

Behaviour of Canadian beavers in the new exposition

On 27 August 2003, the Brno Zoological Garden introduced a group of five Canadian beavers (*Castor canadensis*) into their new exposition. The principal basis of their territory is a water basin, 30 m long and 1 m to 5 m wide; underneath the beaver dam is an underwater tunnel leading to their man-made den. The behaviour of this amphibious mammal belonging to the family of rodents fascinates me and therefore I decided to dedicate part of my leisure time to the observation of the beavers. I live within the zoo area and therefore have excellent conditions for my research, as beavers perform their activity predominantly at night.

The beaver's activity starts immediately before dusk. The first step to a successful observation was making the beavers accustomed to my presence and the light generated by the torch placed on my head. The advantage of this manner of illuminating the beaver's territory lies in its less disturbing effect compared to a hand-held light source, as a beaver is actually able to detect even the slightest motion above the water surface, and will immediately disappear below the surface in an attempt to escape to a safe distance. On the first observation day, i. e. 15 September 2003, the beavers were remarkably nervous and promptly responded to any movement on my part even at a distance of some three or four metres. This mutual examination took three days. On the third day, the beaver's curiosity grew to such extent that one of them dared approach closely toward the light, raised its head, and we looked right at each other, face to face, from a distance of less than one metre. I held my breath, waiting for what would follow. After less than a minute, the beaver, with its intrinsic

intelligence, performed a smooth dive into the illuminated area. Gradually, all the beavers grew accustomed to my presence, as well as the light and its movement. My position was still confined to the outer part of the beaver exposition. Despite this, it occasionally occurred that even a more rapid motion of my head caused them to disappear immediately beneath the water and they reappeared only at a distance they deemed the most secure.

On the seventh day I decided to examine the beaver's sensitivity threshold in respect to their resort to safety. When it got dark, covered by the veil of darkness, I slowly approached the beaver site. I was full of tension, awaiting new experiences with the beavers. Actually, I had decided to settle in their territory and try to explore the beaver's night life from the shortest possible distance. The place I had chosen for myself was located on the bank, under a rock cornice. The deep of night had already been full for some time and my way was illuminated only by the torch and stars. At 21:00, two beavers entered the lake, two on the bank where I intended to settle, and one had swum to a more distant section of the basin, and could not be seen. It took 15 minutes before I reached the desired spot. I had to move very carefully so the beavers would not notice me and disappear under the water. When I reached the chosen place, I crouched and put a tree branch with leaves into the water, hold-

ing the other end of it in my hands. After a while, one beaver that was swimming nearby bit a piece from the branch. It was not even disturbed by the light radiated by the lamp. It was at a distance of some 2 m from my hand. Gradually, the branch dwindled, and the last grasp was some 5 cm from my hand. This time the beaver did not bite the branch, but pulled it into the water. While eating, the distances between the beavers and me varied. The shortest distance between myself and the beaver eating the branch without escaping was some 1 metre.

At any time, not more than three beavers were close to me on the bank. The others watched the situation from the water. When they felt suspicious about something, they released an undertone wheezing sound, and all of them disappeared under the water. One of them had built up a passage along the top of the dam leading downwards to the den. Another beaver and I watched each other from a half metre distance for quite a long time. The beaver was standing on its hind legs, cleaning its mouth with its front legs, and watching me vigilantly – though without any fear. I stopped breathing in order to avoid any motion and disturbance. It was a moment to remember. After some 20 seconds, the beaver turned and disappeared into the water. This night meant a break before those upcoming.

22 September. A pleasantly warm evening followed after a hot day. The air



Canadian beaver in its new run at the Brno Zoo

Photo: Eduard Stuchlik



Canadian Beaver run

had grown slightly cooler, and a fresh breeze was blowing. A deep silence, veiled by the magic of the night, hovered over the zoo. This time, when moving to my observation spot, I startled the beavers a little as I rustled with the branch I was carrying for feeding. However, the escape lasted for only some two minutes. After a while, the beavers gathered around the branch, big enough to feed them all. Their skittishness is gradually disappearing. I started a blind snapping, since I can see almost nothing via the finder. The beavers were very close to me. To my great surprise, the flash does not disturb them in their activity at all, and they did not react. Suddenly, one of them settles some 70 cm from me, and gnaws a piece taken from me a moment ago. It is half turned towards me. I slowly stretch my arm to it, and touch its back with the rest of the branch. Fully absorbed in gnawing, it does not respond. Suddenly, one of the beavers jumps into the water, and "my" beaver, disturbed, also swims away.

