

Remains of fossil elephants in Poland

H. Kubiak

Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Krakow, Poland - kubiak@isez.pan.krakow.pl

SUMMARY: Beside of some mastodont remains known since the beginning of the 19th century from the present territory of Poland, more than 400 localities of finds of *Elephantidae* are known so far. The remains have been collected during the 19th and 20th centuries. Most of the sites occur along the main rivers of Poland Vistula and Odra, as well as around the scientific centres like Gdańsk, Warszawa, Kraków, Poznań, Wrocław. Skulls, partially preserved skeletons and mainly single teeth and bones belong to three species of fossil elephants: *Palaeoloxodon antiquus*, *Mammuthus trogontherii* and *Mammuthus primigenius*.

1. EARLIEST RECORDS OF PROBOSCIDEANS FROM POLAND

1.1 Proboscideans

The first notes about finds of proboscideans in Poland are known from the 19th century. Pusch (1836) wrote about bones of mastodons “which were not yet exactly determined” found near Warszawa at the Vistula river, in the Carpathian Mts, and in the vicinity of Kraków. However, there is probably a mistake in the determination of those finds which already mentioned Kowalski (1959).

1.2 Mastodonts

Perhaps remains of *Elephantidae* have been described as teeth and bones of mastodons. Later authors were already more precisely in their descriptions and examined the material with greater care. In those earliest publications it has been shown that in the recent territory of Poland remains of mastodons occur only in five localities, i.e. the surroundings of Toruń, Oborniki, Opole, Przeworno (Kubiak 1975) and Bełchatów (Kowalski & Kubiak 1993).

1.3 Elephants

Finds of fossil elephants are mentioned in the

literature since the 19th century for instance Hauer (1851). That find was a well preserved mammoth skull examined and described over one hundred years later (Kulczycki 1955; Kubiak 1980). Several papers were published at the end of the 19th and at the beginning of the 20th centuries dealing with elephant finds from Silesia.

2. FOSSIL ELEPHANTS OF POLAND

Since the beginning of the 20th century papers dealing with finds of elephant remains have been published in Poland. A summary of those finds, with special attention to South Poland has been published in the sixtieth (Kubiak 1965). In this paper are also cited positions of former publications. Among four species of fossil elephants known from the Pleistocene of Europe three of them are known, so far, from the territory of recent Poland.

Those are: *Palaeoloxodon antiquus*, *Mammuthus trogontherii* and *Mammuthus primigenius*.

2.1 *Palaeoloxodon antiquus* (Falconer & Cautley 1847)

This species is known from only few localities of Poland (Kowalski 1959; Kubiak 1965, Ruprecht 1971). The most important finds of

the forest elephant in Poland are three almost completely preserved skeletons found in the Upper Pleistocene deposits (Eemian interglacial) in Warsaw, in Józwin near Konin, and in the vicinity of Ciechanów (Jakubowski 1996).

2.2 *Mammuthus trogontherii* (Pohlig, 1888)

The steppe elephant has been found in Poland, so far, in a dozen localities in Central and South Poland only (Kowalski 1959; Kubiak 1965). Because of the difficulties in the exact determination of remains of this species, it is possible that a part of those remains has been described as belonging to the woolly mammoth (Kubiak 1989). Remains of the elephant from Rzochów, described by Borsuk-Białynicka *et al.* (1969) as *Mammuthus trogontherii* belong after Środoń (1976) and Kubiak (1989) actually to *Mammuthus primigenius*.

2.3 *Mammuthus primigenius* (Blumenbach, 1799)

The woolly mammoth is one of the most common species of Pleistocene mammals in Poland. Hundreds of localities are known. Unfortunately in most of them the stratigraphy is unknown. The finds consist mainly of single bones and molar teeth. Well preserved parts of skeletons and skulls are found very seldom. Two skulls are especially interesting. These are the mammoth skulls from Dębica and Bzianka near Rzeszów. Both are described by Kubiak (1980). The skull from Dębica was not damaged at all. The skull from Bzianka was also well preserved. It has strange characteristics : small dimensions, slender, strongly twisted tusks with downward pointed tip and the adult age of this animal. Another find of special interest is the site Spadzista Street B in Kraków, where remains of about 70 mammoths could be discovered (Kozłowski & Kubiak 1972; Kubiak *et al.* 1974; Wojtal 1996).

