

History of the Herpetological Collection of the Hungarian Natural History Museum

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Abstract – The first items documented in the history of the Herpetological Collection of the Hungarian Natural History Museum were 37 amphibian and reptile specimens listed in the handwritten “*Catalogus*” of the National Museum in 1821. They included specimens of *Scincus pannonicus* (now *Ablepharus kitaibelii fitzingeri*) and *Proteus anguinus* most probably collected by PÁL KITAIBEL during his travels in 1797 and 1802. Subsequently, important acquisitions have been the result of the activity of IMRE and JÁNOS FRIVALDSZKY, SALAMON PETÉNYI, and several Hungarian travellers to exotic countries. After the foundation of the Department of Zoology in 1870, JÁNOS KARL (KÁROLI) gave a synopsis of the amphibians and snakes of Hungary, based on the material deposited in the collection and also literature data. From 1896 to 1915, there was a “golden age” of Hungarian herpetology, and also that of the Herpetological Collection of the museum, highlighting such names as LAJOS MÉHELY, ISTVÁN BOLKAY and GÉZA GYULA FEJÉRVÁRY. On the 100 anniversary of the Hungarian Natural History Museum (HNHM) in 1902, the herpetological material consisted of 5,066 identified specimens of 973 species. Remarkable parts of the collection were those collected and donated by SÁMUEL FENICHEL and LAJOS BÍRÓ from New Guinea, JÁNOS XÁNTUS from the United States, Mexico and Borneo, GYULA MADARÁSZ from Ceylon, and DÁNIEL ANISITS from Paraguay. These were all processed by MÉHELY, and most of the type material have also been deposited in the HNHM. The Hungarian part of the collection included extensive material from the whole Carpathian Basin, 1,433 locality samples of 50 species and subspecies altogether, as summarised by FEJÉRVÁRY-LÁNGH in 1943. In 1953, the famous Africa Exhibition of the HNHM was opened, with delightful dioramas prepared by taxidermist SÁNDOR ÖRY, who also mounted a number of reptile specimens. Unfortunately, this exhibition was burnt to ash in 1956, and it could never be reconstructed. The destruction caused by Russian bombs during the Hungarian revolution almost totally annihilated the scientific collection in the Department of Zoology in Baross street as well; approximately 40,000 specimens with 20–25 valid type specimens, and the complete herpetological library were lost. The extremely hard work of reconstruction of the collection was the merit of two committed

persons, ISTVÁN BOROS director general and OLIVÉR GYÖRGY DELY, the last classic museum herpetologist of the collection. They, with the help of international donations, of many enthusiastic Hungarian zoologist collectors, and with the assistance of ERZSÉBET ÖRY, rebuilt the Herpetological Collection from nil to the size of 15,000 specimens reached by the end of DELY's life in 2003. During DELY's activity, the collection became a center for Hungarian herpetological research, many visiting scientists were recurring guests, two international conferences were organised in Budapest, and the scientific synopses of the Hungarian herpetofauna were published. We believe that with this period the traditional, collection- and morphology-based museum herpetology came to an end, and opened the gate to the new style investigations focusing on population biology and nature conservation of amphibians and reptiles. With 48 figures.

Key words – Amphibians, reptiles, museology, Budapest, Hungary, 1956, acquisitions.

THE BEGINNING

The very beginning of the herpetological – i.e. collecting and studying amphibians (Amphibia) and reptiles (Reptilia) – collection of the Hungarian Natural History Museum (HNHM) cannot easily be determined. These vertebrate animals – although being not really popular among the general public – have always yielded a small, but exciting and not dismissable part of natural sciences. In the first few decades the Hungarian Natural History Museum – which was established in 1802 (KORSÓS & HORVÁTH 1996, MATSKÁSI 2002) – concentrated mainly on the “curiosities” (animals, plants and minerals), as many other similar institutes did. The first zoological items were given to the museum most probably around 1807–1808: a one-eyed pig preserved in alcohol, a dry stuffed heron, and a raven's egg (PAPP 1992). In these times, the work of the museum's first “curator” (namely LAJOS TEHEL (1769–1816) who got his job in 1810) was nothing more than the organisation of donations – like the aforementioned pig, heron and egg. The first scientific zoological material – containing butterflies and beetles also – was donated to the museum in his time, in 1811, in the form of the collection of a lady, ANNA JORDÁN from Nagyszombat (through the purchase by FERENC STIPSICS, Canon of Esztergom, see FRIVALDSZKY 1880, HORVÁTH 1902). We do not know anything more about her. TEHEL had two volunteer assistants, one of whom was PÁL JÁNOS JÁNY, who later became a regular employee and the keeper of the zoological collection. TEHEL – who was considered a mineralogist by his contemporaries – established the first exhibition of the museum in 1810, and later, in 1815, he compiled the plan for another one, which he was unable to accomplish, because he died at the early age of 47 in 1816 (PAPP 1992).

PÁL JÁNOS JÁNY (?–1834), the first “*Curator Camerae Zoologicae*” – keeper of the zoological collections – was an employee of the museum between 1814 and 1822. In their (TEHEL's and JÁNY's) time, in 1815 the items of the National Museum were organised in a determined order (ANONYMOUS 1815):

“The objects of the main-Department are divided into two groups again: 1) Products of Nature, and 2) Artificial Works. Items belonging to the first group:...

e) A not very old Collection, in which the Hungarian four-legged animals, birds, amphibians, fish, insects and vermin are collected...”

Unfortunately, written records about what the collection contained at this time could not be recovered.

After TEHEL’s death, new curators worked above JÁNY (the keeper of the collections)*, but they didn’t pay much attention to the animals (though there were animals among their collections and donations). JÓZSEF JÓNÁS (1787–1821) mineralogist was the curator of the Natural Collections between 1817 and 1821, and JÓZSEF SADLER (1791–1849) botanist between 1821–1822. In these times, the museum mainly increased in the number of rare books and printed texts, including the scientifically significant (and herpetologically interesting) PÁL KITAIBEL’s manuscript collection, which was bought for the museum in 1818 by Palatine JÓZSEF (KUBINYI 1861).

PÁL KITAIBEL (1757–1817) the greatest Hungarian botanist was a great polymath: a travelling explorer who – after his death – has not only left his herbarium to the museum, but also his few thousand collected minerals. But the most valuable parts of his legacy are probably the travel diaries, in which he noted many zoological observations (HORVÁTH 1918, JÁVORKA 1957). Concerning amphibians and reptiles, he was the first in Hungary to describe two well-known species. He gave a detailed description of the Snake-eyed Skink (*Ablepharus kitaibelii fitzingeri*) in 1797 in *Iter baranyense* (= Journey to Baranya County) under the name “*Lacerta Nitida*” (placing its habitat around Buda, Budaörs, Csákvár, and Várpalota); if this was a publication, then the animal would still bear the name of KITAIBEL.

Unfortunately, KITAIBEL’s description, along with many other descriptions, remained in manuscript i.e. in an unpublished form. Later CARL VON SCHREIBERS (1775–1852) of Vienna (TIEDEMANN & GRILLITSCH 1997) set aside two specimens (under the name *Scincus pannonicus*) of the small lizard which he got from KITAIBEL. It was only afterwards that LEOPOLD FITZINGER (1802–1884) properly described the species (using the specimens which he got from SADLER after the death of KITAIBEL) as *Ablepharus pannonicus* (FITZINGER 1824, Fig. 1). Finally – after some taxonomical troubles not detailed here (see KORSÓS & HORVÁTH 1992), – ROBERT MERTENS gave it the name *Ablepharus kitaibelii fitzingeri* in 1952, which is accepted today (MERTENS 1952). As it is seen now, the discovery of the Snake-eyed Skink is a real ‘success-story’ of Hungarian herpetology and, in addition, it is one of the earliest. KITAIBEL later mentioned this lizard many times in his diaries (under the name *Lacerta nitida*, Fig. 2) (in his itineraries: *Iter croaticum* 1802, *Iter arvense* 1804: N. Szál = Naszály Hill at Vác, *Animalia Hungariae*: Oct. Lat. 85, see HORVÁTH 1918).

The other interesting herp species, the Olm (*Proteus anguinus*) was already known by KITAIBEL based on the description by LAURENTI, and so he indicated – in 1802 – that this animal lives in the Velebit mountains (*Iter croaticum* 1802). Unfortunately, he caught

* A curator – in the contemporary sense – is the person who organises, labels and scientifically examines the collection, while the keeper of the collection is the one who does all the ‘menial’ work around the collection (i.e. cleaning, dusting, guarding...).

no specimen – the first *Proteus anguinus* of the National Museum was donated by MIKSA VERHOVÁČZ, Bishop of Zagreb, who obtained it in Krajna in 1819 (HORVÁTH 1918).

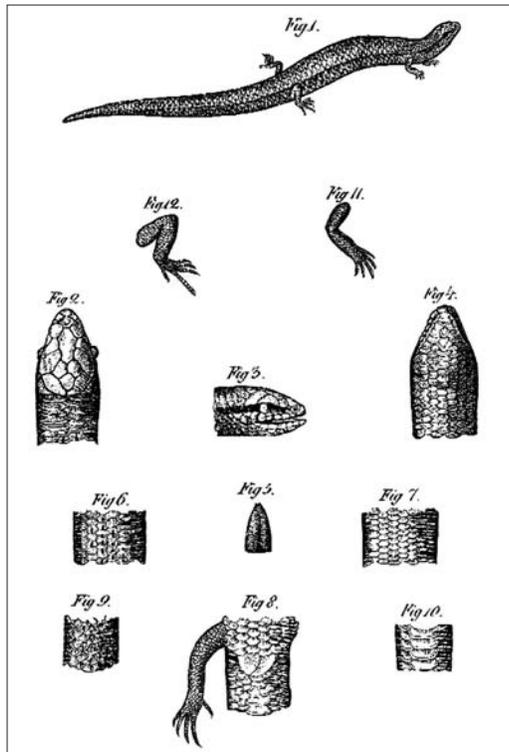


Fig. 1. FITZINGER's drawing of *Ablepharus pannonicus* (= *A. kitaibelii fitzingeri* MERTENS, 1952) from 1824

Stinci
 177. nitida, descripta et picta in chartis separatis.
Stincus pannonicus Schreib.
 Ad Chalcidas propius accedit

Fig. 2. KITAIBEL's handwritten note on "*Lacerta nitida*" ("descripta et picta in chartis separatis. *Stincus pannonicus* Schreib. Ad Chalcidas propius accedit") in his manuscript "*Animalia Hungarica*" (HNHM No. Oct. Lat. 85, JÁVORKA 1957)

THE FIRST ONE-HUNDRED YEARS

The first inventory list of the vertebrate animals of the museum is called “*Catalogus Reinventationalis Rerum Naturalium, et Artefactorum in Camera Naturae, & Artis Productorum Musei Nationalis Hungarici praeexistentium*”, and is now in the collection of the Hungarian State Archives (Fig. 3). It consists of several handwritten pages from the year 1821 (PAPP G. *pers. comm.*). There is a continuously numbered inventory book in the Mammal Collection from 1850 until 1898 (Fig. 4), which lists 1–2,397 items, recent and paleozoological as well. In the same collection there exists another – obviously hand-copied – inventory list, which runs from 1821 until 1873 (Fig. 4). In the first few years they restarted the numbering every year, but from 1850, they used the same numbers as in the other list. This second inventory book – which is at its beginning a copy of the one kept originally in the Archives – only lists 1193 items, but incorporates later-added notes, explanations, and details – but only about the recent vertebrate material (thus the paleozoological entries are omitted). However, it contains the short “*Consignatio Amphibiorum*” (Fig. 5), which was originally mentioned on pages 257–258 of the “*Catalogus*”, comprising only 37 specimens. This is the first documented list of the amphibian-reptile collection of the Hungarian National Museum (Table 1).

Table 1. List of the first amphibians and reptiles, as enumerated in the first inventory book of vertebrate animals of the Hungarian Natural History Museum (1821) (see also Fig. 5)

| Name in the catalogue | Present scientific name | Original annotation |
|------------------------------------|---|---|
| <i>Testudo orbiculata</i> | <i>Emys orbicularis</i> | |
| <i>Testudo geometrica</i> | <i>Testudo hermanni</i> | Etiam in Prot. benef. Anni 1822. sub No 1251 consignata |
| <i>Rana bufo</i> (4 pcs) | <i>Bufo bufo</i> | ist ausgestopft |
| <i>Rana viridis</i> | <i>Bufo viridis</i> | ist: Bufo viridis, fehlt |
| <i>Hyla arborea</i> | <i>Hyla arborea</i> | |
| <i>Rana bombyna</i> (2 pcs) | <i>Bombina bombina</i> | Abjecta |
| <i>Lacerta s. aquatica</i> (2 pcs) | <i>Triturus vulgaris</i> | ist: Triton punctatus |
| <i>Lacerta Salamandra</i> (2 pcs) | <i>Salamandra salamandra</i> | ist: Salamandra maculata |
| <i>Lacerta lacustris</i> (5 pcs) | <i>Triturus cristatus</i> | ist: Triton palustris |
| <i>Scincus pannonicus</i> | <i>Ablepharus kitaibelii fitzingeri</i> | |
| <i>Lacerta agilis</i> (5 pcs) | <i>Lacerta agilis</i> | ausgestopft |
| <i>Coluber Natrix</i> (2 pcs) | <i>Natrix natrix</i> | Abject. |
| <i>Coluber Berus</i> (4 pcs) | <i>Vipera berus</i> | ist: Pelias berus |
| <i>Coluber austriacus</i> | <i>Coronella austriaca</i> | |
| <i>Anguis fragilis</i> (2 pcs) | <i>Anguis fragilis</i> | |
| <i>Proteus anguinus</i> | <i>Proteus anguinus</i> | |
| <i>Coluber Caspius</i> (2 pcs) | <i>Hierophis caspius</i> | sunt flavescences |



Fig. 3. The first “Catalogus...” of 1821 on the natural history objects in the possession of the Hungarian National Museum (Hungarian State Archives, N24, microfilm no. 916)

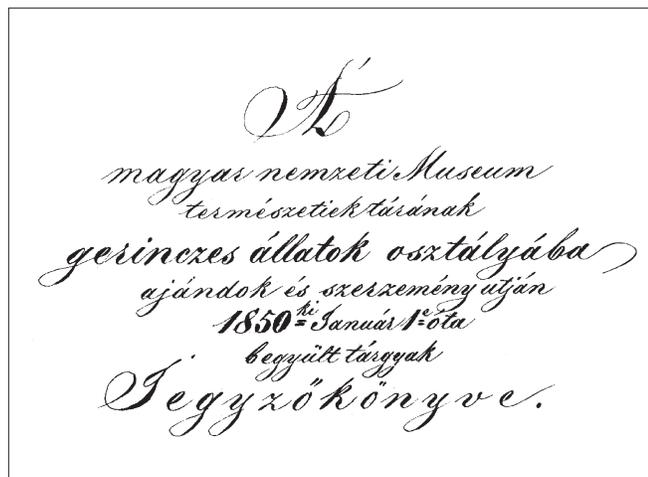


Fig. 4. First page of the original inventory book for zoological specimens since 1850 (now in custody of the Mammal Collection). It says: “Inventory book of the objects donated and acquired to the class of vertebrates of the natural history department of the Hungarian National Museum from 1st January 1850”

*Consignatio Amphibiorum e Catalogo
Reinventionali Anni 1821.*

CA. 1821
1-36.

