

## The Past and Present State of Bird Collections in the Zoological Museum of the Department of Vertebrate Zoology, St. Petersburg University

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**Abstract.** The Zoological Museum was founded in 1819 simultaneously with the University, mostly for study purposes. During the 19<sup>th</sup> and 20<sup>th</sup> century, due to numerous zoological expeditions and some valuable presents from other museums and individuals, the collections constantly increased. Today the ornithological collections contain about 7,000 specimens in 1,100 species from various regions of the world. These are stuffed birds and skins (ca 4,500), skeletons (150), alcohol specimens (150), frozen/buffered tissue samples (140), nests (ca 100), eggs sets (ca 800), and records of bird vocalisations. The bird fauna of the former Soviet Union is represented most completely. Practically all of the 768 recorded species are available, including rare and Red Data Book species. Many species are represented by geographical series of skins and mounted birds in different plumage. The Animal Sound Library of the Museum consists of more than 5,000 recordings from more than 400 species, including especially birds but also amphibians, reptiles and mammals. Bird recordings come from Russia, Crimea, Caucasian mountains, and the deserts and highlands of the Central Asia. Antarctica, Bulgaria and Alaska are also represented in the collection. The museum and its library is accessible for study, not only for zoologists and students of St.Petersburg University, but any persons from outside working in zoology and bioacoustics are welcome to use it.

**Key words.** St.Petersburg museum, ornithology, skins, avian collection, bird recordings

### 1. HISTORY

The Zoological Museum – originally the Zoological Cabinet of Department of Zoology – was founded in 1819. At the same time the University in its central building „Twelve Collegiac“ was founded. The museum served mostly for study purposes, although there is no information about any collections from that time. We only know that a curator was included in the staff of the Cabinet.

A considerable increase of the museum collections happened later when in 1833 Stepan KUTORGA became head of the department. Prof. KUTORGA studied bird anatomy and provided a special course in ornithology. In the museum there are still some mounted specimens from that time. Karl KESSLER, a student of Stepan KUTORGA, followed him as head of the department. It is Prof. KESSLER who is considered to be the founder of ornithology in Russia (MALCHIEVSKY & POLYANSKY 1969). In 1847 he wrote the first bird handbook on „Russian ornithology“ for this country. KESSLER was the initiator and inspirer of zoogeographical research at the university of St. Petersburg. Under his supervision expeditions were organized to the White Sea and the Arctic Ocean (1869-70, 1876, 1877, 1880), to Onega Lake (1868), the Aral-Caspian-Black Sea region (1871, 1874), to Turkistan (1872), and to Khiva (1873). Famous zoologists of that period, as F. YARZHINSKY, O. GRIMM, I. POLYAKOV, M. BOGDANOV, A. NIKOLSKY, or F. PLESKE, took part in these expeditions. All were skilled taxidermists and brought rich collections back to the museum.

M. BOGDANOV, who became head of the department after the death of KESSLER in 1881, followed this tradition. During 1881-1887 birds were studied and collected in different Russian regions: Southern Russia and Caucasus by M. BOGDANOV, Lapland by F. PLESKE, St.Petersburg Province by E. BUCHNER, Novgorod Province by V. KHLEBNIKOV, Sakhalin, Altai, Balkhash Lake, Persia, Crimea and Middle Asia by A. NIKOLSKY (SCHIMKEWITSCH & VAGNER 1899).

Additionally, several other collections were acquired from different sources. In 1873 Grand Prince ALEXIS donated to the Museum the collection of Brazilian humming birds; Dr. MEVES from Stockholm presented an egg collection; in 1872 the museum bought 787 bird specimens (including 499 mounts) from the area of St.Petersburg, prepared by the remarkable taxidermist V. ANDREEVSKY. In 1878, due to intercession of Dr. FINSCH, 32 specimens of 25 bird species came from the museum in Bremen. In 1881, V. TRETYAKOV donated the excellent mounted Griffon Vulture. In 1882, A. NIKOLSKY delivered more than 200 bird specimens from China and 64 specimens from Persia and Trans-Caucasus in 1885. In 1884, the unique black grouse hybrid collection of Mr. BILKEVICH was bought. In the 1890<sup>th</sup> 150 bird skins from the province of Orenburg, collected by N. ZARUDNY, and 300 bird skins from the province of St.Petersburg, collected by D. GLAZUNOV, were added to the collection. The special cabinets for stuffed birds were produced at that time, and until now they adorn the interior of the department.

