

A. Review Articles

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**The History of the European Bison in the Białowieża Forest
and the Results of Its Protection****Bisoniana XV**

[With 2 Tables]

The historical past of the lowland European bison, *Bison bonasus bonasus* (L.), is inseparably linked with the Białowieża Primaeval Forest. This is the only and last natural refuge of the European bison in the world, in which this species has survived up to the present. Two factors have been most important here — suitable habitat conditions and the protection of the law. The European bison was protected from the inroads of hunters as a royal beast, which could only be hunted with the express permission of the king. Despite measures taken for its protection, at the beginning of the 20th century the species was close to complete extinction, but this time as the result of hostilities. In addition mass epizootics proved to be particularly dangerous to the European bison. Territorial dispersion protected the species from final catastrophe. The specimens surviving in the world were used for restituting the species. International co-operation has already given very favourable results, but it cannot be considered as completed. The number of European bison living today is still far from the threshold number of 2000, which must be exceeded before the species ceases to be treated as one in process of extinction. The cataclysms which the European bison has experienced in recent ten-year periods — wars and epizootics — makes great care necessary in forecasting its fate. The consequence of the far-reaching care of the European bison by man are manifestations of its partial domestication.

The European bison and the Białowieża Primaeval Forest are inseparable counterparts, joined by a common past and common present. One cannot be discussed without the other. It is fortunate, therefore, that it is at Białowieża in the home of this species that we shall discuss its lot.

The European bison, a splendid relict of diluvial fauna, was at one time, like *Bos primigenius*, a widespread species settling the areas covered by primaeval forest. The Białowieża Primaeval Forest, the only and last natural refuge in the whole world of the European bison, which was its home in former times and still endeavours to remain so, became the parent environment of this species owing to its habitat conditions.

The point is that it was here in Poland and not elsewhere that the threat to the very existence of the European bison inherent in the civilisation march of man was realized sufficiently early. The progressing liquidation of the remains of primaeval forests, the natural habitat of the European bison, and the attraction of this species as a game animal very soon led to its complete extermination in other regions. In Poland, however, for which praise is due to our national culture, a specific form of protection was established of both the European bison and of the aurochs as well. These animals were placed under the protection of the law as royal animals. Ordinary mortals were not allowed to hunt them without the express permission of the king. The fact that this primitive protection was to a great extent due to purely utilitarian motives cannot today be criticised or compared with the idea of nature protection in the contemporary sense. It is enough to say that under Polish conditions it proved effective in its time, but not unfortunately completely effective. It is true that the European bison has survived to the present, but the aurochs became extinct, although relatively recently, since the last specimen of the aurochs died in the Jaktorowska Forest in 1627.

This historic event may be viewed in two lights, with mixed feelings — with regret that we possessed such valuable material and did not succeed in preserving it, and with pride, that it was in Poland and only in Poland that it survived as long, whereas in other regions it had died out long before.

The history, similar in many respects, of the European bison and the aurochs showed fate to have been kinder to the former, although in its case also there has been no lack of dramatic adversities which threatened the species with complete extinction. One of these critical periods was the beginning of the 20th century, when the spectre of complete annihilation appeared to be very close. It proved possible to drive it some distance away but it still cannot be said that it has been completely banished. How this took place and what the prospects are for the survival of the European bison are far from being rhetorical questions. In passing I would remind my readers that according to international convention a species numbering less than 2,000 individuals is considered as being in process of extinction.

Literature on the past of the Białowieża European bison, apart from studies forming only small contributions to knowledge of the species and scattered marginal references, is somewhat scanty. Among the more important works is the well-documented publication by Sztolcman (1926). Almost simultaneously an extensive monograph on the European bison by Wróblewski (1927) appeared in Poznań, followed by a second study by this author (Wróblewski, 1932). Less well-known is another source of information, a study which appeared in the memorable year of the outbreak of the Second World War, and which probably on this account never reached a wider circle of interested readers. This is the publication by Hedemann (1939).

