Studies on Pleistocene and Holocene Mammals from Poland: The Legacy of Edward Feliks Lubicz-Niezabitowski (1875–1946).

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"Unable to place the future without respect for the past."

(Own thought)



INTRODUCTION

Edward Feliks Lubicz-Niezabitowski (1875–1946) was a Polish scientist, biologist, zoologist, and physician. In the years 1928–1929, he served as *Rektor* (Chancellor) of the University of Poznań.

His scientific achievements include about 150 works in medical and natural sciences, and in topics as diverse as entomology, botany, zooarcheology, and the study of modern vertebrates and Pleistocene mammals. At the same time, he also dealt with issues of natural protection.

The skull from Barycz with a deformity in one antler is an especially important find among the remains of giant deer.

Baryc

Białys Gnato

Ludwi Małop

Masłó Oborn

8 Prosn

9 Wielk

1 Turza

More recently, a revision of the skull was carried out using modern methods, such as gross morphology, radiography, computed tomography, and histopathology (Pawłowska, 2014).

Tab. 4 Eurasian elk (Alces alces).

	Localities (old name)	Year when found	Context	Cranial elements	Post-cranial eleme
	Poland				
1	Bednary near Pobiedziska			antler	
2	Dunajec river		peat	antlers	
3	Gościeszyn near Obra river			antler fragment	
4	Jaszczurówka near Zakopane	1889			skeleton, female
5	Kotowiecko			antler fragment	
6	Krześlice near Pobiedziska	1861	marl		almost complete sk
7	Lubosz			antler fragment	
8	Łabiszyn near Noteć river			antler	
9	Łukaszewko near Trzemeszno	1928	marl, groundworks		almost complete sk
10	Miłosław			antler fragment	
11	Niż Polski				
12	Połajewo near Oborniki			antler fragment	
13	Poznań Główna (Główna near Poznań)	1928			skeleton
14	Prosna river		fluvial	antler fragment	
15	Rogówek			antler fragments	
16	Środa			antler fragment	
17	Warta river near Oborniki		fluvial	cranium and antler fragments	

Tab. 3 Giant deer (*Megaloceros giganteus*).

ities (old name)	Year when found	Context	Cranial elements		Post-cranial elements	Niezabitowski
Poland						
cz near San river	1934/5?	loess	cranium and antlers			1934,1935
stok Dojlidy (Doilidy near Białystok)	before 1899		antler			1934, 1935
owice	before 1882		antler			1934, 1935
inów near Kraków	before 1911		cranium and antlers			1934, 1935
polska	before 1912		6 fragments of craniu	im and antlers		1934, 1935
ów na Śląsku	before 1731					1934, 1935
niki	before 1900	gravel pit			bones	1926
na river near Robaków	before 1896	fluvial	antler			1934, 1935
kopolska	before 1913			1 A REAL		1934, 1935
Ukraine						
river near Włodzimierz Wołyński	1887	peat	whole antler	1.8	i in f	1935
				r <u>om</u>		

ViezabitowskiIn peatlands, especially in1929bWielkopolska and Pomorze,1912bWielkopolska and Pomorze,1929b, 1932complete skeletons of elk, bison,1929b, 1932aurochs, and deer were found in situ,1929b, 1932as were redeposited skulls and bones1929b, 1932of these animals (Niezabitowski,1929b1933b).

^{9b}/_{9b} Two of Niezabitowski's writings are wholly dedicated to his work on Eurasian elk remains (*Alces alces*),

(www.amu.edu.pl)

Fig. 1. Portrait of Professor Niezabitowski.

The purpose of work

The purpose of this work is to present the legacy of Edward Feliks Lubicz-Niezabitowski in the form of published results of his studies of Pleistocene-Holocene mammalian remains found at various sites in Poland. His legacy has both methodological and scientific significance. Reading his morphological descriptions of remains, one is struck with how easy it is to visualize the specimens. The measurements of the specimens are described in excellent detail. In fact, rewriting the descriptions into today's standards would present no problem. The locations of the finds, where known, are so precisely described that today, over a century later, they can be easily found on a map.

