

Zoologist, traveller and explorer: celebrating the 60th anniversary of Alexei Vladimirovich Abramov

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ABSTRACT. The paper presents a brief biography and scientific achievements of a renowned Russian mammalogist Alexei Vladimirovich Abramov (b. 1962) in relation to his 60th anniversary. The paper is illustrated by photos obtained from colleagues who personally know A.V. Abramov and from his family archive.

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Зоолог, путешественник и исследователь: по случаю 60-летнего юбилея Алексея Владимировича Абрамова

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РЕЗЮМЕ. В статье представлена краткая биография и научные достижения известного российского зоолога Алексея Владимировича Абрамова (р. 1962) в связи с его 60-летним юбилеем. Статья иллюстрирована фотографиями, полученными от коллег, лично знающих А.В. Абрамова, и из его семейного архива.

КЛЮЧЕВЫЕ СЛОВА: биография, коллекции, описания, насекомоядные млекопитающие, Лаос, млекопитающие, Mustelidae, филогеография, грызуны, таксономия, Зоологический институт, Вьетнам, зоология.

Both authors of this essay are privileged to have known Dr Alexei Abramov, Principal Curator and Researcher at the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg (hereafter ZIN), not only as an accomplished zoologist, versatile collector and enthusiastic colleague, but also as a great friend. Alexei is turning 60 at the end of November, 2022, and we would like to congratulate him on this occasion. This essay is a synopsis of his lifetime and a tribute to his scientific achievements.



Fig. 1. Alexei V. Abramov, Vietnam, Yok Don National Park, 2008. Credit: V.V. Rozhnov.

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Biography

Younger years

Alexei Vladimirovich Abramov was born on 24 November 1962 in Ozersk, Chelyabinsk Oblast of the USSR. His father, Vladimir Davydovich Abramov (1928–2006) hails from Penza Oblast. By profession he was an engineer and road builder, but later worked on administrative positions in Ozersk. Mother, Zinaida Viktorovna Abramova (b. 1932 in Gorky, now Nizhny Novgorod) was a high school mathematics teacher, who was awarded with the title of Honoured Teacher of the Russian Federation. As young graduates, his parents moved to the Urals to work in a newly founded town associated with the nuclear project — the ‘Mayak’ Chemical Combine. Back then, the town didn’t have its own name, just a number. There the parents met, got married and stayed to live and work. Jubilee’s elder brother, Andrei Abramov (b. 1958), a physics engineer, also lives and works in Ozersk.

Alexei’s interest in biology was manifested in the preschool years. He and his parents used to regularly go to the Black Sea for summer holidays — usually to the Crimea, sometimes to Anapa and Gelendzhik. Of the vivid memories of Black Sea evenings, Alexei recalls hawk moths and fireflies. But particularly, the ladybirds that were lying in meter-long piles along the water’s edge on the beach. Alexei would sit around these piles for hours, picking out ladybird species different from the well-known 7-spot ladybird. He also frequently visited his grandparents, who lived in Penza and Nizhny Novgorod Oblasts, where he remembers oak forests with an incredible amount of porcini mushrooms and all sorts of “exotic” insects for him, such as stag beetles, carpenter bees and hornets. Interestingly, although Alexei did not become an entomologist, in his professional life as a zoologist he continues to collect insects on field trips to exotic regions of the world; this time as research material for other specialists (see below for more details).

Although everyone in Alexei’s family was from the technical and exact sciences, no one hindered his interest in wildlife. There were always some animals at home — cats, dogs, aquarium fish, or even a crow — all of which required patience on the part of the family. At one time, when Alexei was still a preschooler, they had a cage-free hare living in their flat. The hare seems to have nibbled on almost every chair, stool and table it could reach, and yet no complaints from the family. Like many budding naturalists, Alexei had several aquariums. As it is now clear, lighting (e.g., incandescent bulbs) and other electrical equipment were a major drain on the family budget, but the parents were patient.

Jubilee’s interest in aquaristics continued into secondary school. For a couple of years he had attended the aquarists club of the local Young Naturalists’ Station, but it was not very interesting and, more importantly, not very educational. However, in the town there were quite a few private amateur aquarists, many of whom



Fig. 2. Alexei Abramov, a ninth-year student of a mathematical school, Ozersk, Russia, 1979. From the family archive of A.V. Abramov.

Alexei knew personally and had been to their homes. Incidentally, many of them originally came here to work from Moscow or Leningrad, and continued to regularly visit their home cities, bringing new aquarium fish, new plants and new literature — there was a lot to talk to them about and learn from them. The aquaristics skills Alexei acquired at that time are still in use today. At home, he has a very large, 250 litre aquarium, which is inhabited by various freshwater fish regularly brought back by him from expeditions to Vietnam, the UAE and other countries.

Alexei spent his school years (1970–1980; Fig. 2) in a specialised mathematical school, the same one his elder brother also attended. He found learning interesting, and his class was very bright. Of 37 classmates, seven left school with a gold medal award and nine more (including Alexei) with distinction. All of his classmates went into the technical sciences. He was the only one who chose biology, and a single girl became a medical doctor (now a professor). Alexei was reading a lot at school, particularly books about nature and travels. Of the important books of his childhood, Vitaly Bianki’s *The Forest Gazette* is definitely worth mentioning; later, of course, followed by Gerald Durrell’s books, which probably had a decisive impact on Alexei’s future choice of the profession.

Leningrad State University

By his final year of school, it had become clear that Alexei wanted to study biology. At first he wanted to go to the Moscow State University, undoubtedly the best in the country, but could not by an unfortunate coincidence. He left school in 1980, the year the XXII Summer Olympics were held in Moscow. It was therefore anticipated that entry to Moscow for non-resident applicants would be closed or restricted. So Alexei applied to the Leningrad State University, the second best in the country. Later it turned out that there were no restrictions on entry to Moscow, and 10 of his classmates entered various higher education institutes in Moscow without any problems. But Alexei was already in Leningrad.

Although Alexei knew he was going to study biology, he was not sure of a particular speciality. So, there was a hitch when he applied to the admissions office and had to indicate which specialty he would like to choose. Luckily, in the university corridor, in front of the admissions office, there were posters advertising different departments of the Biology Faculty: botany, genetics, entomology, physiology, etc. The poster for the Department of Vertebrate Zoology was the most concise and engaging. It had no texts, graphs or anything else. There were just collections of photos with short captions, such as: “zoologists at work ... in the desert, taiga, tundra...” (with appropriate illustrations), “use ... binoculars, traps, guns...”, “study such-and-such objects...” (with photographs of animals and birds). The

choice was made promptly and unequivocally. So, Alexei was enrolled at the Leningrad University in 1980, studied at the Department of Vertebrate Zoology, from which he graduated in 1985.

During his university years, Alexei and his future research interests were greatly influenced by two scholars. At the beginning of his second year, he found out from his mate Mikhail V. Sablin that Dr Lev A. Nessov (1947–1995; see Averianov, 1996), then a reader in the Department of Vertebrate Zoology, was organising a summer field trip to Kyzylkumy Desert to collect paleontological materials. As a schoolboy, Alexei was fascinated by N.I. Sladkov’s book *The Land of Sunshine* and would have done much for an opportunity to go out into the desert. Of course, he asked to be taken on that trip. Nessov was strict and rational, and had no use for ordinary tourists. Everyone who has ever participated in his expeditions, including the authors of this essay, knows this. During the winter and spring of 1981/82 Alexei and Mikhail spent all their evenings in the department sorting out the sand brought from the previous expedition to Kyzylkumy in order to master the searching for small Mesozoic fossils — teeth, scales and small vertebrae of fish, bone fragments, etc.

Thus, in August 1982, Alexei found himself on the first real expedition to the south-west Kyzylkumy Desert (Fig. 3). Surprisingly, with his own 40 years of fieldwork experience, Alexei is now inclined to



Fig. 3. In the south-west Kyzylkumy Desert, Uzbekistan, August 1982; from left to right: Mikhail V. Sablin, Lev A. Nessov, Alexei V. Abramov, Romualda A. Mertinene. Credit: A.V. Abramov.

think that the working conditions on that low-budget expedition were likely to be the toughest of all his trips. They hitchhiked to the site, carrying the entire load (food, water and sand samples), saving on food and water, working under the scorching August sun from dawn to dusk. But the experience of the desert and, of course, the invaluable interaction with Nesson, who was an incredibly knowledgeable and enthusiastic man, outweighed all the hardships of field living. This month of close interaction with Nesson and the invaluable first fieldwork experience had a huge influence on Alexei's future academic career. In fact, the first academic paper, which Alexei co-authored alongside with other former students who took part in similar Nesson-led expeditions, was prepared and published by their leader (Nesson *et al.*, 1986) to support and promote the younger colleagues.