The past of the Białowieża Forest is closely connected with the past of the European bison. As Hedemann's dissertation went further back into its history than the publications previously mentioned, we shall devote more attention to it. The Białowieża Forest is the relict of one

enormous primaeval forest which linked the presentday tundra with the Black Sea steppes, the Baltic with the Mediterranean. It is obvious that the range of the European bison was contained within this territory.

The settlers' trails gradually separated the forests from the primaeval forest, dividing it up into lesser forest areas. The isolation of the Białowieża Forest is the result of the colonization of the areas adjoining it. Colonization moved forwards from the west. The basin of the Vistula, which had been cleared of its forests earlier on, sent the overflow of its population eastwards. Evidence of this process is the colonization of the Podlasie region situated on a line parallel to the Białowieża Forest. During the 13-th century the Podlasie region belonged to the princes of Volhynia, and included the towns of Bielsk, Mielnik, Drohiczyn, Brest, Kobryn and Kamieniec Litewski. During the reign of Gedymin they were annexed to Lithuania. Gedymin handed down Podlasie, with the exception of the town Kobryn, to Kiejstut. From Kiejstut it passed to Witold, and in turn it was divided into Podlasie proper and the Brest lands. Podlasie thus diminished covering the area including Drohiczyn, Mielnik, Suraż and Bielsk, was ceded by Jagiełło during his struggles with Witold to Janusz of Masovia, son-in-law of Kiejstut. The Brest lands, separated from Podlasie proper, remained part of Lithuania and the Białowieża Forest came within its borders. The west boundary of the Forest ran along the line of demarcation between two voivodships: the Podlasie and Brest voivodships, separating the Crown lands from Lithuania.

The laws regulating the primitive forms of collecting wild bees' honey, mowing grass and woodcutting were the first legal acts which disturbed the continuity and peace of the Forest, and at the same time its royal beast, the European bison. The privileges, the time of granting of which is often hidden in the mists of history, and referring for example to portions of land which could be cleared of trees, settled by people, built on, fields cultivated and sown, meadows kept for hay on the river Narewka, and pastures for cattle without payment to the Treasury, can be traced in a slightly modified form today. It must however be emphasised that while about three hundred such privileges were granted during the reign of Augustus III, only three applied to the Białowieża Forest, the others referring to other forests. This would confirm the theory that the Białowieża Forest was purposely preserved and that it participated but little in the exploitation of natural resources. This permits O. Hedemann to make the lapidary statement: everything points to the fact that the Administration of the Polish Royal Property handed over the Białowieża Forest in 1795 to the Russian government in more or less the same state as it received it in 1589. The Russian historian of the Białowieża Forest, Georgij Karcov, expressed a similar opinion but in a slightly different form. To cite Hedemann: »When impartially considering the 400 years of Polish sovereignty the hunter must, however, be heartily grateful to the Poles. The Forest, destroyed and impoverished in timber and game, was at any rate saved, as was the European bison, which no-one else in Europe had managed to preserve. The Forest owes this to its kings... some of them it is true hunted in barbarous fashion, but they nevertheless valued the Forest highly, while

their subjects protected that which was dear to their monarchs' heart. The first rulers of the Forest never imagined that the Lithuanian forests could ever disappear... Later, when it became clear that agriculture and the timber industry could swallow up all the forest wealth the first legislation aimed at protecting forests was passed. The strength of the law in those times was however a very relative matter, so that as late as the 16th century Falczewski could still completely fell the Forest, under the pretext of gain for the Treasury. A man such Tyzenhauz could also have done the same with the Forest if the charm of the most valuable of the royal estates had not surrounded it. To destroy it was easy, and for a man greedy of profit even tempting, as there was nowhere so valuable a forest as that at Białowieża. It was however realized what Białowieża was and therefore it was not decided to destroy it for the sake of immediate profit; it was remembered that Jagello and his descendents, Batory and many others whom the Polish nation recall with pride, had hunted there«. Thus wrote the Russian author who was also junior chamberlain to Czar Nicholas II, and had no incentive to flatter Poles.

The conclusions on the opinion given above make themselves clear, and are surely binding not only on us but on those who come after us. This was the past, given in greatly abbreviated form, of the Białowieża Forest, today the only natural refuge of the European bison in the world, and owing to which these animals are still extant in the 20th century.