| N ^o . | Nomen Ser. | | N ^o . | Patria. | Ummarkung Lappetok. D. |
|------------------|------------------------------|------------------------------|------------------|---------|---------------------------|
| 1. | <i>Bestudo orbiculata</i> | † <i>Bufo lutaria</i> . | | | |
| 2. | " <i>geometrica</i> ! (Ksta) | | | | |
| 3. | <i>Rana bufo</i> ! | † <i>R. cachinnans</i> . | | | |
| 4. | " <i>viridis</i> ! | † <i>Bufo viridis</i> ! | | | |
| 5. | " <i>bufo</i> ! | † <i>Rana cachinnans</i> | | | |
| 6. | " " | " <i>esculentia</i> ! | | | |
| 7. | " " | | | | |
| 8. | <i>Ryla arborea</i> ! | | | | |
| 9. | <i>Rana bombyna</i> ! | † <i>Bombinator igneus</i> . | | | |
| 10. | " | | | | |
| 11. | <i>Lacerta s. aquatica</i> ! | † <i>Triton punctatus</i> . | | | |
| 12. | " | " " " | | | |
| 13. | " <i>salamandra</i> ! | † <i>Salamandra maculosa</i> | | | |
| 14. | " | " " " | | | |
| 15. | " <i>lacustris</i> ! | † <i>Triton palustris</i> . | | | |
| 16. | " | " " " | | | |
| 17. | " | " " " | | | |
| 18. | " | " " " | | | |
| 19. | " | " " " | | | |
| 20. | <i>Scincus pannonicus</i> | | | | |
| 21. | <i>Lacerta agilis</i> ! | † <i>L. viridis</i> . | | | |
| 22. | " | | | | |
| 23. | " | | | | |
| 24. | " | | | | |
| 25. | " | | | | |
| 25. | <i>Coluber natrix</i> | | | | |
| 26. | " <i>berus</i> ! | † <i>Pelias berus</i> ! | | | |
| 27. | " | " " " | | | |
| 28. | " | " " " | | | |
| 29. | " <i>austriacus</i> ! | | | | |
| 30. | <i>Anguis fragilis</i> ! | | | | |
| 31. | " | | | | |
| 32. | <i>Coluber berus</i> ! | † <i>Pelias berus</i> ! | | | |
| 33. | <i>Coluber natrix</i> . | | | | |
| 34. | <i>Proteus anguinus</i> ! | | | | |
| 35. | <i>Coluber Caspius</i> ! | | | | |
| 36. | " <i>sunt flavescens</i> ! | | | | |

Fig. 5. "Consignatio Amphibiorum" from the 1821 hand-copied inventorybook (note double numbers at 25)

LAJOS MÉHELY gives a different history of the beginning of the herpetological material in his chapter paper written for the 100th anniversary of the National Museum (MÉHELY 1902). According to him, JÓZSEF SADLER and ISTVÁN DRÉHER were the starters of the collection, the former with 3 Hungarian species, the latter with 4 turtle shells. This is partly contradicted by a review for the National Museum from 1896 (ANONYMOUS 1896), which lists in detail the employees of the museum, and in which it is seen that ISTVÁN DRÉHER zoological scribe (and taxidermist) was in employment only from 1866 (until his death in 1888). But, there was more than one ISTVÁN in the DRÉHER family, and most probably the one who donated the shells was the father of the one who worked as scribe and taxidermist. ERZSÉBET SZABÓNÉ REGÓCZI (born ERZSÉBET DREHER, 1924–) personally stated that this was his great-grandfather, ISTVÁN DRÉHER (1791–1849), who – as a scientist – worked with frogs, lizards, and turtles in the Hungarian National Museum, beside JÁNY and later SADLER. He died as the “inspector” of the Museum and is buried in the Kerepesi cemetery in Pest. Surprisingly, none of the earlier editions of the Museum’s history mentioned him (KUBINYI 1861, PULSZKY 1888, HORVÁTH 1902).

According to MÉHELY (1902), the increase in the next year (1823) consisted of 2 turtle, 3 lizard, 5 snake, 3 salamander and 2 frog specimens (15 specimens altogether), and they were all collected by JÁNY. These acquisitions are all indicated in the inventory list of 1823, but it can also be seen there that the 37 specimens from 1821 in the “*Consignatio Amphibiorum*” precede them.

After SADLER, IMRE FRIVALDSZKY (1799–1870) was employed, who – from 1822 as an assistant curator, and between 1850–1851 as a curator – brought huge energy to the expansion of the zoological collections. FRIVALDSZKY was an educated scientist (graduated at the medical faculty of the Budapest University), later became primarily a zoologist (ENDRÓDI 1971, BÁLINT & ABADJIEV 2006), and not only did he improve the collections favourably, but he also established the base of Hungarian faunal research. His dissertation was a monograph of Hungarian snakes (FRIVALDSZKY 1823, Fig. 6). In this 62-page text – besides a general description of the snakes according to the actual viewpoint – he gives the incredibly detailed description of 11, at that time already-known species from the Carpathian Basin. There appears two viper species (under the names *V. ammodytes* and *Pelias berus*), 8 colubrid snakes all considered to be in the genus *Coluber* (according to their present names: the Smooth Snake, the Aesculapian Snake, the Caspian Whipsnake, the Grass Snake, the Dice Snake and two species which are not found in Hungary today: the Four-lined Snake and the Balkan Whipsnake). The book includes one illustration, which consists of three parts depicting the headscapes of the snakes with their Latin names (Fig. 7).

IMRE FRIVALDSZKY enriched the collection with 11 Hungarian and 18 foreign reptile species, in the beginning of his employment, but he later mainly worked with insects. Because of this, the museum had to wait for the increase in the collection of vertebrate material until 1834, when SALAMON JÁNOS PETÉNYI (1799–1855) joined the museum. He was elected to replace JÁNY. He was an assistant curator from 1834, and a curator from 1850. From this time on, FRIVALDSZKY handled the invertebrates and PETÉNYI the vertebrates. This was the so-called “Frivaldszky–Petényi era” (HORVÁTH 1897), which stands as a milestone in the history of Hungarian zoology, thanks to the work of these two exceptional scientists. However, no herpetologically relevant data or text remains from PETÉNYI.

The zoological collection – which at that time did not officially exist as an independent organisation – was housed between 1813–1838 in depositories on the site on Múzeum Boulevard (which was bought for museum purposes from Count ANTAL BATTHYÁNY in 1813). Unfortunately, the great flood of the Danube river at Pest in 1838 destroyed almost the whole collection (incl. most of PETÉNYI's and FRIVALDSZKY's material), even though there were attempts to rescue it into the building of the Ludovika Military Academy. It became obvious for everyone that the collection, being more and more valuable, was worthy of an independent storing place. As ÁGOSTON KUBINYI wrote in 1861:

“Because the greater part of the museum's collections were stored in the building of the Ludoviceum since the dangerous flood of 1838 until the spring of 1847, a small part of it temporarily and in a hurry exhibited, the other part locked away in crates, during this time the scientists and the curious public could not take advantage of it.”

Built after the plans of MIHÁLY POLLACK, the new building of the National Museum was ready in 1846, and the natural history collections got its place on the second floor in eight rooms (Figs 8–9). As was the custom in that age, the exhibition and the scientific collection were not separated. In this year altogether 3,500 vertebrate and more than 32,000 invertebrate specimens were stored in the museum (ANONYMOUS 1896).

Between 1837 and 1847, besides many smaller acquisitions, the most significant herpetological increase was the donation of GYÖRGY JÁNOS RAINER, which consisted of 46 amphibian and reptile specimens collected around the Tátra Mts, northern Hungary (now in Slovakia) (MÉHELY 1902). The year 1851 was also exceptional, when “... *the Hungarian group of amateur naturalists (i.e. the Royal Hungarian Natural History Society) ceased to handle its collections, and passed all its animal, plant and mineral collections to the museum*” (KUBINYI 1861). The reason for this great donation was not really scientific consideration, but rather because of the poor financial state of the Natural History Society after the freedom-fights and the lack of space (GOMBOCZ 1941). In this collection, there were 19 reptiles and 3 amphibians (MÉHELY 1902). In the inventory list, the material was only enlisted in the year 1856 (Fig. 10). From the foreign collections, those which deserve to be mentioned are: the 206-specimen collection of LAJOS DOLESCHALL from the island of Java (1856), the Egyptian reptiles of JÁNOS KOVÁCS (50 pcs, plus 57 crocodile eggs) and the collection of JÁNOS XANTUS, which was collected in South California (=Baja California) and completed by a few specimens sent by the Smithsonian Institution of Washington (FRIVALDSZKY J. 1865). It contained 61 specimens altogether, and arrived in 1861 (Fig. 11). In exchange for it, our museum sent 21 Hungarian specimens to the Smithsonian Institution in 1862 (among which were four Snake-eyed Skinks and two Olms).

From 1850 on, the entries in the inventory lists were no longer given with numbers that started anew each year, but were numbered continuously. Thus, the herpetological items can be easily identified by their numbers. In the aforementioned handcopied inventory list, the last, 1193rd entry (the collection from around the Sava River, now in Croatia, by JÁNOS KARL), is just an entry at the end of the page in the original inventory list from 1850. Why did the transcription and the clearance end in 1873 is not clearly understandable, because at that time the independent collection had already existed for 3 years (see below), and – for instance – inventory take-over also did not happen then but in 1895–1896 (around

the death of JÁNOS FRIVALDSZKY, first to SÁNDOR MOCSÁRY, then to GÉZA HORVÁTH). But let's go back to the 1850s.

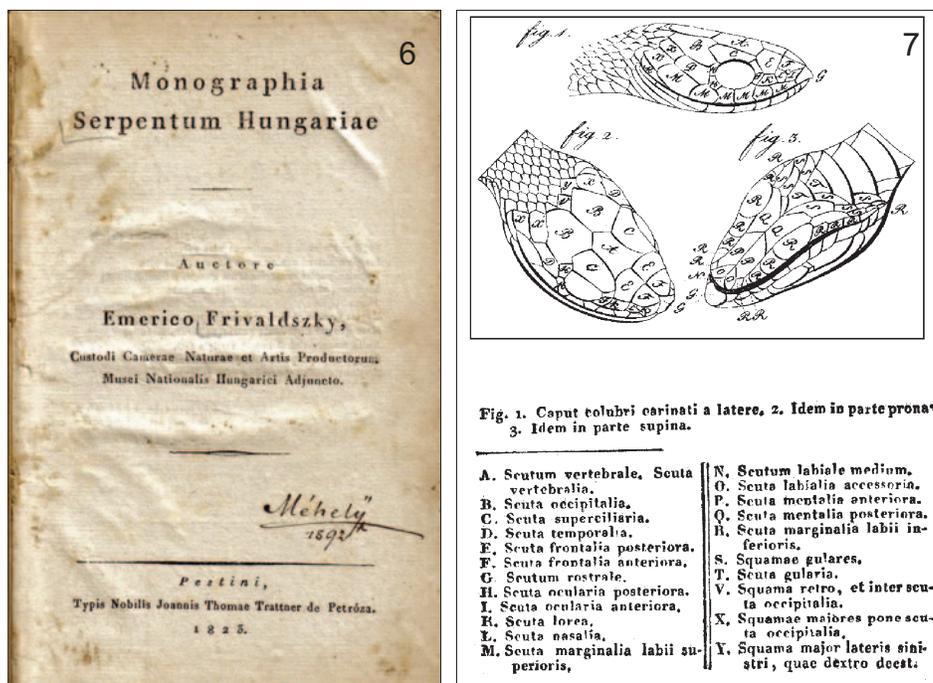
IMRE FRIVALDSZKY did not stop the expansion of his private collection after his retirement (1851), and in 1864 he sold it to the National Museum. In contrast to him, PETÉNYI, who died in 1855, “never collected anything as a curator for himself, even gave all his bird and egg collection to the museum. He did this because in most of the cases the curators work more with their private collections than with the museum's and he did not want to be such a curator” (KUBINYI 1864). In the private collection of FRIVALDSZKY, there were 207 amphibian and reptile specimens from the Balkans, Turkey, and Asia Minor (Fig. 12).

One year later, in 1865 FRIVALDSZKY wrote his book entitled “*Characteristic data about Hungary's fauna*”, in which there were herpetological records from three areas, altogether five snake and a frog species. He highlighted two species of our herpetofauna, which are – even today – considered as the most valuable ones: the Caspian Whipsnake and the Snake-eyed Skink (then under the names *Coluber caspius* and *Ablepharus pannonicus*). These two species were also beautifully illustrated (Fig. 13).

IMRE FRIVALDSZKY was followed in his position by a distant relative of his in 1852: JÁNOS FRIVALDSZKY (1822–1895) head curator, whom he worked with since the 1840's. JÁNOS FRIVALDSZKY was assistant curator from 1851, curator from 1852 and head curator from 1870. The two FRIVALDSZKYS travelled to one part of the country or another almost every year in order to examine the Hungarian fauna. They travelled through and collected everything from Trencsén, Krassó, Temes, and Máramaros counties, but they visited – together or separately – the Balkan Peninsula, Turkey, and even the isle of Crete.

The Zoological Collection of the National Museum occupied 15 rooms on the second floor of the two-floored building in 1861. There were “... two curators and an assistant curator taking care of the collection, with the help of a taxidermist and two servants.” The amphibians and reptiles got their place in the third ‘department’: “*Department of Naturals and Artefacts. A) Animal-collection a) Superior or vertebrate animals. ... 3.) Collection of Creepy-crawlies (Amphibia). In this large collection of 300 specimens almost all of the Hungarian species are presented. The foreign collection was greatly enhanced by the donations of the Smithsonian Institution of Washington and by Dr. Lajos Doleschall Javan medical soldier.*” (KUBINYI 1861). After the flood in 1838, this is the first time we can find a quantified summary of the amphibians and reptiles (which still appear together in the exhibition and the collection).

Not many records remain on how the amphibians and reptiles were prepared in these times, partly because the specimens mounted then have been destroyed (mainly in 1956 in the exhibition and in the building of the Department of Zoology), and partly because written records have not survived from that time. However, there exists at least one, the “Instructions” by SAMU BATIZFALVI (1826–1904), a medical surgeon, who published his book in 1853. BATIZFALVI was not a preparator of the museum, thus his little booklet of 42 pages was not about the museum's aspect of taxidermy, but a general one. In the seventh section he wrote in detail about the preparation of reptiles for “natural collections”. We get exact descriptions of the flaying of frogs, toads, lizards, and even of the preparation of the turtle shell. He believed that such details as the fangs of the poisonous snakes, the fragile tails of the lizards and the scales coming off when the animal sheds its skin (Fig. 14).



Figs 6–7. 6 = Front cover of the first Hungarian truly herpetological work “*Monographia Serpentum Hungariae*” (FRIVALDSZKY 1823). Personal copy of LAJOS MÉHELY, 7 = Drawings of a snake head by IMRE FRIVALDSZKY (1823), page 23.



Figs 8–9. 8 = The building of the Hungarian National Museum in the time when it was still the location for all Hungarian museum collections (painting by JÓZSEF MOLNÁR, 1885), 9 = The Hungarian National Museum today only houses historical collections and exhibitions (photograph by Z. KORSÓS)

A kir. magyar természettudományi társulat ajándoka, 1856-ban.

Gyűjtemény, melyet a társulat a Gyűjteményi Bizottság által, in 1856.