In the Leningrad State University, specialisation, i.e. a referral to a specific department to study a chosen speciality, took place after the second year. In 1982, Alexei was offered a meeting with a member of the ZIN staff Dr Mikhail V. Zaitsev (1954–2005; see Abramson, 2008), who needed an undergraduate student to work with shrews. Zaitsev has just gained a PhD in the systematics of hedgehogs (1982) and was starting to work with shrews, a new group to him. Zaitsev's charisma and passion were so great that Alexei immediately became fascinated with insectivorous mammals and the systematics in general. He turned out to be the first undergraduate student Zaitsev supervised, and they subsequently became close friends and colleagues. As the supervisor of both (3rd & 4th year) coursework and his

final year project, Zaitsev was instrumental in enabling Alexei to write scientific texts. They met regularly at Zaitsev's apartment and worked together to re-read and correct Alexei's writings. Later, they published two short joint papers partly based on Alexei's final year project and devoted to the white-toothed shrews (the genus *Crocidura*) of the Caucasus (Zaitsev & Abramov, 1986, 1987).

In 1983, he and Zaitsev had crossed and worked in Armenia and Georgia — in Nesson's style: hitchhiking, with a trolley and five rucksacks for two. For the last three years of the university, Alexei had spent all his spare time in the ZIN. In June 1985, he did not even attend and celebrate his graduation, as together with Zaitsev already went on a large three-month expedition funded by the ZIN to the Transcaucasia. During these joint expeditions, Alexei first came to know the traditions of classic ZIN expeditions. Zaitsev, in turn, learned much from Petr P. Strelkov (1931–2012), a renowned specialist on bats (see Abramson, 2013). Although Alexei did not have a chance to undertake fieldwork with Strelkov, they communicated extensively when he became a ZIN employee and even published a joint paper on the sex ratio and age composition of males in migratory bat species across their ranges during the breeding season (Strelkov & Abramov, 2001). As Alexei himself recalls, Strelkov was the best of his co-authors to learn from. He paid attention to the accuracy of every sentence in the text, trying to carefully choose words to convey all the nuances of paper content. Yet, his popular works (e.g., Strelkov, 2007) were written in the perfect style as well.



Fig. 4. Fourth-year students of the Leningrad State University, Alexei V. Abramov (left) and Dmitri V. Logunov (right), in the Pirkuli Nature Reserve, Azerbaijan, 6 September 1984. Credit: A.V. Abramov.

Starting a career

In the Soviet Union at that time, all university graduates had to be employed and work where they were assigned for at least three years. The Department of Vertebrate Zoology had close contacts with the Turkmen Anti-Plague Station (hereafter TAPS), where a number of former graduates had also been assigned and had worked for several years. In particular, the Department's lecturer Anna E. Airapetyants (1933–2021) and her husband, Igor M. Fokin (1933–2017), then the head of the ZIN Laboratory of Theriology used to work there in 1956–1959 (Tikhonova *et al.*, 2018). Hence, following the old departmental tradition, when Alexei was offered two options for assignment — the Nizhne-Svirsky Nature Reserve in Leningrad Oblast and the TAPS — he chose Turkmenistan.

Alexei spent just over 3 years in Turkmenistan, where he worked as a zoologist in the Kizil-Arvat (now Serdar) branch of the TAPS. This station monitored the territory of Western and Central Karakumy deserts and Western Kopetdagh Mts. The duties of an anti-plague zoologist included the monitoring of rodent population size, and the collecting and delivering samples to a corresponding laboratory for bacteriological tests. Each zoological team consisted of a zoologist, 5–6 animal trappers, and 1–2 vehicles with drivers. The team would go into the field for the whole season, with the captured mammals and fleas being transported daily to the lab, either by AN-2 airplane (from Karakumy) or by car (from the Kopetdagh Mts). The working year consisted of two seasons of 2.5–3 months each: i.e., the spring (March–May) and the autumn (September–November, sometimes until mid-December). During the summer, it was too hot to work in Turkmenistan, making it impossible to deliver samples to the laboratory before they are spoiled. The winter was normally used for writing up reports and developing plans for the year ahead. The practice of ecological monitoring carried out by the TAPS was later described in a co-authored paper (Verevkin *et al.*, 1986).

The rich fauna of Turkmenistan appealed to and fascinated Alexei, but working as an anti-plague zoologist had certain limitations. Each branch had its own region of responsibility in Turkmenistan and, for example, a zoologist from Kizil-Arvat could not work in Kughitang, Badkhyz or Zaunguz Karakumy. He visited these regions later, when became a ZIN employee. Even before this time, he had begun to contribute to the ZIN mammal collection. For instance, he donated skulls of several carnivore mammals, such as the caracal (*Caracal caracal*), the Turkestan sand cat (*Felis margarita thinobia*), the marbled polecat (*Vormela peregusna*), and others.

After the mandatory three years in Kizil-Arvat, Alexei started to think about other workplaces. His fellow zoologists in Chita (Transbaikalia) had offered him a job in a military anti-plague team in Mongolia, on contract for three years. It was a very tempting offer, for such famous explorers as Nikolay M. Przewalski (1839–1888), Grigori N. Potanin (1835–1920) and Petr K. Kozlov (1863–1935), of whom Alexei read a lot, used to work in Mongolia. However, in the summer of 1988, when he was on holiday in Leningrad, his

senior colleague Zaitsev (see above) persuaded him to move back to pursue his future career at the ZIN; quite convenient, as a position of laboratory assistant in the Laboratory of Theriology was due to become vacant in the coming autumn. Alexei agreed, and from 24 October 1988 to the present day he has been working at the ZIN.

Zoological Institute

In the ZIN, he was first appointed as a senior research assistant in the Laboratory of Theriology. At that time, the laboratory had three sections: Systematics of Small Mammals, Morphology, and Faunal History (= Osteology). The vacant position taken up by Alexei was in the Section of Faunal History. He was responsible for day-to-day maintenance of the collections: i.e., cleaning skeletons and skulls, cataloguing, ensuring that card index, catalogues, cupboards and store boxes were kept in order, and so much more.

His immediate line manager was Dr Gennady F. Baryshnikov (b. 1945), a notable expert in carnivore mammals and Pleistocene faunas. Collaborating with Baryshnikov — an accomplished specialist and erudite scholar — on joint papers on Mustelidae and Canidae was very rewarding for the young professional. Together they studied in detail the morphology of the auditory ossicles and baculum, which play an important role in the taxonomy of mustelids (Abramov & Baryshnikov, 1995; Baryshnikov & Abramov, 1997, 1998; Baryshnikov *et al.*, 2003). Yet, they demonstrated that although the baculum shape distinguishes closely related species, many features derive independently in more distantly related forms. They also revised the taxonomic position of the small Tibetan fox, *Vulpes ekloni* (Przewalski, 1883) and, based on a thorough craniological analysis, confirmed that this species name was to be considered a junior synonym of *V. ferrilata* Hodgson, 1842 (Baryshnikov & Abramov, 1992). Later, the useful experience gained from working with Baryshnikov on foxes led Alexei to an international project to study the skull geographical variation of the red fox, *Vulpes vulpes* Linnaeus, 1758, across the Japanese Islands (Oishi *et al.*, 2010; Amaike *et al.*, 2015).

