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Centenary of Helmut Schaefer (1912–1976): a contribution to the history of research of fauna of the Tatra Mountains (Slovakia)

Príspevok k histórii poznania fauny Tatier:
sto rokov od narodenia Helmuta Schaefera (1912–1976)

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Abstract. In the early 1930s, Helmut Schaefer started examining owl pellets from the Tatra Mts. region, pioneering this type of research in Slovakia. Moreover, he collected an extensive osteological material consisting mainly of small mammals and birds coming from different time periods and located in the Muráň and Nový caves in the Belianske Tatra Mts. in order to determine their age. Based upon the subfossil osteological and recent data he described a new snow vole subspecies – *Chionomys nivalis mirhanreini* and also a new shrew subspecies – *Sorex araneus novyensis* n. ssp. dating back to the Upper Pleistocene.

Key words. Helmut Schaefer, Tatra Mts., history of research, *Chionomys nivalis mirhanreini*, *Sorex araneux novyensis*.

Numerous distinguished German zoologists carried out research of vertebrates in the Tatra Mts., e.g. K. J. G. Hartlaub, A. F. M. Graf von Keyserling, J. H. Blasius, E. Schauer, O. Uttendörfer, H. Kumerloeve, E. Mohr or G. H. W. Stein. Practically until his last days, Dr. Gustav Adolf Helmut Schaefer played an important role in this group despite various life obstacles or even tragedies reflecting the severe political situation of the 20th century. Although he left only few memories on the research of fauna in the Tatra Mts. (Schaefer 1967, 1975d) or several papers including the results of his work were published after his death in Germany (Eberhardt 1976, Gebhardt 1980 and in more detail Stamm 2002 – data from the latter publication were used in our paper) as well as abroad (Štollmann 1976, Hanák 1977, Obuch 2002); from our point of view, a more detailed analysis of his scientific research in the region is still missing. As a result, at the time of his centenary, we have decided to present this personality to our readers in order to highlight and appreciate his research of fauna of the Tatra Mts. Besides the above-mentioned papers, we used letters about his life milestones which he wrote to Dr. Andrej Stollmann as well as the precious information given by Ing. Ján Obuch and Ján Pitoňák

(a former ranger of the Tatra NP), who used to provide accommodation to Dr. Schaefer during his stays in the Tatra Mts.

Dr. Schaefer (using only his first name Helmut in his publications) was born in the Silesian town of Breslau (nowadays Wroclaw) on 12 July 1912. In 1921 his family moved to Görlitz where he graduated at the Augustum High School on the Easter of 1931. He was keen on natural history already during his early childhood. The hobby soon turned into a life-time passion and serious interest in scientific research. He visited the local Museum of Natural Sciences where he met its director Dr. Oskar Herr. His biology teacher P. Gatter also supported him in his efforts. He made friends with the Earl Hans Finck von Finckenstein living in the nearby castle of Niederschönbrun where they used to observe birds. At the age of 15, he helped for two days with ringing in the Vogelwarte Rossiten ornithological centre at Rossiten in East Prussia (nowadays Rybačij, Kaliningrad Region of Russia). In the course of his high school studies, he and von Finckenstein started cooperating with Dr. Otto Uttendörfer – one of the most renowned German specialists in the study of the diet of raptors and owls. Uttendörfer used to characterise their relationship as that between a father and a son, as Schaefer had lost his father quite early. What is more, Uttendörfer highly appraised Schaefer's scientific work and especially highly evaluateds his thesis, which is also mentioned by Stamm (2001, 2002).

At the age of 17, Schaefer published his first paper on the presence of *Sorex alpinus* in Silesia in the *Zeitschrift für Säugetierkunde* (Schaefer 1929) and a year later he noticed on this occurrence again (Schaefer 1930a). Even though Dr. Herr helped him to determine the species, they appeared to have mistaken and the species they reported was *Neomys fodiens* – thus they considered necessary to publish the correction hereon (Herr et al. 1931).