Methods

This article does not attempt to verify the descriptions of the specimens, but instead provides a summary based on the sources available in the bibliography. The current storage locations of the specimens have not been checked. However, an attempt was made to find specimens in the collections of the researcher's institution (Institute of Geology, Adam Mickiewicz University), which turned up certain of the specimens, such as the woolly rhinoceros skull fragment. The year of discovery of a specimen is not known in all cases; where unknown, Tables 1-10 give an indicative date that precedes the publication of the find.

RESULTS

All of his published and accessible analyses of fossil material were used to prepare a faunal list specified for each taxon, reconsidering the names of sites, which have in some cases been renamed, due to geographical updates.

The collected results of his analyses show the taxonomic diversity of mammals. Among others, he identified remains of woolly mammoth (*Mammuthus primigenius*- Table 1), straight-tusked elephant (*Elephas (Palaeoloxodon) antiquus*- Table 1), woolly rhinoceros (*Coelodonta antiquitatis*- Table 2), giant deer (*Megaloceros giganteus*- Table 3), Eurasian elk (*Alces alces*- Table 4), European bison (*Bison bonasus*- Table 5), steppe wisent (*Bison priscus*-Table 6), reindeer (*Rangifer tarandus*- Table 7), horse (*Equus* sp.- Table 8), Eurasian cave lion (*Panthera leo spelaea*- Table 9), and cave bear (*Ursus spelaeus*- Table 10), and other taxa (*Capra hircus, Cervus elaphus, Canis lupus*,

Tab.1 Woolly mammoth (*Mammuthus primigenius*) and straight-tusked elephant (*Elephas* (*Palaeoloxodon*) antiquus). Elephantine remains were described by Niezabitowski from 19 localities. The bones from one (Nowy Targ) represent elements of a single individual.

Localities (old name)	Year when found	Context	Species	Cranial elements	Post-cranial elements	Niezabitowski
Poland						
1 Kraków, vicinity			E.a.	molar: upper M2		1912a
2 Oborniki	before 1903	gravel pit	E.a.	molars: upper M2 and lower M3		1912a, 1926
3 San river near Przemyśl	1888	fluvial	E.a.	molar: lower M1		1912a
4 Warszawa Szczęśliwice (Warszawa)	before 1883, 1884	1	E.a.	3 molars		1912a
5 Dunajec river near Tarnów		fluvial	E.a./Mammuthus sp.	molars: upper M1, upper M2, upper M2		1912a
6 Barycz near Przemyśl			M.p.		bones	1934
7 Dunajec river near Ludźmierz		fluvial, gravel	M.p.	molar: upper M2		1912b
8 Góra Bronisławy, Kraków		loess	M.p.	molar: upper deciduous M2		1912a, 1938d
9 Nowy Targ		loam; brickyard	M.p.		bones, one individual: cervical vertebra, thoracic vertebra, rib, carpal bone, calcaneus	1912b
10 Oborniki	before 1900	gravel pit	M.p.		bones	1926
11 Okiennik Cave near Ojców	before 1938	cave	M.p.	molars: 2 lower deciduous M2 (presumably one individuals)		1938c, 1938d
12 Poznań Główna (Główna)			M.p.		bones	1926
Poznań Szelągowska (Szeląg near Poznań)	before 1926		M.p.		bones	1926, 1929a
13 Rogoźnik, Rogoźniczek stream	before 1852	fluvial	M.p.	tooth		1912b
14 Zalesie near Jarocin	1906	depth: 3.5-4m	M.p.		bones	1926
15 Oborniki			M.t.?	lower deciduous M3		1912a
16 Wisłok river		fluvial, gravel	Mammoth		bones	1931
17 Oborniki	before 1905	gravel pit	Mastodon longirostris	tooth		1918, 1924, 1926
18 Toruń, vicinity			Mastodon zaddachi'			1924
19 Mammutowa Cave near Ojców		cave			bones	1932
Ukraine						
1 Sąsiadowice near Sambor		groundworks, clay, depth: ca 5m	E.a.	molar: lower M2?		1912a
2 Sławuta, Wołyń			E.t.	molar: M2		1912a
3 Starunia		ozocerite mine	M.p.		skeleton and skin	1911, 1914
4 Lwów Łyczaków	1913	sands, Miocene	Mastodon tapiroides	tooth		1918, 1924