*1856.
1856.g.-m.*

| <i>Nº.</i> | <i>Név. Nomen.</i> | <i>Exemplaria.</i> | <i>Patriu.</i> | <i>Segyzetek. Cimmutalvány.</i> |
|--------------------------|------------------------------------|--------------------|----------------|--|
| <u><i>Hüllők.</i></u> | | | | |
| <u><i>Amphibian.</i></u> | | | | |
| <i>g.</i> | <i>1. Python tigris</i> | <i>1.</i> | | |
| | <i>2. Crotalus horridus</i> | <i>1.</i> | | <i>Exemplar, melyet a társulat ajándékozott.</i> |
| | <i>3. Anguis fragilis</i> | <i>1.</i> | | |
| | <i>4. Pseudopus Pallasii</i> | <i>1.</i> | | <i>defect.</i> |
| | <i>5. " "</i> | <i>1.</i> | | <i>defect.</i> |
| | <i>6. Coluber flavescens</i> | <i>1.</i> | | <i>Exemplar, melyet a társulat ajándékozott.</i> |
| | <i>7. " "</i> | <i>1.</i> | | |
| | <i>8. " "</i> | <i>1.</i> | | |
| | <i>9. " "</i> | <i>1.</i> | | |
| | <i>10. " caspius</i> | <i>1.</i> | | |
| | <i>11. " caecus</i> | <i>1.</i> | | |
| | <i>12. Natrix vulgaris juv.</i> | <i>1.</i> | | |
| | <i>13. Vipera amodytes</i> | <i>1.</i> | | <i>Exemplar, melyet a társulat ajándékozott.</i> |
| | <i>14. " "</i> | <i>1.</i> | | <i>Exemplar, melyet a társulat ajándékozott.</i> |
| | <i>15. Pelias berus</i> | <i>1.</i> | | <i>Exemplar, melyet a társulat ajándékozott.</i> |
| | <i>16. Alligator sclerops juv.</i> | <i>1.</i> | | |
| | <i>17. Cameleo vulgaris</i> | <i>1.</i> | | <i>Exemplar, melyet a társulat ajándékozott.</i> |
| | <i>18. Varanus ocellatus</i> | <i>1.</i> | | <i>" " " "</i> |
| | <i>19. Hypochthon Laurentii</i> | <i>1.</i> | | <i>" " " "</i> |
| | <i>20. Rana cacinna</i> | <i>1.</i> | | <i>Exemplar, melyet a társulat ajándékozott.</i> |
| | <i>21. " temporaria</i> | <i>1.</i> | | |
| | <i>22. Triton palustris</i> | <i>1.</i> | | |
| | | <i>Summa. 22.</i> | | |

Fig. 10. List of amphibians and reptiles donated by the Royal Hungarian Natural History Society

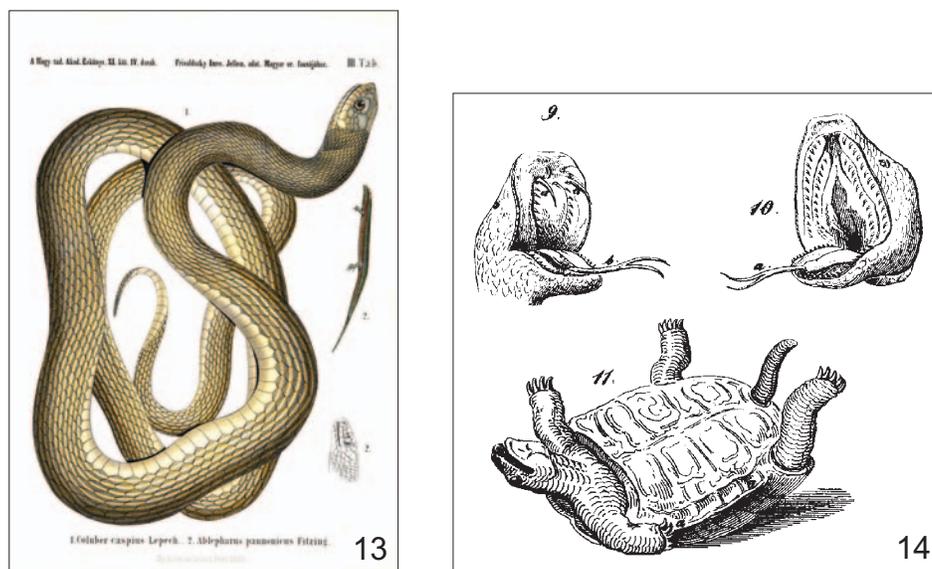
| Segy. szám. | Segy. szám. | Név. | Pél. dány. | Patria. | Seggy. |
|----------------|----------------|--|---------------|-------------|--------|
| | | <u>Atritel.</u> | 27. | | |
| 190. | 727. | <i>Eutainia radix</i> B.et G. | 1. | Illinois. | |
| 191. | 782. | " <i>saurita</i> L. | 1. | Penna. | |
| 192. | 765. | " <i>Fairayi</i> B.et G. | 1. | Luisiana. | |
| 193. | 956. | " <i>Pickeringii</i> B.et G. | 1. | Washington. | |
| 194. | 972. | " <i>Couperi</i> | 1. | " | |
| 195. | 5496. | " <i>Hammondi</i> | 1. | Isl. Szjon. | |
| 196. | 4660. | " <i>vagrans</i> B.et G. | 1. | Utah. | |
| 197. | 861. | " <i>Marciana</i> B.et G. | 1. | Texas. | |
| 198. | 1397. | <i>Regina leberis</i> L. | 1. | Penna. | |
| 199. | 1625. | <i>Scotophis vulpinus</i> B.et G. | 1. | Wisconsa. | |
| 200. | 1614. | " <i>guttatus</i> L. | 1. | Florida. | |
| 201. | 2568. | <i>Ophibolus getulus</i> L. | 1. | " | |
| 202. | 5510. | " <i>Sayi</i> Holbr. | 1. | Louisiana. | |
| 203. | 4715. | " <i>calligaster</i> Say. | 1. | Kansas. | |
| 204. | 2386. | " <i>eximius</i> DeKay. | 1. | Penna. | |
| 205. | 2245. | " <i>splendidus</i> var. B.et G. | 1. | St. Lucas. | |
| 206. | 4285. | " <i>Boylei</i> B.et G. | 1. | Szjon. | |
| 207. | 4295. | " <i>doliatus</i> L. | 1. | Illinois. | |
| 208. | 1506. | <i>Chlorosoma vernalis</i> DeKay. | 1. | " | |
| 209. | 4437. | <i>Bascanion constrictor</i> L. | 1. | Penna. | |
| 210. | 1753. | " <i>flaviventris</i> Say. | 1. | Kansas. | |
| 211. | 4417. | " <i>vetustus</i> B.et G. | 1. | Szjon. | |
| 212. | 4387. | <i>Masticophis taeniatus</i> Holbr. | 1. | California. | |
| 213. | 1676. | <i>Scotophis alleghaniensis</i> Holbr. | 1. | Ohio. | |
| 214. | 4472. | <i>Rhinocheilus Lecontei</i> B.et G. | 1. | New Mexico. | |
| 215. | 5537. | <i>Abaostor erythrogrammus</i> Gaud. | 1. | Louisiana. | |
| 216. | 3503. | <i>Tantila gracilis</i> B.et G. | 1. | Texas. | |
| 217. | 4159. | <i>Contia episcopum</i> . | 1. | New Mexico. | |
| 218. | 2461. | <i>Rhinostoma coccinea</i> Sm. | 1. | Virginia. | |
| 219. | 5283. | <i>Hypsiglena ochrorhynchos</i> | 1. | St. Lucas. | |
| 220. | 1866. | <i>Celuta amoena</i> Say. | 1. | Penna. | |
| 221. | 2183. | " <i>helenae</i> | 1. | Illinois. | |
| | | Oldal. | 59. | | |

Fig. 11. Detail of the list of reptiles donated by the Smithsonian Institution in 1861, with the help of JÁNOS XÁNTUS

1864.
758. Am. n. Muséum pénzüből Frivaldszky Imre m. Academia tag urtól megvett Hüllők (Reptilia).

| Épít. szám | | Épít. szám | Leboly | Források. |
|------------|---|------------|-----------------|-----------|
| 1. | <i>Vipera amodytes</i> | 4. | Mohadia. | |
| 2. | " " <i>cherson</i> | 2. | Kispat. | |
| 3. | <i>Pelias berus</i> | 2. | Pöppöndke | |
| 4. | " " " var. <i>proter</i> | 2. | Norma. i. közp. | |
| 5. | <i>Vipera itegeri</i> | 1. | Macedonia | |
| 6. | <i>Eryx turcica</i> | 2. | Bursa, Smyrna. | |
| 7. | <i>Agrotis fragilis</i> | 6. | Magyarors. | |
| 8. | <i>Crotalus natrix</i> | 6. | " | |
| 9. | " " <i>terrestris</i> est <i>natrix</i> | 6. | " | |
| 10. | " " <i>atrovirens</i> = <i>viridiflavus</i> | 2. | Creta | |
| 11. | " " " = <i>viridiflavus</i> juv. | 4. | Smyrna. | |
| 12. | " " <i>Hemmeri?</i> est <i>terrestris</i> | 1. | Turcia. | |
| 13. | " " <i>turcicus</i> (Scholud) | 6. | Asi-minor. | |
| 14. | " " <i>italicus</i> sp. (<i>viridiflavus</i> 4.) | 5. | Turcia | |
| 15. | " " <i>hypocrepis</i> (briops) | 1. | Macedonia | |
| 16. | " " <i>austriacus</i> = <i>lauris</i> | 6. | Hungaria. | |
| 17. | " " <i>leopardinus</i> (Calyptus) | 4. | Turcia | |
| 18. | " " <i>virens</i> (Athyphid) sp. (<i>viridiflavus</i> 4.) | 5. | " | |
| 19. | " " <i>Dabli</i> (Syrin) | 1. | Smyrna | |
| 20. | " " <i>caspius</i> | 3. | Hungaria | |
| 21. | " " <i>flavescens</i> | 3. | " | |
| 22. | " " <i>bedoupii</i> sp. (<i>viridiflavus</i> 4.) | 4. | Hungar. Turcia | |
| 23. | " " sp.? | 2. | Anatolia | |
| 24. | " " sp.? | 1. | Melta. | |
| 25. | " " sp.? | 2. | Smyrna | |
| 26. | " " <i>pubescens</i> sp. (<i>terrestris</i> et <i>lauris</i>) | 3. | Turcia. | |
| 27. | <i>Pseudopus Pallasi</i> | 4. | " | |
| 28. | <i>Amphisbaena cinerea</i> | 4. | Smyrna, Bursa. | |
| 29. | " " sp. | 1. | Turcia. | |
| 30. | <i>Typhlops joncus</i> | 5. | Balkans | |
| 31. | <i>Hellis vulgaris</i> | 3. | Macedonia | |
| 31a | " " " juven. | 6. | Turcia | |
| 31b | " " " vivit. | 2. | Melta. | |

Fig. 12. First page of the list of the amphibians and reptiles purchased by the National Museum from IMRE FRIVALDSZKY in 1864



Figs 13–14. 13 = Plate of *Coluber caspius* and *Ablepharus pannonicus* (FRIVALDSZKY 1865), 14 = Illustration from the book by SAMU BATIZFALVI (1853). Original figure legend: “9: Venomous snake. There are the especially conspicuous poison fangs, a, a, which risk the preparation, and the tongue, b. 10: For comparison, here the head of a non-venomous snake is presented, also with the tongue, a. 11: On this supine river turtle we can see the divisive line separating the upper and under parts of the shell, a, a.”

THE FOUNDATION OF THE DEPARTMENT OF ZOOLOGY

The most significant period of JÁNOS FRIVALDSZKY’s directorship begun in 1870, when the Department of Naturalia was divided into three departments (see also BUCZKÓ & RAJ CZY 1995 for the history of the Department of Botany), and the independent zoological department was created (this was the predecessor of today’s Department of Zoology) (KORSÓS 2000a). Besides FRIVALDSZKY (who led the department until his death in 1895), JÁNOS KARL and SÁNDOR MOCSÁRY were the first young professional assistants. FERENC PULSZKY, director of the National Museum, wrote about these scientists in 1888: “the departments of the museum are led by excellent professionals, who – despite their low salary – work with all their devotion, find the vocation of their life in the expansion and scientific presentation of the collections, do not chase honour, their names – which are better known in foreign countries than in Hungary – rarely appear in newspapers, but their efforts are admitted by the whole scientific world.”

Apart from JÁNOS FRIVALDSZKY, there was another man who took really good care of the herpetological collection from 1870 until 1882 (in which year he died), and he was JÁNOS KARL (KÁROLI) (1842–1882), an assistant curator. He was a university teacher (Budapest University) of ichthyology and herpetology at the same time. In his two most significant works – which were released in the second and third year of the journal of the museum started by OTTÓ HERMAN (called “*Természetrajzi Füzetek*”, the progenitor of today’s *Annales*) – he summarised Hungary’s amphibians and snakes (KÁROLI 1878, 1879). His paper about the amphibians was the first of its kind – as we have seen before a monograph about the serpents was already written by FRIVALDSZKY in 1823. The descriptions of KÁROLI were not fully original but still, his work was an important step in popularising these less-liked animals. As he wrote: “*There is no other group in the animal kingdom, which would be so despised, hated, pursued, feared and considered disgusting as amphibians and reptiles are. This phenomenon has many reasons. A mostly hidden lifestyle results in fewer encounters with man. The general shape of these animals show an unusual – sometimes extreme – divergence from what is acceptable to men, they can even be very ugly. The hairless, cold and stiff body, the peculiar way of movement, the unwinking gaze, the exceptional resilience, the extremely fast recovery from mutilation and most of all the belief that they all are venomous are all factors which repulse men.*” Maybe even today we could not give a better summary of the animosity of men against reptiles and amphibians.

The works of KÁROLI bear great significance in another sense, too. In the descriptions of the species, he not only noted the differences of male and female specimens, but he gave detailed information about the habitats also with references to other authors and data from the collection of the museum. Thus, we can get a glimpse of the contents of the herpetological collection in the time of the foundation of the Department of Zoology. In KÁROLI’s paper about the amphibians he listed 3 *Triton* and 2 *Salamandra* species among the urodelans, and 8 frog species among anurans (which latter group was divided into 4 subgroups) (KÁROLI 1878). So he counts 13 species altogether, which is not totally incorrect compared to the current state of our knowledge – the number is near the present real number (18), but there are essential differences (Table 2). Later, ENTZ and MÉHELY indicated that, for example, *Rana esculenta* and *Rana fusca* (the green and brown frogs), treated by KÁROLI as two species, actually consist of six different species; that *Bombinator igneus* is actually two separate toad species; and that the Natterjack Toad (*Bufo calamita*) does not exist in Hungary. Today, we even know that the three species of Crested Newts form a complicated species group, and that the black Alpine Salamander (*Salamandra atra*) does not live in the present territory of our country.

KÁROLI’s “synopsis” of snakes has similar values as the one on the amphibians and almost describes the whole fauna of Hungary. It listed 7 snake species (with useful illustrations), and according to the taxonomy in that time some confusion is understandable, e.g. that many species mingle under the name *Zamenis viridiflavus* (Table 3). It is disputed even today, which (mainly West Balkan) whipsnake species should be separated in this group. *Vipera ammodytes* does not live in Hungary’s current territory. However, MÉHELY described the viper “*rakosiensis*” in 1893 as a new species from the Alföld (later it was discovered that this is a subspecies of *Vipera ursinii*), and probably it was this snake which

KÁROLI referred to when saying (according to IMRE FRIVALDSZKY) that vipers live in Pest. Occurrence data in both articles are mainly based on specimens in the museum or on other papers. In the case of the former, the regularly returning habitats can be connected to famous collectors such as SALAMON PETÉNYI, IMRE and JÁNOS FRIVALDSZKY, SÁNDOR MOCSÁRY, JÁNOS PÁVEL, FERENC KUBINYI, LAJOS LÓCZY, GYÖRGY RAINER, GÁBOR VÁRADY. In the case of the latter, the most frequent references are those of BIELZ (1856, Transylvania) and JEITTELES (1862, Kassa).

In a summary written by J. FRIVALDSZKY (1880) the Herpetological Collection appeared with 687 specimens of 313 species. With the death of KÁROLI in 1882, unfortunately, began a sad, neglected period of almost 15 years for this material. There was no curator, so even though there were some valuable donations (for example the foreign collections by LAJOS LÓCZY, TIVADAR DUKA, GYULA MACHIK), specimens were stored unidentified and amid very bad circumstances.

