



National Natural Protected Areas in Hungary
- Water lands -



interesting shapes in the Tapolca Basin and the area of the Káli Basin, dotted by volcanic craters, plateau, stone seas and small lakes. The infinite variety of wildlife here shows can obviously also be attributed to the region's geologically and hydrologically polymorphous landscape.



A group of our students on the Lake Balaton

In several places, often strikingly different ground rock colours catch the visitors' eyes. The white dolomite and limestone from the Triassic period – rock types that do not easily disintegrate - form the bedrock of certain parts of the Keszthely Hills and the Pécsely-Sz I si Basin. Their picturesque rock formations can be best observed in the Keszthely Hills. The terrain, consisting of dolomite and

limestone, suffers from a shortage of water the whole year round and the strata lying close to the surface represent a unique terrain type and ecological system. At many places, deep stream valleys surrounded by rocks have been carved by streams. These stream valleys have created unique microclimates wildlife .

Thermal water caves are also traces of the karts phenomenon. At the foot of the hills, at the bottom valleys, karts springs with quality drinking water are quite common. The so-called “stone seas” are picturesque sediment remains of the Pannonian Sea, probably created by the

effects of thermal springs, and further shaped in later, drier geological eras.



Lake Balaton from Tihany Peninsula

The volcanic activity that occurred towards the end of the Pannon is became a dominant factor in the shaping of the landscape in what is today the centre of the National Park. It is perhaps not surprising that the conical and coffin-shaped volcanic “witness Buttes” of Szentgyörgy, Badacsony, Csobánc, Gulács and Tóti are internationally renowned.

The most exquisite formations is Szentgyörgy Gill, at the foot of which, an enormous basalt debris cone has been formed with an ‘ice cave’ where inside the temperature is per manently below 0°C even in summer .

The Kovácsi Hill has a unique ‘basalt street’ which was formed when a heavy mass of the basalt was dislodged on the slope and became severed from the main bulk of the hill. In other places, ponds have formed where the bas alt cover had collapsed.

With its spring coves, geyser cones and stratified flint and lime sedimentation the Tihany Peninsula is, even worldwide, a repository of post-volcanic activity. This unparalleled open/air geological museum has been recently recommended for a European Diploma. The formation of carbonated mineral water springs (‘bitter water’) found in the National Park can also be attributed to the post/volcanic activities. The most famous of these is the Theodore spring at Kékkút.

The singularly colourful geological picture is the fertile background to a flora and a fauna of exceptional diversity and curiosity, even in European terms. This is the region of the Carpathian Basin where the wildlife typical of the wooded steppes need the closed forest vegetation of the hill ranges that stretch to the north of Lake Balaton. The National Park is especially rich in protected plant species. From the 48m strictly protected plant species in Hungary, nine can be found in the Park and from the total 470 protected plant species in Hungary 30% occur in the Park. Rocky and grassy spots on the Tihany Peninsula, that have an almost Sub/Mediterranean climate, are particularly rich in species, and the peninsula's planted lavender populations, which have long been an integral part of the landscape, are also notable, as are the floras of the dry oak forests and karst-bush forests in the Keszthely Hills and Pécsely Basin.



Wonderful view from Keszthely

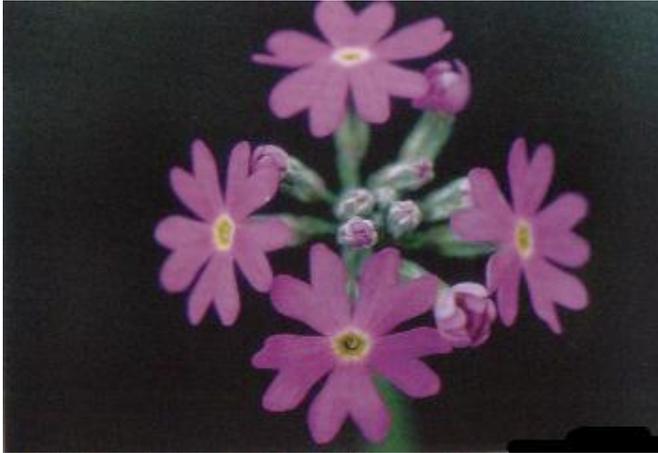
The Global strategy on the Conservation of Nature lists wetlands and temperate deciduous forests of mixed tree composition among the eco-systems, which deserve the highest level of protection. The most characteristic mixed deciduous forests of the Pannonic flora area are situated in the Balaton Uplands, especially in the

Keszthely Hills where the deciduous forests are a riot of colour in autumn. Here in the crown level there are Beech, Turkey Oak, Sessile Oak and Downey Oak trees, as well as ashes, maples and elms. Beneath these, there is the multi-coloured shrub level, where the most characteristic species is the Wig Tree, the leaves of which turn a burning red colour in the autumn.