During his graduation, Schaefer presented his lecture on the issue of animal species and races and handed in the work on bird species nesting in the Görlitz region using his observations as a young boy. Until he graduated, he had four articles on birds and small mammals published in scientific journals. After graduation, he took up studies at the Philological Faculty of the Silesian Friedrich-Wilhelm University in Breslau. As he mentioned in his curriculum vitae, which he later enclosed to his thesis and which is still kept in the University records (record N° F 296, unpaginated), he studied summer and winter semesters of 1931 in Breslau, in summer 1932 in Innsbruck (Austria), the following three semesters again in Breslau, in Cologne in the summer of 1934 and returning to Breslau again in the winter semester of 1934/1935. On 10 January 1935, he elaborated the thesis on zoology (examined by Professors Pax and Goetsch) as well as botany (examined by Professor Bruder) and economy (examined by Professor Hesse). The zoological part of the thesis was aimed at the taxonomic status of small mammals from Central Europe. The thesis was presented on 13 February 1935. The thesis could be characterised as an in-depth scientific analysis published in the same year in the *Archiv für Naturgeschichte* covering 55 printed pages (Schafer 1935a). The reviewers Pax and Goetsche highly appraised the work and its author, whose achievements were said to be extraordinary. According to their own words, the author had been elaborating the thesis for six years and collecting the material herefor during his research in Germany, Czechoslovakia, Austria, Italy, France and the Netherlands. According to them, the thesis contains a great deal of original research and exploration which classify its author among the most distinguished specialists on mammals within Europe.

Consequently, Schaefer continued his studies at the Law College in Köninsberg (Kaliningrad) and Göttingen where he took the first level of the State Examination in 1936 and the second level in 1940. The combination of studies might appear to be contradictory, but Schaefer opted for the law study after more and more drastic exercise of power by the Nazis. According to Stamm

(2002), proving his origin was considered as a delicate question and thus, as an independent barrister he could be given a free leeway for scientific research. In the letter from 27 February 1975, Schaefer wrote to Dr. Stollmann that the main reason for not becoming a zoologist had been his cosmopolitan attitude in contrast to the Nazi ideology.

His visits and the following research in the Czechoslovak part of the Tatra Mts. started in 1931, when he visited the region of Rakúsy near Kežmarok (today's Slovakia) for the first time. He found accommodation at the forester Malina, a grandfather of J. Pitoňák. He came by bike along with his friends and they used to sleep in the stable on hay. As Malina's family spoke German fluently, Schaefer used to visit them almost every summer until the WWII broke out. He also used to be a regular visitor to the family of a local forester Wilhelm Mauksch at Ľubica near Kežmarok. In August 1931 he led him to the attic of a tower of the local church where they found numerous bats as well as a nest of the barn owl (*Tyto alba*). He analysed its pellets and published the results in 1933 (Schaefer 1933c). It is worth mentioning that more than 50 years after Kocyan's publications (1867, 1888, 1889), this paper along with other Schaefer's publications on small mammals dating back to the 1930s are the second in a row to deal with the research of the species of Eulipotyphla, Rodentia, and Chiroptera – mammal groups on which the information had always been insufficient. The situation was more or less the same within all regions across Slovakia. When examining the osteological material from the Tatra Mts. region, Schaefer made use of the pioneering research done by Roth (1881, 1882).

Mr Mauksch helped Schaefer to collect the zoological material in the between-war period. On 3 September 1935 he managed to record one specimen of the southern birch mouse (*Sicista subtilis*) at the altitude of 640 m a. s. l., in an open agricultural landscape. It was the first such discovery in Czechoslovakia and Schaefer determined the species based upon the habitat, physical size and colouring of its back part. He took the photo and material back to Germany but unfortunately, due to unsteady war times he failed to preserve the preparation but its photo and biometric data. In spite of this, several decades later he wrote a paper (Schaefer 1971a) where he analysed its biometric data as well as those of the northern birch mouse (*Sicista betulina*) in order to identify their taxonomic status in Czechoslovakia. He pointed to a major absolute and relative variability in the tail size which interferes in the same manner with the width of the two species and thus he concluded that a part of the specimens might belong to *Sicista subtilis*. Furthermore, the span of variation width should also point to occurrence of hybrids between the two species, thus representing two different subspecies. Schaefer considered *Sicista betulina* from the Central Carpathians as an elder population dating back to the Holocene period while *Sicista subtilis* passed to this region only in recent times. Only Anděra (1972) published his reaction to the article saying that Schaefer's analyses did not take into consideration the age variation and sexual dimorphism of the individuals along with the fact that the relative tail size of rodents represents a highly variable character, thus recommending further research.