Table 2. Amphibians listed by KÁROLI (1878) for the Hungarian part of the Herp. Collection

| Scientific name in KÁROLI 1878 | Present scientific name | Occurrences according to KÁROLI 1878 (collection data/literature) |
|--------------------------------|---|---|
| <i>Triton taeniatus</i> | <i>Triturus vulgaris</i> | Budapest, Central Carpathian/Kassa |
| <i>Triton alpestris</i> | <i>Triturus alpestris</i> | Central Carpathian, Máramaros Mts, Mt. Semenik/Transylvania, Kassa |
| <i>Triton cristatus</i> | <i>Triturus cristatus</i> , <i>T. dobrogicus</i> , <i>T. carnifex</i> | Budapest, Buda, Temesvár/Transylvania, Kassa |
| <i>Salamandra maculosa</i> | <i>Salamandra salamandra</i> | Central Carpathian, Hegyes Drocsa, between the rivers White Körös and Maros/Transylvania, Kassa |
| <i>Salamandra atra</i> | <i>Salamandra atra</i> | 2 specimens without locality record |
| <i>Pelobates fuscus</i> | <i>Pelobates fuscus</i> | no specimen in the collection/ Transylvania |
| <i>Bombinator igneus</i> | <i>Bombina bombina</i> | Rákos-Keresztúr, Nagy-Várad, Homona, Máramaros, Budapest/Transylvania, Kassa |
| <i>Hyla arborea</i> | <i>Hyla arborea</i> | Budapest, Gellért Hill, Torna/ Transylvania |
| <i>Rana esculenta</i> | <i>Rana esculenta</i> , <i>R. ridibunda</i> , <i>R. lessonae</i> | Budapest, Tázlár, Tiszaföldvár, Nagy-Várad, Szobráncz Spa/Kassa |
| <i>Rana fusca</i> | <i>Rana dalmatina</i> , <i>R. temporaria</i> , <i>R. arvalis</i> | Aggtelek Cave, Tatra Mts, Valaskócz Forest, Szobráncz Spa, Homona, Temesvár/Transylvania, Kassa |
| <i>Bufo vulgaris</i> | <i>Bufo bufo</i> | Transylvania, Budapest, Krassó/Kassa |
| <i>Bufo variabilis</i> | <i>Bufo viridis</i> | no specimen in the collection |
| <i>Bufo calamita</i> | <i>Bufo calamita</i> | no specimen in the collection |

Table 3. List of snakes by KÁROLI (1879) with collection locality data from Hungary

| Scientific name in KÁROLI 1879 | Present scientific name | Occurrences according to KÁROLI 1879 (collection data) |
|---------------------------------|----------------------------|---|
| <i>Tropidonotus natrix</i> | <i>Natrix natrix</i> | Pest, Tázlár, Nagy-Szeben, Zilah, Sár-Egres, Kassa, Nagy-Várad, Sátoralja-Ujhely |
| <i>Tropidonotus tessellatus</i> | <i>Natrix tessellata</i> | Buda, Nagy-Szeben, Slavonia, Kassa, Nagy-Várad, Kolozsvár, Máttra, Szent-Endre |
| <i>Callopeltis aesculapii</i> | <i>Elaphe longissima</i> | Buda, Mehádia, Morovich |
| <i>Zamenis viridiflavus</i> | <i>Coluber caspius</i> | Buda, Mehádia, Zajzon, Baziás, Vulkán, Morovich, Sz.Gellért-, Sas- and Ó-Buda Hills |
| <i>Coronella austriaca</i> | <i>Coronella austriaca</i> | Buda, Besztercebánya, Szeged, Nagy-Szeben, Zilah, Mehádia, Kassa, Nagyvárad, Homonna |
| <i>Vipera ammodytes</i> | <i>Vipera ammodytes</i> | Mehádia, Orsova, Szászka |
| <i>Pelias berus</i> | <i>Vipera berus</i> | Pest, Tátrafüred, Öcsöm Balán, Trencsin, Liptó, Pozsega, Máramaros, Fajna Valley, Orsova, Kolozsvár, Borszék, Radna, Kassa, Ránki Spa |

This kind of state – chiefly the lack of professional management – always has an effect on the development of the collection, because there is no sense in “*increasing the collection aimlessly without the supervision of a professional. The true value of the collection is only revealed if a professional processes the material. Otherwise it remains dead treasure, the maintenance and keeping of which puts a great burden on the shoulders of the museum.*” (MÉHELY 1902).

The directorate felt the unpleasant state, but due to the lack of professional candidates, their efforts towards filling the job (the curator’s) did not succeed. OTTÓ HERMAN nominated ADOLF LENDEL (1862–1942) for the assistant curator of the Department of Zoology between 1889 and 1894 (Fig. 15). Previously, between 1885 and 1887, LENDEL was a teacher in the zoological department of the Technical University, Budapest. During his museum years, LENDEL decided to have the herpetological material at his disposal identified by foreign professionals. The amphibians and reptiles brought home by the expedition of BÉLA SZÉCHENYI from East Asia (1877–1880) were, for instance, sent to FRANZ STEINDACHNER (1834–1919) in Vienna, who published his results a couple of years later (STEINDACHNER 1898). His paper was translated into Hungarian by LENDEL (STEINDACHNER 1897).

LENDEL did not stay long in the museum. After his departure he established a zoological preparatory laboratory and an institute for producing educational tools, and in 1901 he became a parliamentary delegate (SÁRINGER 1982). He stayed in a good relationship with the museum, and he kept his interest in reptiles, though this was not quite reflected in scientific publications (e.g. LENDEL 1899). Instead, he worked with spiders and wrote popular reviews. In 1906, the museum asked him to go on a collecting journey to Turkey and in the next year to Argentina and Chile, too (he crossed South America by foot). During his journey in Turkey he caught lizards in the Taurus Mts, where “*... lives a rare lizard species, which we needed to have for our honour. The court museum of Vienna had two specimens of it;*

they sent them to us, so we would certainly recognise them. It lives nowhere else, only on the rocks of Bulgar-Dagh. The book told us this. We searched for it there and we found it; we now have 20–25 specimens of it.” (LENDL 1908, Fig. 16). According to the information kindly provided by Dr WERNER MAYER, Vienna, these specimens are member of the still unclarified *Darevskia rudis-valentini* species complex. It was LENDL too, who was assigned the renewal of the Budapest Capital’s Zoo between 1911 and 1919. He even made sketch plans for housing the Natural History Museum in its own building in 1919, 1920 and in 1931. From these, the beautiful Hungarian “art nouveau” style palace designed to stand on Vérmező was the most enchanting, but unfortunately none of these plans were realised. The lack of space, the crowdedness of the natural history collections became more and more pressing, but the solution did not come for many decades.

In 1888, in the building of the National Museum “... the fifth room is occupied by the collection of reptiles, amphibians, and fish. Here are the Hungarian and almost complete species exhibited. Also in this room is the collection of exotic species of snakes, lizards, frogs and fish, mainly collected by Xántus, Duka, and Machik in East-Asia, and partly sent as a gift by the Smithsonian Institution in Washington.” (FRIVALDSZKY J. 1888). According to MÉHELY’s data (1902), XÁNTUS first sent 65 “Californian” (probably Mexican) snakes, then 64 amphibians, 98 lizards, 164 snakes and 1 crocodile (altogether 392 specimens) in 1870. TIVADAR DUKA donated 35 East Indian reptiles, IMRE VEREBÉLYI 20 Mexican snakes and frogs and the Museum in Vienna 57 foreign reptiles. GYULA MACHIK’s gift could also be considered as equivalent to these: 54 lizards, 144 snakes, 4 turtles, 12 frogs and 1 crocodile skull (altogether 215 specimens) arrived from him.

For the herpetological objects on display, two illustrated guides were written by JENŐ DADAY in 1891 and 1895 (DADAY 1891, 1895). In the 2nd edition, even a groundplan of the zoological exhibition hall on the 2nd floor of National Museum was published. It contained 8 rooms connected to each other, 7 of them housing the zoological displays, and one was for the library. There was one room devoted for the fish-amphibian-reptile collection: from the 10 cabinets here 4 contained the amphibians and the reptiles and the rest the fish. According to DADAY’s description, these wooden cabinets were fully crowded with alcohol jars on the shelves, on the top and even in the bottom of the cabinets. There were dry preparations, too, both from Hungary and exotic areas.

Some of the preparations were quite modernistic in their way of mounting, due to the exploratory taxidermy school of LENDL, the former museum employee, now the head of a self-financing preparatory institute. Instead of the former practice simply to stuff the animal skins into rigid and unnatural poses, LENDL invented a totally new technique more similar to a sculpturesque demonstration (LENDL 1898). Many of the displays made in his workshop could still be acceptable and look natural today.

Since 1850 the incoming items were registered regularly in acquisition inventories (see previously). Until the end of 1898, there were only two of these catalogues: one for the vertebrates, and one for the invertebrate animals. Starting with 1899, the curators split their inventories into 10 separate books, from which 5 were for the vertebrates (according to the classes of the animal kingdom; one for the amphibians, one for the reptiles, etc). Unfortunately, the herpetological books perished in the fire of 1956.

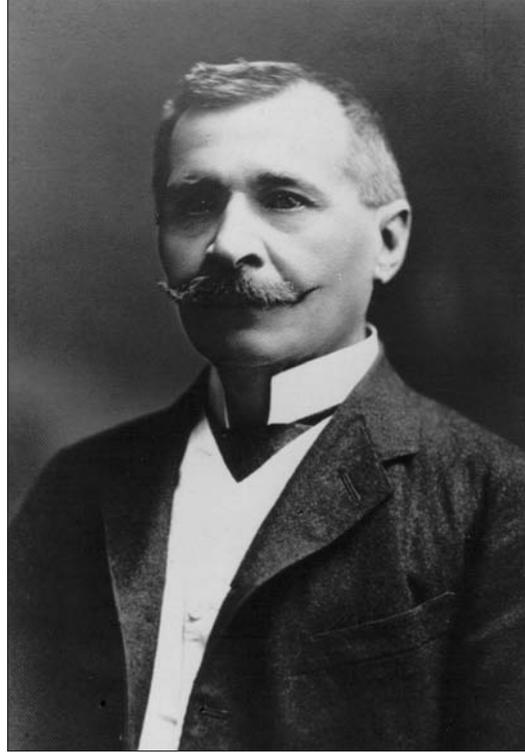


Fig. 15. ADOLF LENDL (1862–1942)

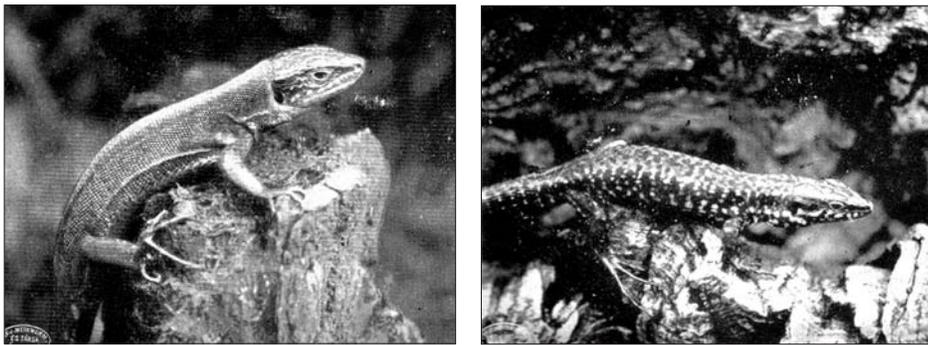


Fig. 16. Lizard photos by LENDL in Turkey: “Green Lizard” (left), and “Wall Lizard” (right)
(LENDL 1908)

THE GOLDEN YEARS

After the Austro–Hungarian conciliation in 1867, there came the prosperous period of peace not only as regards the political–economical situation, but as a result of it with respect to the Hungarian culture, too. These times peaked in the millennial celebration in 1896 – commemorating the 1000th anniversary of the Hungarian conquest, and lasted until World War I broke out in 1914. These golden years enriched our country with many cultural initiatives, institutes, buildings and (as we would say it today) “projects”, many of which bear great significance even in today’s Hungarian scientific life. By the time of the millennium, most of the collections of the National Museum got their deserved location (Museum of Fine Arts, Museum of Applied Arts, Agricultural Museum) or got moved (Museum of Ethnography), but unfortunately the location of the natural history collections remained unchanged along with many other plans waiting for realisation. For commemorating the 1000th anniversary, Hungarian scientists started a book series to enlist the fauna of Hungary, *Fauna Regni Hungariae*. And also these were the times when the three greatest Hungarian herpetologists worked in the herpetological collection: LAJOS MÉHELY, ISTVÁN BOLKAY, and GÉZA FEJÉRVÁRY.

LAJOS MÉHELY (1862–1953), the greatest scientist of Hungarian herpetology (Fig. 17), and a determinative one of Hungarian zoology, was born in Bordogkeszi, and got his degree as a secondary school teacher in 1880 in Budapest. He started his scientific career as assistant to JÁNOS KRIESCH (1834–1888) in the zoological department of the Technical University, Budapest, for five years, then he taught in a school in Brassó (now Braşov, in Romania) for ten years. There he wrote his famous work which has never been published (except the plates), “*Herpetologia Hungarica*”, which clearly demonstrated his talent and abilities (KRECSÁK *et al.* 2008). For this book he won the Bézsán-prize of the Hungarian Academy of Sciences. He was invited to work in the Budapest museum as curator for the Collection of Fish, Amphibians, and Reptiles and the Collection of Mammals as well by GÉZA HORVÁTH in 1896 (certainly this was an attempt to solve the aforementioned problem of the lack of professionals). He accepted the job and led these collections between 1896 and 1912. He was also head of the Department of Zoology from 1912 until 1915, but due to personal opposition, he left the museum and continued his career as a professor of general zoology and comparative anatomy at the Pázmány Péter University, Budapest (1915–1932) (BOROS & DELY 1967, JUHÁSZ-NAGY 1991). After his retirement (1932) he was totally blinded by his racist political views, he resigned from his academic membership, and after World War II he died imprisoned for guilts of war, despised and forgotten in 1953 in a Budapest prison (KORSÓS 2003). The location of his grave remains unknown in one of the cemeteries in Budapest. LAJOS SOÓS wrote about MÉHELY in his autobiographic memorial in 1962:

“He was a lean, thin, narrow-faced, great-minded, suggestive, unmatchedly diligent man born to lead. One of the most exceptional Hungarian zoologists, the author of many papers with imperishable values ... but he became a lonely, stray bull ... (who) Loved the whole nation, but he did not love a single member of it, in fact hated many of them, and not a few of them he hated deadly.”

MÉHELY dedicated his whole scientific work to the revealing of the laws of evolution on functional and morphogenetic basis. In the question of the genesis of species, he considered Darwinism as the only acceptable and should-be-followed theory. He had an analytical biological outlook and he used it in the area of herpetology also. His monographic works about amphibians and reptiles are exceptional not only because of their superb scientific value and accuracy, but because they are illustrated with his own beautiful, hand-painted, artistic pictures.

In the time of MÉHELY the individual Department of Zoology suddenly rose up to the level of the most famous European museums, thanks to the acquisitions and donations. The rooms of the museum which had already been crowded in 1896 were entirely filled in with the 300,000 zoological items. A survey in 1896 (ANONYMOUS 1896) wrote about the herpetological material: “*The reptiles and amphibians and fish occupy a smaller room and are displayed in glass cabinets. Out of the 785 reptile and amphibian, 168 are preserved in denaturated alcohol, and 17 are dry stuffed. And there are 5 crocodile skulls.*” The accession in one year (1896) included 41 Hungarian amphibians and reptiles, 17 South African donated specimens (from EMIL HOLUB), a purchase of 4 specimens of 4 species, and the 20 specimens of New Guinea collected by SÁMUEL FENICHEL. MÉHELY took over the handling of the aforementioned inventory book (the one that was numbered from 1850) in 1896. His first entry was no. 2019: “*A stuffed domestic cat (tom-cat). Found in the old mammal collection without number and name*”. When MÉHELY got his job in the museum, he sold his private herpetological collection to the museum for 300 Hungarian forints (entry no. 1986); it contained 1,636 specimens of 37 species. The new head of collections started to catalogue the material – which was in a very unpleasant state – and put it in order with great enthusiasm: it is very well reflected in the entries of the inventory book, that he listed many formerly omitted items, and that he had thrown out the wretched, useless specimens. In the case of many items (e.g. the cat mentioned above) we find the text of JÁNOS SZUNYOGHY saying “*deleted by Méhely in 1898*”. These items were not always thrown away, for example the József University of Budapest got 112 specimens of 73 species of East Asian reptiles, amphibians, snails, and clams this way (ANONYMOUS 1896).