One of the marshes in the Káli Basin is home to a plant that features on the emblem of the National Park, namely Birdseye Primrose, another glacial relict. Indeed, the largest Hungarian population has survived here, in the company of numerous other rare marshland plant species. A further peculiarity of this wet habitat is that many protected species of orchid grow amongst the rocky plateaus' grass on several dolomite plateaus rising up by just 1 -2 meters between the meadows. The peculiar morphology of the basalt hills offer sights, which are unique in al Europe.

On the lowlands south of Tapolca, stretching as far as Lake Balaton, astonishing hills rise, some of which take the shape of a coffin, while others are similar to a sugar/loaf. Several unique species can be found in the rocky gorges of the basalt hills, including the Mediterranean fern species of Szentgyörgy Hill, and a Red Book ivy species on Badacsony Hill. An uncultivated Lilac grove blooms on the top of Csobánc Castle Hill as a remnant of medieval horticulture. Mediterranean Lichen a moss flora, which is rare in Hungary, can be found along the edge of Kovács Hill.

Kis-Balaton once was a distinctive inlet of Lake Balaton at the estuary of River Zala. Most parts of it were already filled up a hundred years ago by the river, which had brought a tremendous mass of alluvial deposits from the Zala loess hills. That was one of the reasons that made it necessary to artificially create the system of marshlands of Kis/Balaton, which is divided into two big reservoirs. This immense water surface has once again transformed the estuary area of river Zala into a game bird reserve .



The Birdseye Primrose

The extensive marshlands of Kis-Balaton consist predominantly of reeds, but amongst and next to them are patches of open water, high and boggy sedges willow and alder groves, as well as bushy willow beds. Such habitats are threatened throughout Europe and so, together with the most highly treasured parts of the National Park. Rare plants here include one of the world's tiniest plants, i.e. Rootless Duckweed, a swamp/dwelling nettle species, hydrophilic orchids and the picturesque white Water Lily.

The Kis-Balaton is protected by the Ramsar Convention, an international treaty that aims to preserve habitats where wetland birds breed and live. The number of birds species observed at Kis -Balaton is 232, out of which 110 breed here. The number of strictly protected species is 22, which are of outstanding value. The Great White Egret, which is the symbol of the Hungarian Nature conservation, nests in the heart of undisturbed reed beds together with Little Egrets and Spoonbills. Tens of thousands of birds also stay at Kis-Balaton during migration at spring and autumn time .

Mammals at Kis-Balaton include two continent-wide rare vole species, the Short-tailed Vole and the Root Vole. Because of its rather rich dragonfly fauna, Kis-Balaton is also an important meeting and feeding area for various bat species. Researchers not long ago came across a leech, a species and genus new to science .

The Tihany Peninsula which find itself in the waters of Lake Balaton has a bizarre surface characterized by hills, rocks and lakes, and a Sub -Mediterranean flora and fauna. It preserves numerous unique natural peculiarities and beauties for the visitors. The fauna of the hills is featured by the dominance of Mediterranean elements. Its insect world is not unlike that of the Apennine or Peloponnesos Peninsula, since one can find there species like the giant cicada, and several Mediterranean dragonfly, spider, beetle and butterfly species. The old almond/trees of the Pécsely Basin are the only place in Hungary where the Almond Capricorn/beetle occurs. Attesting to the extraordinary diversity of the insect world here is the fact that 112 different running beetle species and 100 Capricorn -beetle species have been identified.



The smallest breeding owl in Hungary, the Scops Owl

The Snake-eyed Skink is a scarce reptile living amongst the rocks of the basalt hills. The small lakes of the basalt region are important bird habitats, too. Great White Egrets even breed in the small Outer Lake on the Tihany Peninsula. Ravens are common throughout the forest area of the National Park. Moreover, on the basalt rocks dawn birds have been observed. Bee-Eaters nest in colonies in the walls of

abandoned sandpits and quarries. Areas by vine yards and forests are rich in small mammals. In the bigger forests, martens are quiet frequently found, and strictly, protected otters appear in several places along the banks of Lake Balaton and smaller streams.