Wielkopolska		3 cranium			
Wielowieś		antler fragments			
Wisłok river	fluvial, gravel		ł	oones	
Żabikowo		cranium	, 1		
			1/1h		Ale
Ukraine			, (Inter		MA
Strwiąż river near Felsztyn	peatland	antlers	(Differ	and and the	
Strwiąż river near Głęboka			1 all	- MA	
				000	
				W	- AL
				11	

Niezabitowski gave an overview of the 8 finds of European bison in Poland, in the context of the 10 bison finds in Europe of the time, in his work entitled "The fossil remains of bison (*Bison bonasus* L.) in Polish lands" (Niezabitowski, 1931).

Attention is there paid to the discovery of a bison skeleton and a human skeleton, found together at a depth of 4–6 m in peat in Grabów, in the northern part of Poland. Along with these two skeletons was found an artifact—a gneiss axe, according to Niezabitowski.

and this taxon is also dealt with in other writings (Niezabitowski 1929, 1932). 1932 1932 1932 1932 1932

Tab. 5 European bison (*Bison bonasus*).

ocalities (old name)	Year when found	d Context	Cranial elements	Post-cranial elements	Niezabitowski
Poland					
rodnica			cranium		1931
zudec, Wisłok river	before 1931	fluvial, gray silt and gravel	cranium-male		1931
zudec, Wisłok river	1925	fluvial	cranium-male		1931
alinowo	before 1909	lake	cranium		1931
oręczyn		peatbog	cranium		1931
rabów		peat, depth: 4-6m		skeleton-male (and human skeleton)	1931
wno near Poznań			cranium fragment and horn cores		1938a;1938b
1ałopolska			cranium-male, horn core-male		1931
sieczek		peatbog	cranium		1931
zeszów, Wisłok river		fluvial	cranium-female		1931
tarkowiec Piątkowski near Miłosław Starkówiec Piątkowski near Miłosław)		peat		presumably complete skeleton, male	1938a; 1938b
Vinna Góra (Winnagóra)	06/1937	peat, depth: 2.6m		complete skeleton	1938a
Ukraine					
1ałkowice			horn core-female		1931
rodno			cranium-female		

Tab. 6 Steppe wisent (*Bison priscus*).

ocalities (old name)	Year when found	Context	Cranial elements	Post-cranial elements	Niezabitowski
nełmno, Wisła river	before 1909	fluvial	cranium		1948b
ryżyna	25/06/1937	sands, depth: 5m	cranium		1948b
borniki	before 1900	gravel pit		bones	1926
kiennik Cave near Ojców	before 1938	cave		bones	1938d
oznań			cranium		1948b
oznań Szelągowska (Szeląg near Poznań)	before 1929			bones	1929a
zew	before 1948		cranium		1948b
alesie near Jarocin	1906	depth: 3.5-4m		bones	1926

Tab. 8 Horse (*Equus* sp.).

Tab. 7 Reindeer (*Rangifer tarandus*).

							2
	Localities (old name)	Year when found	Context	Cranial elements	Post-cranial elements	Niezabitowski	3 4
1	Czułów, Murek Cave		cave, lower layer			1914	
2	Gądki					1914	
3	Gniezno					1914	5
4	Maszyce, Maszycka Cave		cave			1914	6
5	Mników, Jaskinia na Miłaszówce		Neolithic layer (?)			1914	
6	Murowana Goślina					1914	
7	Nowy Sącz					1914	
8	Oborniki		in gravel			1914	
9	Okiennik Cave near Ojców	before 1938	cave		bones	1938d	
10	Piekary, Jaskinia na Gołąbcu		cave, lower layer			1914	
11	Poznań Naramowicka (Naramowice)		peat			1914	
12	Tuczępy					1914	
13	Wierzchowie, Mammutowa Cave		cave			1914	
14	Wisłoka river near Dębica		fluvial	cranium		1914; 1931	
15	Zalesie near Jarocin	1906	depth: 3.5-4m, in gravel		bones	1914; 1926	