On Baryshnikov's suggestion, Alexei started a painstaking project to catalogue the ZIN mammal collections (e.g., Abramov, 1994, 1995), including the types. Together with Baryshnikov they produced two type catalogues of medium and large mammals (Abramov & Baryshnikov, 1990; Abramov *et al.*, 1992). Later, already as a mature zoologist, Alexei took part in the description of mammal specimens collected during the Langsdorff's expedition to Brazil and kept in the ZIN (Abramov & Baranova, 2008). While working on the type catalogues, Alexei was in frequent contacts with Prof Izyaslav M. Kerzhner (1936–2008), a prominent entomologist and expert in the zoological nomenclature (see Emeljanov *et al.*, 2008; Gapon, 2008). His knowledge and help in handling difficult nomenclature matters were very beneficial (e.g., Abramov, 1996). Of other famous zoologists, Alexei was much in contact



Fig. 5. With a uniquely large and heavy mammoth tusk (now on display), Zoological Institute RAS, St. Petersburg, Russia, summer 1991; from left to right: Mikhail V. Sablin, Nikolai K. Vereshchagin, Alexei V. Abramov, Alexey V. Neelov, Igor M. Fokin, Gulsyuma K. Nuraeva. Credit: M.V. Sablin.

with the palaeontologist Prof Nikolai K. Vereshchagin (1908–2008; see Potapova & Potapov, 2009) and the comparative morphologist Prof Petr P. Gambaryan (1925–2017; see Zherebtsova & Zubtsova, 2015). With Vereshchagin — the world’s foremost mammoth expert, hunter and author of many books (Fig. 5) — the two of them once even went hare hunting, though the professor was already in his 90s! Communication with these and other ZIN’s zoologists was certainly of great influence on the formation of Alexei as a well-rounded zoologist.

In the Section where Alexei was working, there was no opportunity to study small mammals. So, he began to catalogue and investigate extant taxa of the family Mustelidae (e.g., Abramov, 1994, 1995, 2000a, b; Abramov & Baryshnikov, 2000; etc.), and yet continued to travel with Zaitsev to Central Asia and the Caucasus to collect small mammals.

Alexei served as a senior research assistant for 11 years, until the end of 1999, when he was awarded the PhD degree based on a successful defense of the thesis entitled “Systematics of the genus *Mustela* (Carnivora, Mustelidae) of the world fauna” (supervisor —

I.M. Fokin) in May 1999. Soon after, he was appointed as a researcher. It so happened that in his career he had never been a postgraduate student or a junior researcher — these landmark academic positions totally eluded him. In November 2017, Alexei successfully defended his DSc thesis “Insectivorous mammals of Vietnam (taxonomy, fauna, zoogeography)” (academic advisor — V.V. Rozhnov, Moscow) and earned the well-deserved degree of Doctor of Biological Sciences.

Since 2008, Alexei has been working as a Principal Curator and Researcher, and since 2010, occasionally and briefly filling in for the Deputy Director of Science. Once (during 2019) he even agreed to act as a Deputy Director, but soon realised it was not the job for him. Administrative work is too time-consuming and totally incompatible with fieldwork, for which he is prepared to sacrifice any other, notably unscientific, activity. For the same reason, he turned down the post of Head of Laboratory offered to him in 2021. In 2019, he was one of the nominees for the post of ZIN Director, but — in his own words — “fortunately was not elected”; expeditions to poorly explored regions still attract Alexei a great deal more than any administrative work.



Fig. 6. Sorting out collected mammal specimens, Maritime Territory, Russia, September 2010. Credit: V.V. Platonov.

Fieldwork and collecting

One of the distinguishing features of Alexei as a professional zoologist is his exceptionally rich, 40 year experience of fieldwork in many parts of the world (Fig. 6). The geography includes the European part of Russia, the Crimea, Yakutia, the Altai, Tuva, Transbaikalia (Buryatia), Kamchatka, Maritime Territory, Sakhalin, the Kurile Islands (Iturup, Kunashir), the northern Caucasus, Transcaucasia (Georgia, Armenia, Azerbaijan), Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan, the UAE (Fujairah), Mongolia, Laos, Vietnam, and China. In some regions, fieldwork has been carried out many times.

Alexei is an excellent organiser and thoughtful collector. In the field he is easy and pleasant to work with, and one can always be sure that he will make all necessary decisions if you miss something yourself (M.V. Nazarkin, pers. comm., 1.07.2022). It is worth mentioning Alexei's keen interest in the latest products on the expedition market, from clothing and tents to small equipment. All the items that interest him are purchased and tested, so he is always able to recommend something specific for a specific task.

Vietnam occupies a prominent place in Alexei's fieldwork. Russian zoologists have been working in Vietnam since the late 1970s, and stories from ZIN colleagues about working in tropical rainforests stirred

his imagination. In May 2000, Alexei was able to visit Vietnam for the first time as part of a joint expedition organized by the ZIN and the Institute of Ecology and Biological Resources of the Vietnamese Academy of Sciences. They worked in central Vietnam (Ha Tinh Province). Already the first trip was quite successful, for rather unexpectedly Alexei found and collected a complete skeleton of the undescribed striped rabbit next to a poacher trap. The species was promptly described and named as *Nesolagus timminsi* Averianov, Abramov et Tikhonov, 2000 (Averianov *et al.*, 2000), after the British zoologist Robert J. Timmins, who first encountered it in the Bak Lak market in Laos in 1996. *Nesolagus* is the rarest known Lagomorpha and one of the rarest extant mammals, previously known only from the Sumatran *N. netscheri* (Schlegel, 1880). Indeed, this description was Alexei's most important contribution to the study of lagomorphs. Before that, he had published just one paper clarifying the taxonomic status of *Lepus capensis pamirensis* (Averianov & Abramov, 2000). Later, Alexei with the co-authors reviewed the distribution of *N. timminsi* in Vietnam (Can *et al.*, 2001), based on personal field observations and evidenced by rare live photos of this species (Abramov *et al.*, 2016). Recently, the conservation status of *N. timminsi* has changed from 'Data Deficient' to 'Endangered' (Tilker *et al.*, 2020). The discovery of *N. timminsi* was the beginning of a great number of other unique finds made by Alexei in

Vietnam, both of mammals and other animal groups (see below). For instance, in just a decade (2006–2015), Alexei deposited 1,475 mammal specimens collected in Vietnam to the ZIN collection (Sablina & Tikhonova, 2022).

Since 2002, Alexei has been working in Vietnam as a seasonal employee at the Joint Vietnamese-Russian Tropical Research and Technological Centre, which was set up in 1987 to carry out joint research by Russian and Vietnamese scientists. The main Russian counterpart to this venture was the Institute for Problems of Ecology and Evolution of the Russian Academy of Sciences (Moscow), and personally Prof Vyacheslav V. Rozhnov (now Academician; b. 1951), with whom Alexei has a long-standing friendship and research collaboration, both on Vietnamese projects (e.g., Abramov *et al.*, 2007b, 2009; etc.) and beyond (Rozhnov & Abramov, 2006; Abramov & Rozhnov, 2007; etc.). At that time Rozhnov became the curator of the academic programmes at the Tropical Centre and helped Alexei to also become involved. In over 20 years, there have been several tens of expeditions (some 2–3 month long) to different regions of Vietnam. To date, Alexei has already lived in Vietnam for nearly four years in total (over 45 months).

The mammal fauna of Vietnam is very diverse, and many animal groups, including the insectivores, remain poorly understood. So, quite out of the blue, Alexei has resumed working with the group he had first studied as a student (see above). He has been actively collecting shrews, moles and gymnures, with the result that the ZIN holdings of insectivorous mammals from Vietnam are now probably the largest in the world: viz., larger than such famous, world-class museums as the Smithsonian (Washington, USA), FMNH (Chicago, USA), AMNH (New York, USA), MCZ (Cambridge, USA), ROM (Toronto, Canada) and BMNH (London, UK) put together. To date, eight new insectivore species and three new genera (see Appendix 2) have been described by him and the co-authors (e.g., Jenkins *et al.*, 2007, 2010; Bannikova *et al.*, 2014, 2019; Zemlemerova *et al.*, 2016; see also below and Table), with his DSc thesis (2017) being also devoted to the insectivorous mammals of Vietnam. Gradually, it has become clear that diversity of many other mammal groups in Vietnam remains insufficiently studied as well. Hence, numerous papers on rodents (including descriptions of three new rats), carnivores and bats have been produced (Kruskop *et al.*, 2006; Abramov *et al.*, 2017a, 2018; Balakirev *et al.*, 2017; Lebedev *et al.*, 2018; etc); see below for further details.

Of course, apart from Vietnam itself, Alexei was also interested in visiting/collecting in neighbouring Oriental countries, especially Laos and China. He managed to visit Laos in 2008. The site chosen was a karst area in central Laos, from where new mammal species, including the Laotian rock rat *Laonastes aenigmamus* Jenkins, Kilpatrick, Robinson et Timmins, 2005, had recently been described (Jenkins *et al.*, 2005). This rodent — a ‘living fossil’ — represents the family Diatomyidae, which was thought to have been extinct for 11 million years (see



Fig. 7. Alexei V. Abramov with the collected specimen of the Laotian rock rat (*Laonastes aenigmamus*), central Laos, November 2008. Credit: A.V. Tikhonov.