Before continuing however I shall give a few data on the past of the lowland European bison both in Poland and in Europe, taken from the publications by Sztolcman (1926), Wróblewski (1927) and Żabiński (1946). The European bison died out on England in the 12th, in Sweden in the 11th and in France in the 14th century. The date the European bison was exterminated in West Pomerania is given as 1364. These animals continued for a comparatively long time in East Prussia. Wilhelm I, notorious for his miserliness, wore soles to his boots made of bison skin, which is noted for its great durability. In his times the European bison was under protection and supplied with food in shelters. There were about one hundred of them at the beginning of the 18th century, the last two being killed by poachers in 1755. European bison survived in Transsylvania up to 18th century. The last of them was killed, also by poachers, in 1790.

In Poland the range of European bison covered almost the entire country, but they began to thin out in the 11th and 12th centuries, limiting their range to the larger forests such as that at Niepołomice, Sandomierz and Rawa Mazowiecka. They were still encountered in the forests of the Wielkopolski region and Prussia. At that time, in order to put a stop to their decimation, the death penalty was established for killing an European bison without royal permission. It appears that it was valued more for the thrill of hunting it than for its meat or skin. According to Gliński the death penalty was brought in during the reign of Sigismund Augustus. In the chronicles of those times there is a description of a hunt for European bison in the Usosin Forest, when Boleslas the Wry-mouthed conquered Szczecin in 1107. Jagello was an ardent hunter. His hunting expedition in 1409 for Lithuanian bison and

elks before the critical moment of the battle of Grunwald is famous. King Casimir IV, Sigismund the Old, Sigismund Augustus, Stefan Batory, John Casimir, Augustus II and Augustus III all hunted. Stanislas Augustus also ordered hunts for the European bison, although he himself was not a hunter. In the middle of the 17th century the European bison occurred in the Kurpie Forest in addition to the Białowieża Forest. It was probably completely exterminated in Central Poland in the 16th century, since Zamoyski brought Lithuanian bison from Radziwiłł to his game preserves.

Numerical data on the number of European bison in the Białowieża Forest go back as far as 1812, when after the cataclysm of war there were, according to Brincken, scarcely 300 left, whereas Baumer gives their number for 1813 as 500. These two examples show that the information was only relatively accurate. The optimum number of these animals, 1898, appears in 1857. Hostilities always had an adverse effect on the head of European bison. The Insurrection of November 1830 brought about a reduction in numbers from 711 in 1830 to 596 in 1851, the January Insurrection from 1251 in 1862 to 874 in 1863. The tendency to reduction continuing in the following years reached its lowest point in 1889, when only 380 European bison were left in the Forest. This was followed by a slow increase to, according to Hohe Jagd, 727 in 1914 at the moment of the outbreak of the First World War, or 737, according to Escherich after Newerly (all data are cited after Sztolcman, l.c.). The consequences of the war were tragic — the European bison were completely exterminated, the last specimen, in accordance with the usual rule, was killed in the Forest by poachers in April 1919. The work of destruction was due to a lesser degree to hostilities and more to the chaos and lawlessness prevailing during this period.

In this way the first period of the European bison's existence, this immemorial inhabitant of the Białowieża Forest ends, a period for which the beginning cannot be established as accurately as the end. It was followed by a sombre period for the Forest, when it contained no bison — not happily a long period, it might almost be termed negligible in the scale of existence of the Białowieża Forest. It ends in 1929 with the reintroduction into the Forest of three out of the small number of enforced emigrant bison which had happily survived.

When viewing the act of restitution of European bison in Białowieża from the perspective of time it is possible to descry in this event something more than a successful biological experiment, or treated formally, only as one of the more important dates in the history of the European bison. There is here also an irrational, but none the less important element of sentiment, the attachment of the Polish nation to these animals. It is in fact difficult to imagine that an undertaking of this kind, not easy to justify by economic reckoning, could be initiated elsewhere than in Poland. It is for instance a significant fact that the Polish branch of the »International Society for Protection of the European Bison« numbered 300 members in 1930 and was its most numerous branch. This took place in a state which had only just been restored to independent life after a period of more than one hundred years captivity, the variety of whose needs urgently requiring satisfaction was only

exceeded by their number. The matter was not however settled with a short »we cannot afford it«. We made a great financial and organizational effort on behalf of this cause during the period between the wars, and People's Poland, rising with difficulty from the ruins of war, also found the means for this end.