The particular abundance and diversity of the natural assets of this landscape already attracted the attention of many writers, artists and scientists throughout the past centuries.

Although it is not the easiest task to fulfil traditional forms of agriculture can be reconciled with the plans that nature conservationists have for the countryside. In rearing

domestic animals that were once indigenous to the lakeside, the National Park not only fulfils the purposes of genetic conversation, but also provides a professional example and breeding stock for bio-farmers. Slowly but surely, there is a renewed trend in Hungary towards the rearing of buffalo, Hungarian Grey cattle, Racka sheep, Mangalica pigs and traditional Hungarian sheep-dog breeds.

Keszthely – in the heart of the Balaton Uplands National Park



Today's town is the result of a 1000-year long development. If we consider the roads, they have an even longer history. As we know, the north-south axis, the route of Sopron Street, Kossuth Street, Festetics Street and Fenékpuszta Road was already used in prehistoric times. A Roman stone-transporting road went along Bem Street, Vásártér and Zsidi Road. The east-west axis - Georgikon Street and Tapolcai Street - was made in the 7th-8th centuries.

The centre of the town is F tér. (Main Square). You can find the Town Hall, housing the Mayor's Office, which was built in 1769 to serve as county lodgings. It was later rebuilt in the style of Louis XVI of France.

The Theatre of Keszthely and Culture - Conference Centre for Various Purposes is being rebuilt next to the Town Hall and will be opened in spring 2002. The renovated institute is in harmony with the other buildings of the square, with surroundings. The formation of its interior allows various activities.

The square is dominated by the block of the grammar school and the parish church with its Neogothic tower, built in front of the entrance in 1880. South of it there used to be a restaurant, which is being rebuilt as the OTP Bank main headquarters. At the eastern end of the L-shaped square, the one-time one-storey houses pulled down a couple of years ago were replaced by the Atrium shopping mall and the Commercial Bank branch office. In front of it, the Holy Trinity Column soars into the air.



Festetics Palace

The northern part of Kossuth Street starts from Main Square, now it is a pedestrian precinct with numerous boutiques and restaurants. Number 28 is the former town hall, which was rebuilt in 1887. Today it houses the Goldmark Károly Community Centre and the TOURINFORM. Number 21 is the Petho House. It is often referred to as Goldmark House, because the famous composer was born here in 1830. In the courtyard of the

arcaded baroque building, one can see the recently opened synagogue, which replaced the old hall of prayer. The dominating buildings are the ones, which were built in the second part of the last century either in Romantic or in Eclectic style. Number 3 was built at the end of the 18th century in Louis XVI style. Numbers 1 and 30 were built in Classicist style.

At the end of the walking street there used to be a stone bridge, which was decorated by the sculptures of St. John and St. Florian, now to be seen in front of the Carmelite monastery. In Kastély Street employees of the Festetics estate used to live.

At the southern end, you can find the Amazon Hotel and the two-storey romantic building of the Pharmacy.

At the end of the pedestrian precinct, Georgikon Street starts and goes straight on west. The Louis XVI-style two-storey building at number 20 was started in 1807. When it was

ready, it housed the Georgikon Academy. This is from where the chestnut -tree-lined Bercsényi Street leads up to the Georgikon Museum, which was a model farm belonging to the Georgikon Academy. There are exhibitions about the history of agricultural education, crop (cereal) - production and viticulture. There is also a coach collection and a fully reconstructed blacksmith's and cartwright's workshop. The northeast end of Main Square and Rákóczi Square are connected by Bem Street (which used to be called Hajdú Street - after the name of the soldiers who lived here during the Turkish occupation). The market, which opens from

here, seems to be the busiest place of the town on Wednesdays.

Theatre and cultural Center

Tapolcai Street starts to the east with a slope. On a small hill on the northern side, there stands the Neo-Romanesque monastery of the discalced Carmelite Order, built in our century. On the south, you can see the towering block of the Municipal Hospital.

The lower part of Kossuth Street goes south from Main Square. In this part, you will find the post office building and the Balatoni Museum, where visitors can be acquainted with the



history, flora and fauna of the Balaton. There is a Roman and Medieval lapidary in the circular gallery. One room houses paintings by János Halápy .

The road next to the museum building takes us down to the Railway Station and the Bus Terminal. Starting from Georgikon Street, Deák Ferenc Street (formerly called Long Street) joins in Kossuth Street near the Museum Building .