The first Schaefer's paper related to a mammal species from the Tatra Mts. region was published in 1932. In the *Zoologischer Anzeiger* he compared some of the dimensions of the alpine shrew (*Sorex alpinus*) from Silesia with those of the specimens coming from the Tatra Mts. (Schaefer 1932e).

Another already mentioned paper from 1933 was aimed at the diet of the barn owl, based on an analysis of its pellets from the Ľubica church. It was the first publication on the owl diet from Slovakia (Obuch 2002). In total he assessed 708 individuals of vertebrates and several individuals of insects. From mammals, the majority of analysed specimens were the following species: *Talpa europaea* (3 inds.), *Neomys fodiens* (35), *Sorex araneus* and *S. minutus* (45),

Crocidura suaveolens (8), *Rhinolophus hipposideros* (1) *Myotis bechsteinii* (1), *Eptesicus serotinus* (3), *Vespertilio murinus* (1), *Arvicola terrestris* (2), *Microtus arvalis* (295), *Chionomys nivalis* (2), *Mus musculus* and *Apodemus sylvaticus* (258), and *Sicista betulina* (6). Out of 47 individuals of birds, the majority were songbirds (notably *Passer domesticus* – 26 inds.). He also found one example of the genus *Rana*. According to Obuch (in litt.), it is obvious that some of his data seem to be inaccurate (e.g. determining the species of *Sorex* and *Mus*) or even doubtful (e.g. the occurrence of *C. nivalis*). We can conclude that at that time Schaefer was only starting to study the owl diet and its osteological material and he was only about to start the study of *Chionomys*.

His research effort resulted in the thesis from 1935. He carried out an in-depth analysis of occurrence and biometric data linked with 23 then-valid species and subspecies of small mammals from different European regions, while the material from the Tatra Mts. region was considered of the highest importance (Schaefer 1975d). He did not only analyse some of then unknown species from the Tatra peaks and their surroundings (e.g. *Sorex alpinus*, *Sicista betulina*, *Microtus agrestis*), but he also described a new taxon, the Tatra snow vole (*Chionomys nivalis mirhanreini*) found in the Muráň and Nový caves in the Belianske Tatra Mts. We looked into this issue in more detail in a separate paper (Kocian & Kocianová 2002). It is only worth mentioning that Schaefer discovered the species in 1933 and 1934 in a rich osteological mates rial dating back to different time periods, which was found around the entrances to the caves. He also located 50 subfossil mandibles of the snow vole based upon which he described this new taxon. His study was thus completed with the description of a complete individual found in May 1934 by Bethlenfalvy at the altitude of 2000 m a. s. l., under the Lomnický štít Peak. Such discovery must be considered as extraordinarily precious due to the fact that the Tatra snow vole lives only in the Tatra and Lower Tatra Mts. and thus, represents not only an endemic of these mountains but also a glacial relict. The unusual name of the subspecies was created by Schaefer from the first characters of names of his friends – Mira Rosenthal, Hans Finck von Finckenstein and Reiner Theil.

Until the WWII broke out, he had published at least eight papers on the Tatra Mts. They mostly dealt with the local fauna (distribution of rodents, insectivores, birds or analysis of owl diet) or a comparison of the Tatran fauna with that from across Europe.