By the initiation of GÉZA HORVÁTH, the *Fauna Regni Hungariae* started in 1893 – to celebrate the Hungarian millennium – which targeted the listing of all animals in Hungary. The release of these volumes lasted until 1918. As the main editor JÓZSEF PASZLAVSZKY wrote in the introduction: “*We neither have the time, nor the power to write a full comprehensive description, but we do have it to create a »Prodromus«, a pre-list.*” From the vertebrates, the chapters amphibians and reptiles were already written by MÉHELY in 1895, but it was only published in 1918 (due to reasons beyond the author’s control). MÉHELY listed 23 reptile and 16 amphibian species, but there were many mistakes in his writings. For example, it is not at all understandable why he mentioned Buda and Losonc (the latter on the Hungarian Upland, now in Slovakia) as a habitat for the Hermann’s tortoise (*Testudo graeca* in MÉHELY’s works, today it is *T. hermanni*, see DELY 1978), or why he listed Budapest among the habitats of the Viviparous Lizard (*Zootoca vivipara*), but he forgot to mention the populations of the Alpine Newt (*Triturus alpestris*) in the Hungarian Middle Range and in the foothills of the Alps. The Hungarian Snake-eyed Skink

(*Ablepharus kitaibelii fitzingeri*) was said to live on the Szentgyörgy Hill in the Balaton Upland and in the region of Tapolca referring to ÖDÖN TÖMÖSVÁRY's (unpublished) observations (see more by TESCHLER 1884). These places are later referred to many times; but in fact, no specimens have ever been found in these places (HERCZEG *et al.* 2004). Similarly wrong is the only datum about the Hungarian Meadow Viper (*Vipera ursinii rakosiensis*) from Vas county (KORSÓS *et al.* 2001).

Celebrating the 100th birthday of the National Museum, a book called “*The past and future of the National Museum*” was compiled, in which the information about the Department of Zoology was summarized by HORVÁTH based on the reports of the curators. MÉHELY (1902) wrote the herpetological part, where he reported 5,066 specimens of 973 species (HORVÁTH 1902).

According to the museum's report in 1903 (ANONYMOUS 1904), the herpetological collection increased in this year by 237 reptiles and 131 amphibians, including donations and collections (for example, MÉHELY collected 43 reptiles and 4 amphibians, ERNŐ CSIKI collected 12 reptiles and 13 amphibians), and including the material of LAJOS BÍRÓ (1856–1931), who returned from New Guinea in 1902 (Fig. 18). BÍRÓ collected altogether 942 reptile and 295 amphibian specimens for the museum during six and a half years in New Guinea. In this time, MÉHELY not only managed the herpetological collection, but the mammal and fish collections were also assigned to him (birds were managed by GYULA MADARÁSZ). Out of the 237 reptiles received in the year 1903, 38 were gifts (mainly from GYÖRGY KLEINKAUF from Sumatra), 121 were collections (MÉHELY, CSIKI, and LAJOS BÍRÓ from Tunisia: 66 specimens) and 78 were purchased. Out of the 131 amphibians 95 were gifts (DÁNIEL ANISITS from Paraguay: 84 specimens, KLEINKAUF from Sumatra: 8 specimens), 21 were collected and 15 bought.

In addition to the study of the herpetofauna of the Carpathian Basin and the territory of Hungary in that time, MÉHELY put great effort into processing the exotic material collected by his colleagues in different parts of the world. From almost everything he touched he managed to produce longlasting scientific results. Not only his species descriptions, but also his evolutionary thoughts about the systematic relationships and on the development of the different taxa are still valid (or revalidated) today. Thus, he wrote remarkable papers on the herpetofauna of Ceylon, New Guinea, Central Asia, and Paraguay (MÉHELY 1897*a, b*, 1898, 1901*a, b*, 1904).

There is a valuable “add-on” literature item which gives a glimpse into MÉHELY's period kept in the Herpetological Collection under the mark J.27. It is a little, handwritten booklet, the work of GÁBOR SZALAY – it is not known who he was, maybe a student of MÉHELY? – its title being “*Notes on snakes – According to Brehm's book »The World of Animals« and to the corrections given to it by dr. Lajos Méhely, and to dr. Lajos Méhely's presentation about vipers held at the Hungarian National Museum on 18. Nov. 1911. – Assembled by Gábor Szalay (in 1906 and 1911)*”. It should be noted that the editor of the first Hungarian edition of BREHM's “World of Animals” (consisting of 10 volumes) was also MÉHELY (1906). SZALAY's neatly bound, 142-page booklet gives an overview of snakes, of Hungarian and foreign species (with an exceptional detail on the county Sáros (Northeast Hungary); so it is supposed that this was the birthplace of SZALAY) with hand-drawn pencil

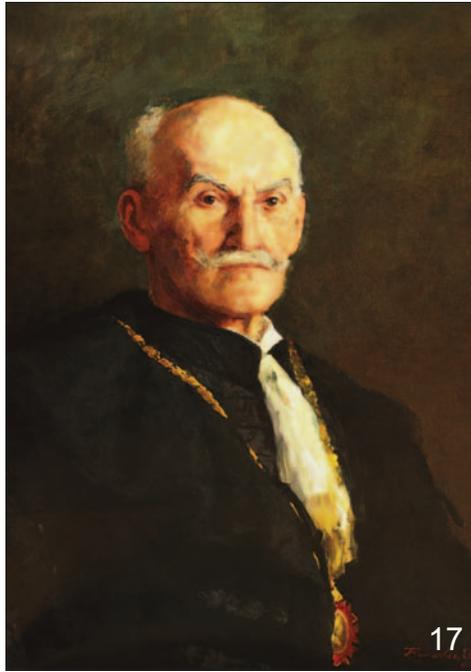
drawings (probably copied from MÉHELY's) (Fig. 19), cut-out pictures from the original MÉHELY-papers and newspaper articles. All this demonstrates well the size of the mass of information about snakes one could assemble in those days.

So the golden years of the museum's Herpetological Collection and of the Hungarian herpetology were the years during MÉHELY's scientific activity (1896–1915), thanks to the coincidence of some (social, economical, and personal) factors, too. But MÉHELY's museum activity was not free of arguments. As seen in LAJOS SOÓS' description, MÉHELY was hard to tolerate as a boss and as a direct colleague. A tragedy of Hungarian herpetology was that another exceptionally talented researcher, ISTVÁN BOLKAY was starting his career just about the same time, and MÉHELY's personality and their disagreements made it impossible for the younger zoologist to remain at the museum.

ISTVÁN BOLKAY (1887–1930) was born into a carpenter's family in Rimaszombat (= Rimavská Sobota, now in Slovakia) and got his teacher's degree, and later his doctorate in 1909 at the Pázmány Péter University in Budapest (Fig. 20). In the summer of 1909 he established a life-long friendship with GÉZA GYULA FEJÉRVÁRY (who was 7 years younger than him, and who later also became a famous herpetologist) in Switzerland, where they conducted many collecting excursions. BOLKAY, after writing his dissertation about anuran amphibians, was immediately taken to the museum to work with MÉHELY as an unpaid trainee (1909–1911). The talented, young researcher's individual notions and methods lead to arguments with his boss, who did not tolerate without a word that his subaltern did not fit in his methods and thoughts. The opposition grew to such a level that MÉHELY removed his young colleague from the museum, which had a fatal effect on BOLKAY's career.

BOLKAY was mainly unemployed between 1911 and 1913, or had jobs far from herpetology to maintain his life. In 1913 he got a job at the side of JENŐ VÁNGEL at the Budapest Teachers' College's Biological Faculty. In these years he published several papers about Hungarian amphibian-reptile fossils, on the distribution of the Snake-eyed Skink in Southeast Hungary or about the osteology of the family Ranidae, which had great effect on later works in herpetology. After World War I broke out, he joined the army and fought on the Serbian and Russian fronts. In 1918, he was appointed the assistant of Balkan Research Institute in Sarajevo, but by the end of this year, he came back to Budapest.

In the November of 1919, he moved to Bosnia–Herzegovina at the invitation of the new Yugoslavian government, and got employed in the Bosnian–Herzegovinan State Museum in Sarajevo. He worked there until his death, but maintained his Hungarian citizenship. In this period, his otherwise insufficient salary was lowered to one-third, and he often had to print his own publications because of the low budget of the museum. His despair was deepened by the fact that he was bound to an English lady by strong feelings but he could not even think about marriage, because of the lack of money. After eleven years, when he would have to confess to the new Yugoslavian state on 17. Aug. 1930, he got so bitter because of his bleak future that he shot himself in his workroom. He was only 43 years old (BOROS & DELY 1969).



17



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Figs 17–18. 17 = LAJOS MÉHELY (1862–1953), painted by JÚLIA RAUSCHER, 1936, 18 = LAJOS BÍRÓ in 1902, after his return from New Guinea

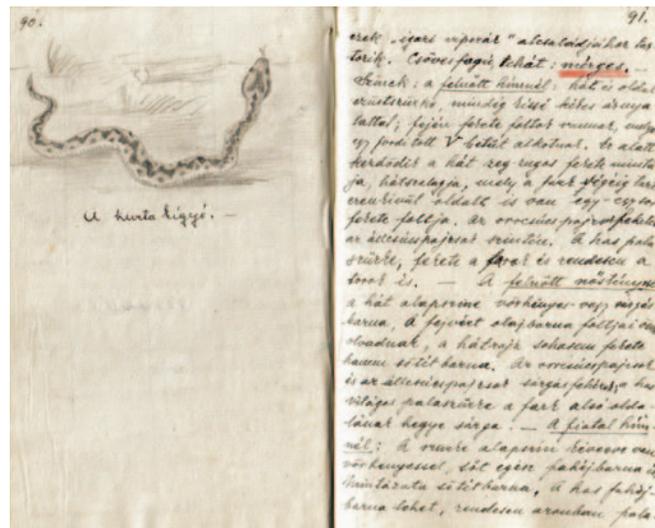


Fig. 19. Sample pages from the notebook by GÁBOR SZALAY (library of the Herpetological Collection, J.27)

As it usually happens with great personalities, MÉHELY in his museum years (1896–1915) also attracted a series of young and talented students who wished to deal with herpetology. After BOLKAY, there came OLIVÉR GEDULY (1889–?) who spent some time studying the herpetofauna of Hungary. He was born in Budapest, and graduated at the university with a degree to teach natural science in high schools. In the beginning, in the years 1911–1912 he was an unpaid trainee in the Department of Zoology of the Hungarian National Museum. Learning from MÉHELY, he wrote up the herpetofauna of the surroundings of Budapest in LENDL's popular periodical, "*A Természet*" (= *The Nature*) in 1914. The work was illustrated with his own photographs (GEDULY 1914, Fig. 21).

This promising herpetologist career was nevertheless ended for unknown reasons: in 1918 GEDULY accepted a teacher's position in the main high school of Budapest, then between 1929–1946 he was teaching natural history in the Szent István High School in the 7th district. He did not lose his interest in reptiles though; travelling to Italy in 1928–1931 he collected several lizards and snakes which he donated to the Department of Zoology of the Museum. His important herpetological finding was the discovery of the Viviparous Lizard (*Zootoca vivipara*) in the middle of the Great Hungarian Plain (GEDULY 1923). This species is well known in the surrounding countries from higher elevations; but in Hungary, its distribution is exceptionally confined to certain isolated lowland habitats (like the boglands of Ócsa and Bátorliget), which resemble with their cool microclimatic conditions to the last glacial periods.

When MÉHELY left the museum and took over the university professor's chair in 1915, he had two talented herpetologist students. He chased away one of them (BOLKAY), but the other one (FEJÉRVÁRY), endured his professor's hard personality better, and also his financial circumstances were luckier concerning his future. He was only 22 when he became the leader of the Herpetological Collection in the museum.

Baron GÉZA GYULA FEJÉRVÁRY (1894–1932) was born into an aristocratic family, his grandfather was the prime minister of the Austro-Hungarian Monarchy. He spent his childhood in Pécs and in Bex in Switzerland, where he went on excursions with BOLKAY in the valley of the Rhône in 1909. He was barely 15 years old, when his first, 50-page work was published in German about the herpetofauna of the Rhône valley. In 1912 he went to the University in Budapest, where he studied zoology and also medical sciences for a while. His favourite teacher was GÉZA ENTZ Sr., but he could only listen to the old teacher's presentations for two years. After ENTZ's retirement his son, GÉZA ENTZ Jr. took over the lectures, but only for one year; when finally MÉHELY became professor of zoology at the university. Meanwhile, in 1913 FEJÉRVÁRY – as a first-grade university student – became volunteer keeper of the Herpetological Collection (led by MÉHELY at that time). When MÉHELY left the museum in 1915, FEJÉRVÁRY followed him to the university and worked as his assistant (BOROS & DELY 1968). During this period he became acquainted with ARANKA MÁRIA LÁNGH, whom he later married (Fig. 20), and who also followed him in the herpetologist's chair of the museum (DELY 1994).

FEJÉRVÁRY officially took over the curatorship of the herpetological collection in 1916, from KÁLMÁN SZOMBATHY (1889–?) who managed the collection for only one year, after MÉHELY in 1915–16. In the very same year, he finished his studies at the Pázmány Péter University, and in 1917 he got his doctorate degree. In 1918, at the age of 24, he published

his more-than-100-page work about the fossil Varanidae and Megalaniae reptile families. The young zoologist became a famous scientist in the blink of an eye, in 1920 he got an invitation to Columbia University in New York, and later, the Calcutta University in India offered him a professor's job, too. He did not accept either of them, because he wanted to work and succeed in Hungary. His further works proved the expectations well, he participated in many international conferences and his scientific works were publicised regularly (PONGRÁCZ 1932).

In 1923 FEJÉRVÁRY processed the herpetological material collected by E. CSIKI on his trips to the Balkan Peninsula between 1916–1918 (FEJÉRVÁRY 1923). The specimens from Albania, among others, represented a near to complete picture of the herpetofauna of the country, and in FEJÉRVÁRY's paper even the museum's appropriate inventory numbers are published (Mus. Hung. Amph. 2540/1–2540/17 and Mus. Hung. Rept. 2680/1–2721/38). Altogether 4 urodelan and 10 anuran amphibian, 7 lizard, 5 snake, and 2 turtle species were listed, including a new Yellow-bellied Toad variety (*Bombina salsa* var. *csikii*). Unfortunately, this material was also annihilated in 1956.

FEJÉRVÁRY was the editor of the Hungarian periodical *Állattani Közlemények* (= *Zoological Communications*) between 1925 and 1927, and the secretary of the 10th International Congress of Zoology in Budapest (its president was GÉZA HORVÁTH). In this year his popular biological book "*Life, love, death*" was also published, and created a great response in Hungarian cultural life.

BETWEEN THE TWO WORLD WARS

In the history of the Department of Zoology, this period brought substantial changes. Before World War I, in 1911, the zoological collections were in the building of the National Museum in 10 rooms. The lack of space and the crowdedness became unbearable by 1925, but the new building, which was promised then, and further postponed during the millennium, was still not built (MÉHELY 1911), and the war killed almost every hope. Although no damage was caused in the building by the war, the exhibitions had to be closed to the public in 1925 because of their bad condition. As a temporary solution, the Department of Zoology was first moved to no. 7 on Szentkirályi street (in 1926), and then to no. 13 Baross street (its present location) in 1928 (HÓMAN 1929, KORSÓS 2002a). The Herpetological Collection was placed on the left side (when observed from the street) of the third floor of the building – which was originally built to be a bank office (Fig. 22). The exhibitions were reopened in ten medium-sized rooms on the second and third floors of the National Museum's building between 1929 and 1935. So from this time on, the scientific collections became separated from the exhibitions, and were not open to the public any more. The museum became different from other cultural museums, and achieved a status similar to most foreign natural history museums: only a smaller part of the material serves the public, the greater part is subject to scientific research. Many herpetologists (MÉHELY 1911, FEJÉRVÁRY 1932, LENDL 1919, 1920, 1931) pursued the problem of the lack of space, but unfortunately all efforts remained unsuccessful.

