. 3. *Rhinoceros* sp. 4. »*Arvicola amphibius* (L.)«. 5. *Trogotherium cuvieri* FISCHER. 6. Neurčené kusy ssavčích obratlů. 7. *Emys orbicularis* (L.). 8. Reptilia. 9. *Esox lucius* L. 10. *Esox* sp. 11. *Tinca vulgaris* CUV. 12. Neurčené rybí zbytky.

Význačný je nález druhu *Trogotherium cuvieri* FISCHER jednak svým výskytem, neboť jest to, pokud jest mi známo, prvé naleziště tohoto bobrovičeho hlodavce v Čechách, jednak svým stratigrafickým postavením a výskytem současně s *Emys orbicularis* (L.) a s »*Arvicola amphibius* (L.)«.

Český výskyt druhu *Trogotherium cuvieri* FISCHER je spojujícím článkem německých nálezů s nálezy moravskými.

V porovnání výskytu od Přezletic s ostatními evropskými nálezy *Trogotherií* a *Conodontes*, docházíme k závěru, že jde o říční uloženiny spodního pliocénu, a to, 1. interglaciálu, Günz-mindelinu. Porovnáním jednotlivých evropských nalezišť, blížíme se závěru, že *Trogotherium cuvieri* FISCHER je vázáno na spodní pliocén, kdežto ve svrchnopliocénních uloženinách je jemu blízký *Conodontes boisvillettii* LAUGEL.

Relativní výška říčních uloženin v lomu pod 248 dosahuje až 81 m. Naproti tomu relativní výška skalního stupně terasy lysolejského stadia je 89—90 m a šterky této terasy dosahují relativní výšky nad Vltavou, sev. od Prahy, až 112.5 m.

Stanovené günz-mindelienské stáří zbytků zvířeny z lomu pod ϕ 248, potvrzuje svrchnopliocénní stáří lysolejského stadia vltavských říčních teras.

While studying the Lower Turonian surface between Prague and Brandy-on-the-Labe the author's excursions in the Bohemian Cretaceous region led him to A. Nedorosta's quarry at Přezletice, where he found on a lydite socle below ϕ 248 m above sea level west of the »Zlatý kopec«, north of Přezletice, also gravels and sands of a river terrace with fragments of bones and teeth.

The quarry is accessible by the wall facing northeast. The uneven socle of Algonkian lydites is covered by a yellowish green layer of fine-grained sand with isolated sharp-edged fragments of the underlying rock. Placoid vertebrae and fragments of large bones are embedded in this layer. It is covered irregularly by a layer of rusty brown sand with many acute-edged fragments and boulders of lydite. Fragments of battered bones are embedded in this layer. The bones are considerably fossilized, they are very hard, heavy and brown. Some 50 centimeters of sharp-edged lydite waste cover the layer of these rusty brown sands. On the waste there are still some 50 cm. of loess which is covered in its turn by about 10 cm. of soil.

In the eastern half of the wall a pocket extends deep into the lydite. It is filled with grayish green clayey sand in which the author found a placoid vertebra and a worn bone fragment.

In the western half of the wall there is a pocket filled with a sandy marly clay in which there are many shark teeth, placoid vertebrae and minute coprolites. This is the remain of a Lower Turonian marine sediment which was found also a little lower down in the western wall of the same quarry, where its thickness is greater. Above the Cretaceous sediments there follows in the western half of the wall a layer of yellow sand with concretions, about 1 m thick, then a layer of rusty sand some 0.5 m thick, and covering it, debris, loess and soil.

In the southwestern wall, in a yellowish green sand the author found on September 29th, 1934, for the first time fragments of bones and a M^1 dext. of *Trogotherium cuvieri* FISCHER. Later investigation of the same locality furnished many finds, of which part of the left maxilla of *Trogotherium cuvieri* FISCHER. with M^1 , M^2 , M^3 is the one best preserved.

In the faunistic remains found in the sands in the quarry below ϕ 248 the following forms are represented:

1. *Elephas* sp.

