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## The “gentle giants” – almost exterminated, but saved ... a contribution to the history of the European bison breeding in Germany

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**Abstract:** The beginning of the European bison breeding in Germany can be dated to the year 1865, when the Prince of Pless acquired five European bison from Białowieża. Animals that were bred there, came in 1888 to the Berlin Zoological Garden and their descendants were distributed over all Germany and abroad. The Lowland-Caucasian line was established in 1911 in “Hagenbecks Tierpark” in Stellingen and continued in Scharbow/Mecklenburg.

After the World War First, the private reserve in Boitzenburg/Uckermark next to Berlin was the most important breeding center in Germany. European bison from Boitzenburg played an important role in the construction of the herds in Hellabrunn and Springe and thus became the basis for numerous other groups, especially in Hardehausen, established in 1958. With animals from Poland the “Wisent-Island” on the Damerower Werder in the former German Democratic Republic was founded in 1957, and has since contributed more than 300 calves for the restitution of the European bison.

**Key words:** wisent, restitution, history, Germany

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### Introduction

The text corresponds to a lecture presented during the conference on May 18<sup>th</sup> 2017, on the 60<sup>th</sup> anniversary of the “Wisentreservat Damerower Werder” (Böhme 2016).

It is limited to the part of efforts towards the species restitution by the development of sustainable European bison breeding in Germany – which, however, can never be seen in isolation. The period stretches from the 19<sup>th</sup> to the middle of the 20<sup>th</sup> century, when the founding of the “Wisentreservat Damerower Werder” and the “Wisentgehege Hardehausen” started a phase which led to an increase in the number of European bison in more and more breeding centers which through an increase of an effective population numbers considerably contributed to the species' conservation.



## Origins of the European bison breeding in Germany

The year 1865 marks the beginning of modern European bison breeding, when Hans Heinrich XI, Prince of Pless received five European bison from Białowieża from Tsar Alexander II, in exchange for twenty of his famous red deer.

Into this primeval forest region of eastern Poland, back then part of the Tsar empire, the last Lowland bison had retreated after centuries of destruction of their habitat and hunting all over Europe. Apart from Białowieża, there was left only a small population of the mountain variety of this species, which had been discovered a short time before, in the Caucasus (Fig. 1).



Fot 1. *Bison bonasus caucasicus* wild

In 1893, the duke purchased another five bison and the game reserve of the European bison in Pless with the birth of more than 200 calves provided a solid base for sustainable breeding of this species not only in Germany.

As early as 1888, a bull from Pless came to the Berlin Zoological Garden. PLANET, the number one of the later established pedigree book, became one of the ancestors of the breeding stock there and the genes of other Pless bison are represented in most of today's herds of European bison.

The Berlin Zoo initially produced only Lowland bison, but in Germany the bison of the Lowland-Caucasian breeding line make up the largest part of the population. This line was not established by the “Society for the Protection of the European Bison” after 1924, but can be traced back even to 1911.

In 1907, the only Caucasian bison ever to come to Western Europe, an about one-year-old bull calf caught in the Caucasus, was brought to the “Tierpark Hagenbeck”

in Stellingen. There, a cow named GARDE from Gatzyna in Russia was joined to that young bull named KAUKASUS.

The first calf of the two and thus the first Lowland-Caucasian bison was born on 23 September 1911, and went as HAGEN into the history of the European bison breeding.

In 1916 HAGEN was acquired by Heinrich von Beyme for his breeding enterprise at Scharbow in Mecklenburg; there he had ten descendants, some of them were sent abroad, including three of them in 1926 and 1933 transferred to the European bison reserve of Count von Arnim in Boitzenburg.

But the time had come for the free-living bison. In 1914, 727 European bison were counted in Białowieża, of which only nine remained after the war. In April 1919, the last Lowland bison was poached there, and in 1927 the last Caucasian bison died in the Caucasus.

Thus the European lowland bison had been wiped out in the wild, and the Caucasian bison became completely eradicated. It was the last moment for the rescue of the species.

### **The last European bison, the pedigree book and the "founders"**

On 26 August 1923, the "Society for the Protection of the European Bison" was founded in Berlin. The President of the society was Dr. Kurt Priemel, director of the Frankfurt Zoological Garden. He had already created a register of the European bison being alive on 15 October 1922, which was the base for a survey performed on 31 December 1924.

At that time there were only 54 European bison of assured pedigree worldwide, among them 29 males and 25 females. From this number, 20 animals were maintained in Germany, in the zoos of Berlin, Frankfurt and Hamburg as well as in the enclosures in Scharbow and Boitzenburg. From German breeding centers descended 31 animals, including the last three survivors of the breeding reserve in Pless, which belongs to Poland since 1922 and is called Pszczyna.