Dawson *et al.*, 2006; Huchon *et al.*, 2007). With the help of local people and staff from the National University of Laos (Vientiane), they succeeded in collecting several specimens of *Laonastes* (Fig. 7). Until then, only the type series of *Laonastes* had been available in the Natural History Museum, London. In trying to clarify the possible phylogenetic relationships of the Laotian rock rat, the collected specimens have been studied quite extensively, including the digestive system, which turned out to be surprisingly similar to that of some marsupial herbivores (Scopin *et al.*, 2011, 2015), and the fauna of ectosymbiotic arthropods (Bochkov *et al.*, 2011a). In Laos, Alexei and colleagues have also collected a good series of two other recently described species: the limestone rat *Saxatilomys paulinae* Musser, Smith, Robinson et Lunde, 2005 and the long-eared gymnure *Hylomys megalotis* Jenkins et Robinson, 2002. The gymnure was later re-assigned to a separate genus *Otohyalomys* (Bannikova *et al.*, 2014).

Although Alexei has never been seriously interested in the palaeontology, even of the Quaternary period, he has participated in many palaeontological expeditions, for instance, to Uzbekistan and the Povolzhye to collect Mesozoic fauna with one of us (AA), or twice to Yakutia to collect remains of the mammoth (*Mammuthus primigenius*) and other representatives of the mammoth



Fig. 8. A selection of badger-related artefacts from the collection of Alexei V. Abramov, August 2022. Credit: D.V. Logunov.

fauna (with Mikhail V. Sablin, and then with Alexei N. Tikhonov and a team from Japan). One of such expeditions even resulted in a joint publication (Arai *et al.*, 1996). In all paleontological expeditions, Alexei always had an opportunity to collect (and did collect) extant animals as well.

Amongst his colleagues and friends Alexei has gained a reputation as an excellent and fanatical collector of zoological materials, always bringing back something interesting or unique for collections of the institute (N.L. Orlov, pers. comm., 29.06.2022). By the end of 2015, Alexei was the fourth of the most productive collectors of mammal materials in the ZIN's history, with 4,246 specimens that had been deposited from 1985 to 2015 (Sablina & Tikhonova, 2022). And this does not take into account other groups of animals, including insects and other invertebrates, which Alexei collects intensively in all of his field trips. For example, he is one of the three main collectors of Vietnamese Orthoptera for the institutional collection (A.V. Gorokhov, pers. comm., 28.06.2022). Alexei regularly brings fish for the ZIN collection, not only from Vietnam (over 100 specimens), but also from Maritime Territory and Sakhalin, of both extant, and fossil species (M.V. Nazarkin, pers. comm., 1.07.2022). In the last six years (2016–2022), Alexei has still donated 1,232 specimens to the mammal collection alone (O.V. Makarova, pers. comm., 19.07.2022). Thus, when it comes to the collection of mammals, with a total of 5,478 specimens deposited, Alexei is currently one of the top three most productive ZIN collectors (cf. Sablina & Tikhonova, 2022: table 1).

Many new species have been described from Alexei's collections, and, perhaps, the best measure of his role as a versatile collector of interesting and often unique zoological materials would be a list of the species named after him (see Appendix 1). To date, a total of 25 new species from eight orders, ranging from Cretaceous

mammals (Averianov & Skutschas, 2000) and snakes (Orlov, 2009) to stick insects (e.g., Ho, 2018) and mites (e.g., Bochkov, 2017), have been described in his honour. Of course, apart from the patronyms, a total number of new species described from the materials he collected in Vietnam and other countries is several times as much; yet, many new taxa (e.g., of spiders) are still awaiting description. Another sign of his appreciation as a collector was that he was included as a co-author in two taxonomic papers on the fur mites (seven new species in three families) of those Alexei collected in Vietnam and Laos (Bochkov *et al.*, 2011b; Bochkov & Abramov, 2014). Alexei himself considers his Vietnamese zoological collections, not only on mammals but also on other groups, to be the most important of those he has ever assembled and deposited in the ZIN.

Not many colleagues know that Alexei also collects badger-related artefacts. At present, his collection accounts for more than 100 objects (Fig. 8), ranging from highly artistic ceramic badger figurines, carved wooden pieces and soft toys, to postcards, pencils, eraser rubbers and even beer bottle caps depicting badgers (from the famous series of 'Badger Beers' crafted in Dorset, UK since 1771).

Academic excellence

To date, Alexei has published 193 papers, leaving aside 74 abstracts for the conferences he has attended, and 26 essays for the IUCN Red List (www.iucnredlist.org) on various mustelid species (e.g., Abramov, 2016; Abramov *et al.*, 2016a, b; etc.), and one on the Annamite striped rabbit (Tilker *et al.*, 2019). Table gives further details on what taxonomic groups of mammals he has studied. As of today, Alexei has described 13 new (sub) species and six (sub)genera of mammals, primarily insectivores and mustelids (see Table; Appendix 2).

Table. Mammal groups of the scientific interest by Alexei V. Abramov, based on his publication list as of June 2022, except for conference abstracts, faunistic papers and those on ectoparasites. The mammal system follows Burgin *et al.* (2018), with modifications. A complete list of the mammal taxa described by A.V. Abramov is given in Appendix 2.

Mammal orders and families	Numbers of papers	New taxa described	
		Genera/subgenera	Species/subspecies
Eulipotyphla			
Erinaceidae	3	1	
Galericidae	2		
Soricidae	14	2	5
Talpidae	6		2/1
Carnivora			
Canidae	6		
Felidae	12		
Hyaenidae	1		
Mephitidae	1		
Mustelidae	65	/3	/1
Ursidae	6		
Chiroptera			
Vespertilionidae	2		
Lagomorpha			
Leporidae	5		1
Rodentia			
Cricetidae	3		
Diatomyidae	3		
Dipodidae	1		
Muridae	16		3
Platacanthomyidae	4		
Sciuridae	5		
Pinnipedia			
Odoboenidae	1		
Artiodactyla			
Bovidae	1		
Cervidae	1		
Proboscidea			
Elephantidae	1		
Total	159	6	13

As a professional mammalogist, Alexei has always been at the cutting edge of his science. The term ‘phylogeography’ was coined by John C. Avise (b. 1948) and the co-authors only in 1987 (Avise, 2000), but since then, this innovative concept has evolved into a dynamic discipline adopted by most biological disciplines, including mammalogy. Alexei is among those Russian mammalogists who saw all advantages of the novel phylogeographic and taxonomic approaches based on modern genetic methods coupled with morphometric analyses, and implemented them in own research projects. Such integrative, hypothesis-driven studies are based on multiple data sets and are by their nature collaborative and multi-authored. The more data sets included in a study, the greater the need for diverse and complementary expertise, and the more complex questions can be explored (Nabout *et al.*, 2015; Bradely & Dowler, 2019). Yet, publication norms in mammalian

taxonomy have changed since 2000, with papers by three or more authors accounting for over 65% of descriptions of new taxa (Wilkinson *et al.*, 2021). All of this holds true for the vast majority of Alexei’s publications, which will be discussed below.

Mustelidae

The Mustelidae have always been Alexei’s favourite group: in his own words, “it is the most interesting and diverse family of carnivorous mammals”. At first, the genus *Mustela* — weasels, ermines, polecats and minks — attracted his attention. The systematics of this genus became the basis of his PhD thesis (1999), but he still continues to work with this group, both using classical morphological (Abramov *et al.*, 2018; Puzachenko *et al.*, 2019; Abramov & Puzachenko, 2020; etc.), and integrative taxonomic (Ishikawa *et al.*, 2020; Kinoshita *et al.*, 2020; Szatmári *et al.*, 2021; etc.) approaches.