In 1889, V. SHIMKEVITSCH became head of the department. For his famous investigations in comparative

anatomy he used specially prepared skeletons and alcohol specimens, which enriched the collections of the museum. He also collected abnormalities and gathered about 100 specimens including birds, e.g. a goose with three hind limbs.

The next strong increase of the ornithological inventory by expedition collections fell in the period of 1933-1941 when D. KASHKAROV, the founder of the Russian scientific school of ecology, headed the department. The outstanding representatives of this school were P. MALCHEVSKY, G. DOPPELMAIR, A. ALEKPEROV, G. NOVIKOV, L. SHULPIN, and A. MALCHEVSKY.

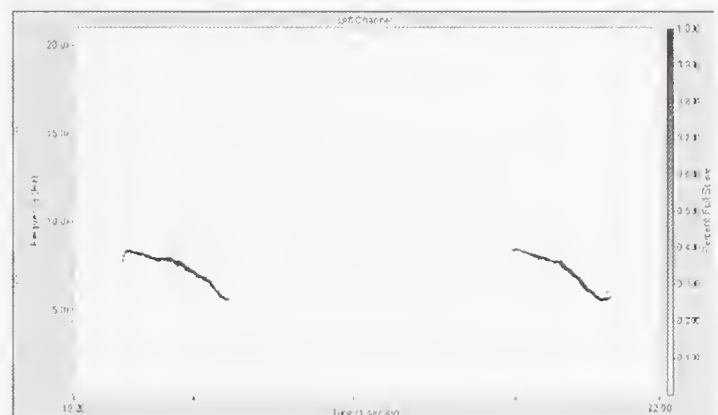
## 2. PRESENT STATE

Today the ornithological collections contain about 7,000 bird specimens in 1100 species from different regions of the world: New Zealand, Australia, New Guinea, Asia, Africa, Brazil, North America, and Europe. These are mounts and skins (ca 4,500), skeletons (150), alcohol specimens (150), frozen/buffered tissue samples (140), nests (ca 100), eggs sets (ca 800), and also records of bird sounds (5,000). The bird fauna of the former Soviet Union is represented most completely. Practically all of the 768 species are available including rare and Red Data Book species, such as Japanese Crested Ibis, Marbled Duck, Red-breasted Goose, White-fronted Goose, White Crane etc. Many species are represented by geographical series of skins and stuffed birds in different plumages. All recent bird orders of the world are represented.

The bird collections are used in the department of vertebrate zoology to present the following lectures and courses: vertebrate zoology, general ornithology, bird systematic, zoogeography, vertebrate ecology, terrestrial vertebrate fauna of NW Russia, and practical courses of bird identification. The collections are also very significant for the environmental education of schoolchildren, teachers and birdwatchers. Every year the final stage of the „biological olympiad“ for schoolchildren of St. Petersburg is held in the department, and seminars to improve the qualification of schoolteachers are regularly carried out here.

Unfortunately, a catalogue of the ornithological collections has never been published. Catalogues for the internal use were compiled several times, but as consequence of large-scale historical perturbations (revolutions, wars) they were destroyed. A last attempt to compile a hand-written catalogue was undertaken in 1980s. All ornithological specimens were listed. But the fate of this manuscript was also sad: a half of it was consumed by fire in 1995. Now an electronic database is being created, but this work goes on slowly because of lack of staff. Only one technician is employed for the collection. All other work for the museum is carried out by volunteers in the department.

Collaborators in the department gained good experience in cleaning and restoring old skins. During many years the plumage of many specimens became dirty. In 1971-1973 a method of feather cleaning was developed (STARIKOV & SAVINICH 1999). It was very successful and later on was used for restoring stuffed birds damaged by fire. Some of them could not be restored, because part of the plumage was burnt. The feathers retained from labeled skins marked the beginning of the feather collection which is used for the study of feather structure, DNA-analysis etc. Additionally, a special collecting of feathers began according to the method of HARTMANN (1999). Today additions to the museum collections come from dead birds in zoological gardens or birds killed on roads, at electric lines etc.