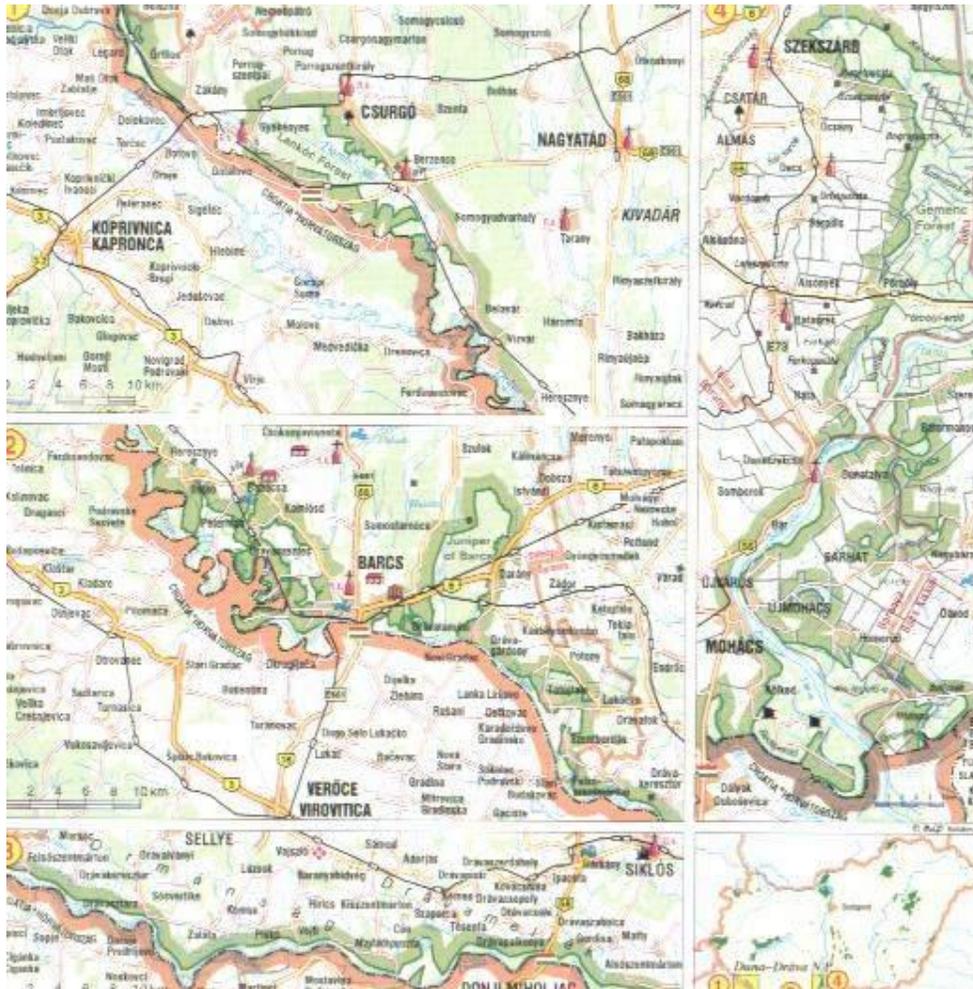
The Agricultural University and the Police headquarters on the opposite corner are about the same distance from the Museum as Main Square is. Kossuth Street ends up at the St. Nicholas graveyard, which has been used since the 18th century. Only a restricted number of graves are still available. Burials are going to be stopped soon. The middle part is a protected monument of art.

Queen Elizabeth Street - (Erzsébet királyné utca) goes down to the Balaton coast from the eastern end of Main Square (F tér). Its lower part borders on Helikon Park, the biggest green area of the town.

At the northern end of the promenade, Hotel Via can be found. If we go along Ferenc Csík Promenade, we will get to the Municipal Sports Stadium, further on to the second-class campsite, then the well-established Halászcsárda (Fishermen's Tavern). Then come the Helikon beach and finally the first class campsite .

On this we end our short sightseeing tour, during which we hope we have managed to make you, Dear Reader, acquainted with the most important events of Keszthely history, its most significant sights and facilities.