Before, however, the reintroduction of the European bison was effected in 1929 at Białowieża, events of great significance to his matter took place, this time also with the participation of Polish scientific thought. I have in mind the International Nature Protection Congress in Paris at the end of May and beginning of June 1923, at which the delegate of the Polish Nature Protection Commission, Jan Sztolcman, presented a paper on the disappearing European bison and put forward the idea of saving it by means of an international organization formed *ad hoc*. In August 1923 the »International Society for Protection of the European Bison« was formed in Berlin, under the chairmanship of Dr. Priemel, director of the Zoological Gardens at Frankfurt on Main. At the time the Society was instituted there were only 56 European bison, scattered in different parks and zoological gardens in Germany, England, Sweden, Russia, Austria, Holland, Denmark and Poland (Pszczyna). It soon proved that this number included several bastards, which had to be deleted from the records of thoroughbred European bison. One of the important activities of the Society was the keeping of pedigree books for these animals.

Table 1.

Distribution of European bison in Poland.
(State as on Sept. 13th 1966).

Reservat, Zoo	Enclosed	Free-living	Total
Białowieża	24	112	136
Borki	7	12	19
Bieszczady Mts.	—	20	20
Niepołomice	19	—	19
Pszczyna	28	—	28
Smardzewice	11	—	11
Zoological gardens	14	—	14
Total	103	144	247

The first bison purchased during the interwar period by the Ministry of Agriculture came from Sweden (2♀, 1♂) and reached Białowieża in 1929, and two further animals in 1930. A total of 7 bison were purchased, 2 of which were bought for the Zoo. Not all of them proved to be thoroughbreds.

The return of the European bison to Białowieża was both a happy and fruitful event. The herd began to reproduce and in addition the effects of the Second World War were not so disastrous. When the area was liberated in 1944 there were still 16 bison there (7♀, 9♂), that is, as many as there were in 1939. There was therefore material from which

to make a start. The successful results of enclosed breeding made it possible gradually to put into effect the chief aim for which they were bred — to set the European bison free. This was started in 1952. The encouraging results of this preliminary experiment made further additions to the freeliving herd possible. In 1966 the herd has reached 112 head in the Białowieża Forest. In addition a basic herd 24 in number is kept in the enclosed reserve.

In all breeding centres of the European bison in Poland, i.e. at Białowieża, Pszczyna, Niepołomice, Borki, Smardzenice and the Bieszczady Mountains we have a total number of 247 European bison, the majority of which, 144 animals, are free-living (Table 1). We have the greatest number of thoroughbred European bison in the world. The Białowieża and Pszczyna centres have what is known as lowland or Białowieża bison (their names, according to the pedigree books begin with *Po* or *Pl*), while the remaining centres have bison with a slight addition of Caucasian blood (their names begin with *Pu*).

Table 2.

Export of European bison from Poland during the postwar period.
(State as on Sept. 13th 1966).

Country	Number	Males	Females
Soviet Union	46	28	18
German Democratic Republik	13	5	8
German Federal Republik	5	2	3
Czechoslovakia	13	7	6
Great Britain	7	3	4
Denmark	4	3	2
Netherlands	3	1	2
Belgium	3	1	2
Switzerland	1	—	1
Austria	3	1	2
Hungary	6	3	3
Yugoslavia	2	1	1
Rumania	4	1	3
Finland	2	1	1
Bulgaria	6	3	3
Sweden	2	2	—
Total	120	61	59

We adhere to the principle of scattering bison herds, not only inside Poland, but abroad, chiefly on account of the threat from epizootics. Our export policy, where the European bison is concerned, has also achieved excellent results. Polish bison, according to the data of the Nature Protection Office during the postwar period (state as at Sept. 15th 1966) had been sent to 16 European countries, and indirectly outside Europe, reaching the impressive number of 120 head (61♀, 59♂) (Table 2). This is an important achievement in the efforts to ensure continuity of the species.