After a half an hour, I moved to another place, close to the water's edge. However, I suddenly notice a gnawing beaver on the bank. I slowly approached it. I kept the light pointing at it in a stable position. I came behind its back, at a distance of a half-foot. It obviously did not pay attention to me. Only another beaver, standing at a distance, warned it of my presence by jumping into the water – immediately followed by the beaver seated near me. I held out the remaining 10 cm of the

branch the beavers had been eating. I crouched by the water with my hand suspended over my knee and waited for what would follow. After a while, one of the beavers emerged. It came close to me, grasped the end of the branch and pulled it. I did not let go. Then it bit a piece off and pulled again. I held the branch for a while, then opened my palm and the beaver swam away with the branch. The first significant learning resulting from that night was that a gnawing beaver, wholly absorbed in eating, does not fully perceive its surroundings. This, however, does not apply to those not eating at the moment.

It can be supposed that the beaver community lives as a well-organised unit (though it does not seem so at first glance) where every individual has its particular role and place. This is, however, only an inkling of what could be explored while observing them. And everything could be also quite different from what we think.

Ing. Peter Lukáč

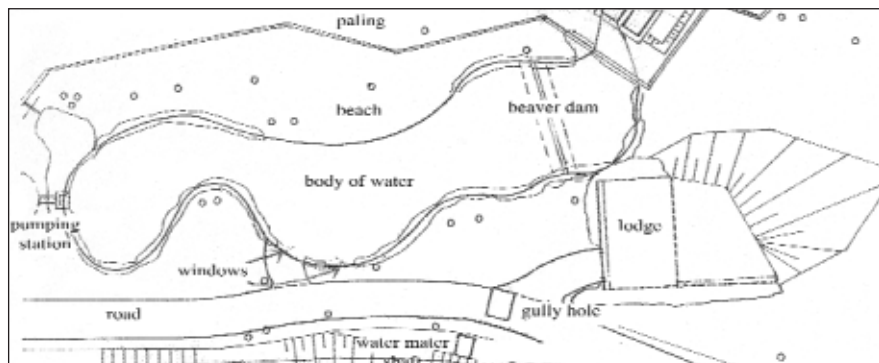
Description of the beaver area

The new area for the Canadian Beavers in Zoo Brno occupies a space of approximately 750 m² and is located on the western slope of Mniší hora. It is the first completed section of a future complex exhibition of northern animals called Beringia. Linked to it is a run for Canadian Wolves, which will be open to visitors next spring. The beaver area consists of a water tank lined with an artificial shore and an artificial lodge, in which there is space for visitors and service as well as a refuge for the beavers.

The tank is a simple water management object of atypical shape, 32 m long; it is 5.5 m wide at its broadest point. It is designed for a flow: water

flows via an artificial stream through the wolf run and leaves the space through a grating into the pumping station. Reinforced concrete partition walls at 1/7 the length of the object support the beaver dam from branches and trunks. The developed area of the tank at the bottom is 135 m²; the depth of the tank varies from 200 cm at the inlet to 150 cm at the outlet grating. The tank is recessed from one third above the terrain; the walls and bottom are made of reinforced concrete. The crown of the tank is treated with metal for clamping on the so-called concealing construction, treated on the surface with a polymer-concrete spray (torkret) and imitating rocks and land. The internal walls are treated with non-permeable paint with toning pigment. In two locations, the walls of the tank are embedded with transparent windows of glued glass 28 mm in width and in dimensions of 120x101 cm and 120x105 cm, also extending above the water surface. The steel frame of the windows is cemented into the walls of the tank. The shores are vertical for the most part, but the wall opposite the window has a slope of only about 30° and this creates the so-called beach, where the beavers may crawl out onto dry land. Draining and filling of the tank are controlled from shafts in front of the den. The vicinity has been landscaped with planted bushes and grass.

The developed area of the above-ground lodge, as well as the soil covering, equals 85 m², while the den itself has a developed area of 22 m². The den is linked to the tank by a burrow 50 cm in diameter – an underwater opening gives access to the beaver refuge, which is already above the water level of the tank. The den object is supported on piles from simple concrete, the above-ground section is walled using Prefa concrete base elements. The masonry ends in a reinforced concrete rim, in which ceiling panels from the same material are positioned, covered with



Site plan of the beaver area



A beaver enjoys some cabbage

grade level concrete. Welded sheets of Hydrolen and protective geo-textiles insulate the object. The entrance doors are steel, retractable and lockable. Visitors pass through a set of suspended ropes and strips of black foil, which limit the penetration of daylight, into the visitors' area. The behaviour of the beavers in the refuge may be observed through a glass window. From the visitors' space, it is possible to enter into the technical chamber through a standard steel door. Lighting in the beaver refuge is linked to the 24 V electricity system; in other parts of the den this is a 230 V current. The exterior and interior surfaces are again performed by spray polymer-concrete (torkret) in concealing construction. Final surface finish consists of a coloured coating. The mound on the roof of the den and its surroundings has been planted with grass and bushes.