The Duna-Dráva National Park



The park is situated in the southern part of Hungary, in a region landscape that has been shaped primarily by water. Its territory almost fully covers the erstwhile inundation area of the Rivers Duna and Dráva. The two rivers once meandered through the region, their direction determined by the characteristics of the main current. The sinuous rivers used to meander along its spacious valley building

shoals from gravel, sand and mud. They created short cuts across the bends, transforming them into backwaters, at the deepest point, into inner lakes. The life of these still waters depended on their contact with the living water of the rivers. If the seasonal connection between them was permanently suspended, the process of their demise was accelerated, and sedimentation followed drastically. Places previously covered with water were superseded by marshlands, which, in their turn, were followed by soft wood thickets. Thus, because of this uncontrolled natural dynamism of the water flow, an extremely differentiated surface ensued, one that was going through constant change. This dynamism called into life an ecosystem of a great biological diversity – one that has been in both a continuous state decay and renewal.

The Duna-Dráva National Park, established in 1996, preserves the remnants of this natural flood-plain ecosystem. This almost 50,000 ha area, out of which over 18,000 ha are the protection the Ramsar Treaty, is of paramount importance to international nature conservation. In Europe, flood-plain areas of this size are scarce, due to the regulation of rivers and the intensive use of lowlands that has occurred. Indeed, the Gemenc region ranks alongside places like the Kopács meadow or the Duna Delta, although they are of a somewhat different character being endowed with much more water.

This area, which lies along the Duna, has the extreme, continental climate in Hungary. Here, the moderating effects of the Atlantic Ocean and Mediterranean Sea are scarce felt, and thus this is the place on Hungary where the summers are the warmest and the winters the coldest. Therefore, both the average and the annual fluctuations in temperature are exceptionally great.

Among the protected plant species, the real ornaments of backwaters are the White-Lily, the beautiful Fringed Water-Lily, which in May seems to cover every square inch of water, and the Water Chestnut. This aquatic vegetation is flanked by the typical bank flora of swamps. On dry land, extensive reed beds and rare sedges like the Cyprus Sedge dominate; whilst on the sandbanks and islets in the Duna willow groves are typical.

Willow groves occupy the muddy banks of rivers and still waters. Groves of the White Willow and the Black Poplar are naturally succeeded by White Poplars when their wetlands habitat silts up.



Black Stork

Oak-ash-elm woods grow on higher-lying parts of the flood plain, and are thus only inundated with water in times of major flooding. The lush vegetation here includes several sub-Mediterranean species, from which the Thin-spiked Wood-sedge, the Rusty Foxglove, the Perfoliate Honeysuckle, the Primrose and the sporadically occurring vine, are noteworthy. Perhaps the most famous plant in the Lower-Duna valley is the indigenous Black Hawthorn.

Seven invertebrate species, which are considered as new in the Hungarian fauna, have been identified in this region, as well as numerous

endangered animal species that are regarded as rarities in the Great Hungarian Plain. Above all, this is a region with one of the most diverse fish/fauna communities in Hungary. In the lower reaches of the Hungarian section of the Duna, the Sterlet and the Burbot are still common. The Pike are widespread predators, which hunt in still backwaters and tributaries, and anglers often catch two species: the Orfe and the Bream. The two most common reptiles are the European Pond Turtle and the Grass Snake.

The amazingly abundant bird life is especially in this protected area. In particular, the populations of breeding Black stork and the White-tailed Eagle are of European importance. Today, nearly two-thirds of the global Black-Stork population is regarded as endangered. Therefore, the National Park play an important role in protecting one of the biggest and most densely breeding populations and in making sure that the habitats are not to be disturbed. Moreover, this species can be considered as indicators of the lower Duna valley in the areas of

the flood plains, since both the breeding and feeding places are such habitats.

Landscape of the river Dráva



The White-tailed Eagles which breed in Hungary are part of the population that nests in the central part of the continent, which is distinct from that of northern Europe. The inundation area of the Lower-Duna holds one of the most important White-tailed Eagle populations in Hungary. Older willow and polar woods are the home of noisy colonies of the Grey Heron, while in the large stands of reeds surround backwaters of Little Egrets and Night

Hérons breed and isolated population of Grey Goose nests in the southern part of the region.

Among the mammals, bat species deserve special attention, whose numbers have drastically declined in many parts of Europe, thus they are endangered. The Pond Bat and the Barbastelle are quite common in forest with old hollow trees. The Daubenton's Bat is typically found in waterside willow groves, and the Common Pipistrelle roosts in fishermen's cottages and hunting hides.

