



OF BISON AND TAXIDERMY: THE BIOGRAPHY OF A PRACTICAL ZOOLOGIST, AUGUSTUS SZUSTERUS

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Abstract: The article is devoted to the biography of Augustus Szusterus (circa 1805 — not earlier than 1871), the keeper of the zoological cabinet at the Vilna Medical and Surgical Academy (1835–1841), and then at the University of St Vladimir, Kyiv (1842–1870). By using his life as a case-study, we analyse the career of an “invisible technician” in Russian higher education during the 19th century. Szusterus was one of the best taxidermists who worked for the academic community in the Russian Empire in the second third of the 19th century. He was a student of Ludwig Bojanus, a pre-eminent comparative anatomist, and of Felix Brunner, a skilled taxidermist. His legacy consists of museum exhibits that were made as skin-mount over sculpture, the technique that was (it is believed) developed only in the late 19th and in the early 20th century; in particular, several European bison mounted by him have been preserved till today. The professors with whom Szusterus worked in Vilna and Kyiv hardly mentioned his name in their annual reports and other documents, although it is quite obvious that without his assistance, both their educational and scientific activities would have been significantly more difficult. We collected fragments of information about Szusterus by using archival material in various cities. The most informative documents that we managed to find were about his work on mounts and skeletons of European bison that served as valuable objects of museum exchange and even diplomatic gifts in the 1830s and 1840s. Thanks to these documents on mounting bison for museums it has become possible to restore Szusterus’ name to the history of zoology.

Key words: taxidermy, invisible technicians, European bison, universities, zoological cabinet, Russian Empire.

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Of Bison and Taxidermy: The Biography of a Practical Zoologist, Augustus Szusterus

The article is devoted to the biography of Augustus Szusterus (circa 1805 — not earlier than 1871), the keeper of the zoological cabinet at the Vilna Medical and Surgical Academy (1835–1841), and then at the University of St Vladimir, Kyiv (1842–1870). By using his life as a case-study, we analyse the career of an “invisible technician” in Russian higher education during the 19th century. Szusterus was one of the best taxidermists who worked for the academic community in the Russian Empire in the second third of the 19th century. He was a student of Ludwig Bojanus, a pre-eminent comparative anatomist, and of Felix Brunner, a skilled taxidermist. His legacy consists of museum exhibits that were made as skin-mount over sculpture, the technique that was (it is believed) developed only in the late 19th and in the early 20th century; in particular, several European bison mounted by him have been preserved till today. The professors with whom Szusterus worked in Vilna and Kyiv hardly mentioned his name in their annual reports and other documents, although it is quite obvious that without his assistance, both their educational and scientific activities would have been significantly more difficult. We collected fragments of information about Szusterus by using archival material in various cities. The most informative documents that we managed to find were about his work on mounts and skeletons of European bison that served as valuable objects of museum exchange and even diplomatic gifts in the 1830s and 1840s. Thanks to these documents on mounting bison for museums it has become possible to restore Szusterus’ name to the history of zoology.

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Introduction

The process of the professionalisation of science is a topic that has been attracting researchers for some decades [Beer, David Lewis 1963; O’Connor, Meadows 1976; Moseley 1977; Spree 1980; Brooks 1998; Waller 2001; Gordin 2008; Lucier 2009; Gribovskiy 2020]. Too frequently, however, the basic (or only) representatives of professional science have been successful researchers, teachers or scientific administrators. A significant number of the specialists who ensured the daily conduct of science have thus been forgotten, and with them such participants in institutional science as the support personnel. In zoology they were (and are) the laboratory technicians, conservators, taxidermists and others with highly specialised training and skills.

In the history of Russian science, the names and roles of these essential professionals have been passed over in silence ever since the appearance of the first historical outlines of one or another institution, written in the nineteenth century. The Soviet tradition, Bukharin’s declaration of the necessity of establishing a social history of science notwithstanding, was even more firmly orientated towards “outstanding scholars”.

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However, in recent decades scientific support personnel have attracted more attention, and a designation of their own — *invisible technicians* [Shapin 1989]. In the history of the study of animals they are called “practical zoologists” [Nyhart 2009].

The most meticulous annalists of institutions specialising in natural history have, nevertheless, provided some brief information about these modest labourers in the scientific field. For the former Russian Empire, one should primarily recall the works by Alexander Strauch [Strauch 1889] and Friedrich von Brandt [Brandt 1865] on the history of the Zoological Museum of the Imperial Academy of Sciences. There is information about Henryk Laupman, the prosector of Vilna (Vilnius) University (of whom more below) in the dictionary of Polish zoologists [Słownik biologów polskich 1987]. Sketches of provincial museums may be extremely informative in this respect [Matvievskaya 2010]. Information about practical zoologists as the assistants of major naturalists is sometimes to be found in the biographies of these last: thus, the figure of interest to us is mentioned in an article about Karl Kessler [Bogdanov 1882].

Nowadays, many museums of natural history have displays illustrating the stages by which the mortal remains of an animal are transformed into a permanent exhibit, but in such cases the names of the taxidermists (and of everyone involved in the preparation of the material) are either omitted or lost.¹ The majority of cases in which a taxidermist has become the hero of research into the history of science are connected with some of their other achievements. Ilya Voznesensky (1816–1871), who was a conservator at the Zoological Museum of the Academy of Sciences, is known as a world traveller, a collector and the author of field diaries [Alekseev 1977]. Alexander Kohts (1880–1964) is remembered as the creator of the Darwin Museum and a populariser of the theory of evolution [Kohts 2013–2014], and so on.

A first-class technician and keeper of a zoological cabinet, particularly in the nineteenth century, at a time when naturalists were comparatively unspecialised, had to possess many skills, including those of a hunter, an artist, a zootechnician and a chemist. He had to know how to catch both common and very rare, peculiar and (as viewed by the man in the street) useless animals, keep them in captivity, and know how to process their skins and bones, mount the skin and articulate the skeleton,² and how to preserve the collection, many of

¹ Museum labels and catalogues are supposed to indicate the collector, and less often they name the specialist who identified the specimen, but hardly ever the taxidermist, even when it is a matter of a large animal which it takes prolonged work, skill and knowledge to stuff.

² Even in the eighteenth and nineteenth centuries, two exhibits were sometimes prepared from a single specimen — the stuffed skin and the skeleton. For this purpose, a model of the skull would be made and, if necessary, also of the hooves.

the objects in which would deteriorate rapidly without proper care. The profession of the collection keeper and taxidermist implied physical work and was closely connected with other trades dealing with animal skins: in Russian towns commercial taxidermists were members of the furriers' guild [TsGIA SPb, f. 223, op. 1, d. 6251; d. 10180].

An interest in the "artisanal" aspects of the development of the natural sciences has led to the appearance of works about the fate of various methods or particular objects and the anthropology of taxidermy [Farber 1977; Ruud 2013; Would 2021]. The importance of practical zoologists in general, and taxidermists in particular, for the emergence of the ecological approach in zoology has been described for Germany by Lynn Nyhart [Nyhart 2009]. Recently works have been appearing discussing the history of both museum and commercial taxidermy [Poliquin 2012]. This last is of no small importance, for it is easy for the historian of biology to lose sight of the fact that the function of the vast majority of stuffed animals is not scientific or educational but decorative.

We have not, however, been able to discover any works in English or Russian that analyse the history of taxidermy as an ancillary scientific profession, and those articles that discuss the life of an individual taxidermist usually do so not as a representative of that profession, but as an exceptional personality with an unusual fate, possessing a multitude of talents and adept in various skills. Moreover, as we shall see from the hero of this article, there is some point to this. In such an uncommon profession, particularly in the early stages of the institutionalisation of zoology, a significant part was played by individual qualities, and simply by good luck, and further research is needed before a balanced collective biography of taxidermists in the Russian Empire can be written.

The best-known work that discusses the evolution of taxidermy in our country is Mikhail Zaslavskiy's *Landscape Exhibitions of the Museums of the World* (1979), written almost half a century ago. Furthermore, Zaslavskiy draws his conclusions from an analysis of incomplete data about conservators from a single institution, the Zoological Museum of the Imperial Academy of Sciences in St Petersburg. However, the conditions in which the taxidermists at the Zoological Museum worked could have been different from the situation in other museums (primarily university museums) and likewise from the conditions of work in commercial taxidermy.

This article will tell the story of a taxidermist whose training and career do not fit well into the scheme proposed by Zaslavskiy. Augustus Szusterus (c. 1805 — after 1870) was a conservator at the Vilna (Vilnius) Academy of Medicine and Surgery, and later at University of St Vladimir, Kyiv. Augustus Szusterus is interesting

not only as a talented practical naturalist, but also as one of the creators of the zoological institution. Less visible to historians of science than professors, he was an important participant in the creation, and later in the reconstitution of the university zoological cabinet. A more or less successful transfer from one city to another of such complex structures as a natural history museum would be achieved not only (and not so much) through the decisions of the highly placed officials of the empire, but through the meticulous work of “the little people”.