The problem of sexual dimorphism in mustelid skulls occupies a significant place in Alexei's research programme (Abramov & Puzachenko, 2009; Rozhnov & Abramov, 2006; etc.). For instance, he discovered that skull sexual dimorphism in the European mink, *Mustela lutreola* (Linnaeus, 1761), is less pronounced in comparison to other similar-sized mustelids, such as the polecat *Mustela putorius* Linnaeus, 1758 (Tumanov & Abramov, 2002; Abramov & Tumanov, 2003). The varying degrees of skull sexual dimorphism in the Siberian weasel, *Mustela sibirica* Pallas, 1773, within its range helped to clarify its subspecies composition (Abramov *et al.*, 2018; Ishikawa *et al.*, 2020). The cranial variation and sexual dimorphism in the Altai weasel, *Mustela altaica* Pallas, 1811, was studied by Puzachenko *et al.* (2019) and Abramov & Puzachenko (2021). The taxonomy and molecular phylogeography of the endemic Japanese weasel, *Mustela itatsi* Temminck, 1844, was scrutinized by Abramov (2000b) and Masuda *et al.* (2012). The two clades of *M. itatsi* could have originated due to either a geographical isolation of Honshu and Kyushu–Shikoku islands, or their independent migrations from the continent to Japan at different times. Alexei's other work focuses on the taxonomy, phylogeography and molecular phylogeny of the whole genus *Mustela* (Abramov, 2000c; Kurose *et al.*, 2000, 2008), widespread species such as the least weasel, *M. nivalis* Linnaeus, 1766 (Abramov & Baryshnikov, 2000; Kurose *et al.*, 2005; Nishita *et al.*, 2017; Sato *et al.*, 2020), or rarities (Abramov, 2006a, b), including the strip-backed weasel, *M. strigidorsa* Gray, 1853, and the mountain weasel, *M. kathiah* Hodgson, 1835 (Abramov *et al.*, 2008, 2013b). In total, Alexei has carried out research and published papers on 11 *Mustela* species out of 17 known in the world (Burgin *et al.*, 2018).

Other mustelid carnivores studied by Alexei include the marbled polecat, *Vormela peregusna* (Guldenstaedt, 1770), in which both morphological and genetic variations were studied (Rozhnov *et al.*, 2008; Puzachenko *et al.*, 2017). Abramov *et al.* (2006) and Nishita *et al.* (2018) investigated geographic distribution and genetic diversity of the stone marten, *Martes foina* (Erxleben, 1777), and the sable, *Martes zibellina* (Linnaeus, 1758). The phylogeography of *M. zibellina* from Japan and the European pine marten, *Martes martes* (Linnaeus, 1758), have been analysed by Inoue *et al.* (2010) and Ruiz-González *et al.* (2013), correspondingly. Rare Vietnamese mustelids have not been overlooked as well. The ferret badgers of the genus *Melogale* were reviewed based on the first DNA data by Rozhnov *et al.* (2019), who recognised three cryptic species: *M. moschata* (Gray, 1831), *M. personata* Geoffroy Saint-Hilaire, 1831, and *M. cucphuongensis* Nadler, 2011. The southernmost record of the small-toothed ferret badger (*M. moschata*) in Vietnam was reported by Abramov & Rozhnov (2014). Yet, Abramov & Rozhnov (2007) reviewed the position of the Oriental skink badgers (the genus *Mydaus*) in the system of Carnivora. This taxon has long been considered a mustelid, but now is assigned to the Mephitidae.

Although other mustelids do interest Alexei, the Eurasian badger genus *Meles* seems to be the most complex and interesting taxonomic problem that has appealed to him. No fewer than 40 papers have been dedicated to this mustelid group by Alexei and his co-authors.

Traditionally, the genus *Meles* was considered monotypic. This viewpoint was advocated by all European authors, in contrast to some Russian authors (e.g., Satunin, 1914; Ognev, 1931) arguing that several species were included in the genus. Over a period of 20 years, a thorough analysis of existing collection materials from the entire genus range, from the British to the Japanese islands, has allowed Alexei and the co-authors to substantiate that in Eurasia the genus *Meles* consists of four valid species: the European badger *M. meles* (Linnaeus, 1758), distributed from the British Isles to Volga River; the Asian badger *M. leucurus* (Hodgson, 1847), occurring to the east of Volga River to Korea and China; the Near East badger *M. canescens* Blanford, 1875, known from the Near East, Transcaucasia and the mountains of Middle Asia; and the Japanese badger *M. anakuma* Temminck, 1844, known from the Japanese Islands only.

The *Meles* species can be distinguished by skull size and proportions (Abramov & Puzachenko, 2006, 2013; Abramov *et al.*, 2009), differently pronounced sexual dimorphism (Abramov, Puzachenko, 2005), dentition (Abramov, 2001b; Baryshnikov *et al.*, 2003), pelage colouration (Abramov, 2003), and the baculum shape (Baryshnikov & Abramov, 1997; Abramov, 2002). The sexual dimorphism of craniological characters in Eurasian badgers was studied by Abramov & Puzachenko (2005). Genetic studies have revealed a clear phylogeographic structure among the Eurasian badgers (Tashima *et al.*, 2011a, b), allowing for the establishment of possible routes for its formation since the Holocene (Kinoshita *et al.*, 2020) and helping to scrutinize their molecular phylogeny (Kinoshita *et al.*, 2017). Analysis of mitochondrial and nuclear markers indicates significant differences between badgers from Europe, Asia and Japan, supporting their species-level differentiation based on morphology (Abduriyim *et al.*, 2017, 2019; Kurose *et al.*, 2001; Marmi *et al.*, 2005). A morphometric analysis of the badger skulls from SW Asia confirmed the validity of *Meles canescens* (Abramov & Puzachenko, 2013). Sympatric populations with genetically validated hybrids have been found for *M. meles* and *M. leucurus* in the Volga-Kama region (Abramov & Puzachenko, 2007; Kinoshita *et al.*, 2019), and for *M. canescens* and *M. leucurus* in the foothills of West Tien Shan (Abramov & Puzachenko, 2013). Interestingly, the zoogeography and taxonomy of the Eurasian badger species is also well-corroborated by the existence of three closely related but distinct flea species (Abramov & Medvedev, 2003).

At first, Alexei's conclusions about several Eurasian badger species were rather unfavourably received by European mammalogists. However, his results were accepted by the checklist *Mammal Species of the World*

(2005), and later Proulx *et al.* (2016) reviewed the world geographic distribution and conservation status of badgers based on his conception. All of the Palaeartic species are now represented by separate species profiles in the IUCN Red List (Abramov, 2016a; Kaneko *et al.*, 2016; Kranz *et al.*, 2016). Mustelids still remain among Alexei's favourite animal groups, on which he continues to regularly publish both dedicated (e.g., Abramov & Puzachenko, 2012; Abramov *et al.*, 2016; Abramov & Masuda, 2018; Sato *et al.*, 2020; etc.) and more general, faunistic (Nguyen *et al.*, 2020; Abramov, 2021) papers. Yet, as a world authority on the Mustelidae, Alexei has been a member of the IUCN Small Carnivora Group for many years.

In the latest treatise on small carnivores (Do Linh San *et al.*, 2022), the editors expressed their profound gratitude to Alexei for his help with collating a checklist of the 72 main small carnivoran taxa given in Appendix B (Do Linh San *et al.*, 2022: 559–570), and particularly for sharing “his encyclopedic knowledge on Russian small carnivores (among others) on numerous occasions” (p. xxi). At least 30 papers by Alexei are referenced in this book (Gantchoff *et al.*, 2022).

Insectivorous mammals

Since his student time, a considerable chunk in Alexei's taxonomic studies has been taken up by insectivores (Eulipotyphla; 24 papers, Table). Apart from poorly faunistic works (e.g., Abramov *et al.*, 2007c, 2012), five new *Crocidura* species from Vietnam have been described: *C. zaitsevi*, *C. sokolovi*, *C. phuquocensis*, *C. phanluongi*, and *C. sapaensis* (Jenkins *et al.*, 2007, 2010, 2013; Abramov *et al.*, 2008); see Appendix 2. The validity of four of them was later verified by the mtDNA genetic analysis (Bannikova *et al.*, 2011). The dental polymorphism within the genus was studied by Voyta *et al.* (2021). In the similar manner, based on mtDNA and nuclear genes, the genetic diversity of the genus *Blarinella* was evaluated to show that *Blarinella* sp. (actually, *B. griselda* Thomas, 1912) from southern Gansu should be assigned to another genus (Bannikova *et al.*, 2017). Yet, a new generic name, *Parablarinella*, was proposed for *Blarinella griselda* Thomas, 1912 (Bannikova *et al.*, 2019). Two soricid genera have been reviewed within the scope of Vietnamese fauna (Abramov *et al.*, 2017c, d): viz., the genus *Episoriculus*, with the first record of *Episoriculus umbrinus* (Allen, 1923) in Vietnam, and the genus of Asiatic water shrews *Chimarrogale*, based on mtDNA genes. In addition, the South Vietnamese lineage of *Chimarrogale* was shown to be a distinct species — *C. varennei* Thomas, 1927, whereas shrews from the Sunda Islands were to be considered in a separate genus — *Crossogale* Thomas, 1921. Alexei also participated in studying the intraspecific phylogeny and molecular diversity of the least shrews, the *Sorex minutissimus*–*S. yukonicus* complex (Ohdachi *et al.*, 2012).