It is possible to determine in the generally badly preserved material broken already primarily: a left thigh-bone (femur sinister) represented by the back wall of its middle part, a fragments of a large specimen, and further fragments of tusks and fragments of the lamellae of molars. It is however impossible to determine the species to which they might belong.

2. *Cervid*.

I found in this locality part of a tooth of a herbivore which would correspond best to P^3 of a Cervid. The fragment has only one root preserved. Up till now the author has not been able to determine the fragment more accurately or to identify it.

3. *Rhinoceros* sp.

Rhinoceros is represented by a partly preserved right thigh-bone (femur dexter), its middle part being preserved (the femur belonged to a relatively small specimen) and by a terminal phalange.

4. »*Arvicola amphibius* (L.)«.

There belongs a beautifully preserved mandibula dextra with M^1 and M^2 and besides a number of loose M and I, belonging to this rodent.

5. *Trogotherium cuvieri* FISCHER.

This beaver-like rodent is represented in the author's finds by the beautifully preserved part of maxilla sinistra with M^1 , M^2 and M^3 , by a right

upper molar M^1 found separately and belonging to another specimen than the left maxilla and by a fragment of mandibula sinistra. The left maxilla found at Přezletice corresponds best to the picture of part of the skull of the *Trogotherium cuvieri* of Mosbach, pl. II, fig. 2 in A. SCHREUDER's work of 1929. All molars are beautifully preserved, the enamel is a pale yellow, the dentine a dark brown.

Dimensions of the molars. The isolated M^1 dext. has a length of the crown of 6.4 mm, a breadth of the crown of 10 mm; the maximum length of the enamel from the chewing surface to the exposed dentine at the root of the molar is 17.4 mm. Molars in the maxilla sinistra: M^1 : breadth of the crown 9.9 mm, length of the crown 6.9 mm, length of the enamel 17.4 mm; M^2 : breadth of the crown 9.7 mm, length of the crown 7.4 mm; M^3 has the greatest breadth 8.9 mm and coronal length 17.8 mm.

6. Undetermined fragments of mammalian vertebrae.

7. *Emys orbicularis* (L.).

To this species of turtle there belongs a beautifully preserved left costal plate, injured in life and healed in.

8. Undetermined Reptilia.

To these belongs a small bone of the foot, not determined more accurately.

9. *Esox lucius* L.

The pike is represented by beautifully preserved dentaries and by very many placoid vertebrae.

10. *Esox* sp.

Broken teeth belonging to pikes, which it is impossible to determine more accurately.

11. *Tinca vulgaris* CUV.

Beautifully preserved pharyngeal teeth of the tench.

12. Undetermined fish remains.

The most remarkable of these finds is *Trogotherium cuvieri* FISCHER as to the author's knowledge this is the first locality of this beaver-like rodent in Bohemia, and also because of its stratigraphical position associated with *Emys orbicularis* (L.) and with »*Arvicola amphibius* (L.)«.

The find in Bohemia of the species *Trogotherium cuvieri* FISCHER forms a connecting link between the German finds on the one hand and the

Moravian finds on the other. From Moravia, *Trogotherium cuvieri* FISCHER is reported with an interrogation mark by K. SCHIRMEISEN from a badly preserved find in the Stránská skála, near Brno, (Early Pleistocene, part of the left mandibula and loose fragment of a rodent tooth). The find given by K. SCHIRMEISEN as doubtful is placed by A. STEHLÍK in other finds kept at the Provincial Museum at Brno. But STEHLÍK attributes the Stránská skála just as Mosbach to preglacial times and to the Pliocene. Similarly KORMOS (1930, 3) believes it to be preglacial.