The first part of our article consists of Szusterus’s biography. An important category of our sources comprised documents about the skins and skeletons of the European bison that he mounted, and therefore the second part will deal with how and why these exhibits were prepared in Vilna during the 1820s, 1830s and 1840s. We shall analyse what precisely the bodies of bison, transformed into museum exhibits, tell us about Szusterus and his place in the world of science.

**“Augustus Szusterus is a good practical zoologist,
a skilled draughtsman, a hunter and a veterinary surgeon”**

All that we know so far about the origins of Augustus Bogumilovich Szusterus (named in Polish documents as Augustyn Szusterus syn Bogumiła, and in some Russian documents as Avgust Shuster) is what it says in his service records. We have discovered three, for 1835, 1841 [LVIA, f. 720, op. 1, d. 1035; f. 567, op. 2, d. 4986] and 1865 [RGIA, f. 733, op. 225, d. 565]. Augustus was born about 1805 in a Roman Catholic family, evidently of modest means. The record for 1835 says that his forebears were “foreigners”, and those of 1841 and 1865, “*szlachta*”. Members of the Polish *szlachta* (gentry and nobility) had to confirm their genealogy [Svod 1876: 73–78], and it was recorded only after the relevant documents had been produced, so that the relatively late indication of his *szlachta* origins should be ascribed not to possible errors, but to Szusterus’s not having immediately provided all the necessary papers.

Szusterus’s record for 1834 says that he had completed his studies at the school at Olkieniki¹ (Valkininkai) [LVIA, f. 720, op. 1, d. 1035, ll. 3–7]. A Franciscan friary had been founded at Olkieniki at the beginning of the seventeenth century, and a parish school attached to it had been opened in 1777 [VLĖ 2014, XXIV]. In the report of the Vilna Academy of Medicine and Surgery for 1840 it says that Szusterus studied at the school in Merez² [RGIA, f. 733, op. 95, d. 401, l. 61]. There was a district school attached to the Dominican friary

¹ The town of Olkieniki (Valkininkai) is about 50 km south-west of Vilnius.

² Merez (now Merkinė) is about 100 km south-west of Vilnius.

at Merecz [VLÈ 2008, XIV]. Szusterus may have studied at both schools.

In September 1822 [LVIA, f. 720, op. 1, d. 1035, ll. 3–7] (or according to other data 1821 [LVIA, f. 720, op. 1, d. 1036, ll. 4–5]) Szusterus began work as an assistant prosector in the zootomic cabinet of Vilna University, organised by Professor Bojanus.¹ Ludwig Bojanus (1776–1827), the first professor of veterinary medicine and creator of the zootomic cabinet, was known as a major specialist in comparative anatomy. He had been a pupil of Georges Cuvier, and Lorenz Oken was glad to publish Bojanus's articles in *Isis*² and printed laudatory reviews of his books [Raykov 1952].³

In September 1823 Augustus Szusterus entered the veterinary department of Vilna University. In June 1826 he passed his exams and received the title of veterinary assistant, first class.⁴ A year later, in June 1827, Szusterus was appointed assistant conservator at the University Zoological Cabinet [LVIA, f. 720, op. 1, d. 1035]. In the autumn of the same year the “skilled taxidermist” Feliks Brunner moved to the Zoological Cabinet from Warsaw University [Bieleński 1907]. In March 1830 Szusterus passed his next examinations and received the title of veterinary surgeon first class. We should stress that since the second decade of the century Vilna University had had both a zoological cabinet (in the Faculty of Physics and Mathematics) and a zootomic cabinet (in the Faculty of Medicine), which was a unique situation at that time⁵ and ensured that Szusterus received an extremely solid scientific training.

Szusterus studied the art of taxidermy under Bojanus, the prosector Henryk Laupman,⁶ and later the conservator Feliks Brunner. The authors of works on the history of taxidermy say that taxidermists only began to receive a scientific and artistic education in the last quarter of the nineteenth century [Zaslavskiy 1979], but Szusterus's biography testifies otherwise. Szusterus began to study drawing under Bojanus, who even among other comparative anatomists was considered an excellent draughtsman. Later, in 1827–1832, Szusterus

¹ Bojanus worked at Vilna University from 1806 to 1824.

² *Isis* was one of the leading journals of the time. Lorenz Oken (1779–1851) was its founder and editor.

³ Although several papers about Bojanus have been published since Raykov's article, Raykov's analysis of Bojanus's contribution to biology remains the most substantive.

⁴ The first and second classes were distinguished by the graduates' achievement: those who were placed in the first class had higher marks.

⁵ The statutes of 1804 prescribed for most universities only a single chair of natural history. The professor was supposed to lecture in all three of its divisions (botany, zoology and mineralogy), and usually specialised in the first of these. There were two chairs only in Moscow, where a chair had been created for G. Fischer von Waldheim at the expense of P. G. Demidov, and at Vilna University, the statutes of which had from the beginning provided for two chairs, of botany and of natural history (the professor of the latter lecturing on zoology and mineralogy).

⁶ Henryk Laupman, 1786–1855 [Ślawiński 1931: 202–206; Słownik biologów polskich 1987: 320].

studied under the director of the university art school, the classical painter Jan Rustem¹ [LVIA, f. 720, op. 1, d. 1036].

Even as a student Szusterus had displayed a talent for taxidermy and had attained a certain recognition as a professional: as an assistant conservator he had several times received additional payments for preparing stuffed animals and other zoological specimens. One reward (100 roubles in silver) was awarded to him “for assisting the conservator Brunner in devising a better means of preparing stuffed animals” [LVIA, f. 720, op. 1, d. 1035, ll. 3–7]. Unfortunately, the document does not explain what that method was.

Likewise, while still at his studies, Szusterus was a practising vet. At least, he was sent on official business around Vilna province on three occasions to organise sanitary measures against epizootics, in the summer of 1826, the summer of 1827 and the winter of 1831–1832 [LVIA, f. 567, op. 2, d. 2065; f. 729, op. 1, d. 1035, ll. 3–7]. “Sanitary measures” in those days usually meant police actions: the organisation of quarantines and the slaughter of suspect cattle.

Szusterus’s career prospects as a practical zoologist at Vilna looked promising, but in 1832, after the suppression of the Polish uprising, Vilna University was closed. The medical faculty continued to exist in the guise of the Vilna Academy of Medicine and Surgery, and the natural history departments of the Faculty of Physics and Mathematics were amalgamated with it, but Szusterus had to look for a new place of work. In 1833 he received the post of chief veterinary surgeon for Pskov province [LVIA, f. 720, op. 1, d. 1035, ll. 3–7]. By this time, Augustus had a family: the documents for 1834 record two sons, Martin and Adolf. His wife’s name, Matilda Petronella, appears in the documents for 1865, but her surname cannot be read with certainty: Rogatson² [RGIA, f. 733, op. 225, d. 565, ll. 6–23].

Szusterus’s teacher Feliks Brunner died in Vilna in 1834. The position of conservator at the Vilna Academy was not at first declared vacant. However, at practically the same time the Academy announced a competition for the vacant position of academy farrier [LVIA, f. 720, op. 1, d. 1035]. This position (sometimes called farrier technician) existed at certain institutions of higher education at least until the beginning of the First World War. One of the veterinarians’ most important tasks was looking after horses’ hooves, and their training necessarily included a course in horseshoeing.

¹ Jan (Ivan Frantsevich) Rustem, 1762–1835. In the first half of the nineteenth century drawing was part of the university curriculum, along with dancing, fencing and riding.

² In the registration of his son Augustin in 1847 the mother’s name is written Rogattion [DAZh0, f. 178, op. 51, d. 548, l. 42]. We have not found any other mention of this surname, and it must be surmised that it was not written down entirely correctly.

Szusterus submitted his papers, and by January 1835 was acknowledged as the preferred candidate out of three for this position. In May he began work at the Vilna Academy [LVIA, f. 720, op. 1, d. 1035]. The short-term prospects of Szusterus's decision to return to Vilna might be regarded as risky, as the position of academy farrier was a step down the career ladder from that of chief veterinary surgeon in a provincial administration. Nevertheless, the desire to return to a big city, to a learned institution, even in a modest capacity, evidently prevailed.