By working closely with colleagues from Moscow on the Vietnamese gymnures, Alexei and his co-authors have been able to produce many important results.

Molecular dating by Bannikova *et al.* (2014) showed that the split between the subfamilies Erinaceinae and Galericinae should have occurred in the late Eocene–early Oligocene. Yet, the ancient origin, deep genetic divergence and high morphological differentiation suggest that both taxa should be elevated to the rank of separate families — Galericiidae (gymnures) and Erinaceidae (hedgehogs). The first cytogenetic analysis of Vietnamese lesser gymnures (the genus *Hylomys*) was undertaken by Pavlova *et al.* (2018). Chernova *et al.* (2015) analysed the hair structure of the long-eared gymnure, *Otohylomys megalotis* (Jenkins et Robinson, 2002). Interesting results on the ecology and behaviour of the Chinese gymnure, *Neotetracus sinensis* Trouessart, 1909, in northern Vietnam were obtained by Schinov *et al.* (2009). The first record of the Hainan gymnure, *Neohylomys hainanensis* Shaw et Wong, 1959, from northern Vietnam made by Abramov *et al.* (2018) is likely to support the hypothesis that Hainan Island could have been previously connected to Guangxi and northern Vietnam rather than to neighboring Guangdong.

Collaborative integrative studies of moles in south-east Asia made it possible to study not only their morphological and genetic diversity, but also their entire molecular phylogeny (Zemlemerova *et al.*, 2013). Thus, Zemlemerova *et al.* (2016) revealed a high cryptic diversity in the genus *Euroscaptor*, with several cryptic lineages arguably to be considered distinct species. Yet, further examination of the variation in skull sizes and shapes of Vietnamese *Euroscaptor* (Bui Tuan Hai *et al.*, 2020) demonstrated that a population from central Vietnam should be described as a separate species — *E. ngoclinhensis* Zemlemerova, Bannikova, Lebedev, Rozhnov et Abramov, 2016. The extensive collecting of moles by Alexei in the Russian Far East during his 2010–2018 fieldwork made it possible to study the genetic and morphological diversity of the genus *Mogera* (Zemlemerova *et al.*, 2019). It is interesting to note that Alexei started collecting moles out of a purely hunting interest. He was just interested in trapping them, but it was not immediately apparent how to do so. He had tried a number of different traps until something started to work, and the material that became the basis of the aforementioned works began to be collected.

Muridae

Although Alexei was not interested in rodents as a student or early in his career, the years of work in Vietnam, Laos and China have brought a wealth of interesting and/or unique materials, particularly on the Muridae. However, the lack of proper identification guides made it difficult to work with the collected material. Hence, Alexei had to start sorting everything out for himself and a lot of unresolved taxonomic issues and problems arose. As a result, to date Alexei has co-authored 29 papers on rodents, of which 16 are devoted to the murids. All are fine examples of the modern integrative taxonomy based on combined DNA and morphological data. Some focus on assessing the taxonomic status of specific species: e.g., the Eurasian harvest mouse, *Micromys minutus*

(Pallas, 1771), from Vietnam (Abramov *et al.*, 2009), or the red spiny rats, *Maxomys surifer* (Miller, 1900), in Indochina and neighboring regions (Balakirev *et al.*, 2017). In both cases, a cryptic diversity was revealed, allowing some old species names to be resurrected, viz. *Micromys erythrotis* (Blyth, 1856) for South Asian populations. Other works present regional taxonomic revisions of some murid genera within the scope of Vietnam (e.g., *Niviventer s. lato*; Balakirev *et al.*, 2012, 2014), or Indochina (e.g., *Leopoldamys* and related genera; Balakirev *et al.*, 2012, 2013). The revision of Vietnamese *Niviventer* allowed Alexei and his co-authors to look into the phylogeography of the white-bellied rat, *Niviventer confucianus* (Milne-Edwards, 1871), in China (Ge *et al.*, 2019a) and to scrutinize the molecular phylogeny and morphological diversity of the *Niviventer fulvescens* species complex (Ge *et al.*, 2021a).

The karyotype of the fairly rare marmoset rat *Hapalomys delacouri* Thomas, 1927 from Vietnam was studied by Abramov *et al.* (2012) for the first time, allowing the authors to reveal its cryptic intraspecific diversity. Later, when more specimens from other Vietnamese sites became available, it turned out that the taxonomy of the species was rather confusing and needed sorting. As a result, a new endemic species from southern Vietnam, *Hapalomys suntsovi* Abramov, Balakirev et Rozhnov, 2017, was described (Abramov *et al.*, 2017b).

A complex phylogeographic structure was revealed in the Indomalayan pencil-tailed tree mouse, *Chiropodomys gliroides* (Blyth, 1856) (Meschersky *et al.*, 2016), with two highly divergent allopatric lineages found in Vietnam. Alexei managed to collect the Millard's giant rat (*Dacnomys millardi* Thomas, 1916) in central Vietnam, i.e. some 1,000 km to the south of all its previous findings (Abramov *et al.*, 2017a). Surprisingly, the specimens of *D. millardi* from northern and southern Vietnam not only did not differ in cranial and oversize characteristics, but were also quite similar genetically. The diversity and distribution of tree rats (the genus *Chiromyscus*) in eastern Indochina was studied by Balakirev *et al.* (2021), who discovered clear geographical phylogroups in all three species studied: *C. langbianis* (Robinson et Kloss, 1922), *C. thomasi* Balakirev, Abramov et Rozhnov, 2014 and *C. chiropus* (Thomas, 1891). As it turns out, the Oriental Muridae are indeed an extremely interesting and understudied group of rodents, and Alexei and his co-authors are planning many more new research on them in the future.

Other mammal groups

Muridae were not the only rodent group studied by Alexei. At least three of his works have focused on squirrels: the phylogeography of the Russian flying squirrel *Pteromys volans* (Linnaeus, 1758) across Eurasia (Oshida *et al.*, 2005); the Eurasian red squirrel *Sciurus vulgaris orientis* Thomas, 1906 in Hokkaido, Japan (Noda *et al.*, 2016); a group of Asian red-cheeked squirrels of the genus *Dremomys* in China and Vietnam (Balakirev *et al.*, 2022); and the first record of the flying

squirrel *Olisthomys morrisi* (Carter, 1942) in Vietnam (Kruskop *et al.*, 2022). The intraspecific structure of the three-toed jerboa *Dipus sagitta* (Pallas, 1773) was analysed by Lebedev *et al.* (2018), who demonstrated that the newly detected six mtDNA lines correspond well to the known morphological subspecies. Three papers are devoted to the Cricetidae. Based on Alexei's collections from Sakhalin, a new species was recorded for the fauna of Russia: viz., the Hokkaido red-backed vole, *Myodes rex* (Imaizumi, 1971) (Abramson *et al.*, 2009). Lebedev *et al.* (2020) investigated the cryptic genetic variation in mole voles of the genus *Ellobius* in Mongolia, with two divergent allopatric lineages endemic to East Central Asia being revealed: *E. tancrei* (s. str.) Blasius, 1884 known from central Mongolia to Dzungaria, and *E. orientalis* Allen, 1924 restricted to East Gobi. The phylogeography of the Chinese striped hamster, *Cricetulus barabensis* was examined by Poplavskaya *et al.* (2019).

Once, Alexei participated in the study of molecular evolution of the common raccoon dog, *Nyctereutes procyonoides* (Gray, 1834), in Russia and Japan (Bartocillo *et al.*, 2020, 2021). He also was a co-author of a critical assessment of the conservation status of wild canids in Vietnam (Hoffmann *et al.*, 2019). Of the taxonomic projects based on rich ZIN collections, it is worth mentioning the work on the taxonomy of the walrus *Odobenus rosmarus* (Linnaeus, 1758) (Lindqvist *et al.*, 2009). The authors tried to find morphological or molecular support for the recognition of the Laptev Sea walrus, *O. r. laptevi* Chapskii, 1940, as a distinct subspecies, but failed. Thus, at present, the species includes only two subspecies: *O. r. rosmarus* and *O. r. divergens* Illiger 1815.