Under the assumption that \odot above the quarry is at an altitude of 248 m above sea-level, and that the level of the Labe at Kostelec is at about 165 m, the relative height of \odot is about 83 m. After subtracting about 2 m, we obtain the relative height of the base of the gravels and sands at about 81 m which corresponds approximately to the highest localities of the Hořany terrace rising north of Vyšehořovice to about 242 m, on the Skřivánek between Kozovazy and Mochov to 243 m, and in the Ižera basin southwest of Jiřice to 247 m (after the geological map 251 m). The Hořany terrace in its typical development rises after R. SOKOL at Hořany to an altitude of 233-246 m (p. 23), though farther on R. SOKOL states (p. 30) that the highest points of this terrace are on an average at 237 m above sea-level (64 m above the Labe). This has to be understood so that »at a height of about 237 m which is that of the Hořany terrace, the rubble-stones on those elevations are apparently its remains and their hill-tops represent the remnants or witnesses of a level of erosion on which the Hořany terrace was deposited« (p. 28). This terrace corresponds to the Upper Pleistocene terrace of the Vltava, q₁.

That it cannot be a higher terrace than the Hořany terrace can be proved by its relative height, as the next higher terrace, the Upper Pliocene stage of Lysoleje begins with a rocky ledge at a height of 89-90 m above the river, and also by the character of its fauna discovered in the quarry below \odot 248.

From the relative and absolute height of the finds below \odot 248 m it is evident that this terrace is SOKOL's »Hořany« terrace of the Labe, corresponding to the earliest or first Pleistocene terrace of the Vltava. This assertion is borne out also by the occurrence of the species *Trogotherium cuvieri* FISCHER, which as far as is known at present is found only in the sediments of the youngest Pliocene and of the earliest Pleistocene. There are of course localities the age of which, either Tertiary or Pleistocene, was a long time in dispute, and in some cases their age is still in dispute. Or, to be more accurate, the age of the fossils found there is in dispute. This is due to the imperfect investigation of the localities immediately at the time of their discovery or to the imperfect statements made by unprofessional finders. In this respect the locality at Přezletice is of special importance as it is situated on the top of a socle so that it is impossible that younger Pleistocene river deposits could have got there, even though the »Třebestovice« terrace of the Labe has the greatest relative height of its rock bottom, 31 m above the present level of the

Labe. Another important circumstance is that the sediments with the fragments of Pleistocene vertebrates are covered by an undisturbed layer of loess, which may be identified at ϕ 248 without doubt with the loess in other outcrops of this region, characterized by an abundance of molluscs.

The nearest German locality with *Trogontherium cuvieri* FISCHER is Mosbach. *Trogontherium cuvieri* FISCHER belongs there to the Lower Pleistocene. It belongs to the first Pleistocene Interglacial period, the Günz-Mindelian, which just by the character of its fauna somewhat resembles the Pliocene fauna. SCHREUDER (1931) attributes the English, Dutch and French finds to *Conodontes boisvillettii* LAUGEL but determines the specimens from the German localities as *Trogontherium cuvieri* FISCHER (to which he attributes also *Trogontherium soergeli* RÜGER).

Also from the sands of Mauer, VOELCKER reports *Trogontherium cuvieri* together with *Hippopotamus amphibius*, *Machairodus latidens* and *Felis issiodorensis*. SOERGEL determined the age of these sands of Mauer, the locality where the mandibula of *Homo heidelbergensis* SCHOETTENSACK was found, first as Mindelian, than as Günz-Mindelian (first interglacial period). This is also the age attributed to them by ILSE VOELCKER, as the whole Meridionalis fauna determined at Mosbach by SOERGEL to be of a Günz-Mindelian age (therefore of the first interglacial period), is represented also at Mauer. (The mandibula of *Homo heidelbergensis* found in the sands at Mauer near Heidelberg and ascribed to the Old-Neanderthal race is placed e. g. by O. HAUSER in the second interglacial period, therefore in the Mindel-Rissian, but the detailed stratigraphical study by SOERGEL has proved it to belong to the first Pleistocene interglacial period.)