The surviving lecture lists of the Vilna Academy inform us that at least from November 1835 Szusterus was teaching the theory of horseshoeing three times a week, and the practice every day [Bielin-ski 1889: 105]. Naturally, the professors at the Academy knew about Szusterus's skill as a taxidermist, and in parallel he fulfilled the duties of the conservator of the Zoological Cabinet, and was remunerated for preparing specimens. In particular, the Cabinet acquired stuffed specimens of such large and difficult to mount animals as the polar bear and the camel,¹ and also a wild boar, a hyaena and a lynx [LVIA, f. 720, op. 1, d. 1041; d. 1036]. The money saved from the conservator's salary went not only on one-off payments to Szusterus, but also on buying zoological, zootomical and anatomical specimens [LVIA, f. 567, op. 2, d. 3854].

Szusterus had a great deal of work at the Zoological Cabinet also arising from the fact that the taxidermists who had worked there before him and Brunner had not used toxins for the conservation of their stuffed animals:² "By reason of the poor fabrication of the previous specimens, which were stuffed only with horsehair, without the addition of arsenic, or even of mercury bichloride, some specimens are completely spoilt" [RGIA, f. 7733, op., 95, d. 401, l. 28].

In March 1837, Szusterus was promoted for length of service to collegiate secretary, with seniority from May 1834, and in November 1838 to titular councillor with seniority from July 1837. The official record from 1865 mentions that he was sent in November 1837 to Białystok "to receive the instruments, linen, tableware, etc. that remain after the closure of the Białystok Midwifery Institute³ and have been transferred to the Vilna Academy" [RGIA, f. 733, op. 225, d. 565, ll. 6–23].

¹ Specimens of large animals are harder to mount, if only because of the need to provide a firm armature. Thus, in the winter of 1841–1842 Szusterus used 55 pounds of iron in preparing his stuffed bison, and a further 35 pounds on the skeleton [LVIA, f. 567, op. 2, d. 4806, ll. 23–24].

² Although the use of poisons (particularly arsenical soap) for treating skins was already practised in the second half of the eighteenth century, many naturalists regarded this method as ineffective and/or dangerous. The method was only fully recognised in the 1830s [Farber 1977].

³ The Białystok Midwifery Institute (1802–1837) had provided two-year courses for training midwives.

In 1838 the Vilna Academy of Medicine and Surgery restored the position of conservator of the Zoological Cabinet. Possibly the professor of zoology and comparative anatomy, Karl Eichwald (1795–1876) was against Szusterus's candidacy, as he had in the past been in conflict with his teacher Brunner.¹ At all events, Eichwald first tried to attract to Vilna a conservator from Breslau University, then one from Königsberg, but both universities, unwilling to lose their colleagues, raised their salaries [LVIA, f. 720, op. 1, d. 1036, ll. 3, 6–8, 20]. This instance demonstrates that even if the professors rarely wrote about the important part played by their invisible technicians, they had a good understanding of their significance for the functioning of institutions devoted to natural history, and there was competition between universities to attract the best of them. As we shall see below, in the 1840s Szusterus himself was to become someone for whom two universities would compete.

In spite of Eichwald's position, the board of the Vilna Academy came to the conclusion that Augustus Szusterus should be considered the best candidate: "as a native of Russia, Szusterus has the advantage over a foreigner whose skill is unknown", and he "has always been zealous and of excellent conduct" [LVIA, f. 720, op. 1, d. 1036, l. 7]. Nevertheless, Eichwald's opinion meant that the question took a long time to resolve, and Szusterus had to pass theoretical and practical examinations. For the latter, he stuffed "a Kyrghyz horse", a leopard, a fox, several birds, among them a snow goose and a nightingale, and also a pike. The commission noted that they were done "without the slightest flaw and are noteworthy for the solidity and excellence of the work." In June 1839 Szusterus was confirmed in the position of conservator [LVIA, f. 720, op. 1, d. 1036, ll. 23–24, 26], but he continued for a time to teach his course in horseshoeing [Bieliński 1889: 109].

The Vilna Academy of Medicine and Surgery, which had been built on the ruins of the university after its annihilation, existed only for a decade. In 1841 work on the buildings for the medical faculty of University of St Vladimir, Kyiv, was completed, and the greater part of the funding, staff and property of the Vilna Academy was transferred there. The decision to close the Vilna Academy was taken as early as April 1840, when the academies of medicine and surgery in Vilna and Moscow were transferred from the Ministry of the Interior to the Ministry of Education, so as to amalgamate them with the universities of Kyiv (which was done in 1842) and Moscow (in 1845) respectively.

¹ There survive letters from Eichwald and Brunner to the rector of the Academy with mutual accusations. For example, Eichwald complains that Brunner is not providing the necessary specimens for his lectures, while Brunner complains that students are damaging valuable exhibits during classes [LVIA, f. 567, op. 2, d. 1626].

The University of St Vladimir, Kyiv was created out of the Polish-speaking Krzemieniec [Kremenets] Lyceum and Vilna University, and the government hoped that by transferring educational establishments to “interior” provinces with a greater proportion of Russian-speaking inhabitants, the “Polish element” would be kept under better control. However, in the second half of the 1830s this “Polish element” was still strong at the University of St Vladimir: the inspectors who supervised the students would discover proclamations of Polish patriotic societies. This, in the government’s opinion, meant that further measures were required to turn the university into a centre for the Russification of the western provinces [Vladimirskiy-Budanov 1884: 164]. Moreover, in 1838 members of the Association of the Polish People had been arrested in Vilna and neighbouring provinces. The imperial government was confirmed in its idea that the Vilna Academy of Medicine and Surgery must be closed as “the last refuge of false patriotism’ in the western region”, and that it would be replaced by a new medical faculty at the University of St Vladimir [Rozhdestvenskiy 1902: 300].

The majority of the professors of the closed Vilna Academy gave up teaching, and only two moved to Kyiv: Karl Eduard Miram, who was from Courland, and Ivan Leonov, a graduate of Kharkiv University. Szusterus too decided to move to Kyiv.

By the beginning of the 1840s, Szusterus had acquired some authority in academic circles. He was invited to work not only at the University of St Vladimir, but also at the University of Kazan. Both universities were prepared to pay Szusterus a higher salary than was prescribed for the position.¹ Szusterus chose Kyiv, in his own words, because the greater part of the Vilna zoological collection that he had curated had gone to that university [RGIA, f. 733, op. 69, d. 614]. The Kyiv professors E. R. Hofmann² and V. A. Karavayev,³ who had been sent to Vilna “to assist the committee set up in that city for distributing the teaching resources of the Vilna Academy” explained to the Trustee of the Kyiv Educational Region and the Minister of Education the necessity of transferring Szusterus to Kyiv:

Szusterus is a pupil of the well-known taxidermist Brunner and himself a great master of his trade. He mounts the largest animals using a new method, the so-called plastic method, that is, he first prepares a rough skeleton of the animal out of wood, on which he

¹ The academic and non-academic staff of Vilna University had higher salaries than those who worked at other Russian universities. The Vilna Academy retained the same high level of pay. However, the professors’ pensions were cut, as was the funding for their cabinets [Bieliński 1889: 115].

² Ernst Reinhold Hofmann (Ėrnst Karlovich Gofman) (1801–1871), professor of mineralogy and geognosy at University of St Vladimir.

³ Vladimir Afanasyevich Karavayev (1811–1892), professor of surgery at University of St Vladimir.

forms out of rags and papier mâché all the muscles, bones and other externally visible contours, and finally he stretches the skin over it, by which means a more natural appearance of the animal is achieved than by the old method of stuffing with cotton waste. This has the additional benefit that no moths breed inside the animal. Since Szusterus is a good practical zoologist, a skilled draughtsman, a hunter and a veterinarian, he is acquainted with the appearance of most animals, and before beginning work he makes an exact cast of the animal; this method of mounting, which is not yet in use everywhere, means that the greater number of the largest animals in the academy cabinet are very good. Since Szusterus in Vilna will pack the animals and birds intended for University of St Vladimir, and their shape will to a certain extent suffer in transit, it would be [...] desirable if he could himself unpack them in Kyiv and put them in a place where he could restore their previous shape. Besides, a large number of skins are being taken from Vilna, and the work done in Kyiv will be very different from that done in Vilna, if it is not done by an equally skilled workman [RGIA, f. 733, op. 69, d. 614, ll. 1–2].

