New inhabitants in the Zoological Garden

Two young female ibexes, one of them perhaps pregnant, have joined our old herd of ibexes – four males and a single female that no longer comes into heat. The four males welcomed the new females with a lot of excitement, and two of them began horn-fighting, testing the established hierarchy. There is no doubt that the two young ibexes have added life to our sleepy herd.
An adult coypu arrived at the Zoological Garden at the end of the summer. It was originally collected by a ranger of the Israel Nature and Parks Authority, together with other coypus, for research purposes. One of the coypus, however, did not get along with the others so she found her way to our Garden. Our new coypu lives in the former crocodile enclosure, and for the first few days she hid in the vegetation. She has since become used to her new home, stopped hiding, and now can be seen strolling about or swimming. We hope to bring her a male soon, so that she will have company.

Renovation and renewal

Of all the thicket aviary inhabitants, Henry, the friendly bulbul, is the most prominent. He welcomes whoever enters the aviary, perches on their shoulders and enjoys pecking at their beauty marks and jewellery. A short while after Henry arrived at the aviary we discovered that, to our great surprise, he was without his tail feathers! The initial suspect was a large young whip snake, part of the natural fauna of the area that had found its way into the aviary and made one of the logs on the ground its home. The snake can sometimes be seen basking in the sun beside its log. Perhaps the real guilty one, however, is one of the visitors, who while Henry was standing on their shoulder tried to hold him and was left with poor Henry's tail feathers in their hand. But don't worry, the tail feathers have started to grow again and Henry's flight has not been affected.

Garden news are also available at our website
More inhabitants in the thicket aviary: Mosquito fish and Galilee tilapias are swimming in the pond, where several toads also live. About 20 spur-thighed tortoises and several starred agama can be seen strolling on the ground, and in the dense vegetation you can encounter a common little bittern, a great spotted cuckoo, a Namaqua dove, a European turtle dove, a laughing dove, a corncrake, and a common whitethroat with one eye and one wing, which we received after it had been treated at the Wildlife Hospital. The vegetation features a variety of shelters and feeding tables that we installed for the birds and tortoises.

1. Fish in the thicket aviary pond; 2. A high and hidden feeding table; 3. A spur-thighed tortoise walking across the aviary floor; 4. The log in which the great whip snake lives, photos: Iil Pratt

Garden news are also available at our [website](#)
A large and spacious enclosure for the water birds

About a year ago, in autumn 2016, we joined the white-eyed gull enclosure to that of the spoonbills, in order to provide them all with a large and spacious common space. We have since continued this work and joined the northern bald ibis enclosure to that of the white-eyed gulls and spoonbills. For the time being we have opened up just a small part of the separating net, in order to observe the dynamics between the ibises and the other inhabitants of the communal space. After we are certain that there are no negative interactions taking place among any of the inhabitants using the available space, we will remove the remaining net that still separates between the two enclosures, enabling a very roomy space for all. Eventually, our aim is to create a spacious aviary that will allow our visitors to walk through and watch the birds from a close distance without disturbing their daily routine.

A new shed for the boars:

Thanks to a donation from a private donor, who thoughtfully seeks to improve animal welfare in the Garden, we have built a new shed for the wild boars. The shed will create a new area in their enclosure that will always be dry, even on rainy days.

Garden news are also available at our website.
What else is new?

The white-eyed gulls have bred again this year, but following our bitter experience in recent years, with many of the chicks disappearing between the first and third day of their life, this year we put the young chicks in a protected netted area inside the parents' enclosure. During their time in the protected area the chicks were tended to by the animal keepers, but they could always see all the other members of the flock. As a result of their hand-feeding, the chicks are not afraid of people and willingly approach whoever enters the enclosure, as can be seen in Anat Gal's photograph, in the news item on the young birders' group.

In the flower garden, at the entrance to the Zoological Garden, we have planted a variety of bulbs, among them Mesopotamian iris, sea squill, sea daffodil, hyacinth squill, Tel-Aviv garlic, common gladiolus, and Persian cyclamen. After the next rain we will sow more wild flower seeds. To ensure that the flower garden will remain green and beautiful, none of its plants are edible to the animals that roam freely in the Garden.