Those days, Schaefer did not work as a zoologist by profession, but since 1936 after taking his first State Examination he became a lawyer at then a state court in Breslau and in 1942 he was finally appointed as a State Counsellor in Krems an der Donau despite the fact that from 1940 until the end of the WWII he fought as a soldier on the Western Front. That was when he was held in captivity by the Americans for several months (Stamm 2002). After his release, he came back to Görlitz on the Christmas of 1945 and from 24 April 1946 to 31 October 1947 (Christian in litt.) he worked as a head of the local Museum of Natural History, a head of the Department for Science and Research of the Kulturbund and he also gave lectures at the Community College (Volkshochschule). He also became an active member of the Liberal-Democratic Party of Germany (Liberal-Demokratische Partei Deutschlands). At that time, the town of Görlitz was under the Soviet occupation. In 1947, while Schaefer – as a member of the anti-Nazi party – was trying to negotiate a release of a German journalist, he was arrested by the Soviets (Stamm 2002). He spent two years in detention in Dresden and without a right to fair trial he was found guilty of "collaboration with Western bourgeoisie" and sentenced to 25 years of convict labour in a Soviet concentration camp located in the coal region of Vorkuta (northern Russia). He worked there in coal mines from January 1950 to January 1955. From January 1955 to March

Helmut Schaefer and his memorial plaque in Tatranská Lomnica.
Helmut Schaefer a jeho pamätná tabuľa v Tatranskej Lomnici.

1955 he was transferred to a coal mine Inta in a labour camp Abes suited for the handicapped. In 1955 an Agreement was reached between the Soviet and West German Governments and as a result, German war prisoners were able to leave Russia. Schaefer left among the last ones – in January 1956 through Gorkiy (today Nizhniy Novgorod).

After returning, he decided to publish his experience from the Soviet concentration camps (Schaefer 1958b, Schaefer & Frenzel 1959) which enables us to read about appalling conditions in which prisoners were forced to live and work. As a watchful observer, he was able to examine local climate and a way of life of people living in harsh climate and working conditions. Secretly he also tried to note down occurrence of particular species of birds and mammals in the camp along with their reactions to the winter season. His observations were published after he returned from prison (Schaefer 1955, 1957a, b, c, d). It was a little miracle that during these hard times he succeeded in collecting more than 160 species of local plants and preserving them in herbarium. He collected the plants in 1953 along with another sick prisoner – forester Schmidt in tundra around the camp. They mainly focused on plants in blossom. They glued them with panada on the pieces of wall paper, later they used glue made from flour which was used by the prisoners to glue books. They tried to hide the herbarium in different places in prison and

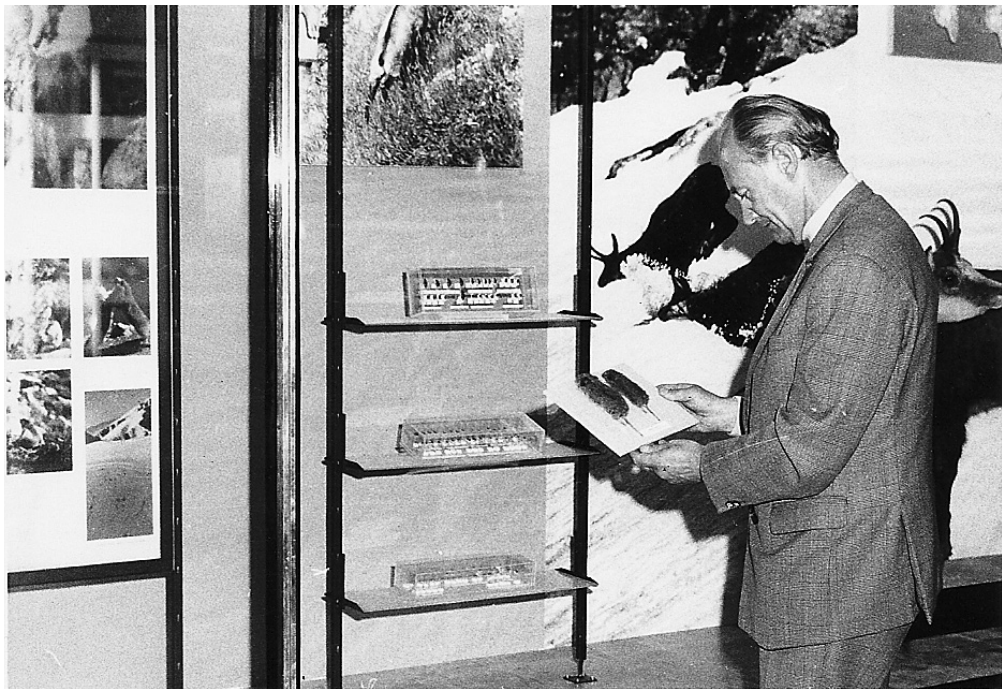
finally, one of the co-prisoners managed to transport it from Russia in the convoy of German soldiers who were bound to leave. Schaefer could get home several months later and settled down in Düsseldorf, West Germany. He contacted Mr Burhard Frenzel – a distinguished botanist and climatologist – in order to work up the herbarium by way of a scientific publication (Schaefer & Frenzel 1959).