Export of our bison applies chiefly to the *Pu* line, that is specimens with some Caucasian blood. Of the *Po* line, i.e. thoroughbred lowland or Białowieża bison, 36 have gone to the Soviet Union and two to West Germany.

It is obvious that for the good of the species dispersion of this kind is extremely desirable. Beginning from the negligible residue surviving in Europe, the restitution of the lowland European bison in the Białowieża Forest in 1929 marked out a determined road to its salvation. We began with three animals at Białowieża (and three at Pszczyna in 1922), while we now have 247 European bison. In addition during post second World War period 120 bison from Poland were sent to a total of 16 countries. It is true that there are still fewer bison in Białowieża Forest than there were in 1914 their »strategic« situation in their struggle for life is better, for they are dispersed.

The action to save the European bison from complete extinction, despite the encouraging results so far obtained, cannot be considered as ended. It would be risky to state that the worst is now over. It is not only from the formal aspect that the European bison population in the world is still far from the threshold number of 2000 head. The cataclysms which the European bison has passed through over the span of its recorded history (epizootics, wars) oblige us to be very careful in forecasting the fate of this species.

Another aspect of this matter has however become actual. It is not necessary to explain at length that the contemporary European bison, the species saved, differs slightly from its wild forebears. The very presentation of this problem suggests that the difference in the present-day European bison is the result of far-reaching care on the part of man, care which was essential and what is more important, effective in its fundamental purpose. But at what price was it effective? The European bison began gradually to take on the characteristics of a semi-domesticated animal. It would seem that it is a highly specialized mammal, but it exhibited great adaptability to the conditions enforced upon it. In fact it is only owing to this adaptability that it is among living animals today. It is also difficult to say what the European bison of the future will be like, since the so-called natural habitat which we are able to offer these animals when releasing them has undergone metamorphosis, in comparison with the primaeval forests, as the result of human activities.

Everyday practice also shows that the interests of presentday forest management will collide with the interests of the European bison. With good will, however, this is an obstacle which can be overcome. Research on the free-living European bison will most certainly contribute to the successful solution of this problem.

The present year 1966 is the Millennium year of the Polish state. Among the many cultural achievements which our Millennium can present as its credentials, not only to its own nation but also to the whole world, the role of Poland in the protection of the European bison both in the past and at present, its participation in the efforts made to preserve this species, is one both important and praiseworthy.

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HISTORIA ŻUBRA PUSZCZY BIAŁOWIESKIEJ I REZULTATY JEGO OCHRONY

Streszczenie

Historyczna przeszłość żubra nizinnego *Bison bonasus bonasus* (L.) wiąże się nierozdzielnie z Puszcza Białowieską. Jest ona jedyną i ostatnią w świecie naturalną ostoją żubra, w której przetrwał on do naszych czasów. Zdziałały tu głównie dwa czynniki — odpowiednie warunki środowiskowe i opieka prawa. Żubr był chroniony przed natarczywością myśliwych jako zwierzyna królewska, na którą wolno było polować tylko za osobistym zezwoleniem panującego. Mimo zabiegów ochronnych, na początku XX wieku żubr był bliski kompletnej zagłady, lecz tym razem w wyniku działań wojennych. Również masowe epizootie okazały się groźne w skutkach dla żubra. Przed ostateczną katastrofą uchroniło żubra rozproszenie terytorialne. Ocalałe w świecie okazy mogły być użyte do restytucji gatunku. Międzynarodowa współpraca dała już bardzo zachęcające wyniki, lecz nie można jej uważać za skończoną. Stan ilościowy żubra jest nadal daleki od progowej liczby 2000 sztuk, po przekroczeniu której przestanie być traktowany jako gatunek ginący. Kataklizmy jakie żubr przechodził w ostatnich dziesiątkach lat — wojny i epizootie, nakazują dużą ostrożność w prognozowaniu jego losów. Następnym daleko posuniętej opieki człowieka nad żubrem są objawy jego częściowej demestykacji.