The detailed work by SCHREUDER (1931) seems to enable us to distinguish accurately between the finds belonging to the species *Conodontes boisvillettii* LAUGEL (first described from the Upper Pliocene of St-Prest near Chartres) in the sediments of the Upper Pliocene and those of the species *Trogontherium cuvieri* FISCHER which seems to be restricted to the first Pleistocene interglacial period. This would be in keeping also with the results of the investigations at Mosbach and Mauer as well as with the finds made in England and Holland. WHITE (1917), too, reports from the Norwich crag (HARMER's Icenian, i. e. Upper Pliocene) together with *Trogontherium cuvieri* OWEN (SCHREUDER places the English finds to *Conodontes boisvillettii*) *Elephas antiquus* FALC. and *Mastodon arvernensis* CR. et JOUB.

We have of course to remember that the English Cromerian had been the origin of a chaos in the stratigraphy of the Upper Pliocene and Lower Pleistocene, as the finds from localities where both these strata were represented, had been mixed irrespective of the stratum from which they were derived. It was only when E. DUBOIS together with C. REID visited the outcrops of the Cromerian in Norfolk and Suffolk to verify REID's division of the Cromerian and to compare it with the clays studied by DUBOIS at Tégelen in Holland, that E. DUBOIS determined the sequence of the strata in the Cromerian and gave its division. It has now happened that many Pleistocene

bones were from the Upper Freshwater Bed, i. e. from the Upper Cromerian, whereas most of the mammalian bones pliocene in C. REID's »Forest-bed« i. e. Middle Cromerian, they were removed from the Lower Freshwater Bed.

The problem of the true stratigraphical position of the sequence of strata which in England are called collectively »Forest bed« or Cromerian has been the subject of a detailed work by DUBOIS. He identifies REID's middle part of the beds with REID's »Forest bed« in a proper sense, but according to him it does not represent an old forest soil, but an accumulation of branches, roots and wood washed down and deposited. According to DUBOIS most of the mammalian bones obtained have to be ascribed to these deposits. Formerly these beds had been called also »Elephant bed« because of the finds of molars of *Elephas meridionalis* which were made especially at their base. According to DUBOIS these Estuarine-beds represent fluvio-glacial deposits and are therefore the equivalent of the »Maas-Rhine diluvium« in Holland and of the gravels with *Elephas meridionalis* in Central and Eastern France which according to PENCK are of Pleistocene age.

Above the Estuarine-bed there follow in the Cromerian, REID's lake (and river) deposits full of root fragments (»Rootlet-bed«). We have to stress DUBOIS' remark that neither *Elephas meridionalis*, nor *Elephas antiquus* nor any other elephant has ever been found in the Upper-Freshwater-Bed, briefly called Freshwater-Bed.

In the Forest-Bed proper (the Estuarine-Bed) *Rhinoceros etruscus* mentioned from West-Runton also for the Upper-Freshwater-Bed is quite frequent. DUBOIS is inclined to believe that in this case the finds are more likely to belong to *Rhinoceros mercki*.

The table given in the work of ABEL BRIQUET will probably have to be supplemented by this evidence collected by C. REID and E. DUBOIS. The »Forest bed de Cromer« mentioned by BRIQUET which he believes to be the equivalent of the Tégelen clays, does not correspond to them as a whole, but only in its lower strata, the Pliocene Lower-Freshwater-Bed, whereas its middle part, REID's Forest-bed proper, has to be considered as Lower Pleistocene. The upper part, the Upper-Freshwater-Bed is, according to DUBOIS' investigation, even of the same age as the strata at Saint-Prest and belongs to the first Pleistocene interglacial period. The question of the limit between the Pliocene and the Pleistocene is also simplified, when we supplement BRIQUET's conclusion (p. 413) by the earlier research of C. REID and E. DUBOIS.

DUBOIS found that the fairly thick freshwater (lake) clays of Tégelen can correspond only to REID's Lower-Freshwater-bed, i. e. to the Upper Pliocene of the English Cromerian, which he had been the first to doubt.