This assessment seems to us extremely important. Zaslavskiy (1979) says that the method of modelled taxidermy¹ appeared in the second half of the nineteenth century and the beginning of the twentieth, and that scientific and artistic training of taxidermists began along with it. Zaslavskiy's assessment of the work of earlier craftsmen is unflattering: a lifeless appearance, a static pose on straight, stilt-like legs, barrel-like bodies, and a lack of any musculoskeletal contours. However, in the same book Zaslavskiy describes certain stuffed animals in quite different terms. He calls the elephant prepared for the Kunstkamera in St Petersburg in the first decade of the nineteenth century "a splendid example of the taxidermist's art", which was made on a sculptural maquette — "an achievement of twentieth-century taxidermy" [Zaslavskiy 1979: 133]. Such exceptions give grounds for thinking that modelled taxidermy, or certain elements of it, may have appeared several decades earlier than Zaslavskiy indicates. Probably not all taxidermists were eager to share their trade secrets, and therefore some techniques spread slowly or were forgotten, such as, for example, the method by which the aforementioned elephant was done.² The assessment of Szusterus's work made by Hofmann and Karavayev is also evidence in favour of an earlier appearance of elements of sculptural taxidermy. We would point out that Hofmann and Karavayev used a special term to denote the method used by Szusterus.

¹ A sculptural mannequin on which the animal skin was mounted.

² A known example of the slow dissemination of a technique is the use of arsenical soap for processing skins, which protects them well from most pests. Jean-Baptiste Becœur (1718–1777), the inventor of this method, kept it a secret, so that it became known only after his death [Farber 1977].

Szusterus spent the whole spring and summer of 1841 packing up zoological specimens for Kyiv, and duplicates for some other educational establishments [LVIA, f. 567, op. 2, d. 4921]. We have not succeeded in locating any catalogues of the zoological objects sent to Kyiv, only indications of the number of specimens. For University of St Vladimir Szusterus packed 20,594 specimens, among them 126 mammals, 742 birds, 229 amphibians and reptiles, 433 fish, 13,065 insects, 68 large crustaceans, 18 arachnids, 20 molluscs (probably meaning those preserved in spirits), 4,277 shells, 307 worms, 84 echinoderms, 290 “polyps” (probably coral skeletons) and 935 “petrified objects” [LVIA, f. 567, op. 2, d. 4921, l. 12].

The property of the Vilna Academy was divided among several educational establishments. Their zoological cabinets most often asked for stuffed bison and beavers, and also *plica polonica* (the Polish plait) [LVIA, f. 567, op. 2, d. 4806].¹ While there were duplicate beavers and plaits, there were no spare bison (the two that there were both sent to Kyiv), and that had consequences for Szusterus.

In August 1841 Szusterus finished packing up the zoological specimens, sold his property and prepared to leave for Kyiv with his family, but his departure had to be deferred. The St Petersburg Academy of Medicine and Surgery, followed by Moscow University, demanded stuffed bison and their skeletons for their collections [LVIA, f. 567, op. 2, d. 4806], and Szusterus was acknowledged as the best person to undertake such a task. His departure for Kyiv was postponed, as it turned out, for another year, but we shall discuss all the questions relating to the preparation of the stuffed bison in the second part of the article.

The transfer of the property of the Vilna Academy was beset by many difficulties, but by the spring of 1842 the greater part of the zoological collections had been taken to Kyiv [LVIA, f. 567, op. 2, d. 5063]. Szusterus arrived in Kyiv in September 1842, after he had finished the preparation of three European bison and supervised their despatch.

The zoological cabinet of University of St Vladimir was formed out of the collections of the Krzemieniec Lyceum. At the beginning of 1835 it contained 11,321 species of insects, 32 species of mammals, 113 species of birds, etc., altogether 28,947 specimens of 13,664 species [Istoriko-statisticheskie zapiski 1884: 10]. The first lecturer in zoology was adjunct Antoni Andrzejowski (1785–1868), who had come to Kyiv from Krzemieniec. In 1839 Alexander Middendorf (1815–1894) was appointed adjunct, and soon promoted to extra-

¹ In the eighteenth and nineteenth century *plica polonica* was regarded as an endemic disease that presented as a gluey condition of the hair. See, for example: [Klajumaitė 2013].

ordinary professor. Middendorf had a wide network of connections amongst his colleagues and, being a passionate hunter and field naturalist, actively extended the departmental collection both independently and by means of exchanges. By the beginning of 1842 the collection contained 16,063 species, the number of mammals had risen to 79 species and of birds to 453 [Istoriko-statisticheskie zapiski 1884: 10]. However, Middendorf was more attracted by travel than by teaching, and in May 1842 he left the university to go on an expedition to Siberia [Sukhova, Tammiksaar 2015]. Karl Kessler (1815–1881) came to Kyiv in January 1843, and until he arrived zoology was taught by the professor of physiology, Eduard Miram.

Professor Kessler described the Vilna part of the zoological cabinet as the most remarkable: “The zoological collection of Krzemieniec Lyceum, which came to University of St Vladimir in its entirety, formed the basis for its zoological cabinet. But this collection consisted principally only of shells and insects. The number of vertebrates in it was most insignificant, and moreover the mammals and birds were badly stuffed and without the proper precautions, so that they were soon utterly spoilt. [...] As for the Vilna Academy collection, it was divided between the universities of Dorpat and Kyiv, but [...] the second of these got the larger and better part of it. All the necessary measures were taken to preserve this collection, so that it incurred very little damage. Many of the specimens in this collection are stuffed animals: mammals, birds, fish and amphibians — and they are remarkable for their beauty and their excellent preparation” [Bogdanov 1882: 309–310].

Modest Bogdanov, Kessler’s junior colleague and the author of his biography, tells not only of the collection, but also of its curator, Szusterus. Bogdanov characterised Szusterus (evidently in the words of Kessler) as a taxidermist who “in the skill of preparation” was unsurpassed “by any Russian conservator, including Ilya Voznesenskiy,” and he even compared him to Conseil in Jules Verne’s novel *Twenty Thousand Leagues under the Sea* [Bogdanov 1882: 311].

Bogdanov recounted what Karl Kessler had said: “Every time K. K. and I spoke about the needs of the St Petersburg zoological cabinet, he would inevitably recall Szusterus, regretting that we had no one like him. Through these reminiscences Szusterus’s personality was drawn for me as if from life. Avgust Bogomilovich Szusterus was the conservator of the zoological cabinet at the Vilna Academy. When it was closed in 1842, Szusterus came to Kyiv together with the collections and was appointed conservator. Soon K. K. arrived. From his diaries and his reports on the cabinet it is evident that they soon became friends. It was a rare excursion of Kessler’s around Kyiv province in which Szusterus took no part. There was not

a single report on the cabinet in which K. K. did not praise Szusterus” [Bogdanov 1882: 311–312].

The reports referred to by Bogdanov should be sought in the archives of Kyiv, since this information was not included in the reports of the university sent to St Petersburg. Only in the very first of them, for the year 1843, does Kessler mention the conservator, reporting that the cabinet had lost many of its stuffed animals: “This loss resulted from the fact that until the conservator Szusterus arrived in Kyiv, the zoological cabinet did not have its own taxidermist, so that the animals were stuffed extremely badly and suffered damage from insects” [RGIA, f. 733, op. 95, d. 816, l. 57].

So far, we have succeeded in discovering only a few documents about Szusterus’s service at the University of St Vladimir. These are strictly formal papers, for example about payment of honoraria to him from the university’s budget without specifying what exactly he had prepared.¹ In 1844 the possibility of his transfer to Moscow University was being discussed [TsDIAK, f. 707, op. 10, d. 179b]. The papers from the 1840s show that Szusterus was teaching taxidermy to two peasant boys from villages belonging to the university.²

Otto Paulson, professor at University of St Vladimir and the author of an outline of the history of its zoological cabinet, thus describes Szusterus’s role in the study of the local fauna: “Together with the Vilna Museum there came to Kyiv University the highly skilled preparator and hunter A. B. Szusterus, who played a large part in the expansion of the cabinet under Karl Kessler. [...] Having such an assistant as Szusterus, Professor Kessler conceived the idea of studying the local fauna, and to this end he more than once undertook excursions around the provinces forming the Kyiv Educational Region. The fruit of this labour was a model collection of the representatives of the local fauna, mostly from the phylum Vertebrata” [Istoriko-statisticheskie zapiski 1884: 113–114].

Paulson may not have been entirely accurate. In Bogdanov’s opinion, the stimulus for Kessler to study the fauna of the Kyiv Educational Region was not the presence of his valuable assistant, but the orders of the Trustee of the Kyiv Educational Region and Governor-General of Kyiv, Dmitry Bibikov [Bunge 1853; Bogdanov 1882]. Several of Kessler’s reports on his excursions through the provinces of the Kyiv Educational Region are preserved at the Russian State Historical Archive, but they do not mention Szusterus, although some of them

¹ See, for example, the item for 1843, which mentions a supplementary payment of 250 roubles in silver to Szusterus: [TsDIAK, f. 707, op. 9, d. 312].