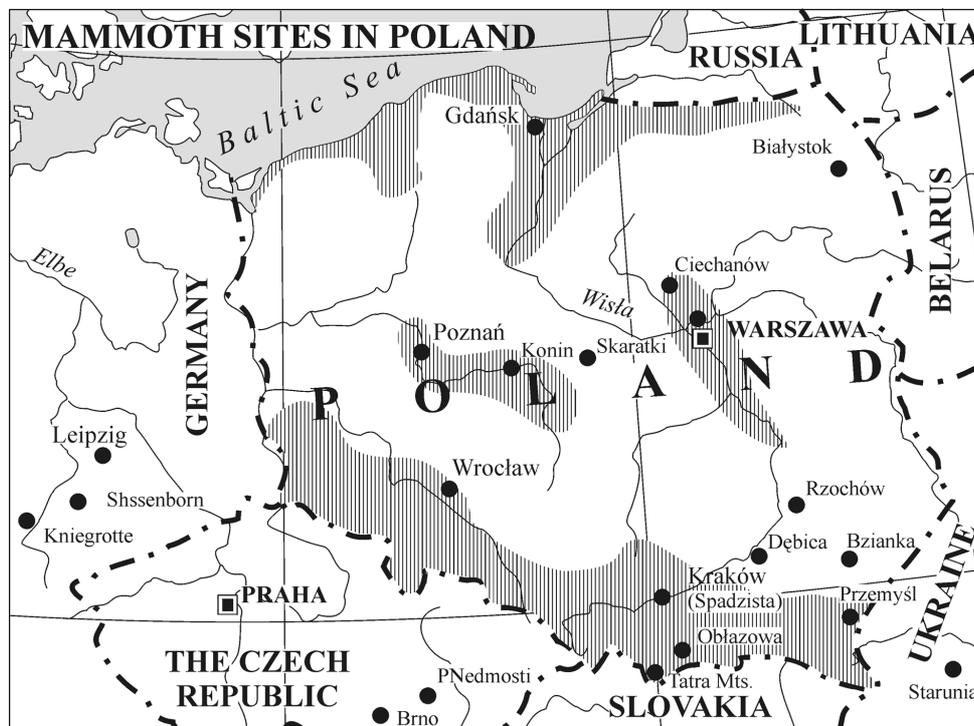


Fig.1 - Distribution of fossil elephant finds (screen) and localisation of main sites.

Tab.1 - List of species and main localities.

Species	Localities	Remains	References
<i>Palaeoloxodon antiquus</i>	Warsaw	skeleton	Jakubowski 1996
	Józwin/Konin	skeleton	Jakubowski 1996
	Ciechanów	skeleton	Jakubowski 1996
	Sokołka/Białystok	molars	Ruprecht 1971
	Tatra Mts.	ridge plate	Kubiak 1965
<i>Mammuthus trogontherii</i>	Rzochów	skeleton	Borsuk-Białynicka et al. 1965
	South Poland:		
	Łańcut	molars	Kubiak 1965
	Jarosław	molars	Kubiak 1965
	Przemysł	molars	Kubiak 1965
<i>Mammuthus primigenius</i>	Skaratki	complete manus	Chmielewski et al. 1962
	Bzianka	skull	Kubiak 1980
	Dębica	skull	Kubiak 1980
	Kraków/Spadzista	bone structures	Kozłowski et al. 1972 Kubiak et al. 1974
		kill site?	Wojtal 1996
	Oblazowa	ivory boomerang	Valde-Nowak et al. 1987

3. RADIOCARBON DATINGS

Only few radiocarbon datings of mammoth finds from Poland are known. The above mentioned skulls: from Dębica = 25,300 y. BP, the skull from Bzianka comes from a mammoth living 14,080 y. BP. Other radiocarbon datings of mammoth finds from Poland show the site Skaratki - more than 37,000 years BC. (Chmielewski & Kubiak 1962), and Cracow-Spadzista-Street B - 21,000 years BP. According to the above cited datings the mammoth finds of Poland derive from a phase about 40,000 to 14,000 years. That means the mammoths from Poland lived during the Middle Vistulian interglacial complex until the Late Vistulian time.