			Localities (old name)	Year when found	Context	Species	Cranial elements	Post-cranial elements	Niezabitowski
	1		Dunajec river		gravel		teeth		1912b
	2		Oborniki	before 1900	gravel pit	E.c.		bones	1926
	3		Okiennik Cave near Ojców	before 1938	cave	E.sp.		bones	1938d
ski	4	А	Poznań Główna (Główna)			E.c.		bones	1926
14		В	Poznań Szeląg (Szeląg)			E.c.		bones	1926
14		С	Poznań Szelągowska (Szeląg near Poznań)	before 1929		E.sp.		bones	1929a
14	5		Zalesie near Jarocin	1906	3.5-4m	E.c.		bones	1926
14	6		Złoczów			E.sp.	cranium		A&N, 1914



Tab. 9 Eurasian cave lion (Panthera leo spelaea).

Kowanówek near	•		Localities (old name)	Year when found	Context	Cranial elements	Post-cranial elements	Niezabitowski
where the mandible	of a cave		Poland					
lies was found in	the meant	1	Bębło, Jaskinia Bębłowska Dola		cave, lower layer			1925
lion was found, is	the most	2	Jaskinia Magurska, Tatra Mts. (Grota Magura,Tatra Mts.)	before 1925	cave		2 bones	1925; 1938c; 1938d
northornproot place	with any	3	Kowanówek near Obornik		gravel pit	mandibula with teeth		1938c; 1938d
northernmost place	with cave	4	Milowice		sand mine			1938d
lion romoino in	Poland	5	Ojców groty, vicinity	before 1925	cave			1925; 1938c; 1938d
lion remains in	Polanu	6	Wierzchowie, Jaskinia Wierzchowska Górna		cave, lower layer			1925
(Niezabitowski, 1938c	1/							
(Mezabilowski, 19500	4 / -		Ukraine					
		1	Wołyń	before 1925				1925; 1938c; 1938d
		2	Rudki			maxilla with teeth		1938c; 1938d
		-						10000, 10000

Among the remains of woolly rhinoceros, which are known from 22 localities, fragments of skulls and loose teeth are almost as well represented as bones.