² Beginning in 1849, these boys (Semen Silvestrov and Ivan Sedyuk, in other documents Ivan Fedyuk or Fedyunin) received a salary from the university as trainees at the zoological cabinet [TsDIAK, f. 707, op. 87, d. 2139].

are quite detailed and list the most interesting animals acquired for the departmental collection [RGIA, f. 733, op. 70, d. 293; d. 851].

Beginning in 1861, University of St Vladimir printed the *Universitetskiye izvestiya*, in which its regular reports and the protocols of sessions of its council were published. It appears from these that in 1861 and 1862 Szusterus took part in the congresses of naturalists in Kyiv. He did not present any papers, nor do the protocols record any contribution of his to the debates, but it is clear that it was he who presented the zoological cabinet and its collections to the participants of the congresses [Izvestiya o syezde 1861; Vtoroi syezd 1862].

In 1864 Szusterus undertook “the stuffing of the skins that Professor Kessler had left for him, up to 200 items”, and also “the 42 skins of rare American birds given by Count Mnieszek” [Protokoly 1865a: 31]. In 1865 the Zhytomyr Grammar School decided that it would be useful to have stuffed specimens of local birds in its cabinet of natural history. Szusterus agreed to make up such a collection in his free time, while not engaged in his university duties, and sent them a list with prices for each item [Protokoly 1866a].¹ In the autumn of 1868, Szusterus was engaged in stuffing another set of skins (about 500 items) and could not cope with his responsibilities for the second, zootomic, cabinet. At that time, out of the six technicians presupposed by the staffing levels of 1863, the university had only four, so that Nikolay Bobretskiy,² a stipendiary of the university, was taken on for a year as a technician for the zootomic cabinet [Protokoly 1869].

In December 1864, the Faculty of Physics and Mathematics discussed Szusterus’s twenty-five years of service, and, in connection with this, granting him a pension, and also the question of continuing to employ him for an additional five years. Since the chair of zoology was vacant at that point,³ Szusterus’s reference was written by the professor of geology, Konstantin Feofilaktov (1818–1901): “Mr Szusterus’s art of stuffing animals has reached the highest degree. His works adorn not only our cabinet, but also cabinets in St Petersburg, Moscow, Stockholm, London and many other cities.⁴ [...] Mr Szusterus’s art has not diminished with the years: his strength is still quite sufficient for this sort of mechanical work. With Mr Szusterus’s departure from the university the zoological cabinet

¹ We have no information about whether this collection was actually prepared.

² Nikolay Vasilyevich Bobretskiy (1843–1907), professor of zoology (from 1877) and rector (1903–1905) of University of St Vladimir.

³ After Kessler’s departure for St Petersburg in 1862, the chair of zoology was unfilled until 1865, when Otto Paulson came to Kyiv. There were no lectures on zoology at the university during those three years [Istoriko-statisticheskiye zapiski 1884: 117].

⁴ This probably refers to mounted European bison.

will suffer the loss of a skilled taxidermist which will be irreplaceable for a long time. It is a very difficult business to find somebody who would be scientifically trained and would possess the art of taxidermy to the same degree as Mr Szusterus. Therefore, I propose that the Faculty of Physics and Mathematics should for its part make the necessary representations to the council of the university to retain Mr Szusterus in position for a further five years" [Protokoly 1865a: 30–31]. The second assessment was made by the professor of botany, Afanasi Rogowich, who also gave a high evaluation of Szusterus's skill and merits and supported the proposition of retaining him in position for a further five years [Protokoly 1865a: 31].

The documents submitted to the Department of Education in January 1865 [RGIA, f. 733, op. 225, d. 565, ll. 6–23] make clear that in 1858 Szusterus received a medal in commemoration of the Crimean War of 1853–1856 on a St Andrew's ribbon, and in 1860 an award of merit for twenty-five years' impeccable service (according to other data, the medal was received in 1861 [TsDIAK, f. 707, op. 36, d. 364]). In 1864, on grounds of length of service, he was promoted to collegiate assessor with seniority from 18 June 1863. His annual salary was 571 roubles 80 copecks in silver [Otchet 1864: 16–17]. At that time his family consisted of his wife and six children: Adolf, born about 1833, Kazimir, b. 1853, Anna, b. 1838, Joanna, b. 1840, and Emilia and Ludowika, b. 1844 [RGIA, f. 733, op. 225, d. 565, ll. 6–23]. The 1865 document makes no mention of his sons Martin (b. c. 1831) and Otto (b. c. 1835): evidently, they had both died between 1841 and 1865. The Szusterus family lived in university quarters consisting of three rooms and a kitchen [Protokoly 1865b: 23].

When the question of the pension was examined at the Department of Education, it turned out that Szusterus's years of service as assistant conservator at Vilna University did not count towards the twenty-five years' service required for a pension equal to his salary, while his service in the position of conservator was counted as seven years for five. The Department stated that he would not qualify for a pension until 1867 [Protokoly 1866b: 8–9]. In the spring of 1867, the question of Szusterus's pension and of retaining him in post for another five years was again raised [Protokoly 1867: 1–16]. The question of his pension was finally resolved by the beginning of 1870 [Protokoly 1870a: 6–7]. In April 1870, Szusterus retired from the university, but continued to work in the zoological cabinet without an established post until the beginning of August [Protokoly 1870b: 14]. In May of that year, the rector of the university included Szusterus in the list of those whom, for their long and impeccable service (thirty-five years) it was proposed to reward with the Order of St Vladimir, Fourth Class, and in 1871 he was awarded that order [TsDIAK, f. 707, op. 36, d. 364].

So far, we have not succeeded in finding any later information about Augustus Szusterus. His name does not appear in the lists of members of the Society of Naturalists of Kyiv, organised in 1869, nor in the list of participants of the Third Congress of Russian Naturalists, which took place in Kyiv in 1871. His eldest son, Adolf, chose a military career [Dyakov 1967: 192, 230], and Kazimir was a pharmacist and dentist [RGIA, f. 487, op. 22, d. 101]. The search for more detailed information about the Szusterus family must be pursued in the archives of Vilnius and Kyiv.

European bison as evidence

The most detailed documents describing Szusterus's work as a taxidermist have been preserved in the archival materials about the stuffed European bison and their skeletons which he prepared in Vilna. In a certain sense, these bison may be considered evidence of Szusterus's life and work: without them he would have joined the ranks of those ordinary scientific workers all trace of whom is lost in a decade or two.

In the nineteenth century the European bison, *Bison bonasus* (Linnaeus, 1785) was a desirable object for naturalists and museums of natural history because of its uncertain taxonomic status and also because of the discussion of questions of the extinction of the megafauna. This largest of the extant mammals of Europe also interested the public at large, as an animal that attracted people by being "native" and "exotic" at the same time. The kings and heroes of olden days had hunted European bison, they look "wild" and "primaeval", they are very big and very rare. The last two details, which increase the value of an animal, made the acquisition of such an exhibit no mean feat for major museums: the difficulties in obtaining a European bison were comparable to those of getting an exhibit from exotic countries. Therefore, Russian emperors more than once used stuffed European bison (and later also live animals) as diplomatic gifts, and Russian zoological museums exchanged them for the exhibits that they required [Fedotova et al. 2018; Fedotova 2018]. Since hunting European bison in the Białowieża Forest had been forbidden by a decree of Emperor Alexander I (1802), the permission to shoot one could be given only by the Emperor himself. Obtaining this permission, and the subsequent steps to be taken to turn a live European bison into an exhibit which, though dead, would be able to exist for many decades [Would 2021] left a paper trail, and correspondence on these questions is an extremely significant source for our article.

Vilna University first requested permission to shoot European bison for its zoological collection soon after it had received the status of an imperial university (1803), but it was refused. As we have said,

in 1802 Alexander I followed the example of the kings of Poland and grand dukes of Lithuania and forbade the hunting of European bison in the Białowieża Forest.¹ The university obtained European bison much later, as a result of Professor Bojanus's insistent requests and an intensive correspondence between the rector and government departments. Permission to shoot was granted at the end of 1820, and in January 1821 the prosector of the zootomic cabinet, Henryk Laupman, set off for the Białowieża Forest [Fedotova et al. 2018].

In his letters, justifying the necessity of shooting European bison for the university collections, Bojanus indicated that this rare beast "would sooner or later be completely exterminated" and that if Vilna University did not preserve some trace of it "for the benefit of the natural sciences", naturalists would be justified in accusing Vilna University of "unpardonable negligence in this matter" [RGIA, f. 379, op. 4, d. 940; f. 733, op. 99, d. 77, l. 6]. Bojanus's arguments about the approaching inevitable extinction of the European bison had their effect, and in future such permission was sought and granted with similar formulations. In February 1821 Laupman brought back the carcasses of two European bison, a male and a female, and mounted their skins and skeletons under Bojanus's supervision. Their description was included in a posthumously published work by Bojanus [Bojanus 1827].