One can frequently encounter Otters both in man-made and natural wetlands. The Wild Cat occurs at every place in the unperturbed parts of the forest where there are reeds. The Red Deer living in the region is endowed with exceptional genetic faculties, and has not gained its worldwide reputation without reason. Inhabiting an area that is perfectly suited to its needs, the red stag grows until it reaches a strong mature stature, and yet, develops a gigantic trophy of fine lines and a proportionate structure.

The potential of the ecosystem in this inundation area of the Duna, which is one of the most extensive currently known examples of its kind make it possible for us to restore the close-to-natural character of the areas harmed through human intervention. The constant restoration process involves the renewal of aquatic habitats, the supplanting of nonnative tree species with native ones and the regulation of the numbers of wild animal species. However, towards the south beyond the borderline, there are territories with similar qualities along the Duna, which brings up the possibility of creating an internationally protected area, stretching across state borders, would notably lack validity altogether.



Spring Snowflakes

The other cardinal river of the National Park is the Dráva, which springs in the Tirolean Alps, then flows through Austria, Slovenia, Croatia and Hungary, and finally, at the end of its 720 km long course it discharges in the River Duna near Aljmas. It reaches Hungary at rtilos and leaves it at Matty.

Perhaps the most precious area along the track of the River Dráva is the Zákány- rtilos Hills, situated in the westernmost corner

of the national park. The value of the flora-distribution in this area of the national park lies along the River Dráva is due to the meeting of Illyrian and Pannonian floras here. It is typical of the multifarious nature of this vegetation that experts have found almost 150 different plant communities and more than 100 protected plant species. Of especial value are the seven plant species that do not occur elsewhere in Hungary.

Quite unparalleled in Hungary, the Zákány- rtilos Hills are the habitats of mixed Illyrian hornbeam-oak woods, as well as Illyrian beech forests, where species typical of the hilly, mountainous areas occur side-by-side with species endemic to Southern climates. Such species include the three-leaved anemone species, the Trifoliate Bittercress and the Dead-nettle species called *Lamium orvala*, which are listed among the principal botanical assets of the National Park.

Because of the felling trees erstwhile groves, there ensued swamp meadows, which used to be utilized by means of scything and/or cattle grazing. The meadows, endowed with a protean flora, are typically covered either by a yellow or white carpet of flowers. The summer Snowflake, which at some places appears in masses, and the Lily type called Fritillary were originally plants living in groves. The gems of the deeper-lying patches, often covered with water, are the meat-coloured Early Marsh-orchid and the Loose-flowered Orchid. Further rarities include the Siberian Iris.

A singularly enthralling area of the National Park is Barcs that is covered by a juniper population, and where acidophil vegetation has evolved on the sour sand. In the first phase of the succession, moss and lichen species appear in the company of the slender Rat's tail Fescue. Later, sand-steppe grasses take hold. Characteristic plants are the Grey Hair-grass, the Knotgrass and the Sheep's-bit. Protected plant rarities include the Pasqueflower, the *Peucedanum arenarium* and the *Helichrysum*.

In the areas between the sand dunes, which have no natural outflow, there stretch swamp forest. On the bark alders, Peat Moss and Crested Buckler-fern grow. In Hungary, the man-high Royal Fern only occur here, the most extensive population of the Bridewort lives here.



Gemenc Forest

Similarly, the fauna in this part of the National Park stretching along the River Dráva is exceptionally rich. So far, almost 4500 animal species have been identified in these colourful habitats. The number of protected species is 300, and the area is a site of major importance for 40 species. The River Dráva is a particularly important habitat for aquatic organisms that are especially sensitive to water quality. The snail species *Amphimelania hollandi*, which is only found here in Hungary, thrives in the rapid current of this clean river. The river's Mayfly and trichoptera faunas are also important; indeed, the Dráva is thought to be the only place in the world where caddisfly species occurs.

The dragonfly fauna of these areas is also exceptionally rich. The Dráva and her tributaries and backwaters also host two-thirds of the fish species found in Hungary. Rare species include the Hucho hucho, the Grayling and the *Acipenser nudiventris*, which was last caught in 1989.

The River Dráva plays a pivotal role in the migration and wintering of aquatic birds. Following the freezing of still waters, many thousands of aquatic birds gather on the ice surface of the river.