KAUKASUS already died on 25 February 1925. However, up to 1924, 14 of his descendants, mainly descendants of HAGEN, had established the breeding line of the Lowland-Caucasian bison, a fact which is often described incorrectly.

For the purpose of clarifying the status and origin of animals registered in the pedigree book, all European bison with proven pedigree received the name, whose initial letters indicated the origin (breeding center), e.g. "PL" for Pless, "BE" for Berlin and "BO" for Boitzenburg, and were numbered consecutively.

In the first edition of European Bison Pedigree Book issued on 15 April 1932, not only the living E. bison were listed – as has been done later – but also their identifiable ancestors. Thus, 28 animals, whose parents were unknown, and ten of which had already died, were identified as "founders".

The lines of eleven founders became extinct by 1951, as determined by an American biologist 30 years later. Thus 17 founders remained, of which three pairs as well as a group of three animals were represented by only one offspring, which was classified as a founder. Therefore, contemporary European bison can be assigned to only twelve founders (Slatis 1960).

As Professor Wanda Olech of the Warsaw University of Life Sciences, a leading expert on this subject, has noticed, these facts “are very often confused”. Such statements like “from the group of 54 only 12 reproduced” or “all 54 surviving animals were descendants of 12” are not true (Olech 2009).

### **Beginning in Boitzenburg**

Besides the Berlin Zoological Garden, the enclosure of Count von Arnim-Boitzenburg was the most important breeding center in Germany. From 1926 there was carried out a successful breeding with three sons of HAGEN from Scharbow and two cows from Berlin and Frankfurt; 23 out of 35 calves are derived from these three bulls (Fig. 2).

In 1932, BOTHO-ERNST was born as the first European bison whose parents were both born in Boitzenburg, and three years later he founded the third generation.



**Fot 2.** European bison in Boitzenburg

## Boitzenburg European bison in Germany...

Fifty European bison lived in Boitzenburg until 1945. More than half of animals bred there were donated by Count von Arnim to other breeding centers, thereby effectively promoting the goal of species conservation. A significant contribution to the captive breeding was the transfer of European bison from Boitzenburg to Springe and Hellabrunn (Fig. 3).

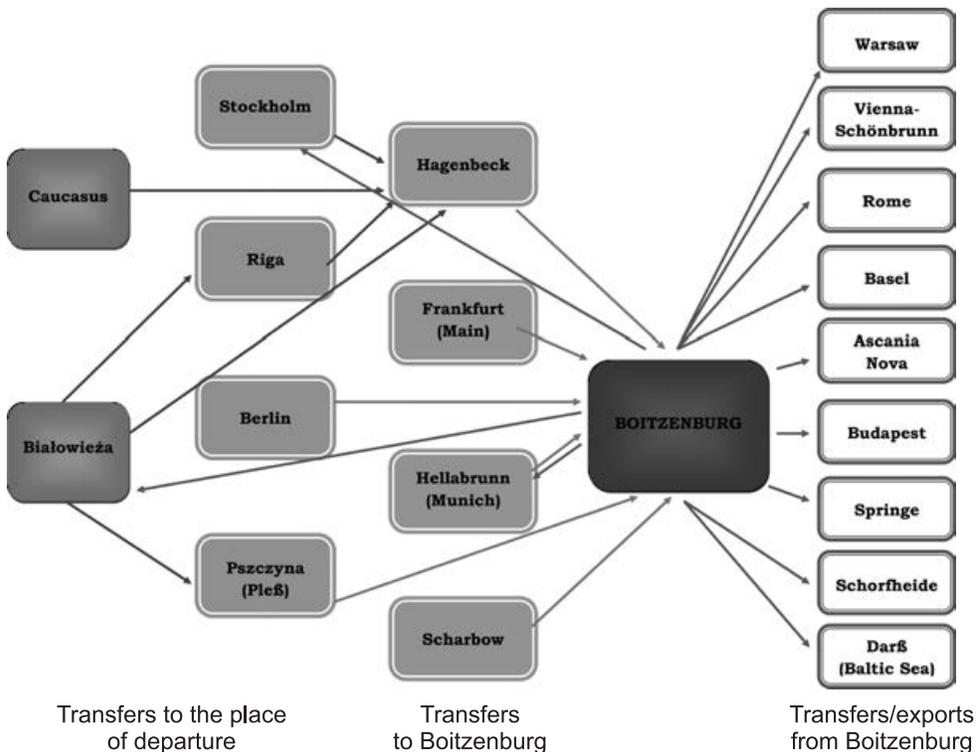


Fig 3. Origin and remaining of the Boitzenburg Europe bison

In 1934, four cows from Boitzenburg went to the first “Staatlichen Deutschen Wisentschutzpark” in the former “Saupark Springe” near Hanover. All four were mated with the Berlin breeding bull BERNSTEIN as well as since 1943 with PLUM, born in Pless. A total of 27 of the 37 calves born until 1946 in Springe were descendants on the maternal side of Boitzenburg E. bison (Fig. 4).