In August 1824 Laupman set off again for the Białowieża Forest to kill two European bison for another academic collection, the *Kunstkamera* of the Imperial Academy of Sciences. The documents say that he went with three assistants [SPbF ARAN, f. 4, op. 2 (1823), d. 81]. Szusterus may have been one of them.

The stuffed European bison prepared by Laupman for Vilna University were already in an unsatisfactory condition in the second half of the 1820s, and so in the autumn of 1828 the university council once more requested permission to shoot two European bison. The rector, Wacław Pelikan, explained that since 1827 "an extremely skilful taxidermist", Feliks Brunner, had been working at Vilna University. Permission to shoot a male and a female was granted on condition "that such a lapse at the university should not happen again." It was therefore decided that Brunner should first kill only one bison, "to be certain that the carcass would not spoil", and the second animal would be killed later. A large European bison, a male, was killed on 9 March 1829², and on 14 December of the same year, a large female. "Excellently good stuffed animals" were made out of them [LVIA, f. 567, op. 2, d. 1733; d. 1626; RGIA, f. 733, op. 62, d. 937]. We assume that Szusterus, who was by that time assistant

¹ This territory became part of the Russian Empire as a result of the Third Partition of Poland.

² All dates are given in Old Style (O. S.).

conservator, took part in the work on them, though we have not found any direct indication of this.

In the Białowieża Forest Brunner had discovered that from time to time the forest guard found the carcasses of European bison that had died from natural causes. If such a carcass were found “in decent condition”, they skinned it and sold the hide as part of the official income from the forest for relatively modest sums. Brunner proposed to the university administration that they should conclude an agreement with the forestry officers and the forest guard that such remains should be sent to Vilna University, which would use them for exchange with other museums. By the nineteenth century, exchange of natural specimens was an established and fully effective means of enlarging collections. Museums and private collectors would send each other lists of duplicates and desiderata, indicating the value that they assigned to each object. This means of enlarging collections was particularly significant for museums of natural history, which did not have substantial funds for buying specimens. Most of the scientific museums of the Russian Empire fell into this category.

During his time in the Białowieża Forest Brunner had written brief instructions for processing the hides and bones of dead animals for one of the forest guards, Jakub Szretter. The proposal was approved by the university council, and Szretter confirmed his promise to send the hides and bones of European bison [LVIA, f. 567, op. 2, d. 1733]. However, in November 1830 the Polish Uprising began. The whole Szretter family, including his wife, sons and daughters, took part in it, and after the uprising had been suppressed, they fled abroad [Szretter 1893]. In this sense, the suppression of the November uprising had consequences for Vilna University, not only on the macro level (the closure of the university) but also on the micro level (the severance of informal links with collectors). There are, however, indications that some European bison specimens were obtained by such a method on individual occasions. In the winter of 1837, the conservator of Königsberg University brought from the Białowieża Forest the carcasses not only of three European bison that had been specially killed for German zoological museums, but also the remains of a bison calf that had been killed by wolves [Museum für Naturkunde Berlin. BbH 1–12]. In 1839 a local forestry officer collected a complete skeleton of a dead European bison, which the Vilna Academy used for exchange [NIABG, f. 1, op. 4, d. 1064].

It is hard to say when Szusterus himself first went to the Białowieża Forest. We have already indicated the probability of his going in 1824. In 1837 the St Petersburg Mining Institute received the skeleton of a male bison. The documents indicate that the skeleton was “prepared at the Vilna Academy”, but do not name Szusterus [TsGIA SPb, f. 963, op. 1, d. 4608].

Szusterus's first documented trip to the forest took place in November 1838. This was also connected with museum exchange. In Szusterus's service record for 1865 it says "On 17 November 1838 sent to the Białowieża Forest to shoot three European bison for the universities of Breslau, Leiden and Frankfurt" [RGIA, f. 733, op. 225, d. 565]. The skeleton received by the Leiden Museum is still in existence and stands in its storeroom¹ (ill. 1 on the colour insert). The Vilna Academy received valuable zoological specimens in exchange: for example, the director of the Leiden Museum, Coenraad Temminck,² sent the skeletons of an orangutan and of tropical bats [VUB RS, F 4-A696, ll. 45, 81].

The next trip to the Białowieża Forest took place in the autumn of 1840. On that occasion Szusterus was entrusted with preparing a stuffed animal for the Rheinische Naturforschende Gesellschaft [VUB RS, F 4-A696, ll. 121–122]. This European bison was a diplomatic gift on the occasion of the marriage of the Tsesarevich Alexander to the daughter of Ludwig II, Grand Duke of Hesse (the future Empress Maria Alexandrovna). The preparation of the stuffed animal was completed in the summer of 1841, and by the end of the year it had been delivered to Mainz. It survived two world wars [Quagga, Nashorn, Wisent 1989: 22–23] and was exhibited until 2014; it is now in store³ (ill. 2 on the colour insert).

As we explained in the first part of the article, in the summer of 1841 Szusterus completed the packing of the specimens from the zoological and zootomical cabinets and was preparing to go to Kyiv. However, the Ministry of Education decreed that his departure for Kyiv should be postponed, because two European bison had been promised to the St Petersburg Academy of Medicine and Surgery [LVIA, f. 567, op. 2, d. 4757, ll. 1–2]. Szusterus remained in Vilna and at the end of October he went to the Białowieża Forest. On 13 November he returned with two carcasses and began preparing the skeletons and stuffed skins. Once more, one of the skeletons was intended for the Stuttgart Museum, probably in exchange for preparations for the St Petersburg Academy of Medicine and Surgery [LVIA, f. 378, op. 52, d. 299; f. 567, op. 2, d. 4757].

At the end of October there came an order to kill another European bison, this time for Moscow University. Therefore, Szusterus went to the Białowieża Forest again in February 1842. The Vilnius Historical Archive preserves documents about the preparation of

¹ We are grateful to Dr. Pepijn Kamminga, senior collection manager (birds and mammals), Naturalis Biodiversity Center, for this information.

² Coenraad Jacob Temminck, 1778–1858.

³ The present name of the museum is Naturhistorisches Museum Mainz. We are indebted to the curator of the zoological collection, Dr Carsten Renker, for information about this exhibit and for supplying the photograph.

these stuffed European bison, and also about work on European bison for the museums of natural history in London and Copenhagen, in the winter of 1844–1845¹ [LVIA, f. 378, op. 52, d. 299], and about the preparation of two animals in the winter of 1847–1848 [LVIA, f. 378, op. 55, d. 2174].

The European bison prepared in the winter of 1844–1845 were diplomatic gifts: the one sent to London was a gift from Nicholas I to Queen Victoria,² and the one sent to Copenhagen to Prince Frederick William of Hesse-Kassel³ on the occasion of his marriage to Grand Princess Alexandra Nikolayevna.

The documents show that Szusterus did his work in the building of the anatomical theatre of the former Vilna Academy. The trip to the Białowieża Forest usually took three weeks, and preparing the animal no less than five months, but this period had to be extended because the Governor-General, Fedor Mirkovich, demanded that Szusterus should be present in person when the stuffed beasts were packed up to be sent abroad. Mirkovich may have been worried that without the close supervision of the master craftsman this technically complex procedure might not go quite as it should. Before being packed, the animals had to dry out completely, and this took a further five or six weeks. Szusterus always had at least one assistant working with him; specifically, in the winter and spring of 1847–1848, his pupil at the zoological cabinet in Kyiv, Ivan Sedyuk [LVIA, f. 378, op. 55, d. 2174].

Some accounts for the expenses of stuffing the animals have survived — for daily payments to auxiliary workers, for the purchase of nails and other iron from the smith, for joinery work preparing the armature for the stuffed animals, bases for them and for the skeletons, and for packing cases, for chemicals for processing the skins (arsenical soap, “strong spirits” and so on), and for stuffing and packing materials (straw, tow, twine, etc.), glass eyes (which were ordered from Germany), etc. (ill. 3 on the colour insert).

The packing of the stuffed animals and skeletons to be sent to European museums was done in the presence of a customs official, so that there would be no need to open the cases at the border. Transporting such massive cases in an age before railways was a problem in itself. The zoological exchanges of 1839, particularly

¹ For more detail regarding the bison killed in December 1847, see: [Fedotova 2018].

² In fact, the European bison was given at the request of Roderick Murchison, who, after his travels in Russia, enjoyed the favour of the Tsar and of the high-ranking personages in St Petersburg. More than that, in 1846, at Murchison's request, a pair of live European bison were caught in the Białowieża Forest and sent to London Zoo [Samojlik et al. 2020].