There have been several large-scale international projects, in which Alexei has been involved, for instance, on the Felidae: the molecular taxonomy of extinct subspecies of the tiger, *Panthera tigris* (Linnaeus, 1758) (Yamaguchi *et al.*, 2013), the molecular phylogeny and phylogeography of the sand cat, *Felis margarita* Loche, 1858 having a fragmented distribution across Sahara, Arabian Peninsula, and Central Asia (Howard-McCombe *et al.*, 2020), and the evidence of strong genetic differentiation between all the classically recognized subspecies of the cheetah, *Acinonyx jubatus* (Schreber, 1775) (Prost *et al.*, 2022). Alexei also participated in revising the taxonomy of Felidae, published by the IUCN Cat Specialist Group (Kitchener *et al.*, 2017), in which the authors have recognized a total of 14 genera, 41 species and 77 subspecies of the felids worldwide. At present, this work is the main world taxonomic synopsis on cats. Several international projects were devoted to the Ursidae, for instance, on the phylogeography of the brown bear, *Ursus arctos* Linnaeus, 1758, based on the complete mtDNA genome (Saarma *et al.*, 2007; Korsten *et al.*, 2009; Hirata *et al.*, 2013, 2014, 2017; Keis *et al.*, 2013). The authors not only reconstructed the maternal phylogeny of the brown bear, but also estimated the timing of bear migrations, particularly in north-eastern Eurasia.



Fig. 9. Alexei V. Abramov (left) with Prof Ryuichi Masuda (right), Hokkaido, Japan, 19 May 1998. Credit: A. V. Abramov.

Two projects, which could be classified as ‘exotic’ for Alexei, were devoted to even-toed ungulates: viz., on historic and contemporary records of the sika deer, *Cervus nippon* Temminck, 1838 from the southern Kurile Islands, Russia (Kozlovskiy *et al.*, 2020), and an updated account on the Przewalski’s gazelle, *Procapra przewalskii* Büchner, 1891 (Leslie *et al.*, 2010). The paper on the sika deer resulted from Alexei’s fieldwork in Kunashir in 2019, the second paper was based on his work with the ZIN mammal collections.

Many collaborative projects have been made possible primarily thanks to Alexei’s unique collecting skills, coupled with using modern research methods. For instance, the enigmatic pygmy dormouse *Typhlomys chapensis* Osgood, 1933 was studied based on molecular, karyotypic and morphological data (Abramov *et al.*, 2012, 2014). Such integrative approach allowed the authors to prove that the Vietnamese population of *T. chapensis* is distinct from that occurring in the type locality and is therefore to be treated as a separate species, in the heretofore monotypic genus *Typhlomys*. Moreover, laboratory experiments with live pygmy dormice have shown that this unique, blind mammalian species relies entirely on ultrasonic echolocation for its activity (Panyutina *et al.*, 2017; Volodin *et al.*, 2019). Unfortunately, our authors were unable to publish such unique and novel results in neither *Science*, nor *Nature*. It was as if the editors simply did not believe the results presented. Yet, the echolocation in soft-furred tree mice is now a proven fact (He *et al.*, 2021), and the priority of this discovery does belong to the Russian authors.

Finally, a good number of Alexei’s papers have been devoted to faunistic studies of different regions:

European Russia (Abramov & Tikhonov, 2002), Transbaikalia (Borisova *et al.*, 2001; Abramov, 2001a, 2002), Vietnam (Abramov *et al.*, 2007a,b, 2008, 2009, 2010, 2011a,b, 2013a,c, 2015, 2018; Rozhnov *et al.*, 2008; Rozhnov & Abramov, 2009; Son *et al.*, 2009; Kruskop & Abramov, 2011; Abramov & Kruskop, 2012; Abramov & Rozhnov, 2013; Ly Ngoc Tu *et al.*, 2019; Nguyen Thi Tham *et al.*, 2020), and Laos (Abramov, 2021). Quite unsurprisingly, the number of faunistic works on Vietnam far exceeds others: 19 out of 24 (79%). The zoogeography of Vietnamese mammals was outlined by Abramov & Tran Quang Tien (2017). Alexei also wrote the chapter on Carnivora in the reference book on Russian mammals (Abramov & Khlyap, 2012).

Collaboration and mentoring

Surprisingly enough, Alexei has almost no students of his own; apparently because he is not too keen on giving lectures or tutoring students. Yet there are many younger colleagues whom he helped and supported early in their academic careers. For example, Igor G. Khorozyan (b. 1972), currently a specialist on biodiversity conservation and management from the University of Göttingen, Germany. Alexei was a formal supervisor for his PhD thesis “Spatial population structure and conservation problems of the leopard *Panthera pardus* (L., 1758) in Armenia”. And they have published quite a few joint works in relation to the topic of this PhD thesis (e.g., Khorozyan & Abramov, 2005, 2007; Khorozyan *et al.*, 2006, 2007, 2008, 2010).

Although, as mentioned above, any modern, integrative taxonomic or phylogeographic study is inherently collaborative, a prominent place in Alexei’s research is his partnership with Prof Ryuichi Masuda (b. 1960) from the Hokkaido University (Sapporo, Japan) (Fig. 9). They have known each other since 1997. Prof Masuda has visited Russia many times and they have undertaken many joint expeditions to the Volga Region, Kirov, and Buryatia. He invited Alexei to Japan many times, and they have had several successful joint grants. Their collaboration has been especially productive in the field of molecular phylogenetics of Carnivora, predominantly Mustelidae, and resulted in over 45 joint publications (e.g., Hirata *et al.*, 2014; Amaike *et al.*, 2015; Nishita *et al.*, 2015; Ishikawa *et al.*, 2020; Bartocillo *et al.*, 2021; etc.).

Alexei’s longstanding work in Vietnam was only possible through collaboration and friendly support by the Joint Vietnamese-Russian Tropical Research and Technological Centre in Hanoi. Of the Russian colleagues, Dr Andrey Kuznetsov and Svetlana Kuznetsova have been the main contacts and regular partners in expeditions (since 2003). Of the Vietnamese colleagues, the various help and collaboration by Dr Nguyen Dang Hoi, Dr Bui Xuan Phuong, Tran Quang Tien and Le Xuan Son cannot be overestimated. In over 20 years of working together, they have made dozens of joint expeditions throughout Vietnam and covered tens of

thousands of kilometres, living in tents in the rainforest for many months — in the rain and/or in extreme heat. Until 2008, the expeditions in which Alexei took part were organised and led by the late Dr Phan Luong (1948–2008). A new shrew species from Vietnam was described in his honour: *Crocidura phanluongi* Jenkins, Abramov, Rozhnov et Olsson, 2010. There is also fruitful cooperation between Alexei and his colleagues at the Vietnamese Academy of Sciences, Drs Nguyen Truong Son and Bui Tuan Hai, with whom they have conducted several joint fieldtrips and are in regular contact on mammal research in Vietnam.

Since 2017, Alexei has also been collaborating on studying the rat taxonomy with the Key Laboratory of Zoological Systematics and Evolution of the Institute of Zoology (the Chinese Academy of Sciences, Beijing) led by Prof Qisen Yang (b. 1964). In 2017–2019, with Prof Yang, Dr Deyan Ge and their colleagues, they conducted several interesting and productive expeditions to Hunan, Sichuan, Chongqing, Guizhou and Hainan. Based on the results of their joint fieldwork, several papers have been published, particularly on the molecular phylogeny, morphological diversity and taxonomy of the wild rats (*Niviventer* spp.) and the field mice (*Apodemus*) species in China (Ge *et al.*, 2018, 2019a, b, 2021a, b; Li *et al.*, 2020). On his visits to the Institute of Zoology in Beijing, Alexei was particularly impressed by the friendly atmosphere prevailing in Prof Yang's laboratory, and by the modern zoological storage facilities of the institute.

A collaboration with Paulina D. Jenkins (b. 1945), a Senior Curator at the Natural History Museum (NHM, London), on the taxonomy of shrews was also rather productive. Alexei visited London at least five times to study type and comparative materials on shrews and mustelids retained at the NHM and received a very friendly welcome from Paulina. Together they have published five joint papers (e.g., Jenkins *et al.*, 2007, 2010; etc.) and described five new species of shrews from Vietnam (see Appendix 2). Paulina always helps with information on particular specimens retained at the NHM and literature. In fact, they started communicating back in the 1990s, when for a paper on foxes (Baryshnikov & Abramov, 1992), she loaned him a skull from the NHM for comparison.