Three cows of these came to the Hellabrunn Zoo in Munich in 1938 followed by two E. bison bulls from Boitzenburg in 1939. One of these bulls, BOB, a Boitzenburg bison of the third generation, produced until 1946 nine calves with the cows from Springe.



**Fot 4.** M 249 SPROSS in Darß

A bull from Springe and two cows from Hellabrunn later founded breeding group in Hardehausen in 1958. All three animals can already be traced back to the Boitzenburg line in the "grandparents generation". Only in Springe and Hardehausen, more than 500 European bison have been born since the beginning of the breeding program, of which the predominant part descends of Boitzenburg ancestors.

## **...and throughout Europe**

On 19 September 1929, BORUSSE was the first "export" to be transferred to the newly erected enclosure in Białowieża, where there had been no European bison for already ten years. There he produced around a dozen calves and played a crucial role in the restitution of the European bison

Another European bison from the Boitzenburg were sold to Stockholm, Schönbrunn, Askania Nova in Ukraine, Rome, Basel and Budapest. Not all of them could reproduce, some were mated only with American bison or mixed breed cows, and in Basel the foot-and-mouth disease killed two Boitzenburg bulls (Fig 3.).

## **Breakdown and ... what remained?**

The end of the World War II in Boitzenburg only BOTHO-ERNST survived. He was transferred to Berlin, but died on the evening of 24 December 1946 during the transport. On January 1<sup>st</sup> 1947, only 25 European bison remained in Germany, of which 19 were of the Boitzenburg origin.

Altogether about 90 European bison were alive around 1946/1947 and more than half of them were of the Boitzenburg origin. Two such bulls in Rome and Basel lived until 1949 and 1953. BOB in München lived until 1955 and produced more than twenty calves. In Springe, the last bison born in Boitzenburg, the cow BORAH, died in August 1957 (Rengert 1995).

## **“Wisentschutzpark Springe”**

The "Wisentschutzpark Springe" had already been set up in 1926/1927, and in September 1928 the bull BERNSTEIN, called "Ivan", came into the enclosure, as well as two American bison cows, a crossbred cow and a crossbred calf (Fig. 5).

Even in Springe, for a few years, the then widespread so called "upgrading" was practiced due to the lack of suitable European bison cows. From a crossbreed of an European bison bull and an American bison cow, the male descendants were sorted out, while the female progeny was further crossed with European bison.

In this way – according to the ideas of that time – the descendants after three or four generations should no longer be distinguished by their phenotype from the purebred European bison, and in the end animals with a high percentage of E. bison genes and an appearance closely resembling true purebred European bison should be obtained. Nevertheless after the formerly mentioned four wisent cows from Boitzenburg and another from Frankfurt were brought to Springe in 1934, such hybrids were "banished" to the Schorfheide (Fig. 6).

By 1945, 36 purebred European bison had been born in Springe, some of which were brought to Hellabrunn, where such "upgrading" breeding was practiced until



**Fot 5.** European and American bison in Springe (year 1941)



**Fot 6.** Wisents in Schorfheide



Fot 7. M 558 BENNO (Springe)

1940. Some other animals were transferred to the Darß Forest on the Baltic Sea and the former imperial hunting ground in the Schorfheide, where E. bison breeding was practiced until the collapse in 1945 (Fig. 7). Some more animals from Springe were moved to the “Wildgehege Neandertal” and into the long forgotten enclosures in the East Prussian “Elchwald” and in Wilhelmsthal near Eisenach (Fig. 8).

### **Effects of the World War II<sup>nd</sup>**

Shortly before the end of the World War II<sup>nd</sup>, the number of the European bison in Germany reached its highest at that time level of 72 animals. Most of them lived in Springe, in Boitzenburg, in the Schorfheide and on the Darß. At the beginning of 1945, there were eight remaining European bison in Berlin, seven in Munich and the rest in Cologne, Hanover, Heidelberg and the three formerly mentioned game reserves.

About 50 European bison did not survive the war. For most of them the year 1945 is given as the presumable time of death. Only a few may have been killed directly by military actions, but as it is known from reports of Boitzenburg and Darß, many animals were shot by soldiers.



