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A TAPIR TOOTH FROM NOWA WIEŚ KRÓLEWSKA NEAR OPOLE  
(POLAND)

*Abstract.* — A tapir lower premolar ( $P_2$ ), collected from the Miocene (Sarmatian) of Nowa Wieś Królewska near Opole, is described. Its identification as *Tapirus cf. telleri* Hofmann may be also based on similarities displayed by the mammalian assemblage from Opole to that from Göriach which yielded remains of *Tapirus telleri* Hofmann.

## INTRODUCTION

More or less fragmentary remains of the bones and dentition of vertebrates, chiefly mammalian, also shells of freshwater pelecypods and gastropods have — since some tens of years — been collected at Nowa Wieś Królewska near Opole<sup>1</sup>. They were found in bluish Miocene clays (Sarmatian) and have been worked out by Wegner (1913).

Since the end of World War Two these faunal remains have been collected from Miocene clays in the „Bolko” quarry, about 1 km from the pre-war collection site. A systematic search was started there in 1950. It has been continued for several years on a grant from the Institute of Palaeozoology of the Polish Academy of Sciences, for which the writer's warmest thanks are due to Professor Roman Kozłowski.

As a whole the faunal assemblage of the new site resembles that yielded by the pre-war locality, except that the state of preservation of the bone remains is still more fragmentary. They are now being worked out.

The present paper is concerned with the tooth remains of a tapir, thus far never found in this locality. They consist of the first right lower premolar ( $P_2$ ). On its state of preservation it is referable to a young, nearly mature individual since the roots are closed and well developed, although the crown is very little worn.

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<sup>1</sup> Hereafter referred to as Opole.

## MORPHOLOGY OF THE TOOTH

(text-fig. 1; pl. I, fig. A-C)

The tooth here considered is made up of two lophids: the posterior — hypolophid consists of the entoconid and the hypoconid, and the anterior — metalophid consists of the protoconid and the metaconid, also of the most forward cusp — the paraconid. The hypolophid is placed nearly at a right angle to the longest axis of the tooth, while the metalophid runs slightly obliquely to the axis. The posterior area of the tooth is steep, nearly vertical, with the cingulum running across its entire width. In the recent *Tapirus indicus* Desmarest the cingulum is shorter, confined to the central portion of the posterior tooth wall. The crest, extending from the cingulum to the apex of the hypoconid, is less well marked than that in *Tapirus indicus* Desmarest. The anterior face of the hypolophid descends less steeply than the posterior.

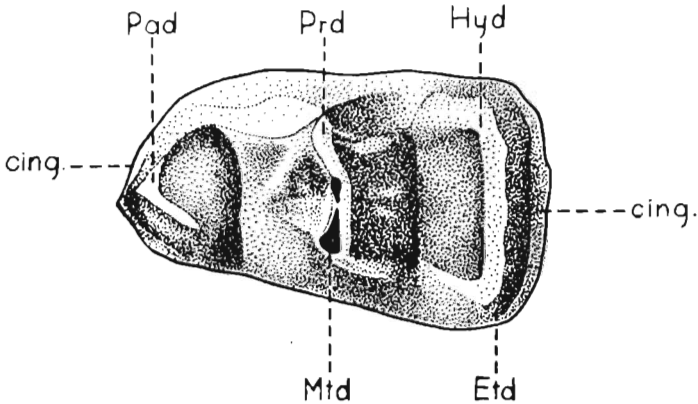


Fig. 1. — Tapir tooth  $P_2$  from Nowa Wieś Król. near Opole; *Pad* paraconid, *Prd* protoconid, *Hyd* hypoconid, *Etd* entoconid, *Mtd* metaconid, *cing.* cingulum.

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A low crest advances forward from the apex of the hypolophid, passing onto the posterior metalophid wall. It is directed towards the apex of protoconid but does not reach it. In *Tapirus indicus* Desmarest this crest extends towards the posterior face of the metalophid, terminating nearly midway between the protoconid and the metaconid. In the Opole specimen there is, moreover, a distinct low crest transversing the posterior metalophid wall, which is missing in the recent *Tapirus indicus*.