³ Friedrich Wilhelm von Hessen-Kassel-Rumpenheim, who was regarded as having, through his mother, a claim to the Danish throne.

that with Leiden, had turned into a logistical nightmare for the Vilna Academy, so when at the beginning of the 1840s the Heimann trading company¹ offered to organise delivery to the European museums, the Academy readily agreed to it. Moreover, the company did not require to be paid for its services, only that its expenses should be covered. This was probably done to consolidate its “social capital” [VUB RS. F 4-A696; LVIA, f. 567, op. 2, d. 4757; d. 4806]. For delivery within the Empire private hauliers were engaged. For example, the journey from Vilna to St Petersburg by sledge took three weeks.

A case with a stuffed animal weighed about 600 kg, one with a skeleton almost 200 kg. The case containing the stuffed animal for Copenhagen was weighed on the scales at the Vilna City Hall before being handed over to a representative of the Heimann Company on 18 June 1845. Its weight was 36 poods 30 pounds.² The case with the stuffed European bison to be sent to London weighed 42 poods 8 pounds, and the one with the skeleton for London 11 poods 10 pounds [LVIA, f. 378, op. 52, d. 299, l. 70]. The stuffed European bison arrived in Copenhagen on 1 September, and the crates with the stuffed bison and the skeleton arrived in London two weeks later [LVIA, f. 378, op. 52, d. 299, ll. 95, 97].³

The documents show that Szusterus’s long absences about the European bison were not in the interests of the zoological cabinet where he worked. Who decided that it was Szusterus who should work on the stuffed animals and the skeletons in the 1840s (i.e. in years when Vilna no longer had a taxidermist employed by the state)? The correspondence between the three ministries involved shows that the proposal to entrust the preparation of the bison to Szusterus in 1844 originated either with the Governor-General of Vilna, Fedor Mirkovich, or with one of his officials. Szusterus’s work on the stuffed bison of 1840–1842 was probably remembered in Mirkovich’s office in 1844. The order to send Szusterus to the forest in 1847 originated from the Ministry of State Domains, possibly from the minister, Pavel Kiselyov, himself.⁴

The Zoological Museum of the Imperial Academy of Sciences had received imperial permission to shoot three European bison. In parallel it was decided to prepare two more stuffed animals for the

¹ Probably the company owned by Heinrich Salomon Heimann, 1777–1855.

² The pood as a unit of mass equal to 16.38 kg was used in the Russian Empire and the USSR until the mid-1920s. The Russian pound was standardised in 1835 as 1/40 of a pood or 409.5 g.

³ The London European bison and skeleton still exist (catalogue numbers NHMUK ZD 1845.10.13.1 and NHMUK ZD 1845.10.13.2). The stuffed European bison is on display and the skeleton is in storage. We are grateful to Phaedra Kokkini of the Natural History Museum in London for this information.

⁴ The Białowieża Forest was a state forest and administered through the Forestry Department of the Ministry of State Domains.

future, for diplomatic gifts or for museum exchange.¹ It was also suggested to Szusterus that he should teach the basic taxidermy to two or three Białowieża forestry officers. Szusterus's travel plans were inconvenient both to the Zoological Museum of the Imperial Academy of Sciences and to the chair of zoology of University of St Vladimir, where Szusterus was employed. Friedrich von Brandt, the director of the Zoological Museum, hoped that his museum could manage by itself, and was unwilling to spend its modest funds on the pay of a taxidermist from outside. Besides, the delivery of completed stuffed animals and skeletons was much more difficult and much more costly than the transport of skins and bones. For their part, those at University of St Vladimir also had concerns; in particular the professor of zoology, Karl Kessler, did not want to be without his conservator for several months.

Kessler wrote that the departure of the preparator involved "a very serious loss" to the zoological cabinet, and all the more so because it had recently "had the opportunity" to acquire the skins "of a giraffe and other animals, already slightly decayed". This material "could be lost altogether" if Szusterus did not soon return. Besides, "the boys attached to the cabinet to learn the art of stuffing animals [...] under the supervision of Mr Szusterus [...] will inevitably fall behind in their training." Kessler added that the foresters could not "learn the art of stuffing large animals" in such a short period, and that it would be more useful to send them to Kyiv for training [RGIA, f. 735, op. 2, d. 653, ll. 31–32]. Kessler was supported by Governor-General of Kyiv and Trustee of the Kyiv Educational Region Dmitry Bibikov [RGIA, f. 735, op. 2, d. 653, ll. 30–32].

The Minister of Education informed the Ministry of State Domains of all this, but his objections were ignored. The head of the latter, Pavel Kiselyov, replied that the emperor had already been informed of Szusterus's work on the European bison. From the bureaucratic point of view Szusterus was first and foremost an official, so that his convenience, and even the interests of his university, were of secondary importance. As for the training of the forestry officers, Kiselyov explained that Szusterus was to teach them only "the art of removing the skin and treating it with some compounds against decay", which would not take much time [RGIA, f. 735, op. 2, d. 653, ll. 35–36]. Still, the Academy of Sciences did succeed in reaching an agreement that Szusterus would not mount the animals for the Zoological Museum, but only process the skins and bones, which reduced its expenses.

¹ "To avoid the expense of organising a special European bison hunt on each occasion and the special secondment for stuffing the animals of an official with experience in these matters." These two stuffed European bison were to be kept at the provincial Office of State Domains "against the occasion of an imperial command that such bison should be sent to somebody" [RGIA, f. 735, op. 2, d. 653, ll. 24–25].

One of the European bison that it had been permitted to shoot for the Academy of Sciences' collection was killed at the beginning of December 1847 by Alexander Middendorf [Fedotova 2018], and the others two weeks later on a large hunt in which minister, Pavel Kiselyov, probably took part. Szusterus nearly came to grief during the hunt: a wounded bison charged in his direction. Szusterus owed his survival to the sharp shooting of a Białowieża huntsman and to the fact that he was wearing a white sheepskin coat. Szusterus threw himself down on the snow, and the European bison, "enraged and bewildered by its mortal wound", did not see him and ran past [LVIA, f. 378, op. 55, d. 2174, ll. 28–29].

Szusterus brought the five dead European bison to Vilna. On 1 March 1848 he sent the skins, bones, and anatomical specimens in spirits of three of them to the Academy of Sciences. Their weight altogether was almost 900 kg. Alexander Middendorf received them in St Petersburg on 20 March. The catalogue of the osteological department of the Zoological Institute (the Zoological Museum of the Academy of Science's successor) lists two European bison received in 1848. The third animal was intended for the Museum's exchange fund, so it is understandable that the present catalogue does not list it. The correspondence for 1848 of the director of the Museum, Friedrich von Brandt, preserves the desiderata of the Heidelberg Zoological Museum. This printed list bears a manuscript addition "*Bos urus*"¹ — it is probable that that is where the third European bison went [SPbF ARAN, f. 51, op. 3, d. 18].

From March 1848 Szusterus and his pupil were occupied in preparing two stuffed European bison, and were once again working in the building of the former anatomical theatre. It was decided to send one of the stuffed bison in the Grodno Office of State Domains, "to be shown to the visiting personages and scholars who frequently come to Grodno with the sole aim of seeing these rare beasts", and the second was kept in the Vilna Office of State Domains [LVIA, f. 378, op. 55, d. 2174], probably for the same purpose. Szusterus and his pupil did not return to Kyiv until June 1848. We have not succeeded in finding any documents about the training of the forestry officers in basic taxidermy.

In the note of 1841 cited above, the Kyiv professors called Szusterus "a skilled draughtsman, hunter and veterinarian". Until the development of instant photography, much in the art of taxidermy depended on whether the taxidermist had had the opportunity of observing the animal in nature, and on whether he could remember and reproduce the peculiarities of its appearance and movements. When in the 1840s it was necessary to mount a stuffed European bison, Szusterus was

¹ Junior synonym of *Bison bonasus*.

the best candidate for the work. By the 1840s he not only had an all-round training, but also experience. In his first years at Vilna University, he would have been in time for Bojanus's work on his article about the European bison [Bojanus 1827] and for Laupman's on the skeleton and stuffed animal for the *Kunstkamera* in St Petersburg, and in 1829–1830 he must have taken part in mounting Brunner's bison. Szusterus also had the opportunity to observe European bison during his repeated visits to the Białowieża Forest.

Usually, a museum taxidermist stuffed animals for "his own" museum. Szusterus, however, prepared European bison for museums in other cities, both inside and outside the empire. In these cases, he acted as a civil servant despatched by order of a high-ranking official to carry out duties quite unconnected with the interests of his zoological cabinet. Although Shapin suggests calling people like Szusterus "invisible technicians" [Shapin 1989], it is worth pointing out that they are invisible to historians. Contemporary zoologists well understood the significance of such professionals for the functioning of learned institutions, and Szusterus's name and talents were known outside the academic milieu.