In the meantime, a huge amount of material arrived from East Africa. KÁLMÁN KITTENBERGER (1881–1958), famous Hungarian animal collector and hunter increased the number of specimens in the museum by almost one thousand reptile and amphibian specimens between 1902–1919, 1925–1926, and between 1928–1929. Unfortunately, we can not find more exact data, because the inventory books, in which these items were described, were burnt in the fire of 1956 (see later). Even though MÉHELY used some of the material for his osteological papers, in a faunistical and systematic sense, KITTENBERGER's entire herpetological collection was lost completely unprocessed (BOROS 1959).

MIKLÓS VASVÁRI (1898–1945) began his university years in Budapest, and at that time he could already be frequently found in the National Museum studying the collections. Around 1916 FEJÉRVÁRY – university professor and the leader of the Herpetological Collection – gave his attention to him. FEJÉRVÁRY gave him the Eastern populations of the Green Lizard as the topic of his doctoral thesis, which VASVÁRI solved in an excellent way. The more so, that he named a subspecies after his teacher (*Lacerta viridis fejervaryi*) (VASVÁRI 1926) which is still valid today. In the beginning, MÉHELY also supported the talented young herpetologist, and suggested to TITUSZ CSÖRGEY, director of the Ornithological Institute, Budapest, that he should employ VASVÁRI in his institution, which in fact happened in 1922. But FEJÉRVÁRY and MÉHELY were already on the opposite side in their scientific views (see below), thus VASVÁRI could not defend his doctoral dissertation at the university in Budapest. Instead, he had to move to Szeged, southern Hungary, where Professor BÉLA FARKAS at first also rejected his dissertation, but later VASVÁRI managed to acquire the doctorate title (KEVE 1947). He could not have a scientific job though, so he became a private teacher in Ormándpuszta, Southwest Hungary, in 1923, where he was the first to find the black form of the common European Adder (*Vipera berus* var. *prester*) in Inner Somogy county. He sent specimens to MÉHELY, who “accepted it with great joy, and only noted – as Vasvári remembered it – that it is a pity that he has strangled the neck of the snake so much.” (KEVE & MARIÁN 1973). From this time on, VASVÁRI totally gave up with herpetology and would not publish anything from his observations. He continued his career as an ornithologist, but his life did not become easier, and at the end of the World War II in 1945, his life ended among very sad circumstances (KEVE 1947).

Although the theory of evolution and of the origin of species was widely accepted in the beginning of the century, the probable methods of evolution were best seen in the opposition of two theories named after two famous biologists. In the '20s, the leader of the Herpetological Collections, FEJÉRVÁRY was a follower of LAMARCK's theory, while his tutor, MÉHELY – who at this time already taught at the university – was devoted to the theory of DARWIN and would not accept any contradictions. Their relationship went awry, and the younger herpetologist became the victim of their disagreements (BOROS & DELY 1968).

FEJÉRVÁRY relocated his university teachings to Pécs because of his disagreements with MÉHELY: in 1930, he became the private teacher of the Erzsébet University of Pécs. In the same year, he heard the news about the suicide of his childhood friend BOLKAY (FEJÉRVÁRY 1930). Not much later, in 1932, at the zenith of his career, at the age of 38 he suddenly died as the result of an unfortunate gallbladder operation (Fig. 23). His unfinished works were brought to press by his widow, ARANKA FEJÉRVÁRYNÉ LÁNGH, who also took over the curatorial chair of the Herpetological Collection in the museum.



Figs 20–21. 20 = Group photograph of Mrs A. M. FEJÉRVÁRY-LÁNGH, Baron G. GY. FEJÉRVÁRY (sitting, from left to right), O. GEDULY and I. BOLKAY (standing from left to right). 21 = Opening page of GEDULY's paper in the popular journal "A Természet", 1914 ("Amphibian and reptile fauna of the surroundings of Budapest")



Figs 22–23. 22 = Department of Zoology, no. 13 of Baross street, in 1927 (HÓMAN 1929), 23 = Grave of G. GY. FEJÉRVÁRY in the Farkasrét Cemetery, Budapest (photograph by Z. KORSÓS, on the 75th anniversary of FEJÉRVÁRY' death, on 12 May, 2007)

Immediately after FEJÉRVÁRY's death, in 1933 the Hungarian Natural History Museum was officially formed. However, it only got organisational independence from the National Museum by the Museums' Act in 1949. This law was the first to state that the Hungarian Natural History Museum is to be considered part of the "nationally important museums" and thus, part of our national heritage. Non-museum professionals said also unanimously that the Department of Zoology is actually our "*national collection of animals*" (DUDICH 1939). However, even this view could not help to find an appropriate location for the collections.

ARANKA MÁRIA FEJÉRVÁRYNÉ LÁNGH (1898–1988) graduated from the Pázmány Péter University, Budapest, in 1919; she got her doctorate degree there in the same year. She met FEJÉRVÁRY as a first grade university student. Through FEJÉRVÁRY she became an unpaid trainee in the Herpetological Collection in 1916. In 1917, three days after her first presentation in the Zoological Section of the Royal Hungarian Natural History Society, she married FEJÉRVÁRY (Fig. 20), and was appointed assistant curator of the collection. She became a proper museologist in 1922, and in the next year – 1923 – her 100-page monograph about fossil *Ophisaurus* was published. In 1924, due to the bad financial situation of the museum and to the fact that FEJÉRVÁRYNÉ's (= Mrs FEJÉRVÁRY) family's financial circumstances were quite good, she was forced to resign from her paid job, but she could still work there as a volunteer. Preceding this, she offered her private herpetological collection to the Department of Zoology for 1,500 US dollars. In 1928, she participated in a Maltese expedition with her husband, and his friend GYULA KIESELBACH (1891–1972), a chemist.

FEJÉRVÁRY died suddenly in 1932, so his wife returned to the museum as a paid employee and took over the leadership of the herpetological collection. She finished and sent to press her husband's five unfinished works, but she did not begun any new, individual research, only wrote popularising texts of high level. She would have liked to write a catalogue of the Hungarian herpetofauna similar to MÉHELY's *Fauna Regni Hungariae*, and as the first step towards this goal, she published the collection's Hungarian locality data* in her two papers in the museum's journal *Fragmenta Faunistica Hungarica* in 1943 (FEJÉRVÁRY-LÁNGH 1943a, 1943b). In Table 4 we present here the summary of these papers: the list of the Hungarian species in the collection, with the number of corresponding localities (i.e. the number of samples of that particular species in the collection).

We don't know the number of specimens; but from these data at least we can get an idea how large the Hungarian part of the Herpetological Collection has been (1,433 samples of 50 species and subspecies). Since in 1956 practically the entire material, except for the individual inventory cards, was burnt to ash (see below), it can be the subject of a later analysis to work up those records registered in the cardboard catalogue (including collecting details, number of specimens, etc.).

* Hungary at that time was almost three times larger than today and included entire Transylvania (now part of Romania), the North and West Carpathian Mts (now in Ukraine and Slovakia), the region where the rivers Danube and Tisza join (now in Serbia), and the area to the Adriatic Sea coast (now in Slovenia and Croatia).

Table 4. Number of locality records (= species samples) in the Hungarian part (= Carpathian Basin *sensu lato*) of the Herpetological Collection in 1943 (after FEJÉRVÁRY-LÁNGH 1943a, b)

| Species | No. of localities | Species | No. of localities |
|---|-------------------|-----------------------------------|-------------------|
| Amphibians (FEJÉRVÁRY-LÁNGH 1943a) | | | |
| <i>Triturus alpestris</i> | 21 | <i>Bombina variegata</i> | 52 |
| <i>Triturus cristatus cristatus</i> | 19 | <i>Pelobates fuscus</i> | 24 |
| <i>T. cristatus carnifex</i> | 4 | <i>Bufo bufo</i> | 61 |
| <i>T. cristatus danubialis</i> | 29 | <i>Bufo viridis</i> | 46 |
| <i>T. montandoni</i> | 22 | <i>Hyla arborea</i> | 40 |
| <i>T. vulgaris</i> | 45 | <i>Rana arvalis arvalis</i> | 2 |
| <i>T. vulgaris meridionalis</i> | 4 | <i>R. arvalis wolterstorffi</i> | 31 |
| <i>Salamandra atra</i> | 1 | <i>Rana dalmatina</i> | 66 |
| <i>Salamandra salamandra</i> | 27 | <i>Rana esculenta</i> | 40 |
| <i>Proteus anguinus</i> | –* | <i>Rana (esculenta) ridibunda</i> | 47 |
| <i>Bombina bombina</i> | 68 | <i>Rana temporaria</i> | 61 |
| | | Subtotal: | 710 |
| Reptiles (FEJÉRVÁRY-LÁNGH 1943b) | | | |
| <i>Emys orbicularis</i> | 7 | <i>Ablepharus kitaibelii</i> | 18 |
| <i>Testudo graeca</i> | 2 | <i>Coluber gemonensis</i> | 2 |
| <i>Caretta caretta</i> | 1 | <i>Coluber jugularis caspius</i> | 5 |
| <i>Hemidactylus turcicus</i> | –* | <i>Coluber viridiflavus</i> | 2 |
| <i>Tarentola mauritanica</i> | –* | <i>Elaphe longissima</i> | 26 |
| <i>Ophisaurus apodus</i> | 3 | <i>Elaphe quatuorlineata</i> | 2 |
| <i>Anguis fragilis</i> | 56 | <i>Elaphe situla</i> | 2 |
| <i>Laverta horvathi</i> | 13 | <i>Coronella austriaca</i> | 45 |
| <i>Lacerta melisellensis</i> | 9 | <i>Natrix natrix</i> | 61 |
| <i>fumana</i> | | | |
| <i>Lacerta muralis</i> | 53 | <i>Natrix tessellata</i> | 21 |
| <i>Lacerta taurica</i> | 20 | <i>Telescopus fallax</i> | 1 |
| <i>Lacerta praticola pontica</i> | 7 | <i>Vipera ammodytes</i> | 8 |
| <i>Lacerta vivipara</i> | 96 | <i>Vipera berus</i> | 54 |
| <i>Lacerta agilis</i> | 104 | <i>Vipera berus bosniensis</i> | 2 |
| <i>Lacerta viridis</i> | 86 | <i>Vipera ursinii</i> | 15 |
| <i>Algyroides nigropunctatus</i> | 2 | | |
| | | Subtotal: | 723 |
| | | Total: | 1,433 |

* These species are mentioned in FEJÉRVÁRY-LÁNGH's catalogue only on the basis of literature data, no specimens in the HNHM existed.

FEJÉRVÁRYNÉ became a curator in 1939, participated in the faunistical exploration of Transylvania reconnected to Hungary in 1940; and she published her results in 1944 (FEJÉRVÁRY-LÁNGH 1944). The zoological researchers had their first opportunity to do research in Transylvania in 1941–42, and the regular research started in 1943. The collectors were IRMA ALLODIATORIS, JÁNOS BALOGH, ENDRE DUDICH, GYULA ÉHIK, ANTAL GEBHARDT, ADORJÁN KESSELYÁK, GÁBOR KOLOSVÁRY, IMRE LOKSA, MIKLÓS and LÁSZLÓ MÓCZÁR, SÁNDOR PONGRÁCZ, MIHÁLY ROTARIDES, LAJOS SOÓS, JÓZSEF SZENT-IVÁNY and VILMOS SZÉKESSY. The number of specimens in the material is unfortunately unknown.

During the war, both of her (grown-up) children were in the West, so she had to endure the siege of Budapest alone. In 1945, her apartment was bombed, so she moved into the department's building in Baross street. She was entrusted with the task to reorganise the collections, which were moved into the basement after the war, and to watch over the exhibitions. These tasks ate up all of her time, but she successfully finished them; even though, perhaps for her aristocratic relationships, she was dismissed from the museum in 1951. On 13th of October 1956, 10 days before the Hungarian revolution, she flew to her daughter to Switzerland with official papers, and one year later, she went on to her son to Venezuela. After 8 years, she returned to Europe and donated the result of her South American collections to the Natural History Museum of Lugano, Switzerland. She never came to Hungary again, though she welcomed Hungarian visitors in her home. In 1983, she flew back again to Venezuela, and spent the rest of her life with her family there. She died in 1988 at the age of 90; her grave is in Maracaibo (DELY 1998a, b).

On 1st of July 1950, OLIVÉR GYÖRGY DELY was appointed in the museum next to FEJÉRVÁRYNÉ, and it was soon in 1951 when he took over the management of the collection.

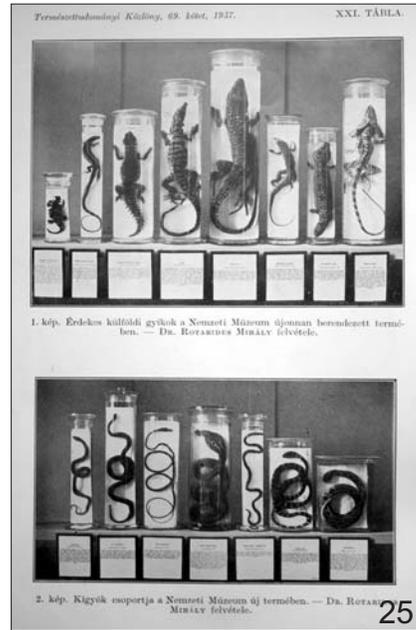
DÉNES KLOBUSITZKY (1900–1974) medical biochemist – who worked at the Butantan Institute in São Paulo since 1940 – became familiar with the herpetological collection in the time of FEJÉRVÁRYNÉ. In his herpetological works, he discussed the venom activity of the *Bothrops*-species, but he became world-famous for his medical, physical-chemical, and colloid-chemical investigations. Because of his good relationship with FEJÉRVÁRYNÉ and later also with DELY, he donated a Brazilian snake collection to the museum, which was unfortunately destroyed in 1956. In those rare occasions when he came home to Budapest, he never missed a visit to the museum and to discuss herpetological questions with DELY. He died in Brazil in 1974, and he is also buried there (DELY 1975a).

Between the two World Wars, under the general directorship of SÁNDOR PONGRÁCZ (1887–1945), detailed guides to the material exhibited in the building of the National Museum were written (PONGRÁCZ 1937a, b, 1942). We can find two photographs about the systematic part of the amphibian and reptile exhibition (Figs 24–25). But in the famous Africa-room on the second floor, there were beautifully prepared natural dioramas, with specimens of e.g. the Nile Crocodile (*Crocodylus niloticus*) (Figs 26–27) and the African Spurred Tortoise (*Geochelone sulcata*) exhibited. The systematic collection of reptiles was located on the third floor. OSZKÁR VOJNICH's famous hunting trophy collection (put on permanent deposit by his heir, MIKLÓS VOJNITS) was since 1930 located in Baross street, in the director general's room, except for the giant Indian Python (*Python molurus*) shot

originally in India, which was displayed in a side-room of the exhibition in a reedy swamp, in natural environment (see below).

The museum survived World War II with relatively little damage, even the famous Africa Exhibition was left unharmed. Unfortunately though, some 10 years later, during the uprising in 1956 the exhibitions in the building of the National Museum and the Herpetological Collection in Baross street were seriously damaged. So it is worth mentioning here a giant, rare, spectacular snake specimen which survived, and the story of which is known in its details (FEJÉRVÁRY-LÁNGH 1935, ZILAHY 1996). We are speaking about a 5-metres-long Reticulated Python (*Python reticulatus*), which was collected by JÁNOS XÁNTUS in Borneo in 1870–71. According to PONGRÁCZ (1942) “*the animal was captured by huge efforts. Xántus tied it to a chariot, dragged it into his tent and shot it there.*” Its skin, flayed and salted, was sent home by XÁNTUS in a chest along with the other collected material, but no preparator had seen it in the museum for 65 years. In 1935, SÁNDOR ÖRY (1887–1962) finally managed to mount it in a natural pose (SIPOS 2002a, b) (Fig. 28). This was extraordinary in its way, because until then, animals were only prepared in a stiff pose in unnatural environments. This particular specimen was a popular piece of the herpetological exhibition, survived the war and even the revolution’s destruction. After the deconstruction of the exhibits in the National Museum in 1996, it was located in a corner in the entrance room of the Herpetological Collection on the fourth floor of the building in Baross street. Unfortunately, time wore it out, its skin was torn, its colours faded, and the decorative plants on the background stump were wrecked. More than 60 years have passed since 1935, until it got into the hands of taxidermist restorator FERENC ZILAHY. Its skin had to be softened, new iron pieces had to be inserted into the gypsum body, its surface had to be cleaned, its scales had to be repainted one by one so that the pattern became lifelike. And – at last – the background stump and plants were reconstructed. This was the final step of the restoration, which lasted for 4 months. Today, the brand new, 137 year-old snake – prepared by ZILAHY – is located in our exhibition building on Ludovika square, and is one of the prides of the museum (ZILAHY 1996).