**Fot 8** M 145 BERNSTEIN named Iwan (Springe)

Most of the European bison had survived in Springe and Hellabrunn. The European bison living in Munich and originating from there were, however, initially not taken into account in breeding planning, since "upgrading" type of breeding was practiced there, and the records required for pure breeding, were not provided until 1955.

### **Development of E. bison breeding in Germany until today**

The enormous importance of E. bison breeding for the breeders throughout Europe, performed by the Duke of Pless, the Berlin Zoological Garden, Scharbow, Boitzenburg, and Springe before both World Wars, is evident. For all animals maintained now in breeding centers of Western Europe, the pedigree of their animals can be traced back to at least one of these five German breeding centers.

After the breeding center in Boitzenburg was destroyed, Pless belonging to Poland, and no European bison in Berlin for ten years, Springe became the center of the European bison breeding in the then Western Germany.

In 2012, a herd of purebred Lowland bison was established there. Well over 350 purebred Lowland-Caucasian bison have been born so far in Springe and more than 140 have been delivered to other breeding centers, including Eastern Europe.

However in the meantime, two further breeding enterprises were established in Germany, which was still divided at that time, and this gave a significant boost to cross-border species restitution.

In 1957, the “Wisentreservat Damerower Werder” was established. The breeding there, began with PUMIK and PUELLA from Poland. A year later the first calf was born with name DAGMAR. Currently more than 30 European bison live there and over 300 calves were born since the beginning of the breeding program (Hausmann and Zentner 2008; Kelterborn *at al.* 2009).

In 1958, the first European bison of Boitzenburg origin were brought to a newly erected facility at Hardehausen in North Rhine-Westphalia. In 2004 – for the first time in Western Europe – a separate enclosure for Lowland bison was erected there. In 2008, the first International European Bison Congress took place there. The year before, the bluetongue disease, only in Hardehausen had killed ten European bison, including POKEMON, the title star of the popular European bison monograph (Kraśńska and Kraśński 2008).

Since the beginning of the breeding program in Hardehausen about 190 European bison were born there, many of which found their way into other enclosures and reintroduction projects in many countries. Currently there are around 20 animals of both lines living in this center (Glunz 2007).

Since 2010, the three historic breeding centers in Germany became also the Regional Offices Germany: North (Springe), East (Damerower Werder) and West (Hardehausen) under the framework of the European Bison Conservation Center (EBCC) for the support of the European bison owners in Germany. The “Wisentprojekt Donaumoos” near Neuburg was selected as the Regional Office Germany South.

In total, in European Bison Pedigree Book of 2015, for Germany listed are 77 E. bison breeders with 601 animals. Around 86 percent of these, are Lowland-Caucasian bison. A project of the “Heinz-Sielmann-Stiftung” in the Döberitzer Heide is classified as “semi-free”, and the only free-living European bison of Western Europe have been roaming in freedom since 2013 near Bad Berleburg (Raczyński 2016).

Since an increasing trend is observed for numbers of E. bison in Germany, even with the knowledge that a population with such a narrow genetic basis remains seriously threatened, there are still reasons for justified optimism regarding further development of European bison captive breeding in Germany as well as in other countries of Europe.

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### **„Łagodne giganty“ – prawie zgładzone, ale uratowane..... wkład ośrodków hodowli żubrów w Niemczech w historię ochrony gatunku**

**Streszczenie** Początek hodowli żubra w Niemczech to rok 1865, kiedy książę pszczyński uzyskał pięć żubrów z Białowieży. Rozpoczął hodowlę w Pszczynie i stad w 1888 pierwszy żubr PLANET pojechał do berlińskiego ogrodu zoologicznego, a jego potomkowie byli rozsiedleni na obszarze Niemiec i za granicę. Linia nizonno-kaukaska rozpoczęła się w 1911 roku w ogrodzie zoologicznym K.Hagenbeck'a w Stellingen i kontynuowana w Scharbow (Mecklenburgia).

Po I wojnie światowej, prywatny rezerwat w Boitzenburg (Uckermark) leżący w pobliżu Berlina stał się najważniejszym ośrodkiem hodowli w Niemczech. Żubry pochodzące z rezerwatu w Boitzenburg miały duże znaczenie w tworzeniu stad w Hellabrunn i Springe oraz poprzez te dwa ośrodki były podstawą utworzonej w 1958 roku hodowli w Hardehausen. Razem z żubrami przywiezionymi z Polski stanowiły bazę hodowli na „Żubrzej wyspie” w Damerower Werder na terenie wschodnich Niemiec. W hodowli tej utworzonej w 1957 roku urodziło się ponad 300 cieląt żubra przeznaczonych na wsparcie procesu restytucji gatunku w Europie.

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