The turtle pond is home to 47 red-eared sliders that arrived at the Garden in mid-June. The sliders will be subjected to a variety of studies in order to learn about the physiology and behavior of this invasive species. As can be seen in the photograph, the vegetation in the turtle pond, both in the water and on the banks, has acclimated well and provides a protective cover against mosquito development, as well as many shaded places.

Garden news are also available at our website
Have you ever peeked into the ibex or hyrax yard and wondered about the tunnel openings in the ground? These yards are the new homes of some of our fat sand rats, which are enjoying the new space available to them. Many studies are carried out on the fat sand rat in the Zoological Garden, so we keep quite a few as a research reserve. Some of them are now sharing an enclosure with ibexes or hyraxes, in order to determine whether the semi-natural conditions are appropriate for them. Over time, some of the sand rats have cleverly learned to exit the ibex enclosure and to return later, probably through the small gap beneath the enclosure door. One of the females did even more: she left the enclosure and returned to the room in which she was born, near the staff dining room, where she settled in a cardboard box near the door!

Sand rats in their new home, photo: Ilil Pratt
A few words in their memory….

Our beloved Michelle was the friendliest barn owl of all the barn owls in the colony that we look after in our laboratory. She hatched in the Zoological Garden in 2004 and was hand-raised by our lab members, who fed her every three hours (including nights). Michelle stood out for her easy nature and beauty, which caused everyone who saw her to fall in love with her. She was very friendly, ate from our hands and let everyone enjoy her soft and pleasant feathers, while surrendering to our petting with her eyes closed. Due to her easy nature we used to take her out to meet important guests who arrived at the Garden. She also appeared in several television programs, among them the comedy series Polishuk and various children's programs, and she starred together with a model in a fashion magazine. Michelle died of old age when she was nearly 14.

Pazit Zadicario
In mid-September, Guru, our honey badger, died at the age of 27. The life expectancy of this species in zoos is 24 years, so there's no doubt that Guru had had a long life. She was one of six honey badger cubs that were born in our Zoological Garden in the late 1980s, a rare occasion in zoos. Shimon Arbiv, an animal keeper at the time, tells us that after several incidents in which a cub was born and then disappeared within a day or two, it was decided that the next cub to be born would be separated from its parents and hand-raised. Guru grew up in Shimon's home and is seen in the photograph with Shimon's daughter, Rotem Arbiv, who was about 2-3 years old at the time.

Of the six cubs that were born in the Zoological Garden, two were transferred to Haifa Zoo, two to the Jerusalem Biblical Zoo, and two stayed here – Guru and her brother. The two spent some of their time here in problem solving: climbing up on wooden boxes in order to get to the food that was hanging from the ceiling, opening coffee tins, and more. In the last two years, as part of an enrichment program in the Garden, Guru also enjoyed licking the honey from the holes that were made in the wooden logs given to her.
The two honey badgers in Haifa and the two in Jerusalem died around the age of 16-17, two of them due to a thyroid tumor. Guru's mate also died during the same period and Guru herself was ill and the animal keepers thought that she too would die, but happily she recovered.

After the death of her mate, Guru herself, who had never given birth, started to show maternal behavior towards stones. She would pick them up and treat them as if they were cubs, taking them into her burrow and taking them out again and guarding them protectively all the time.

Guru was the last honey badger to live in a zoo in Israel. At the beginning of September this year her health deteriorated and in mid-September we sadly said goodbye.

Lilo and Stitch, our two male mongooses, have died of old age within a few days of one another. They arrived at the Zoological Garden 15 years ago as orphan cubs, after being found at Pick Junction in the Golan Heights. The two were about 10 days old, their eyes still closed. They were hand-raised and tended to day and night by the students who worked in the Zoological Garden at the time. The devoted care proved its worth and the two grew up successfully.
The birding and nature childrens’ club of the Society for the Protection of Nature in Israel's is hosted by the Botanical Garden and Zoological Garden

Written and photographed: Anat Gal, the group's guide and an animal assisted therapist

The birding club of the Society for the Protection of Nature in Israel has been operating in the Gush Dan area for many years. Last year a new group was begun, for very young birders – aged 8-10. The declared aim of the group is simple: to let the children go out; to disconnect them from the computer and telephone screens and connect them instead to nature and especially to birds. In search of an age-appropriate structure for the activity and programs we began a collaboration with Tel Aviv University. As part of this cooperation, some of the group's meetings are held in the Botanical Garden and in the Zoological Garden.