Svetozár Poláček

Journey of seventeen animals from Brno to Kazan

The transfer of seventeen animals from Zoo Brno to the zoological garden in Russian Kazan, a distance of approximately three thousand kilometres, took place at the end of September and the beginning of October of this year. It involved the largest, longest and most demanding transport Zoo Brno has ever attempted. Its mission was to implement the first part of a mutually benefi-

cial animal exchange in which the Kazan colleagues of Zoo Brno offered their own breeds or representatives of species that do not fit their developmental concept.

Roughly a year passed from the beginning of preparations before it was possible to load the animals onto freight cars. This began on Tuesday morning, 30 September 2003 and lasted roughly six hours; keepers placed six species of predominantly large animals in trucks. They began with a pair of Syrian Brown Bears (*Ursus arctos syriacus*), which had to be sedated - at which time the veterinarian took blood and fur samples for genetic research. Then pair of Bennett's Wallabies (*Macropus rufogriseus fruticosa*) was loaded followed by three Nile Crocodiles (*Crocodylus niloticus*), four Green Iguanas (*Iguana iguana*), five Australian Larger Emus (*Dromaius novaehollandiae*) and a Chapman's Zebra mare (*Equus burchelli chapmani*). For members of species particularly sensitive to the length of transport, i.e. for the Chapman's Zebra and the brown Emu, technicians from Zoo Brno completed boxes of pipe and spoke construction, which could be disassembled. The other animals travelled in transport crates corresponding to international freight regulations of IATA.

The crew of the truck consisted of two drivers from a freight-hauling firm, the head of transport was a zoologist from Zoo Brno. The special trip went relatively fast and smooth; the animals were calm and accepted water and even food without any problems. It is

possible to say that they adapted exceptionally well to their temporary home. Despite the traditional delays during border crossing inspections, the truck made its way rapidly across Poland and Byelorussia and then, with the help of Zoo Kazan staff, it arrived at its destination on Friday afternoon, 3 October 2003. Due to longer delays at the customs office in Kazan, the animals did not reach their quarters in their new home until evening, but in entirely satisfactory health and condition. For the crew, the most dramatic stage of transport came to an end and the three men could finally breathe a little easier.

The plan for the return was as follows: On Monday, 6 October, appraisal of the animals, empty crates and structures in the truck leave for customs and set out on the return journey. Although warned by certain signals and from experience, the crew did not know exactly to what degree the customs organs in Kazan, the City of Tatarstan, would be flexible and understanding. It turned out that to obtain permission to re-export the transport crates, the Tatar Central Customs Office intended to work painstakingly for several days until finally it would be possible to begin the customs process in matters of acquiring the customs declaration necessary for exporting the crates back to the Czech Republic. When it was clear that this process, if it were to be at all successful, would take 10 to 15 days, maybe more, the crew decid-



Loading the Nile Crocodile (*Crocodylus niloticus*)

ed to return with an empty truck. The bureaucratic hassle ended in Brno and the crates were transported on the return journey from Russia in another truck of the Czech freight-hauling firm that had conducted the transport.

As I have already noted, preparations for the trip took roughly one year. It was necessary to obtain many veterinary, customs, transit and other permissions and also to secure a freight hauler. As noted above, there were not many suitable and primarily willing freight haulers. Among others, colleagues from zoos in Prague and Dvůr Králové nad Labem, who had transported animals very often and have a wealth of experience with this, were contacted. But the transport seemed too long and risky to them. Transport firms were also not willing to undertake such a long and demanding trip. At the same time, perhaps the greatest argument against the transport was the direction – to the east and particularly to Russia. When we finally tracked down a company that was willing to undertake the order, we



Photo: Lubomir Stehlik

Loading the Syrian Bear (Ursus arctos syriacus)

discovered that it did not have and could not acquire international certification for the transport of animals, the so-called sensitive carnet. At the last

minute, at the beginning of September, a freight hauler that had this carnet was successfully found and which specialised in the transport of sensitive goods to Russia. Also very important was accommodation with our requirements as to the welfare of the transported animals. The firm provided a Volvo box truck with bed space 13.5 m long and was willing to allow modification of the bed space, which improved the conditions for transport and also facilitated the necessary handling of animals during the long journey.

The transported animals enriched the collection of the Kazan Zoo, which is attempting to improve its look: next year they will celebrate the two-hundredth anniversary of their opening and furthermore Kazan itself will celebrate one thousand years since its founding. In exchange, next year there will be a return trip with animals, which will meet the needs of the new breeding and exhibition concept of Zoo Brno. This will involve a pair of Siberian Wolverines, a pair of Polar Foxes, four Steppe Grouse and ten Waxwings.

I believe that despite the complications with customs, the transport to Kazan was a success; for all that, it demonstrated the good health of all the transported animals. According to the latest report from Kazan, they have adapted to their new environment without any problems. Experience from the demanding journey will be useful for Zoo Brno staff during new transports and for all their future work with animals.

Ing. Daniel Zeller, PhD.



Photo: Daniel Zeller

Truck with animals



Photo: Daniel Zeller

Transport director Ing. Daniel Zeller on the body of the truck