From the apex of the entoconid a crest also descends anteriorly with a slight deviation to the centre; it does not, however, reach the valley separating the hypolophid from the metalophid. The hypoconid and the entoconid occur along nearly the same line which meets the medial line

of the tooth at a right angle. They are both of nearly equal height, with a slightly depressed hypolophid between them.

The cusps of the metalophid — the protoconid and the metaconid — also occur along one line running a little obliquely to the longest tooth axis, at an angle of  $110^\circ$ , so that the protoconid protrudes somewhat more to the front. Crests directed antero-centrally extend from the apex of both cusps and unite along the median line; they are separated by a depression deeper than that in the hypolophid. From the bottom of the valley a crest faintly marked ascends along the center of the posterior metalophid wall. Another crest goes from the apex of the protoconid along the margin of the anterior slope of the metalophid. This crest deviates slightly lingually before reaching the apex of the paraconid. The paraconid is somewhat lingually shifted in relation to the median line of the tooth. Two more crests extend from its apex: one runs more forward, the other more to the rear, as in *T. indicus* Desmarest. A slight cingulum occurs at the base of the paraconid in the front of the tooth and it is reached by the anterior paraconid crest. In the recent Indian tapir this cingulum is absent.

Labially the general outside contour of the tooth is slightly domed, the inside contour (lingual) is nearly straight, similarly as in *T. indicus* Desmarest. The bottom of the valley between the paraconid and the metalophid is lingually depressed, while between the metalophid and the hypolophid it is nearly horizontal and only slightly bent backwards. The dimensions of  $P_2$  are stated in table 1.

Table 1

Dimensions of  $P_2$  of the Opole tapir and of *T. indicus* Desmarest (in mm)

Measurements	Opole specimen	<i>T. indicus</i> Desmarest young individ.
Maximum length	22.5	28.8
Breadth along the metalophid (perpendicular to the longest tooth axis)	11.6	14.3
Breadth along the hypolophid	13.5	15.0
Height of cusps (approx.):		
paraconid	6.6	9.2
protoconid	10.8	13.8
metaconid	8.8	12.4
hypoconid	8.0	11.3
entoconid	8.0	11.1

\* Specimen from the Zoological Institute Museum of the Wrocław University: young individual with teeth nearly unworn.

## THE SPECIFIC ASSIGNMENT OF THE OPOLE TAPIR

The difficulty experienced in the specific identification of the Opole tapir comes partly from the fact that one single tooth only has been found, even though it is an unmolarized tooth ( $P_2$ ), partly from the scarcity of available accurate descriptions of tapir dentition. Neither is the size of this tooth a diagnostic feature; it merely enables us to exclude *Tapirus helveticus* H. v. Meyer and *Tapirus hungaricus* H. v. Meyer as having relatively small teeth. On account of its age we may also exclude *Tapirus arvernensis* Cr. & Job., since it occurs in the earlier Pliocene, while the Opole tapir is beyond doubt Upper Miocene in age, although they do not, indeed, differ considerably in size. Thus the only two comparable forms seem to be *Tapirus priscus* Kaup and *Tapirus telleri* Hofmann from Göriach. The former has the second lower premolars of similar size as those in the Opole tapir; it differs, however, in the time of occurrence, being Lower Pliocene in age.  $P_2$  of the latter form have not thus far been found, while those of the other specimen<sup>2</sup> of Göriach tapir and of the Willmandingen<sup>3</sup> tapir, have not yet been described.

Hence the identification of the Opole tapir, based only on one detached tooth, will always be more or less speculative. For this reason the present writer has: 1) compared the faunal assemblages associated with the tapir from Opole and with *T. telleri* Hofmann from Göriach, and 2) attempted to demonstrate that, in view of its dimensions, the tooth of the Opole tapir may have belonged to an individual of the size of *T. telleri* Hofmann.