In Düsseldorf he worked as a head of the Department for Culture and Preservation of Rhineland and he contributed to designation and management of a local protected area (focused mainly on protection of birds on the island of Amrum). From 1960 he was staying in Cologne where he executed the function of a head of the Department for Cultural Preservation of Landscape of Nord-Rhineland-Westphalia. He was also in charge of the Rhineland Museum in Bonn and conservation of its nature. At that time, he made a study trip to Scandinavia where he contributed to the conservation of certain valuable localities (Stamm 2002). He also travelled to Greece and Tunisia. He continuted publishing: beside the articles he also published two books (Schaefer 1958a, 1966) and gave lectures mainly from the field of zoology and nature conservation. Accorda ing to the letter he wrote to Dr. Stollmann on 27 February 1975, he gave more than 200 lectures and wrote around 100 papers. On 30 June 1972 he went into retirement (Stamm 2002).

He was also thinking about visiting the Tatra Mts. again in order to continue with his pre-war research. He only managed to do so in 1966 after meeting Ing. Dušan Janota from the Slovak Institute of Monument Care and Nature Conservation who introduced him to the Director of the Tatra NP Ing. Turošík. Based upon his personal invitation, he visited the Tatra Mts. on a yearly basis. He used to stay at Pitoňák's parents who lived at Ždiar at that time. The Tatra NP employees Ing. Pavol Helm and Ivor Mihál accompanied him during his excursions to the park. Ján Pitoňák and Ján Obuch helped him to collect the material for his research. Schaefer was both excited and touched as he was enabled to work in the same regions (Muráň and Nový caves) as 30 years ago. In 1967 the journal of the Tatra NP (*Sborník Prác o Tanape*) published his summarising study on pre-war research in the Tatra Mts. complemented with interesting notes (Schaefer 1967). He expressed his honest gratitude that the Tatra Mts. was proclaimed a National Park as – according to his own words – there is not a more appropriate and more important place for nature conservation and protection in Central Europe than the Tatra Mts.

His life-work was published in 1974 and referred to fauna of the Tatra Mts. from the 18th century, notably located in the Muráň cave. The paper was also published in the *Bonner zoologische Beiträge* (Schaefer 1974b). According to Obuch (2002) it is considered as the largest site of animal bones (5370 individuals) from Slovakia with the largest variety of mammal (57) and bird (103) species (Vojen Ložek and Vladimír Hanák from Prague helped him to identify some species). It is interesting to note that Schaefer gave a lecture on this research in the National Museum in Prague for the members of the Czechoslovak Ornithological Society and the Czechoslovak Zoological Society, on 22 May 1974. Another extensive publication from 1975 (Schaefer 1975c) was focused on the Holocene occurrence of small mammals and birds from Muráň. The very same year (Schaefer 1975b) he published a detailed analysis of hundreds of mandibles of shrews from the two caves dating back to the period of 30,000 years ago. According to him, there were three thanatocoenoses which, based upon carbon dating, he classified to the Upper Pleistocene (pre-Würm), Holocene (Preboreal-Atlantic) and to the period of around 200 years ago. From the Nový I cave (nowadays referred to as Nový III) he identified a new subspecies of shrew from the Upper Pleistocene – *Sorex araneus novyensis*.