In September we had our first visit to the Botanical Garden, in which we encountered several habitats: desert vegetation, tangled thicket, local sea squills, and unique cacti from all over the world… Each time we arrived at one of the Garden's crossroads we took a different path, leading to wonderful experiences. Everything was in bloom and many mosquitos and insects were buzzing around the flowers, trying – successfully – to taste them, and us too. Despite the annoying stings and bites, the abundance of insects is a wonderful treat for the small birds that pass here during their migration to Africa. A spotted flycatcher, a collard flycatcher, several willow warblers, and a young red-backed shrike were the main insect-eating birds that celebrated in front of us between the blossoming salt cedars and acacia trees. Between bites they stopped for a quick shower in the stream. In addition, we were lucky to observe in the Botanical Garden a marsh frog, a Lebanon lizard, and a group of researchers who were investigating one of the trees, where a chameleon had found refuge among its leaves.

Garden news are also available at our website
In October we visited the Zoological Garden, where we were given a very special tour by the administrative director of the Garden, Dr. Ron Elazari-Volcani. Ron explained to us about the importance of the Garden and the research that is carried out here. We were invited to a personal and close encounter with some of the animals. We visited the breeding colony of the white-eyed gull, an endangered species, and we learned about the global importance of this colony. When we entered the enclosure some of the gulls and ibises were a little scared at first and moved away from us. After few minutes, however, in which we remained motionless and silent, three almost-adult chicks came to us and "asked" for food. The kids put on gloves and happily and gently fed the chicks with small pieces of fish.

Our next stop was to visit the smallest owls in Israel: the Eurasian scops owl and the pallid scops owl. The challenge was to find five owls. Their height (about 20 cm) and their perfect camouflage made it difficult to discern them among the tree branches in the yard, but the sharp-eyed kids succeeded to find them all. We were lucky to have such a close look at such small and secretive owls.

We continued to walk along the Zoological Garden paths, accompanied by peacocks, swans, storks, and ducks. We arrived at a very large enclosure and "someone" inside invited us to enter. We found the door and our "host" arrived to welcome us with greetings. The minute we sat down, he also sat – on our shoulders! It was Henry – a tailless bulbul that had grown up in a human home. We enjoyed his company throughout our visit to the new thicket aviary.

We finished our visit to the Zoological Garden near the new exhibit of the white-tailed sea-eagles, very large and impressive birds of prey. It is hoped that the pair will breed and its future offspring will be reintroduced back into nature. We wish them success in their important goal.

Sounds fun? You are welcome to join our group!

For further details and registration: 052-4773977, hug.tzaparut@gmail.com
The Botanical Garden Newsletter

From cheese to Tamarix

Three Tamarix nilotica trees, originating from the Yotvata area, will shortly be joining the Israel plant collection. Cuttings of the trees were brought to the Botanical Garden a few years ago, planted in the research plot, and used for genetic research. The growth pace of the trees was measured, following irrigation with brine, a by-product of the cheese industry at the Yotvata Dairy. Prof. Amram Eshel, Prof. Hillel Fromm and Prof. Avia Zilberstein, from the School Of Plant Sciences and Food Security, led the study. They were seeking to identify those Tamarix ecotypes that were fast-growing, short rotation and high-biomass-yielding, and could develop sustainable forests in marginal lands. Such forests could serve as sources of biomaterials and biofuel. Now that the research has been completed, the trees have been given to the Botanical Garden and they will shortly be planted in the desert plot.