The huge Indian Python (*Python molurus*) collected by OSZKÁR VOJNICH was also mounted by SÁNDOR ÖRY in 1935. VOJNICH collected it in Assam, India (in 1913), in reeds next to the village Sidli. With its 578 cm length, this specimen was one of the largest in Europe, and it was also valuable because of its rarity (as opposed to the common Reticulated Python). ÖRY and his young assistant, GYÖRGY PUDLEINER, placed it in a natural environment, in the motion phase before the attack on a waterfowl (Figs 29–30, PONGRÁCZ 1935). The diorama was unfortunately burnt in 1956.



Figs 24–25. Details of the systematic part of the amphibian and reptile exhibition in 1937 (photographs by M. ROTARIDES, HNHM)



Figs 26–27. Nile crocodile mounted by S. ÓRY for the Africa Exhibition (in its time and today, in the storage room)



Figs 28–29. 28 = Reticulated Python collected by XÁNTUS in 1870 on Borneo, and mounted by S. ÖRY, 29 = ÖRY preparing the Indian Python (photograph by courtesy of GY. SIPOS)



Figs 30–31. 30 = Indian Python collected by O. VOJNICH in 1913 in India, and mounted by ÖRY (photograph courtesy of GY. SIPOS), 31 = Burnt newt skeletons remained from the fire in 1956 (photograph by courtesy of M. DANKÓ)

THE DESTRUCTION OF 1956

1956 was a significant year in Hungary's history not only in the political context. During the revolution – which was fought for democratic changes in the country and which was finally drowned in blood – Soviet bomb attacks fell on some of our cultural buildings – probably this was pre-designed. Among these buildings was the National Museum, where stood – along others – the famous-in-Europe Africa Exhibition, and the building of the Department of Zoology in Baross street, in which the largest damage was suffered by the Herpetological Collection. We can imagine the sad events of October most authentically from the personal report by FERENC MIHÁLYI (1906–1997):

“...the collection survived World War II and the siege of Budapest in chests in the basement of the museum, though the building suffered more severe damage than it has in this year. Now, however, the revolution which broke out suddenly, caught the museum totally unprepared. It was impossible to defend the material...”

“...the Department of Zoology only has exhibitions in the building of the National Museum. Among these the most popular and most beautiful was the Africa-exhibition. Unfortunately, the two 20-metres halls were absolutely destroyed. In one of them – the one which housed the elephants – stood the world's largest and most beautiful diorama created by the museum's preparators and artists from the trophies of Kálmán Kittenberger. Not only the Hungarian visitors looked upon it with admiration, also experienced foreign professionals spoke about it with rapture noting they have never ever seen such a scene elsewhere.

In the other great hall, Sándor Óry's perfect lions, chimpanzees, and a rhino were destroyed. Fortunately, the crocodile-hall did not catch flame, though an exploding grenade caused great damage here. The corridor-hall's antelope-heads got smoky and sooty, but probably they can be cleaned. The Department of Zoology exhibitions on the other side of the building remained unharmed. After the conflagration, we walked through the destroyed exhibitions with grief in our hearts, hoping that this was the end of the devastation.

Unfortunately, it was not. On the 5th of November, battles raged around the building in Baross street. Here stood the scientific collections and workrooms of the Departments of Zoology and Anthropology. Bombs exploded in the collection of reptiles and amphibians on the top floor. The few thousand specimens stored in alcohol caught flame, and more than 20,000 litres of alcohol ran out, turning the whole annex into a sea of flames. The fire spread to the neighbouring fish collection, where there was also alcohol in almost 3,500 bottles. The inhabitants of the neighbouring house formed a chain and helped the firemen. The doors and windows of the butterfly collection stood in flames and even the furniture started to burn. However, the fire was finally extinguished, and the Lepidoptera collection – containing 400,000 specimens – was saved. Even though almost one-third of the buildings – along with the collections stored in them – were destroyed...” (MIHÁLYI 1956).

For the public, the tragedy of the Natural History Museum was summarized by ISTVÁN BOROS director general in the yearbook of the museum (BOROS 1957). As MIHÁLYI also wrote, the Herpetological Collection was absolutely burnt out: 15–20 thousands of Hungarian (Carpathian Basin) materials, mainly the collections of BOLKAY, DELY, DUDICH, ÉHIK, FEJÉRVÁRY, GEDULY, MÉHELY, PONGRÁCZ and VASVÁRI and 18–20 thousands of

foreign materials: those collected by GYÖRGY ALMÁSY (Turkmenistan), LAJOS BÍRÓ (New Guinea), ISTVÁN BOLKAY (Yugoslavia), ERNŐ CSIKI (Albania and Serbia), TIVADAR DUKA (East India), the FEJÉRVÁRY couple (Switzerland and Malta), KÁLMÁN KITTENBERGER (Africa), ÖDÖN KOVÁCS (Abyssinia), GYULA MADARÁSZ (Ceylon), ÁRPÁD VEZÉNYI (Brazil), JÁNOS XÁNTUS (North America and Southeast Asia) were annihilated. Altogether approximately 40,000 specimens have been lost. 20–25 valid type specimens were also destroyed, including that of the snake *Liasis maximus* Werner, 1936, which was collected by LAJOS BÍRÓ (WERNER 1936), and MÉHELY's type specimens, too. The South American snake collection donated to the museum by KLOBUSITZKY, and some specialities like the 4 Tuataras (*Sphenodon punctatus*) from New Zealand (a gift by F. WERNER) burnt to ash as well. Three-hundred Alpine Newt specimens from Berlin and 150 from the University of Bucharest on loan to DELY for his candidate of science dissertation were also lost. The whole extraordinarily valuable, specially preserved bone collection got burnt also: 3500–4000 specimens incl. BOLKAY's and FEJÉRVÁRY's fossil types and the Alpine Newt skull collection by DELY (Fig. 31). The dry collection and the reptile skins, some 150–200 pieces, and 80–100 frogleg-preparations stored in glycerine – which formed the basis of FEJÉRVÁRY's prehallux study (FEJÉRVÁRY 1925) – perished. The herpetological library (approx. 2,200 books and 500 separata) and all the furniture also turned to dust (Figs 32–33).

RECONSTRUCTION AFTER 1956

The horrible devastation would possibly have destroyed all hopes of the Hungarian museology for the future, but there was an optimistic, self-taught scientist called ISTVÁN BOROS (1891–1980), who graduated in the Soviet Union, and who started rebuilding everything with immense enthusiasm, humanity and honesty (Fig. 34). BOROS was appointed director general to the museum in 1949, and he bore this title from 1 August 1949 until 29 July 1960 (KASZAB 1981). He started the organisation of the replacement of the destroyed collections and the rebuilding with incredible energy. Besides his many great tasks, he devoted much of his time to the popularisation of Darwinism (he wrote the introductions to the Hungarian Darwin-book editions and completed them with notes), to the increase of the herpetological collection, and to the writing of papers on the history of science (BOROS & DELY 1967, 1968, 1969). Many great exhibitions were created under his directorship: “*Wildlife of Africa, The World of Minerals, The Evolution of the Earth and Life, The Evolution of Plants, The Origin of Men*”, and the popular touring-exhibitions were also started (BOROS 1952).

BOROS lead a very adventurous life, which provides an authentic overview of almost the whole Hungarian (East European) history of the 20th century. He got a degree in geology and natural sciences at the Pázmány Péter University of Budapest at the beginning of World War I in 1914. He finished in the same year as GYULA ÉHIK (1891–1965), who later became the leader of the Collection of Mammals and the director of the Department of Zoology. During their university years, they together dreamt of a South Russian expedition (BOROS 1969). The “excursion” was realised for BOROS, though it happened

in a “slightly” different way: in 1914, on the Carpathian battleground he became a Russian prisoner of war, and was transported across the Caspian Sea on a train for prisoners of war. He spent 8 years (1914–1922) in the Soviet Union, but he was fortunate: in the camps he was treated exceptionally well and he could even indulge in his hobbies: observing nature and collecting animals. The experiences of his “journeys” expanded his zoogeographical and evolutionary ideas. Unfortunately, however, a great part of his collected material was lost or damaged due to his travels and vicissitudes. After his homecoming he became a teacher in Pécs and he got his doctoral degree in 1925 at the University of Pécs. The years spent in the Soviet Union served him well after World War II: first, he became the secretary of the Hungarian Communist Party in Pécs, then the granger of county Baranya (1945–1947), councillor of foreign affairs (1948–1949), and finally he became director general of the Hungarian Natural History Museum until his retirement (1949–1960). After this, he retired to Pécs.

As far as the museum is concerned, BOROS’ most important merits were his untiring fight for science and culture in the hard years after the World War, and the reconstruction of the whole museum and the exhibitions after the destruction in 1956. He was a kind of a humanist, objective leader concentrating on real values, as it was told by many of his colleagues and employees – some of whom had different ideologies than his Marxism. Because the reptiles and amphibians always stood in the centre of his interest, the Herpetological Collection always reserved an exceptional place in his mind. As a university student in the time of MÉHELY, he visited the museum frequently; he remembered this in a paper in which he described how he caught a Central Asian Saw-scaled Viper (*Echis carinatus*) (BOROS 1969): “... I put my left leg on its head with soft pressure, and as I learnt it from Lajos Méhely in the National Museum back in 1913, I caught its neck with my left hand carefully.” BOROS hastened the replacement of the material destroyed in 1956, in which he was helped by a young colleague, OLIVÉR GYÖRGY DELY. After the reconstruction of the building in Baross street (JABLONKAY 1996), the director general frequently enjoyed staying in the new herpetological research room on the fourth floor (Fig. 35). He acquired the famous animal painter, GÉZA VASTAGH’s (1866–1919) impressive painting “Landscape with lion” on permanent loan from the Hungarian National Gallery through his connections. In the following 40 years, this large-sized painting used to give a determinative impression everybody who entered DELY’s room. After his death, this painting was restored and now hangs on the wall in the office of the deputy director general (Baross street, 1st floor).

The leadership of the Herpetological Collection was taken over by DELY after FEJÉRVÁRYNÉ’s dismissal in 1951.

OLIVÉR GYÖRGY DELY (1927–2003) (Fig. 36) was born in Nagyszalonta (= Salonta, now in Romania) and graduated in museology at the University of Budapest in 1950. After finishing the university he was directed as a trainee with scholarship to the János Xántus Museum in Győr for a short time by the Hungarian Centre for Museums and Monuments. Subsequently, in 1951 he was employed in the Department of Zoology of the Hungarian Natural History Museum in the Herpetological Collection where he worked until his retirement, and where he spent much of his time until his death.



Figs 32–33. The fire in 1956 totally extinguished the Herpetological Collection on the third floor of the Department of Zoology (photographs by G. SZEGVÁRY, 12. Nov. 1956, HNHM)



Figs 34–35. 34 = ISTVÁN BOROS, the herpetologist director general, 35 = The Herpetological Collection after the reconstruction on the fourth floor of the Department of Zoology

One of his first works was to participate in the large task coordinated by VILMOS SZÉKESSY (1907–1970): discovering the wildlife of the Bátorliget Bog, eastern Hungary (Fig. 38). An interesting herpetological feature of the work was the Viviparous Lizard (*Zootoca vivipara*), which is a montane species in the neighbouring countries and which was first found in the Carpathian Basin by OLIVÉR GEDULY next to Ócsa in Felsőbabád in 1923 (GEDULY 1923, see also above). This is a part of the Alföld, the Great Hungarian Plain, typically formed like the huge Asian steppes. The occurrence of the Viviparous Lizard was first indicated in the Bátorliget Bog – which is regarded as a relict habitat from the Ice Age near to the edge of the Plain – by ENDRE DUDICH and GYULA ÉHIK in 1925–26 (DUDICH 1926). In the Museum's project, FEJÉRVÁRYNÉ was there to collect once in 1948, DELY twice in 1952 – after then he wrote the part about the herpetofauna in SZÉKESSY's book (DELY 1953). This lizard species later became the favourite subject of DELY's many scientific papers and of his research concerning the *pholidosis* (headscale pattern) diversity in lizards (e.g. DELY 1981a).

One of DELY's invaluable merits was the reconstruction of the Herpetological Collection, and the restoration of it from nil to nearly 15,000 specimens (Fig. 37). For an instance of his extended efforts, we have at our disposal his correspondence with KARL F. BUCHHOLZ, Curator of Herpetology at the Museum und Forschungsinstitut Alexander Koenig, Bonn (courtesy of WOLFGANG BÖHME). In the letters they went into details of exchange of museum specimens as well as reprints and other library items.

The vertebrate collections (the fish, the amphibian-reptile, and the bird collections) were the ones having suffered the most from the tragedy of 1956. BOROS, director general of the museum, organised the replacement of the collections with determination and enthusiasm which gave power and hope to all the employees. He gave all the help he could acquire through his connections to the curators in order to reach the threefold target he placed before them: he encouraged the implementation of Hungarian collecting trips, the requests for donations from foreign fellow-institutes, and he supported the realisation of the most promising foreign collecting expeditions. While the first two were relatively simple tasks and mainly required vocation and diligence, the latter one required a financial support greater than the museum could afford. BOROS did not give up, though. He wrote a letter to the government of the Soviet Union, for example, in order to ask for help to organise a collecting trip to China. He wanted to send an expedition, and had recourse to the Soviet authorities to let it travel through the country duty-free. He did not get an answer, though. BOROS, however, wanted to grab every opportunity to make the necessary collecting trips as profitable as possible. It was not his fault, that many of these expeditions could not be realised.

Egypt was the first target in the program of the Natural History Museum to replace the lost material (Fig. 39). There was an intergovernmental agreement between the two countries, and with the purpose of the possible restoration of the famous Africa Exhibition a four-month-long collecting journey was realised in 1957. The expedition was led by DELY, with three other participants, LAJOS HORVÁTH ornithologist, LÁSZLÓ GOZMÁNY lepidopterist, and ISTVÁN VISÓVÖLGYI taxidermist. Firstly, they had to spend two months on a boat on the Mediterranean Sea from Budapest to Alexandria. At the end, the collected

material contained 350 reptiles and amphibians, 203 birds (belonging to 71 species) and approximately 6,000 invertebrates (insects and molluscs) (DELY *et al.* 1958). “Besides two giant cobras, the expedition managed to bring home Horned and Sand vipers. Among the lizards there was a large *Varanus*, in addition to many small different lizards.” (HORVÁTH 1963). The material has never been processed in its details, just as the Sudanese expedition was not realised which had been planned for the next year.

DELY had to concentrate on the writing of his candidate dissertation around this time. Unfortunately, not only his whole collection but also his whole scientific work was destroyed in 1956. He actually had to write his candidate dissertation two times, because both of his manuscripts and his study material (samples of the Hungarian Alpine Newt populations) were burnt. Finally, in 1965 he acquired the Hungarian academic degree, the Candidate of Biological Sciences with his 369-page dissertation entitled “*Ecological and taxonomical studies on the Alpine Newt*”.