DUBOIS studied the fauna - mammals and molluscs - and the flora of the clays from the brickyards of the Jammersdaalsche Heide at Tégelen near Venlo and determined among other fossils also *Hippopotamus amphibius* L., *Equus stenorhis* COCCHI, *Rhinoceros etruscus* FALC. and *Trogontherium cuvieri* OWEN. SCHREUDER identifies the Dutch finds similarly as the English finds of *Trogontherium cuvieri* with *Conodontes boisvillettii* LAUGEL. The

mammals collected in the clays at Tégelen prove therefore, that the Tégelen clays have to be placed in the Cromerian and are equivalent to its lower part. According to DUBOIS five of its seven species are represented also in Norfolk.

According to DUBOIS the flora of the Tégelen clays would be likewise older than the interglacial Upper-Freshwater-Bed, and he believes it to be Pliocene. As the fauna and flora were derived from the same deposits, the fauna, too, would have to be put down as Pliocene. DUBOIS tries to prove the Pliocene age of the Tégelen clays also by the study of the cervines which he believes to show the characteristics of the Pliocene cervines of England, Italy and especially France, where besides also the flora is of the same character as at Tégelen. Among mammalian remains antlers of stags are the most frequent finds after bones of *Trogotherium* in the Tégelen clays, and DUBOIS has been able here to establish up till now three species, of which *Cervus dicranus* had been described already before from the Upper Pliocene of the Val d'Arno in Italy.

DUBOIS believes in the Pliocene age of the Tégelen clays also in his book mentioned above in which he solves the problem of the sequence of strata in the English Cromerian (1905). Also in his following work (of 1907) DUBOIS is emphatically of the opinion that the Tégelen clays below the fluvio-glacial sands and gravels of the »Rhine diluvium« (better »Maas-Rhine diluvium«) are of Pliocene age. According to DUBOIS, the »Maas-Rhine diluvium« of the Netherlands cannot be anything else than the first Pleistocene glacial period, PENCK and BRÜCKNER's Günzien, J. GEIKIE's Scanian. DUBOIS bases the Pliocene age of the Tégelen clays not only on the stags but especially also on *Equus stenonis*.

DUBOIS it is true points out that the presence of *Rhinoceros etruscus*, *Hippopotamus amphibius major* and *Trogotherium cuvieri*, which are found also in the first interglacial deposits at Mosbach, do not alter the Pliocene age of the Tégelen clays. Besides SCHREUDER identifies *Trogotherium cuvieri* from Tégelen, as already said, with *Conodontes boisvillettii* LAUGEL.

The Upper Pliocene age (Villafranchien) of the Tégelen clays is then proved also by FERNSEN (1931) by the find of *Sus strozzii* and so the clays of Tégelen are placed as an equivalent of the Villafranchien in the period of the English Norwich Crag and the French horizon of Chagny.

Thereof we see that apart from the German localities at Mosbach, Mauer, Jockgrim, it will be possible to compare the locality of Přezletice perhaps only with some English locality, as that of East-Runton mentioned by SCHREUDER, whereas the other English, French and Dutch localities are of Upper Pliocene age and, as shown by SCHREUDER, the lower Pleistocene *Trogotherium cuvieri* FISCHER is represented in these localities by the very closely related *Conodontes (Trogotherium) boisvillettii* LAUGEL.

In the series of finds of *Trogotherium* — Norfolk, Mauer, Mosbach, Přezletice — the connecting link with Taganrog on the Sea of Azov from whence *Trogotherium cuvieri* FISCHER was first described, is Somlyóberg at

Püspökfürdő near the village of Hájó, southeast of Oradea Mare in Roumania.