All the above-mentioned publications by Schaefer are considered as original and unique contributions based upon long-term research. Even though some of the conclusions may seem



Helmut Schaefer in the Museum of the Tatra Mts. in Tatranská Lomnica.
Helmut Schaefer v Tatranskom múzeu v Tatranskej Lomnici.

doubtful (e.g. carbon-dating method, credibility of identification of some species in earlier papers; see Obuch 1992, 2002, 2012), they still play an important role in zoological research in the region.

Schaefer published several papers dealing with the diet of the eagle owl (*Bubo bubo*) in the Tatra Mts. region (Schafer 1970a, b, 1971b, 1972). Some of the papers are aimed at rare subfossil and recent occurrence of bats in the Muráň cave (Schaefer 1973a, c, 1974a) on which there was a lack of information. Another comparative study of subfossil and recent bats was published only post-mortem (Schaefer 1977). In the diet, he also discovered (Schaefer 1973b) a skull of the greater noctule bat (*Nyctalus lasiopterus*); it was the first record of this species in Slovakia.

Besides that, he wrote two short contributions from the Tatra Mts. where he described occurrence of the marmot (Schaefer 1936) and, based upon a carbon-dating analysis of post-cranial skeleton of the Tatra chamois (*Rupicapra rupicapra*), he set its age to the period of the Upper Dryas. It was the first proven subfossil occurrence of the chamois in the Tatra Mts. (Schaefer 1975a).

In total, in the period from the WWII until his death, Schaefer published 17 papers directly dealing with vertebrates of the Tatra Mts. or dealing with the analyses of vertebrates in Europe. He had visited the Tatra Mts. more than twenty times; even after retirement he went on with his

research and the last time he visited the mountains in autumn 1975. According to the letter to Dr. Stollmann from 17 October 1975, he had plans to continue with his research also in July 1976. At that time he intended to work along with his son in the Nový cave in the Belianske Tatra Mts. The date had been set with the Tatra NP Directorate in advance. He also asked for better access to localities, renting of a ladder and a longer rope. Unfortunately, after his last return from the Tatra Mts. he was diagnosed with a brain tumour and despite a swift intervention, he died on 11 January 1976. He is buried in Rösrath-Hoffnungstal near Cologne.

Dr. Schaefer – a humble, diligent and knowledgeable scientist and conservationist – has become one of the most important and distinguished researchers of the Tatra nature. Although he could observe various parts of Europe, he considered the Tatra mountains as the basic, long-term scientific environment which he loved above all. He claimed to have survived extremely harsh conditions in gulags only thanks to his memories of the Tatra Mts. Let this commemoration on the occasion of his centenary express our gratitude to this man for everything he had ever sacrificed to our mountains.

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SÚHRN

Dr. Helmut Schaefer (12. 7. 1912 – 11. 1. 1976) bol nemecký zoológ a ochranca prírody, ktorý v 30. rokoch minulého storočia realizoval v Tatrách rozsiahly výskum drobných cicavcov a vtákov. Tento výskum prerušila druhá svetová vojna, ktorú prežil ako nemecký vojak na západnom fronte a potom jeho odsúdenie sovietskou brannou mocou na 25 rokov žalára, ktorý prežil v sovietskom koncentrčnom tábore vo Vorkute. Z väzenia sa vrátil v r. 1956 do Západného Nemecka. V Tatrách pokračoval vo výskume aj od polovice 60. rokov a navštevoval ich až do posledných dní svojho života. Ako prvý na Slovensku analyzoval vývržky sov. Spracoval rozsiahly osteologický materiál, hlavne drobných cicavcov a vtákov, z rôznych časových období z jaskýň v Muráni a v Novom v Belianskych Tatrách a pokúsil sa stanoviť ich vek. Na základe subfosilného osteologického i recentného materiálu opísal z odtiaľ nový poddruh hraboša – *Chionomys nivalis mirhanreini* a zo svrchného pleistocénu aj nový poddruh piskora, *Sorex araneus novyensis*.

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