The following 7 mammalian species and genera are in common to the assemblage of Nowa Wieś Królewska near Opole (Wegner, 1913) and to that of Göriach (Hofmann, 1893):

Species in common:

- Hylobates antiquus* Gervais  
(= *Pliopithecus antiquus* Gervais)
- Erinaceus sansaniensis* Lartet
- Sciuropterus gibberosus* Hofmann
- Mastodon* (*Bunolophodon*) *angustidens* Cuvier
- Anchitherium aurelianense* Cuvier
- Palaeomeryx eminens* H. v. Meyer
- Dicrocerus furcatus* Hensel

<sup>2</sup> Königswald (1930).

<sup>3</sup> Königswald (1930), Schlosser (1902) and Thenius (1959) are of the opinion that the Willmandingen tapir is referable to the species *Tapirus telleri* Hofmann.

Genera in common:	Opole	Göriach
<i>Lutra</i> . . . . .	<i>L. oppoliensis</i> Wegner	<i>L. dubia</i> Blainville
<i>Sciurus</i> . . . . .	Sciuridae sp. indet.	<i>S. göriachensis</i> Hofmann
<i>Steneofiber</i> . . . . .	<i>St. subpyrenaicus</i> Lartet	<i>St. jaegeri</i> Kaup <i>St. minutus</i> H. v. Meyer
<i>Cricetodon</i> . . . . .	<i>C. minutus</i> Lartet	<i>Cricetodon</i> sp.
<i>Aceratherium</i> . . . . .	<i>A. tetradactylum</i> Lartet	<i>A. incisivum</i> Kaup <i>A. minutum</i> Cuvier
<i>Hyotherium</i> . . . . .	<i>H. simorreense</i> Lartet	<i>H. soemmeringi</i> H. v. Meyer
<i>Tapirus</i> . . . . .	<i>Tapirus</i> sp.	<i>T. telleri</i> Hofmann

The relatively large number of species and genera occurring in common, together with the resulting similarity in the age of the two faunal assemblages, reasonably suggest that the Opole tapir may have been conspecific with the tapir remains from Göriach. This seems all the more probable since no other tapir species has thus far been recorded from faunal assemblages of this type.

It still remains an open question whether, in view of its dimensions, the Opole tooth (P<sub>2</sub>) could have belonged to an individual of the species

Table 2  
Comparable dimensions of P<sub>2</sub> and M<sub>2</sub>  
(in mm)

Species of tapir	Length ratio of M <sub>2</sub> and P <sub>2</sub>	Length/breadth ratio	
		in P <sub>2</sub>	in M <sub>2</sub>
<i>T. priscus</i> Kaup, Eppelsheim (after Meyer, 1867)	24.0 : 22.0 = 91.7	22.0 : 13.0 = 59.1	24.0 : 18.5 = 77.0
<i>T. arvernensis</i> Cr. & Job., Valdarno (after Del Campana, 1910)	23.6 : 21.5 = 91.1	21.5 : 13.0 = 60.5	23.6 : 17.0 = 72.0
<i>T. arvernensis</i> Cr. & Job., Auvergne (after Del Campana, 1910)	22.2 : 22.5 = 101.3	22.5 : 14.3 = 63.5	22.2 : 16.8 = 75.7
<i>T. helveticus</i> H. v. Meyer, Eggingen (after Meyer, 1867)	19.0 : 17.0 = 89.5	17.0 : 10.0 = 58.8	19.0 : 14.0 = 73.7
<i>T. telleri</i> Hofmann*	23.5 : 22.5 = 95.7	22.5 : 13.5 = 60.0	23.5 : 18.0 = 76.6

\* *Tapirus telleri*: tooth M<sub>2</sub> from Göriach, tooth P<sub>2</sub> from Opole.

*Tapirus telleri* Hofmann. A comparison of the dimensions of the lower premolars and molars belonging to several fossil species of the tapir shows that the P<sub>2</sub> approaches in length closest to M<sub>2</sub>, the latter being only slightly longer and broader. The dimensions available for comparison, as presented in table 2, do not exclude the possibility that the Opole tooth P<sub>2</sub> may have belonged to *Tapirus telleri* Hofmann. This assignment is indeed reliably supported by the presence of numerous species and genera in common to the mammalian assemblages from Opole and Göriach, making it all the more so probable.