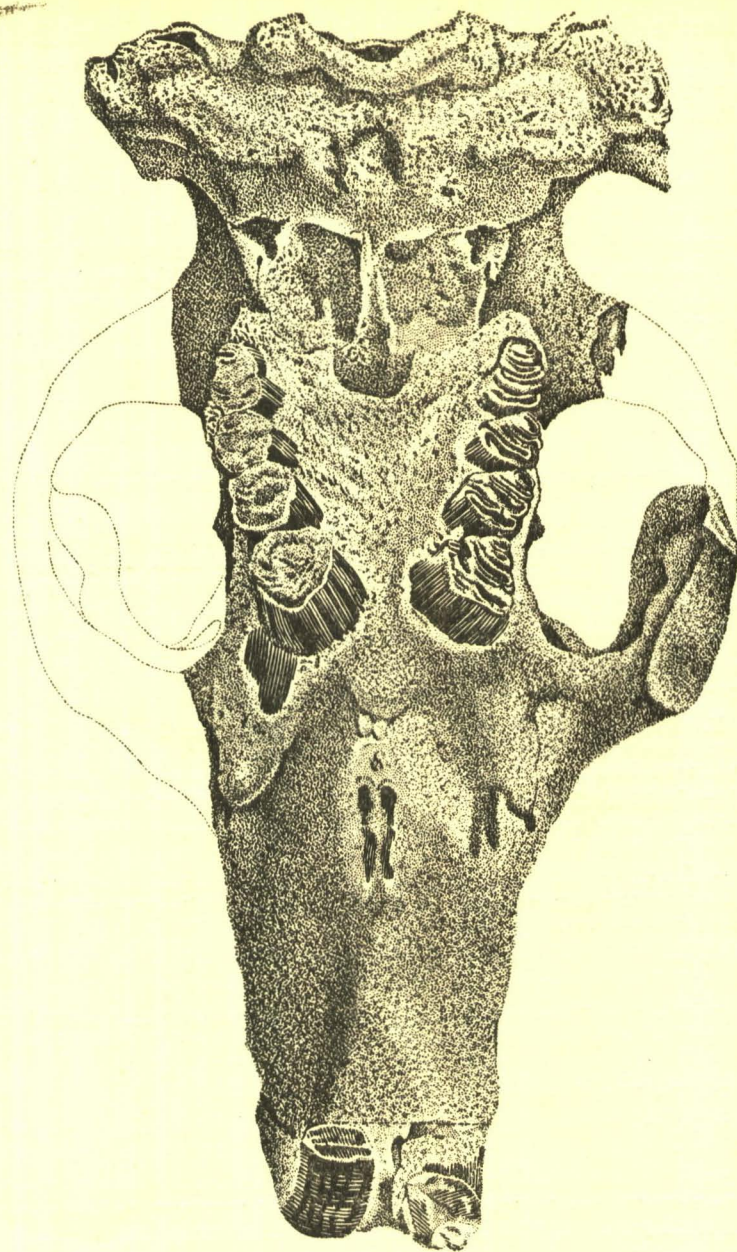
SCHREUDER after studying this find (1925), writes that the finds at Püspökfürdő correspond entirely in shape as well as in the dimensions to the finds of *Trogotherium cuvieri* FISCHER at Mosbach. But in the find of Püspökfürdő it is remarkable that in the western parts of Europe it may be proved that the true *Trogotherium cuvieri* FISCHER is restricted to the Lower Pleistocene, whereas the Pliocene deposits have according to SCHREUDER another species, his *Conodontes boisvillettii*. But just at Püspökfürdő SCHREUDER determined *Trogotherium cuvieri* FISCHER, though we might have expected here again *Conodontes boisvillettii* LAUGEL in the case that the fauna of Püspökfürdő is really preglacial, Upper Pliocene as determined by TH. KORMOS (1930—1, 2, 3, 4), together with the fauna of Beremend, Villány-Kalkberg and Csarnóta. In 1914, v. MÉHELY placed the fauna of Püspökfürdő in the first interglacial period, i. e. in the earliest Pleistocene. But KORMOS established the preglacial origin of these deposits, or rather the preglacial age of the fauna discovered in them, as he believes the so-called warm interglacial periods to be untenable from a biological point of view, and for palaeobiological reasons insists on a division of the Quaternary into three stages connected with each other by transitions, into the preglacial, glacial and postglacial stage (1930, 2), similarly I. BAYER since 1922 (after the notes of J. F. BABOR 1927). In this case he has of course to consider the fauna of a warm period as preglacial. Stratigraphically KORMOS places the fauna of Püspökfürdő in the »Cromerian« of the English Upper Pliocene and, more accurately, into its lower and middle division which he calls Norwich Crag, Weybourne Crag-Shelly Crag (1930, 3, 4). It is of course difficult to compare the Roumanian locality of Püspökfürdő placed by MÉHELY in the first interglacial period and by KORMOS, repudiating interglacial periods, into the preglacial period, with the Cromerian, especially as KORMOS bases his comparison on HARMER's (HINTON's) division of the English Cromerian which is not accepted even by all English authors in the same way. So we see that BOSWELL or WRIGHT (103—104) after HARMER include in the highest sub-zone of the Upper Pliocene, the marine Norwich Crag, the estuarine Chillesfordian (Chillesford Clay and Sand), the marine Weybourian and as the highest stratum the freshwater and estuarine Cromerian, the so-called Forest-Bed Series, the zone with *Elephas antiquus*. But SLATER includes already in the Pleistocene also the period with *Hippopotamus amphibius*, *Elephas antiquus*, *Rhinoceros mercki*, therefore the Forest-Bed (Elephas-Bed) proper and the Upper-Freshwater-Bed by including here also the upper and middle river terrace.