DOLLES.								
		Localities (old name)	Year when found	Context	Species	Cranial elements	Post-cranial elements	Niezabitowski
The specimen from	1	Poland	1000		6		a constru	1025
-	1	Czarnków Czerwonak (Poznań Czerwonak), Warta river	1909 1910	fluvial	C.a. C.a.		scapula radius	1926 1926
Starunia (Ukraine) is	3	Gołaszyn near Oborniki	-	iluviai	C.a.	lower tooth		1926
	4	Jankowo	1909		C.a.		tibia	1926
the best known, due to	5	Karzec near Gostyń	12/03/1889		C.a.		pelvis, femur	1926
*	0	Kielce Kadzielnia (Grota Kadzielnia)			C.a.			1926
its completeness, as it	/	Kobylnica Kowanowo near Oborniki	-		C.a. C.a.	cranium fragment, upper tooth, lower tooth mandibula with tooth		1926 1926
 Interview of the second se Second second se Second second sec second second sec	9	Kowanówko near Oborniki	-		C.a.	lower teeth	metacarpal III	1926
is preserved along	10 A	Luboń near Poznań (Lubań near Poznań)	-		C.a.	upper tooth		1926
	В	Luboń (Żabikowo)	-		C.a.	mandibula with tooth, lower tooth		1926
with the skin and	11	Mechowo near Swarzędz	20/03/1890	gravel	C.a.	cranium fragment, mandible with teeth, lower teeth	metacarpal IV, pelvis	1926
entrails.	12	Oborniki	before 1900; 1905; 1908; 1909; 1911; 1912; before 1926	gravel pit	C.a.	cranium fragment, upper teeth, mandibula with teeth, lower teeth	, thoracic vertebra, scapulae, humeri, radii, pelvis, femur, astragalus, metatarsus III	1926
Also noteworthy are	13	Ostrzeszów	-		C.a.	cranium fragment		1926
	14	Poland	1910;1912;1918		C.a.	upperteeth	scapulae, ulnae, tibiae, astragalus	1926
well-preserved skulls	15 A	Poznań Dębiec (Dębiec near Poznań)	1905;1907;1909;1 911;1919		C.a.	crania	scapula, humeri, metacarpal IV, pelvis	1926
described from	В	Poznań Główna (Główna)	-		C.a.		bones	1926
	C	Poznań Malta	25/10/1889;		C.a.	mandibula with teeth	pelves	1926
Poznań	D	Poznań Starołęka (vicinity of Starołęka)	-		C.a.			1926
	F	Poznań Szelągowska (Szeląg near Poznań) Poznań Wilczy Młyn (Wilczy Młyn-Poznań)	1913 1906		C.a. C.a.		radius, tibia, metatarsal III pelvis	1926, 1929a 1926
(Niezabitowski, 1926).	G		1897		C.a.	crania, upper tooth	humerus, radius	1926
(н	Poznań Zegrze (Zegrze near Poznań)	1909		C.a.	lower tooth	pelvis	1926
A	1	Poznań, vicinity	-		C.a.	cranium fragment		1926
	16	Prosna river	-	peat	C.a.	mandibula with teeth	rib	1926
	17 18	Śrem Wialkonalska	1907		C.a. C.a.		atlas ulna	1926 1926
Caller Contractor	18	Wielkopolska Wierzenica near Mechowo	-		C.a.		radius	1926
	20	Zalesie near Jarocin	1906;1910	depth: 3.5-4m		lower tooth	scapula, pelvis	1926
	21	Oborniki	-	gravel pit	R.m.	tooth		1926
	22	Okiennik Cave near Ojców	before 1938	cave			bones	1938d
		Ukraine						1010 1055
	1	Biała Cerkiew (Złoty Potok) Starunia	before 1853 1929		C.a. C.a.	cranium	skeleton and skin	1913a, 1926 1911, 1914
	2	Jiaruma	1929		C.a.		SKEIELUH AHU SKIII	1911, 1914

	Localities (old name)	Year when found	Context	Cranial elements	Post-cranial elements	Niezabitowski	Tab. 10 Cave bear
1	Dunajec river		fluvial, gravel	teeth		1912b	(Ursus spelaeus).
2	Jaskinia Magurska, Tatra Mts. (Grota Magura, Tatra Mts.)	before 1938	cave		bones	1938c	
3	Jaskinia Wierzchowska Górna		cave	mandibula with teeth		1898b; 1899	
4	Mammutowa Cave near Ojców		cave		bones	1932	

It is worth quoting Niezabitowski on the care of specimens using the methods of the time: "Excavated specimens should be carefully wrapped in yarn or paper and tied with string. The place of the find should be detailed on an attached piece of paper, along with information on the quality of the soil in which the item was found. The wrapped item should be covered in hay, straw, straw, or shavings and sent in a package to the Museum." (Niezabitowski, 1933b).

CONCLUSIONS

A significant number of specimens come from sites in Wielkopolska in Poland, and some of the fossil remains originate from contemporary Ukraine. Some specimens have been presented in their cultural context.

Niezabitowski's work provided knowledge of morphological and morphometric issues and zoogeography, along with environmental aspects of animals.

As his research belongs to the period between the World Wars, it is difficult to quantitatively and qualitatively assess the surviving state of his specimens. In this context, his published works (most of which have good illustrations of the specimens), constitute an invaluable source of information from the first half of the century.

The collected data can be used for synthetic works concerning diversity and occurrence of Pleistocene mammals in Europe, with reference to Poland.

Dedication

This work is dedicated to the memory of Edward Feliks Lubicz-Niezabitowski, in appreciation of his enduring legacy to research into the remains of Pleistocene and Holocene mammals from Poland.



University of Adam Mickiewicz

VI International Conference on Mammoths and their Relatives