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Wrocław, April 1961*

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## ZĄB TAPIRA Z NOWEJ WSI KRÓLEWSKIEJ K. OPOŁA

*Streszczenie*

Autor opisuje ząb tapira  $P_2$  prawy, znaleziony w Nowej Wsi Królewskiej koło Opoła, niedaleko stanowiska opisanego przez Wegnera (1913), w sinych ilach wieku sarmackiego. Ząb ten należał najprawdopodobniej do *Tapirus telleri* Hofmann. Przemawiają za tym zarówno jego rozmiary i morfologia, jako też fakt, że zespoły ssaków towarzyszących tapirowi w stanowiskach w Nowej Wsi Królewskiej i Göriach są bardzo podobne. Zespoły te mają siedem wspólnych gatunków (*Hylobates antiquus* Gerv., *Erinaceus sansaniensis* Lartet, *Sciuropterus gibberosus* Hofmann, *Bunolophodon angustidens* Cuv., *Anchitherium aurelianense* Cuv., *Palaeomeryx eminens* Meyer, *Dicroceros furcatus* Hensel oraz siedem wspólnych rodzajów (*Lutra*, *Sciurus*, *Steneofiber*, *Cricetodon*, *Aceratherium*, *Hyotherium*, *Tapirus*).

Ząb  $P_2$  z Opoła nie da się bezpośrednio porównać z uzębieniem tapira z Göriach, gdyż ząb taki w Göriach nie został znaleziony. Jednak badania porównawcze rozmiarów  $P_2$  w stosunku do innych zębów, a zwłaszcza w stosunku do  $M_2$ , do którego pod względem długości jest najbardziej zbliżony, wskazują, że ząb ten mógł należeć do tapira wielkości zbliżonej do *T. telleri* Hofmann z Göriach. Wobec tego wydaje się bardzo prawdopodobne, że tapir z Opoła należał do tego właśnie gatunku.

## OBJASNIENIA DO ILLUSTRACJI

Fig. 1 (p. 332)

Ząb  $P_2$  tapira z Nowej Wsi Król. koło Opoła; *Pad* parakonid, *Prd* protokonid, *Hud* hipokonid, *Etd* entokonid, *Mtd* metakonid, *cing.* cingulum.

Pl. I

Ząb  $P_2$  tapira z Nowej Wsi Król. koło Opoła; A strona lingwalna, B strona labialna, C powierzchnia żująca; ca  $\times 3$ .