KORMOS, of course, includes entirely in the sense of HARMER's (HINTON's) conception of the English Cromerian the »etwas jüngere, aber noch immer als Pliozän geltende Fauna des Nagyarsányberges bei Villány« in the upper horizon of the Cromerian, i. e. in the Upper-Freshwater-Bed of West-Runton (1930, 3). It is difficult to define one's attitude regarding

these questions without knowing the localities and without studying the fauna. It seems however that MÉHELY was right to place Püspökfördő in the first Pleistocene interglacial period, as this would be in keeping also with the determination of the species *Trogontherium cuvieri* FISCHER just by SCHREUDER who bestowed so much attention upon the discrimination between this species and *Conodontes boisvillettii* LAUGEL, and also with the comparison of the locality with that at Přezletice and with the German localities and with the results of the works of C. REID and E. DUBOIS which discuss the division of the Cromerian. KORMOS is right too, of course, when we remember that he compares Püspökfördő with (HARMER's) HINTON's conception of the Cromerian. The outcome is that the deposits at Püspökfördő are identified with the same horizons of the English Cromerian, placed into the Upper Pliocene by one of the authors and into the Lower Pleistocene by the other. It seems however that more attention will have to be paid to the works of C. REID and E. DUBOIS which contribute much to the solution of this question for the English Cromerian from which all authors start in their comparative studies. The conclusions drawn by E. DUBOIS are proved also by the later studies of PENSEN and VOELCKER and we have to admit that only the studies of E. DUBOIS made possible the mutual comparison of the German and other localities with the horizons of the English Cromerian. When we compare his chronology with that given by KORMOS, i. e. by HINTON, we see that HINTON himself though including in one place the Upper-Freshwater-Bed in the Upper Pliocene (p. 126) approaches a little farther on the opinion of those authors who place the Upper-Freshwater-Bed into the Lower Pleistocene, by saying that there is no great difference of age between the part of the high terrace of Thames at Ingress Vale (HINTON's Pleistocene) and the Upper-Freshwater-Bed at West Runton. Otherwise, HINTON gives *Trogontherium* from the »Cromerian« as well as from the Pleistocene high terrace of the Thames, but without mentioning the species.

Regarding the discovery of the species *Trogontherium cuvieri* FISCHER at Taganrog on the Sea of Azov in the littoral sand, described by G. FISCHER from the collections of Count Alexander Strogonov, the author of the present article would place it likewise in the Pleistocene just like the other Pleistocene finds of *Trogontherium cuvieri* FISCHER, basing his opinions on the statements of NEWTON and SCHREUDER.