Figs 36–37. 36 = O. GY. DELY as a young herpetologist at his table in the Herpetological Collection. FEJÉRVÁRY’S portrait hangs on the wall (courtesy of Á. DELY-DRASKOVITS), 37 = DELY in the new Herpetological Collection arranging material in the cabinets (courtesy of Á. DELY-DRASKOVITS)



Fig. 38. DELY, BOROS, and I. SZABÓ in the Bátorliget Bog in 1952 (photograph by I. SZABÓ)



Fig. 39. Preparation of collected reptiles at Giza, Egypt, 1957 (DELY, HORVÁTH, GOZMÁNY, from left to right) (photograph by I. VISÓVÖLGYI, HNHM)

THE LAST PERIOD OF CLASSIC MUSEUM HERPETOLOGY

The soil zoological collection trips marked with the name of JÁNOS BALOGH, professor at the Eötvös Loránd University, Budapest, played a great role in the increase of the material of the museum. The first was the South American soil zoological expedition to Argentina, Brazil, and Chile in 1965–66 (participants were JÁNOS BALOGH, ISTVÁN ANDRÁSSY, IMRE LOKSA, SÁNDOR MAHUNKA and ANDRÁS ZICSI). This expedition brought some interesting material for DELY also: he wrote his one and only paper about tropical reptiles based on the examination of four specimens of *Anops kingi* (Amphisbaenidae) (DELY 1970).

The second South American zoological expedition in 1966 to Bolivia brought back 238 specimens of amphibians and reptiles. Significant herpetological material arrived from the collecting trips by GYÖRGY TOPÁL to Argentina (1961), India (1966–67: 84 specimens, and 1979–80: 143 specimens), and Vietnam (1966). ZOLTÁN KASZAB, coleopterist and director general of the Hungarian Natural History Museum added 130 specimens during his Mongolian expeditions. FERENC ZILAHY taxidermist collected 59 specimens in Tunisia. Most of these items, however, have been remaining unidentified in the collection until today.

In 1973 DELY spent six weeks in Algeria with preparator FERENC ZILAHY on an almost 6,000 km long collecting trip. This expedition ended with a tragic accident, which had an influence on the rest of DELY's life. They were chasing jerboas in the middle of the night with a car in the desert, when a gunshot accidentally hit his left thigh. Though his leg was saved thanks to his composure and to repeated operations, he never recovered fully, his thighbone broke two times more during his life, and the painful vicissitudes escorted him until the end of his life (DELY 1975*b*). DELY wrote about the incident only tangentially and in an easy way in his expedition report: "...our two-month stay in Algeria was prosperous and successful – apart from the sad, but fortunately ending accident – not only to ourselves, but also to the Museum." The collected material lists 232 amphibians and reptiles, 14 birds, 55 mammals and more than 3,500 invertebrates (mainly flies and snails). No scientific paper was published about the herpetological procession of the material.

DELY with his wife, ÁGNES DRASKOVITS dipterist went for the fourth expedition of the museum to North Korea in June–July of 1977 (Fig. 40). This was one of the many expeditions, which grounded the fame of our Museum with their huge material collected in East Asia (DELY & DELY-DRASKOVITS 1978). It can be read in their report that they returned home with 249 amphibian and reptile specimens (and almost 35,000 (!) invertebrate ones, about half of which were flies). Out of the 28 days spent there, 11 were collecting days: the usual days around Pyongyang, capital of North Korea (163 amphibians + 4 reptiles), the ones in the Kumgang-san (Diamond Mountains) (48 amphibians + 3 reptiles), and they also managed to get to the northern, rarely opened high mountain range called Paekdu-san (31 amphibians). Only two of the subsequent 21 HNHM expeditions got there. One herpetological paper was written as a direct result of the study of Korean lizard specimens (DELY 1981*b*). It is about the diversity of *Eremias argus*; DELY, however, later used these observations for his morphological research about the headscale-patterns of the European lacertid lizards as well.

DELY maintained an international relationship with most of the best herpetologists abroad (ADLER *et al.* 2007); a few of these relationships were already established during the collection's reconstruction period after 1956. In 1981, still amidst difficult political circumstances, he organised the First Herpetological Congress of the Socialist Countries in Budapest. The 47 participants were from the USA, France, West Germany, Spain, the Netherlands, Finland, United Kingdom and Austria – in addition to six East European countries. This congress became – contrary to its title – an East–West meeting; many herpetologists from both sides mention it even today that it was the first time they met someone who they knew before only by his/her papers, because the political boundaries divided them (there were 12 participants from the Soviet Union, too). The 1981 Budapest conference was essential in building friendships and understanding that led directly to the organisation of World Congress of Herpetology in 1982 and to its first congress in Canterbury, UK, in 1989, which has been to this day the largest international herpetological meeting ever held. Another result of this breakthrough event was that exactly ten years later, in 1991, on the 6th Ordinary General Meeting of the European Herpetological Society (Societas Europaea Herpetologica), organised in Budapest by the author of this paper, DELY was elected the honorary president of the conference.

DELY liked to tell the story how he had met with ROBERT MERTENS, one of the greatest herpetologists of all time, and how he admired him. He visited him twice in the Natur-Museum Senckenberg, Frankfurt am Main, at first in 1968, then in 1972 for a bit shorter time. At their first encounter, MERTENS introduced DELY to his collection, explained the material, then at the end of the visit he stopped him in front of a terrarium in his room, and pointed with demonstrated expectation to the living lizard-like reptiles in it.



Fig. 40. DELY and his wife in North Korea, 1977 (courtesy of Á. DELY-DRASKOVITS)

DELY has never seen before living Tuataras (*Sphenodon punctatus*), but after some speculation he managed to recognise them. It was his proud success to pass the “exam”, and thus immediately achieved MERTENS’ admission.

Several papers have already been published about the life and the herpetological work of DELY (KORSÓS 2004a, KORSÓS & VÖRÖS 2004). Here, it is enough if we mention that he was the author of the most important Hungarian herpetological books: the volumes “Amphibians” (Amphibia, DELY 1967) and “Reptiles” (Reptilia, DELY 1978) of the *Magyarország Állatvilága (Fauna Hungariae)* academic series. In these two monographs, he described the species of the Hungarian herpetofauna with unprecedented thoroughness.

He was the one to start and edit all the 23 volumes of the *Vertebrata Hungarica*, the Museum’s journal on vertebrate zoology. The publication – which unfortunately ended in 1989 – contained many herpetological studies from DELY and his friend and colleague GÁBOR STOHL (1919–) (DELY & STOHL 1982, 1984), but we can find other herpetologists’ names in it, too (BOROS, JANISCH, MARIÁN, and SZABÓ, for examples).

For all his period in the museum’s Herpetological Collection, DELY was helped by her diligent and faithful assistant, ERZSÉBET ÖRY (1921–2004) (Figs 41–42), daughter of museum taxidermist SÁNDOR ÖRY mentioned earlier. She became employed in the museum in 1947, at first in the director general’s office, then in the Departments of Mineralogy, Petrology, Geology and Paleontology, until she found her place in the Herpetological Collection of the Department of Zoology finally in 1954. She became soon a well-tempered and popular member of the assets working mostly on the reconstruction of the museum after 1956. They attended many memorable collecting trips together, and all of the storing bottles, labels, inventories etc. wear her handwriting. She prepared very diligently and precisely, counted the scales, measured the body proportions, replaced the alcohol on the amphibians and reptiles put under her care every day. She never married, and – living at a distance of a couple of metres away from the museum in Baross street – one can say that her entire life took place among the walls of the museum.

ERZSÉBET ÖRY learnt fluent German from her Berliner mother (ERZSÉBET TOPP, 1886–1963), and also got an official medium level examination from German language in 1970. Her only brother died in 1971, and after that she lived completely alone. She always received the guests to the Herpetological Collection with open heart, had cheerful conversations with them, and prepared coffee in uncountable quantities. She retired in 1985, but until 1991, till DELY’s retirement, continued to be a valued assistant. In the following years she did not maintain any link with the museum, and it was only a few months after DELY’s death when she passed away in October, 2004.

HERPETOLOGISTS IN THE COLLECTION

During the 50 years DELY spent in the Herpetological Collection, he became a firm support for Hungarian herpetology. Many people used to visit him frequently, took advantage of the rich yet closely guarded library, examined the carefully stored collection. DELY paid extreme attention to all these objects under his care, and guarded them like they were his own.

Unfortunately, no one could even think about increasing the number of researchers. The museum constantly struggled and still struggles with insufficient employees, but many “outsider” dissertations and papers from other fields of zoology were prepared with the support of the Herpetological Collection and DELY.

Still during the time of FEJÉRVÁRY in the Herpetological Collection, JÁNOS SZUNYOGHY (1908–1969) wrote his doctoral dissertation (1932) about the study of the skeletons of snakes – which was beautifully illustrated (Fig. 43) and which described the skull and the other bones of snakes even including some fossilised remains. SZUNYOGHY later became the leader of the Mammal Collection and the deputy head of the Department of Zoology, but he kept his herpetological interests (SZUNYOGHY 1954). He was on very good terms with DELY and he also collected reptiles for the Herpetological Collection, for example during his famous African journey in 1965–66 (Fig. 44, SZUNYOGHY 1968).

ISTVÁN SZABÓ (1913–2000) (Fig. 45) was more of a herpetologist than SZUNYOGHY. Although he never got a university degree in zoology, he studied and popularised reptiles and amphibians with great passion. He was a hussar officer in the pre-war army, and then a prisoner of war in the Soviet Union until he came home in 1947. After that, he worked in banks and similar establishments in Budapest. At first he only visited the museum as an employee of these firms, but soon, with the professional help of BOROS, DELY, and FEJÉRVÁRYNÉ, he started regular research (Figs 46–47). Later he became employed in the Museum of Agriculture, Budapest, and from there, he managed to switch – as he told, “by mere luck” – to the Department of Zoology, HNHM (MATSKÁSI 1993). His best herpetological papers discussed the amphibians and reptiles of the Pilis and the Visegrád Mts, the Börzsöny and the Bakony Mts, from where he reported many new observations and data. He was the first to state that conservation of Hungary’s herpetofauna needs attention. He finally became the founder of the Parasitological Collection in the Department of Zoology, as he worked with external parasites, mainly fleas (Siphonaptera) of various vertebrates.

PÁL AGÓCSY (1922–1997) was the employee of the Department of Zoology from 1957 until 1983. He was a museologist from 1960. His task was to rebuild the molluscan collection, which was also destroyed in 1956. He wrote many educational papers about molluscs (VARGA *et al.* 2003). His significant herpetological discovery was that he found the Adder in Tiszahát, eastern Hungary (AGÓCSY 1958), which formerly was only recorded from the Transdanubian counties Somogy and Zala. After his retirement in 1983, he was the leader of the Youth Nature Club in the Educational Department of the HNHM.

MIKLÓS JANISCH (1922–2002) and MIKLÓS MARIÁN (1914–) maintained a good professional – almost friendship-like – relationship with DELY, and were regular visitors to the Herpetological Collection. JANISCH – Hungary’s one and only official “governmental expert on venomous snakes” and a record-holding snipe hunter – was famous for his collecting trips and his abilities in the field, his knowledge about reptile species and their habitats (Fig. 46). Many of the collections’ alcoholic bottles were “loaded” with his material (KORSÓS 2002b, VARGA 2003). He worked out the Meadow viper’s (*Vipera ursinii rakosiensis*) Hungarian distribution data with DELY (DELY & JANISCH 1959). DELY published a similar paper about the distribution of the Adder (*Vipera berus*) with MARIÁN (DELY & MARIÁN 1960). MARIÁN – the founder of natural historical museology in county Somogy (ÁBRAHÁM *et al.* 1998) – is the most significant “countryside” herpetologist even today.



Figs 41–42. ERZSÉBET ÖRY (1921–2004), DELY’s assistant in the Herpetological Collection for more than 40 years (photographs by L. MIKÓ, 1963, and F. MIHÁLYI, 1988, HNHM)

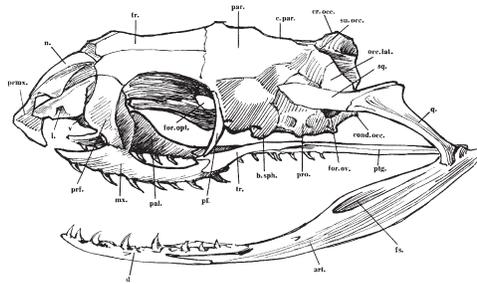


Fig. 43. Skull drawing of “*Zamenis jugularis* L. var *caspius* Gmel.” (= *Hierophis caspius*) from SZUNYOGHY’s doctoral dissertation (1932)



Figs 44–46. 44 = J. SZUNYOGHY with a 120 cm *Varanus* aff. *exanthematicus*, shot in Rungwa, Tanzania, 1965 (photograph by H. HALBACH), 45 = I. SZABÓ with a *Varanus griseus*, 46 = M. JANISCH and SZABÓ, collecting fleas from a newborn mouse (1970, Sopron)



Fig. 47. SÁNDOR ÚJHELYI and SZABÓ on a collecting trip in Barcs

Apáczai Lőrinc Sándor (1853): Magyar Egyébkései.
 Miklósi Csipr (1902): Jelen Vadkötője ①

Leginkább ritkaságok vannak benne, s levelesben
 jöve a csodás, különös dolgokat említik is azokat
 néveléssel, babszerűkkel, még erkölyi vonatkozásokkal
 füzérekre is mutatják az állatokat. Ez első sorban
 aprócskánál van így, de a kor szellemének emiatt
 képe megvan még, nagy mértékben hiányozna a
 hiányzó könyve egyébként fordítás, s így kevés viszonyokra
 vonatkozó könyvek is főmunka alig akadnak benne.

Del tölgyes Magyarország földrajzának megismerésében
 az állatorvosi van tekintettel s ebben az állatvilágra
 mennyiben van tekintettel azokat nagyon (állatvilágra,
 állatvilágra is hullóare ortos stb) mutat.

Martini A. (1892) - ban nagyon látott egy évében
 melyben a bűnös mellében több ezer át vizsgált megfi-
 gyelemmel jött be az en csoportomra mit is?

Bevezető szöveg: Trautsonnálban bűnös bűnösözés -
 zis csoportomra mit is? s így utána, s
 en csoportomra mit is?

Bevezető szöveg: Trautsonnálban bűnös bűnösözés -
 zis csoportomra mit is? s így utána, s
 en csoportomra mit is?

Bevezető szöveg: Trautsonnálban bűnös bűnösözés -
 zis csoportomra mit is? s így utána, s
 en csoportomra mit is?

Bevezető szöveg: Trautsonnálban bűnös bűnösözés -
 zis csoportomra mit is? s így utána, s
 en csoportomra mit is?

Fig. 48. DELY's notes on the history of Hungarian herpetology

With the death of DELY, a great era has ended in the history of the Herpetological Collection of the Hungarian Natural History Museum. DELY was the last classic Hungarian museologist herpetologist (KORSÓS 2004b), who did his examinations mainly on the material preserved in the collection using a microscope and morphological analyses. He incredibly respected his predecessors (MÉHELY, BOLKAY, FEJÉRVÁRY), and by the thoughts he learned from their papers – his thoroughness, his exact observations and descriptions, his pragmatic explanations and his careful evaluation – he deserves to be mentioned on the same level with them. He respected and loved the reflections of the former periods of zoological activities, as well as the professional literature, until the end of his life. He was constantly collecting data to write the history of Hungarian herpetology, but at the end, he only left a few notebook pages about it (Fig. 48). Although he was not “born” to be a herpetologist, he treated the animal group, which was assigned to him after the war – amphibians and reptiles – as his “own animals”, and he took care of the collection and this branch of science very enthusiastically, always keeping his duties in mind. By the end of his life, the role of museums in culture has changed worldwide. The purpose of natural history museums – especially with regards to the vertebrates – was no longer the accumulation of dead material and the documentation of the fauna, but rather to play a role as a zoological research center, which provides indispensable information on the biology of species and their conservation also by examination of living populations. In the light of this role-change, the Herpetological Collection of the 200-year-old Hungarian Natural History Museum came to the threshold of a new era.

*

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