ЗБИГНЕВ РЫЗЕВИЧ

## ЗУБ ТАПИРА ИЗ НОВОЙ ВСИ КРУЛЕВСКОЙ ОКОЛО ОПОЛЯ (ПОЛЬША)

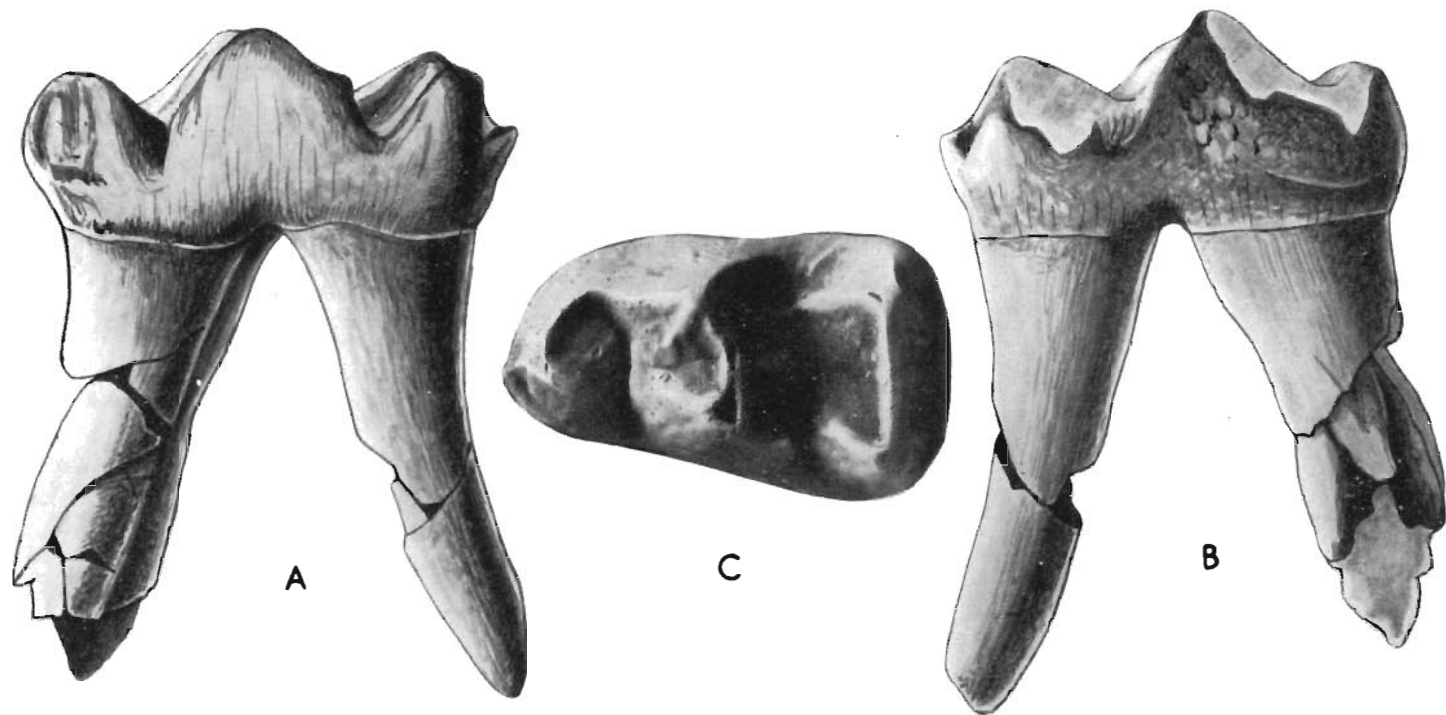
*Резюме*

Автор описывает зуб тапира  $P_2$  правый, найденный в синих глинах сарматских в Новой Вси Крулевской около Ополя, недалеко от места описанного Вернером (1913). Зуб этот принадлежал, вероятнее всего, к *Tapirus telleri* Hofmann. В пользу этого говорит равным образом его величина и морфология, как и тот

факт, что комплексы млекопитающих сопровождающих тапира в Новой Вси Крулевской и Гэриях весьма сходны. Эти комплексы включают семь общих видов (*Hylobates antiquus* Gerv., *Erinaceus sansaniensis* Lartet, *Sciuropterus gibberosus* Hofmann, *Bunolophodon angustidens* Cuv., *Anchitherium aurelianense* Cuv., *Palaeomeryx eminens* Meyer, *Dicroceros furcatus* Hensel) и семь общих родов (*Lutra*, *Sciurus*, *Steneofiber*, *Cricetodon*, *Aceratherium*, *Hyotherium*, *Tapirus*). Непосредственное сравнение зуба  $P_2$  из Ополя с зубами тапира из Гэриях невозможно, так как в Гэриях такой зуб не найден. Однако сравнительные исследования величины  $P_2$  в отношении к другим зубам, а в особенности к  $M_2$ , к которому он по длине наиболее близок, указывают на то, что зуб этот мог принадлежать к тапиру, близкому по величине к *T. telleri* Hofmann из Гэриях. В связи с этим становится весьма вероятным, что тапир из Ополя принадлежал именно этому виду.

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Tapir tooth  $P_2$  from Nowa Wieś Królewska near Opole  
A lingual side, B labial side, C grinding surface; approx.  $\times 3$ .

Phot. M. Czarnocka

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