**Fig. 1:** Sonagram of two calls of a Woodcock chick (*Scolopax rusticola*), recorded by A. MALCHEVSKY on June 1959 in the Leningrad region.

## 3. THE ANIMAL SOUND LIBRARY OF THE DEPARTMENT OF VERTEBRATE ZOOLOGY

The archive of tape recordings of animal acoustic signals occupies a particular significant status in the collection of the Zoological Museum of the Department of Vertebrate Zoology. More than 40 years ago the first tape recordings of birds were the start of the Animal Sound Library at St. Petersburg University. In May and June 1959 A. MALCHEVSKY (1915-1985) obtained these first recordings (MALCHEVSKY 1963, VEPRINTSEV 1979). Records of Common Crane (*Grus grus*), Black Woodpecker (*Dryocopus martius*), mating signals of Corn Crackle (*Crex crex*), Eurasian Cuckoo (*Cuculus canorus*), songs of the Redwing (*Turdus iliacus*), calls of the Woodcock chick (*Scolopax rusticola*) and some others were among the first. Due to his enthusiasm and energy, Prof. MALCHEVSKY obtained about 100 recordings of 50 bird species up to 1961 (MALCHEVSKY 1963). Many of these recordings not only have a historical significance, but are a basic part of the sound archive.

In 1971, on the basis of the sound recordings collection of Prof. MALCHEVSKY the Animal Sound Library (Phonoteka) was established. From 1971 to 1973 K. BOLSHAKOV was the first curator of this archive. The number of zoologists who are mainly involved with the recording of sounds (especially of birds) significantly increased at the University during that time. A. BARDIN, K. BOLSHAKOV, I. ILJINSKY, G. NOSKOV, YU. PUKINSKY, S. REZVYJ and some other zoologists contributed significantly to the Sound Library. In 1984 the famous zoologist, Dr. I. NEUFELDT, passed a huge part of her own collection of bird recordings which she had obtained in the southern part of the Far East and Amursky region to the Sound Library.

Now the Sound Library consists of more than 5,000 recordings from more than 400 species, including birds but also amphibians, reptiles and mammals. However, recordings of birds are more varied and numerous. Recordings were gathered in the extensive area of Russia, and exceptionally in Crimea, the Caucasian Mountains, and the deserts and highlands of Middle Asia (Turkmenia and Uzbekistan). Some recordings were obtained from Antarctica, Bulgaria and some other places. In the 1990s the collection was completed with some recordings of bird voices from Alaska (E. KRETCHMAR).

The basic aim of the sound recording collection is to serve scientific studies (MALCHEVSKY 1981, 1982). Therefore the archive is documented. Every unit of the collection bears such data as scientific and common name of the recorded animal, its gender and age, date and location of the recording, description of probable functional and situational context, author of the recording, and some additional technical information (weather data, recording equipment etc). The sound archive is also used for educational purposes in biology. Recordings are used not only for some special courses, but also for practical and experimental work in the students' individual graduate programs. Additionally, recordings of the Animal Sound Library were used as acoustic illustrations in educational and popular scientific movies, in sound guides on cassette: „Talking birds and birds of the White Nights“, „Voices of rare mammals and birds“, „Voices of birds in Ussuriland“ and some others (ZYKOVA 1974, SELLAR, BOSWALL & KETTLE 1977, BOSWALL 1979, BOSWALL & DICKSON 1979, BOSWALL 1981, et al.).

At the present time conservation and restoration of tapes is carried out in the Sound Library. Recordings are copied in a digital form (CD-R) by means of processing on personal computers. The Animal Sound Library still has no special staff in the University's budget. The assistant professor of the Department of Vertebrate Zoology, Dr. Ivan ILJINSKY, has been the curator of this collection since 1973. S. MENSHIKOVA,

E. KRETCHMAR and many other teaching zoologists also participate in the collecting activity and contribute to its growth.

The Museum is open for research not only for zoologists and students of St. Petersburg University. Any person from outside working on zoology or bioacoustics is welcome to use the collections of the department.

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