4. REFERENCES

- Borsuk-Białynicka, M. & Wysoczański-Minkowicz T. 1969. *Mammuthus trogontherii* from Rzochów. *Bull. Acad. Pol. Sc., Ser. Géol. et Géogr.*, 17: 143-147.
- Chmielewski, W. & Kubiak, H. 1962. The find of mammoth bones at Skaratki in the Łowicz district. *Folia Quaternaria* 9: 1-29.
- Hauer, F.V. 1851. Fossiler Elephantenschädel von Bzianka bei Rzeszów. *Jb. Geol. Reichsanstalt* 2: 158-159.
- Jakubowski, G. 1996. Forest elephant *Palaeoloxodon antiquus* (Falconer & Cautley, 1847) from Poland. *Prace Muzeum Ziemi* 43: 85-109.
- Kowalski, K. 1959. *Katalog ssaków plejstocenu Polski (A Catalogue of the Pleistocene Mammals of Poland)*. PWN Warszawa-Wrocław.
- Kowalski, K. & Kubiak, H. 1993. *Gomphotherium angustidens* (Cuvier, 1806) /Proboscidea, Mammalia/ from the Miocene of Belchatów and the Proboscidean Datum in Poland. *Acta Zool. Cracov.* 36/2: 275-280.
- Kozłowski, J.K. & Kubiak, H. 1972. Late Palaeolithic Dwellings made of Mammoth Bones in South Poland. *Nature* 237 (No 5356): 463-464.
- Kubiak, H. 1965. Slonie kopalne Polski południowej. (The Fossil Elephants of South Poland - English summary). *Folia Quaternaria* 19: 1-43.
- Kubiak, H. 1975. *Gomphotherium angustidens* (Cuvier, 1806) /Proboscidea, Mammalia/ from the Miocene of Przeworno (Silesia, Poland). *Acta Zool. Cracov.* 20: 469-480.

- Kubiak, H. 1980. The Skulls of *Mammuthus primigenius* (Blumenbach) from Dębica and Bzianka near Rzeszów, South Poland. *Folia Quaternaria* 51: 31-45.
- Kubiak, H. 1989. Trabowce - Proboscidea. In K. Kowalski (ed.), Historia i ewolucja lądowej fauny Polski (History and Evolution of the Terrestrial Fauna of Poland). *Folia Quaternaria* 59-60: 203-208.
- Kubiak, H. & Zakrzewska, G. 1974. Fossil mammals. In Upper Palaeolithic Site with Dwellings of Mammoth Bones - Cracow, Spadzista Street B. *Folia Quaternaria* 44: 77-95.
- Kulczycki, J. 1955. Les ossements des mamouths. *Palaeont. pol.* 7: 1-65.
- Pusch, G.G. 1836. *Geognostische Beschreibung von Polen sowie der übrigen Nordkarpathen-Länder*. Stuttgart u. Tübingen: J.G. Cotta.
- Ruprecht, A.L. 1971. Słof lény (*Palaeoloxodon antiquus*) w północno-wschodniej Polsce (The Forest Elephant /*Palaeoloxodon antiquus*/ in S-E Poland). *Folia Quaternaria* 37: 19-21.
- Środoń, A. 1976. Late-Pleistocene Flora and Mammoth Skeleton from Rzochów near Mielec (S.Poland). *Biul. Periglac.* Łódź 26: 299-309.
- Valde-Nowak, P., Nadachowski, A. & Wolsan, M. 1987. Upper Palaeolithic boomerang made of a mammoth tusk in south Poland. *Nature* 329: 436-438.
- Wojtal, P. 1996. The Cracow Spadzista Street (B) Upper Paleolithic Site. *Current Research in the Pleistocene* 13: 73-75.