The evidence that the river deposits in the quarry below \odot 248 at Přezletice represent the first Pleist. interglacial period is important for Central Bohemia in-as-much as here a true interglacial Günz-Mindelian fauna has been established for the first time in river terrace. Furthermore this find is important because it corroborates the author's opinion that the »Lysoleje« stage of the Vltava terraces is of Upper Pliocene age. The relative height of the river deposits in the quarry below \odot 248 rise to 81 m, whereas the relative height of the rock bottom of the Lysoleje terrace is 89—90 m and the gravels of this terrace reach up to a relative height of 112.5 m above the Vltava north Prague.



Lebka Trogontheria ze spoda. Nalezena na břehu Azovského moře u Taganrogu. Ze sbírky hr. Alexandra Strogonova vycobrazena G. Fischerem na tab. 23. v Memoires de la Société Impériale des Naturalistes de Moscou. Tome II. 1809. Kopie o málo zmenšena.
Skull of Trogontherium, ventral view. Found on the shore of the Sea of Azov, at Taganrog. From the collection of Count Alexander Strogonoff, represented by G. Fischer on plate 23 of the Memoires de la Société des Naturalistes de Moscou. Tome II. 1809. The photograph slightly reduced in size.

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VYSVĚTLIVKY K TABULCE. — EXPLANATIONS OF THE PLATE.

Trogontherium cuvieri FISCHER.

1. Část levé maxilly s M^1 , M^2 , M^3 . Pohled s vnější strany. Dvakrát zvětšeno. Part of the left maxilla with M^1 , M^2 , M^3 , left lateral view. Twice the natural size.
2. Táž část levé maxilly jako obr. 1. Pohled na kousací plochu. Dvakrát zvětšeno. — The same part of the left maxilla as in fig. 1, grinding surface. Twice the natural size enlarged.
3. M^1 dext. Pohled zřepedu. Dvakrát zvětšeno. M^1 dext. Front-view. Twice the natural size.
4. Týž M^1 dext. jako na obr. 3. Pohled na kousací plochu. Dvakrát zvětšeno. The same M^1 dext. as in fig. 3. View of the grinding surface. Twice the natural size.

»*Arvicola amphibius* (L.)«

5. Pravá mandibula s M_1 a M_2 . Pohled na kousací plochu. Zvětšeno 2,75 \times . Right lower jaw with M_1 and M_2 , grinding surface. 2,75 times the natural size.
6. Táž pravá mandibula s M_1 a M_2 jako obr. 5. Pohled s vnější strany. Zvětšeno 2,75 \times . The same right lower jaw with M_1 and M_2 as in fig. 5. Right lateral view. 2,75/1.

Emys orbicularis (L.).

7. 2. costale sinistrum, za živa poraněné a zhojené. Pohled shora. V přirozené velikosti. Second left costal plate, injured in life and healed in. Dorsal aspect. Natural size.
8. Totéž 2. costale sin. jako na obr. 7. Pohled zespoda. V přirozené velikosti. The same second left costal plate as in fig. 7. Seen from below. Natural size.

Esox lucius L.

9. Část levého dentale. Pohled shora. V přirozené velikosti. Imperfect left dentary bone. View from above. Natural size.
10. Táž část levého dentale jako na obr. 9. Pohled s vnější strany. V přirozené velikosti. The same left dentary as in fig. 9, left lateral view. Natural size.

Všechny vyobrazené kusy byly nalezeny v lomu pod kotou 248, sev. od Přezletic, záp. od »Zlatého kopce« a jsou uloženy ve sbírkách Geologicko-paleontologického oddělení Národního musea v Praze.

All the specimens figured here were collected in the quarry north of Přezletice below 248 s. l., west of the »Zlatý kopec«, and are preserved in the collections of the Department of Geology and Palaeontology of the Národní Museum, Praha.