Garden news are also available at our website
Waiting for the rain

The natural rhythm of plant germination and growth in the wild is represented in the planting program of the Garden. Because some annual plants are unable to retain a sustainable seed bank in the soil of the Garden we re-seed them each year in the nursery. Other annuals, however, have a much stronger germination capability, due to larger seed size or a better germination rate. These will overcome the surrounding competitors and can be sown directly in the flowerbeds; they include: *Lupinus pilosus*, *Lathyrus cassius*, *Cerinthe palaestina* and *Lomelosia prolifera*. They will be sown in the Garden following the next rains and a drop in temperature.

Medicinal Garden

The yellow horned-poppy (*Glaucium flavum*) is a perennial growing on the kurkar hills of the Israeli Mediterranean coast, close to the water line. Mature plants can be found in our Israeli coastal plant collection. The Papaveraceae family, to which *G. flavum* belongs, contains several medicinal and poisonous plants. A few cuttings from mature plants were therefore planted in the Menashe medicinal plant collection, in a sunny flowerbed in the eastern part of the plot.

Garden news are also available at our [website](#)
Other seedlings of a different species, *Melissa officinalis* (family Lamiaceae), were planted in a more shaded area of this plot. This species is known for its relaxing properties as well as for helping the digesting system. *M. officinalis* is also a wild plant in Israel, growing in mesic scrub and on the banks of streams. The plants in the Botanical Garden were grown from seeds collected in the Carmel region (Nachal Oren), while seedlings of Melissa were also planted along the stream in the Israeli plant collection.

**Research focus: Mechanisms of speciation in the Royal Irises**

A study recently completed in the Botanical Garden dealt with the mechanisms that maintain species boundaries between the Israeli species of the Royal Irises (*Iris* section *Oncocyclus*). The study was performed by MSc student Inna Osmolovsky, supervised by Dr Yuval Sapir, the Garden’s director. Inna examined the extent of reproductive barriers among the eight Israeli species, mostly carried out in the *Iris* collection maintained in the Botanical Garden. It included a large-scale eco-geographical study on the potential ecological niche of the species, and revealed that this is probably the major driver of divergence in this group. The findings from this study contribute to a better understanding of the ecological and genetic determinants of species’ existence, which may provide better practices for their conservation, as the entire royal iris species are categorized as endangered in the IUCN red list.

*Garden news are also available at our [website](http://example.com)*
Seed catalogue

The Botanical Garden exchanges vegetative material with other such gardens as well as with other research institutes from around the world, through an international agreement that sets standards to protect biodiversity. There is a seed catalogue, called the *index seminum*, of the various botanical gardens and through which orders are made. At the beginning of this year we received several requests for Arabian globe-cress (*Globularia Arabica*) seeds. This is a dwarf shrub belonging to the Plantaginaceae family, its flowers are blue and it flourishes on the kurkar hills of our Botanical Garden. The spherical form of its inflorescence is the source of its Latin name, which means “round head”. The Arabian globe-cress is highly suitable for water-saving gardening, due to its long flowering period and its adaptation to arid habitats. As a result of the numerous requests for seeds, our hard-working volunteers collected multiple inflorescences throughout the summer. They are now cleaning and counting the seeds.

Unfortunately, similar to previous findings in nature, we found that Arabian globe-cress has a very low ripening percentage, and despite the numerous inflorescences that were picked only a few seeds were obtained. This is an interesting subject for further examination, but for now it seems that the Arabian globe-cress seed requests must remain un-fulfilled.

Follow-up

Desert update: In our previous newsletter we wrote about interesting new plants we had planted in the desert plot. After ensuring sufficient water,
good weeding, stone cover surrounding the plants and careful observation, the young seedlings have grown and some of them are already in flower: *Salvia aegyptiaca, Tephrosia apollinea, Farsetia aegyptia, Moricandia nitens, Pituranthos tortuosus, Pituranthos triradiatus* and *Fagonia mollis*.

**News from the construction site:** The construction of the new entrance plaza continues. In the last two months, new electricity cables and water pipes have been installed and stone terraces embracing new flowerbeds have been built, along which future visitors will enter the Mediterranean part of the ecological garden.