Alexei's collaboration with some of his colleagues has been particularly productive, for instance, with Dr Andrey Yu. Puzachenko (b. 1964) from the Institute of Geography, RAS in Moscow. Together they have published 19 joint papers (about 10% of the total), primarily on the Mustelidae (e.g., Abramov & Puzachenko, 2005, 2009, 2021; Puzachenko *et al.*, 2017, 2019; etc.), and have had a number of joint research grants. Dr Puzachenko has an excellent command of modern mathematical methods, and furthermore has developed some of the counting algorithms himself. At the same time, he is a professional mammalogist who completely comprehends all topics and taxonomic problems, making collaboration with him easy and productive.

Also worth mentioning is Alexei's productive collaboration with colleagues and friends from Moscow:

Dr Anna A. Bannikova (b. 1961) from the Lomonosov Moscow State University and Vladimir S. Lebedev (b. 1964) from the Zoological Museum of the Lomonosov Moscow State University. They have published at least 16 joint papers on rodents and insectivores, including those from Vietnam (Abramov *et al.*, 2012, 2017c, d, 2018; Bannikova *et al.*, 2011, 2014, 2017; etc.). They have had joint research grants and have undertaken field trips to Mongolia together.

Alexei is a member of the Russian Theriological Society and the International Federation of Mammalogists, and the IUCN SSC Small Carnivora and Small Mammal Specialist Groups. He has attended all the congresses of the All-Russian Theriological Society, from the 4th (in 1986) to the 11th (in 2022). He attended two International Mammalogical Congresses: viz., IMC-9 (Japan, Sapporo, 2005) and IMC-12 (Australia, Perth, 2017). In 2002, Alexei and one of us (AA) founded a new academic journal — the *Russian Journal of Theriology*, and since its inception, Alexei has been actively working as an Associate Editor of this journal. He is also a member of the editorial boards of four other journals: i.e., *Acta Theriologica Sinica* (2018–present), *Mammal Study* (Japan) (2007–2012, 2020–present), *Academia Journal of Biology* (Vietnam) (2021–present), and *Mammal Research* (Poland) (2021–present).

In his private life, Alexei is constant and happy. His wife, Yulia Borisovna Slastionenko (b. 1965) graduated from the same Department of Vertebrate Zoology as him, but three years later. She was working as a Research Assistant in the Laboratory of Theriology when Alexei returned from Turkmenistan in 1988. Together they undertook expeditions to Central Asia and Yakutia, and even published a joint paper (Abramov & Slastionenko, 2011). Alexei and Yulia got married in 1991 and have a grown-up daughter, Vera (b. 1994).



Fig. 10. In the mountain Altai, Russia, July 2008. Credit: D.V. Logunov.

On behalf of the *Russian Journal of Theriology*, all Russian and overseas mammalogists and ourselves, we wish Alexei good health, happiness and further success in his professional career, and, of course, best of luck in finding more new and exciting zoological materials in Vietnam and elsewhere.

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Appendix 1. List of species dedicated to Alexei V. Abramov.

Class ARACHNIDA

Order Aranei (5)

1. *Argiope abramovi* Logunov et Jäger, 2015 (Araneidae)
2. *Spartaeus abramovi* Logunov et Azarkina, 2008 (Salticidae)
3. *Stenaelurillus abramovi* Logunov, 2008 (Salticidae)
4. *Storenomorpha abramovi* Logunov, 2010 (Zodariidae)
5. *Xysticus abramovi* Marusik et Logunov, 1995 (Thomisidae)

Order Acari (3)

6. *Dubininetta abramovi* Bochkov, 2017 (Listrophoridae)
7. *Leptotrombidium abramovi* Stekolnikov, 2013 (Trombiculidae)
8. *Radfordia (Microtimyobia) abramovi* Bochkov et Mironov, 1998 (Myobiidae)

Class INSECTA

Order Orthoptera (4)

9. *Anabropsis (Apteranabropsis) abramovi* Gorochoy, 2020 (Anostomatidae)
10. *Elimaeva (Rhaebelimaeva) abramovi* Gorochoy, 2009 (Tettigoniidae)
11. *Megadiestramima abramovi* Gorochoy et Storozhenko, 2019 (Rhaphidophoridae)
12. *Rhaphidophora abramovi* Gorochoy, 2012 (Rhaphidophoridae)

Order Coleoptera (7)

13. *Colasidia abramovi* Baehr, 2008 (Carabidae)
14. *Chydaeus abramovi* Kataev et Fedorenko, 2013 (Carabidae)
15. *Craspedophorus dalatensis abramovi* Fedorenko, 2016 (Carabidae)
16. *Pterostichus abramovi* Fedorenko, 2017 (Carabidae)
17. *Parathlibops abramovi* Fedorenko, 2016 (Carabidae)

18. *Hister abramovi* Zinchenko, 2017 (Histeridae)
19. *Onthophagus (Parascatonomus) abramovi* Zinchenko, 2018 (Scarabaeidae)

Order Blattodea (1)

20. *Macrostylopyga abramovi* Anisyutkin, 2016 (Blattidae)

Order Dermaptera (1)

21. *Mongolabis abramovi* Anisyutkin, 2022 (Anisolabididae)

Order Phasmida (2)

22. *Paragonylopus abramovi* Ho, 2017 (Diapheromeridae)
23. *Pylaemenes abramovi* Ho, 2018 (Heteropterygidae)

Class REPTILIA

Order Squamata (1)

24. *Calamaria abramovi* Orlov, 2009 (Colubridae)

Class MAMMALIA

Order †Leptictida (1)

25. † *Prokennalestes abramovi* Averianov et Skutschas, 2000 (Kennalestidae)

Appendix 2. Mammal taxa described by Alexei V. Abramov and the co-authors.

Genera (3)

1. *Pseudosoriculus* Abramov, Bannikova, Chernetskaya, Lebedev et Rozhnov, 2017 (type species: *Soriculus fumidus* Thomas, 1913)
2. *Otohyalomys* Bannikova, Lebedev, Abramov et Rozhnov, 2014 (type species: *Hylomys megalotis* Jenkins et Robinson, 2002)
3. *Parablarinella* Bannikova, Jenkins, Solovyeva, Pavlova, Demidova, Simanovsky, Sheftel, Lebedev, Fang, Dalen et Abramov, 2019 (type species *Blarinella griselda* Thomas, 1912)

Subgenera (3)

4. *Neovison* Baryshnikov et Abramov, 1997 (type species: *Mustela vison* Schreber, 1777)
5. *Cabreragale* Baryshnikov et Abramov, 1997 (type species: *Mustela felipei* Izor, de la Torr, 1978)
6. *Cryptomustela* Abramov, 2000 (type species: *Mustela strigidorsa* Gray, 1853)

Species (11)

7. *Nesolagus timminsi* Averianov, Abramov et Tikhonov, 2000
8. *Crocidura sokolovi* Jenkins, Abramov, Rozhnov et Makarova, 2007
9. *Crocidura zaitsevi* Jenkins, Abramov, Rozhnov et Makarova, 2007
10. *Crocidura phuquocensis* Abramov, Jenkins, Rozhnov et Kalinin, 2008
11. *Crocidura phanluongi* Jenkins, Abramov, Rozhnov et Olsson, 2010
12. *Crocidura sapaensis* Jenkins, Abramov, Bannikova et Rozhnov, 2013
13. *Euroscaptor kuznetsovi* Zemlemerova, Bannikova, Levedev, Rozhnov et Abramov, 2016
14. *Euroscaptor orlovi* Zemlemerova, Bannikova, Levedev, Rozhnov et Abramov, 2016
15. *Chiromyscus thomasi* Balakirev, Abramov et Rozhnov, 2014
16. *Hapalomys suntsovi* Abramov, Balakirev et Rozhnov, 2017
17. *Niviventer gladiusmaculus* Ge, Lu, Xia, Du, Wen, Cheng, Abramov et Yang, 2018

Subspecies (2)

18. *Mustela nivalis rossica* Abramov et Baryshnikov, 2000
19. *Euroscaptor parvidens ngoclinhensis* Zemlemerova, Bannikova, Lebedev, Rozhnov et Abramov, 2016