The museums of natural history of the long nineteenth century were involved in the process of constructing an idea of the *Bison bonasus* as an *iconic species*, which in the end was significant for the preservation of this species [De Bont 2017; Fedotova et al. 2018]. The animals mounted by Szusterus for European museums were part of this process, and Szusterus's skill in creating the likenesses of these animals was his contribution to constructing the image of the *Bison bonasus* and ultimately to the preservation of the species.

Conclusion

The work of a practical zoologist as a representative of a university's "invisible technicians" is a topic which has been little studied using Russian material, although it is quite obvious that the interaction between professors and the support personnel has a huge significance for the teaching and research routine of any department. Augustus Szusterus, the preparator of the Vilna Academy of Medicine and Surgery and Kyiv University, from the 1830s to the 1860s, whose activity we have been examining, was just such an invisible (in Shapin's terminology) but irreplaceable assistant. We consider it necessary to add that Shapin's conception requires refining: these technicians are invisible only to historians, not to their contemporaries. Our hero was sent on secondments lasting many months on the initiative of the Governor-General or the Minister, his name was mentioned more than once in correspondence at the highest levels of government, he was directly involved in the production of diplomatic gifts, etc.

One case is clearly insufficient to draw conclusions about the work of the conservator in a zoological cabinet or about the profession of taxidermist in the Russian Empire. However, the facts of Szusterus's biography diverge substantially from the scheme of the evolution of taxidermy proposed by Zaslavskiy in his 1979 monograph. Zaslavskiy said that modelled taxidermy appeared only in the second half of the nineteenth century and the beginning of the twentieth, and that the need for the scientific and artistic training of taxidermists arose at the same time. Zaslavskiy criticised the works of early taxidermists for their lifeless appearance, static poses and lack of musculoskeletal contours. He did note, though, that much more accomplished stuffed animals were being created in the first half of the nineteenth century. Contradictions of this sort confirm that the history of the professional training and activity of the taxidermists of the first half of the nineteenth century needs to be studied more attentively. It is already clear that modelled taxidermy, or some elements of it, appeared several decades earlier than Zaslavskiy said. It is probable that by no means all masters of the art were ready to share their trade secrets, and as a result some techniques spread slowly or were forgotten.

It is quite obvious that taxidermy, as a profession connected not only with the natural sciences, but also with the "dirty" physical work of the tanner and furrier, attracted young men from lower-income families, often of the most humble origins: the famous preparator of the Zoological Museum of the Imperial Academy of Sciences, Ilya Voznesenskiy, was the son of an NCO. However, Szusterus's example shows that in some cases a young taxidermist could have occupied a more prestigious position, but chose to belong to the university milieu, albeit in the role of an invisible technician. Szusterus's example also shows that a taxidermist of the first half of the nineteenth century could have a university education with an excellent training in comparative anatomy and elements of artistic training. It is quite possible that a more attentive study of the biographies of nineteenth-century taxidermists, including commercial ones, will acquaint us with other skilled masters who had received an all-round education.

The career of a practical zoologist in Russia in the first half of the nineteenth century greatly depended not only on his own talents and hard work, but also on simple good luck, and on the will of his superiors: the labour market in this speciality was too small for it to be otherwise. Szusterus began to study taxidermy at the insistence of Professor Bojanus and under the influence of the keepers of the natural history cabinets. After the closure of Vilna University, Szusterus switched to the veterinary service and would have continued in that career, were it not for the death of his teacher Brunner. His move to Kyiv, although it did imply some sort of choice on Szusterus's part, was determined more by the transfer of the Vilna

collections to the University of St Vladimir. The decisions about his travels to prepare stuffed European bison were also taken not by Szusterus but by imperial officials.

After the closure of Vilna University and the Vilna Academy, only two of its professors moved to the University of St Vladimir. The move of the conservator Augustus Szusterus to Kyiv has all the more weight. Not only did he ensure the relocation and preservation of the zoological collection, but also the effective work of the department immediately after the move.

Szusterus's everyday work and the zoological specimens that he had prepared underpinned the scientific and teaching process at the Vilna Academy of Medicine and Surgery in the second half of the 1830s and the beginning of the 1840s, and at the University of St Vladimir for almost three decades. His contemporaries, whether they knew Szusterus personally or from what their colleagues had told them, had a high opinion of him. Judging by the recollections written down by Modest Bogdanov from the words of Karl Kessler, Szusterus's skill was one of the factors that allowed the zoological cabinet in Kyiv to assemble one of the best university collections of its time. But overall, we know very little about how that mechanism worked at the time when Szusterus was providing for its normal work. As often happens with good technical support, its role is only noticeable when it is missing. A significant part of the documents through which Szusterus's activity can be traced are connected with his absence: Kessler agitates for the swift return of his assistant from a long secondment; he mentions him in St Petersburg; the professors discuss Szusterus's retirement and ask for the prolongation of his post for another five years. Another part of the documents is the material concerning the mounting of the European bison. They have become the evidence by means of which we have been able to recount the taxidermist's life.

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Abbreviations

DAZhO — Derzhavnyy arkhiv Zhytomyrs'koi oblasti

LVIA — Lietuvos valstybės istorijos archyvas

NIABG — Natsionalnyy istoricheskiy arkhiv Belarusi v Grodno
 RGIA — Rossiyskiy gosudarstvennyy istoricheskiy arkhiv
 SPbF ARAN — Sankt-Peterburgskiy filial Arkhiva RAN
 TsDIAK — Tsentralnyy derzhavnyy istorichnyy arkhiv Ukraïny
 TsGIA SPb — Tsentralnyy gosudarstvennyy istoricheskiy arkhiv Sankt-Peterburga
 VLE — Vseobshchaya litovskaya entsiklopediya <<https://www.vle.lt/>>
 VUB RS — Vilniaus universiteto biblioteka. Rankraščių skyrius

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Ill. 1. Skeleton of a European bison mounted by Szusterus for the Leiden University Zoological Cabinet in the winter of 1838/39. [Naturalis Biodiversity Center, RMNH. MAM.13429]. Photo: Dr. Pepijn Kamminga, senior collection manager (birds and mammals)



Ill. 2. Stuffed European bison mounted by Szusterus in the winter of 1840/41 for the museum of the Rheinische Naturforschende Gesellschaft. Photo: Bettina Henrich, Mainz Natural History Museum, local fauna exhibition, 1991

23		23	
Примѣ издѣлывающаго мѣсто дѣла при Подписанъ: Ученъ и Академикъ, Юрковъ Витѣ.			
1842 г.	Мартъ 10	Трудовъ	Слѣдствіе
		Слѣдствіе	Слѣдствіе
1. Ученъ издѣлывающаго мѣсто дѣла при исполненъ подѣлать кость Витѣ...		5.	5.
Слѣдствіе за подѣлывающаго мѣсто дѣла при подѣлать кость Витѣ...		3.	3.
И за подѣлывающаго мѣсто дѣла при Трудовъ руб. 10.		2.	10.
Трудовъ руб. 10.		10.	
2. Ученъ издѣлывающаго мѣсто дѣла при исполненъ подѣлать кость Витѣ...		5.	5.
Слѣдствіе за подѣлывающаго мѣсто дѣла при подѣлать кость Витѣ...		3.	3.
И за подѣлывающаго мѣсто дѣла при Трудовъ руб. 10.		2.	10.
Трудовъ руб. 10.		10.	
3. Ученъ издѣлывающаго мѣсто дѣла при исполненъ подѣлать кость Витѣ...		5.	5.
Слѣдствіе за подѣлывающаго мѣсто дѣла при подѣлать кость Витѣ...		3.	3.
И за подѣлывающаго мѣсто дѣла при Трудовъ руб. 10.		2.	10.
Трудовъ руб. 10.		10.	
4. Ученъ издѣлывающаго мѣсто дѣла при исполненъ подѣлать кость Витѣ...		5.	5.
Слѣдствіе за подѣлывающаго мѣсто дѣла при подѣлать кость Витѣ...		3.	3.
И за подѣлывающаго мѣсто дѣла при Трудовъ руб. 10.		2.	10.
Трудовъ руб. 10.		10.	
5. Ученъ издѣлывающаго мѣсто дѣла при исполненъ подѣлать кость Витѣ...		5.	5.
Слѣдствіе за подѣлывающаго мѣсто дѣла при подѣлать кость Витѣ...		3.	3.
И за подѣлывающаго мѣсто дѣла при Трудовъ руб. 10.		2.	10.
Трудовъ руб. 10.		10.	

III. 3 Expense account for preparing one stuffed European bison and mounted skeleton, 1842.
LVIA, f. 567, op. 2, d. 4806, f. 23