Most prevalent of them is the Mallard that can often be sighted in the company of Teals, Goldeneyes and Cormorants. The Little Ringed Plover is the nesting bird of the gravel and ballast shoals of the Upper- Dráva. On certain islands, the nest colonies of the Common Tern and the Little Tern can also be found. The Little Tern currently does not lay its eggs anywhere in the country. On the islands covered by soft-stemmed vegetation, and in the wall of the banks, the Common Sandpiper builds its nests. The relative height of the wall flanking the river can vary between 2 and 25 m. in this wall alongside the several thousand Sand Martin couples, the colorful Kingfisher and the Bee-eater are found.



White Tailed Eagle

The softwood areas provide habitats for protected butterfly species, namely the Scarce Large Blue, the Dusky Large Blue and the Purple-edged Copper. The largest snake found in this area is the Aesculapian Snake, which inhabits deciduous forests. Wild cats are rare predators in the undisturbed forests.

The presence of man along the Duna and Dráva can be traced back to the Neolithic Age. In Roman times, major roads crossed this region, with strategic points such as fords defended by fortifications. The river valley was seemingly favored establishing settlements in because its abundance of natural resources facilitated a life-style based on the cultivation of land and grazing of domestic animals. People living here have always been closely bound up with their environment, adapting their lives and agricultural processes to the tendencies of the water. The moveable raised houses and wickerwork fences common to these wet areas all attest to such a relationship. The utilization of flood-plain areas along the river was solved by means of the

so-called 'oxbow-cultivation'. In the course of such a water-management regime, floodwaters were spread over virtually all the territory under cultivation, so that it simultaneously served the purposes of fishing, grazing and cultivation .

The National Park is a target of eco-tourism, which is mostly organized from a tourist centre set at the heart of a 15 ha parkland in the Bárányfok are of the Gemenc Forest. The tow ends of its narrow-gauge railway are easily accessible by road, by road, thus visitors have the opportunity to travel across a major part of the Gemenc forest with minimal disturbance to its wildlife. The water-based tourism on the Duna and the Dráva, especially in the summer months, is limited to traditional means of transport such as canoes, kayaks and rowing boats .

Pécs – in the Heart of the Duna-Dráva national Park

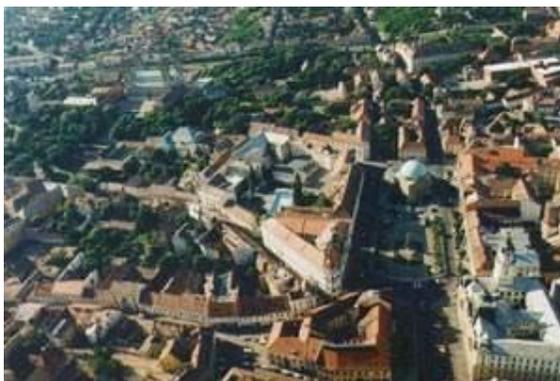


Pécs, founded two thousand years ago, is the capital of the Baranya County. Being the biggest town of the Transdanubian area (population 180,000), Pécs is the natural agglomeration centre of the South Transdanubian region (population 1,000,000) .

As a university centre it influences the economical development of the town by supporting the appearance of knowledge-intense and innovative technologies.

The economy of the town can be characterised with lively trade, developed tertiary sector and processing industry, developing engineering and electronic industry. Pécs provides favourable conditions for those who intend to invest, trade and settle down:

- Well trained labour forces with industrial traditions, developed business services, multilingual communication, - high level of special and retraining courses tailored to individual requirements provided by the Pécs Regional Labour Force Development and Training Centre, - pro-business, liberal town municipality, further some and flexible local authorities, - redeveloped business links toward Eastern and South-eastern markets, - wide network of international business links in the Alps-Adriatic region and through nine sister cities.



Bird's eye view of the center

The town, located at the Southern slope of Mecsek Hill, has a Mediterranean climate. This is the warmest region of the country with a lot of sunshine. Pécs is big enough to provide all conditions for a pleasant way of living, without the disadvantages of metropolitan towns and increasing urban problems. Hundreds of foreign entrepreneurs, managers and experts already work in Pécs appreciating their new environment.

Pécs provides high level of dwelling conditions at much lower prices compared to Budapest. Smaller and larger hotels can accommodate several thousand guests. The town is the biggest trading centre of the region with excellent shopping facilities at a European level. Beside several thousands of retail shops international chains are also present like METRO, Spar, DM, Baumax, etc. More than a thousand catering facilities, among them 250 restaurants, operate in the town with domestic and international cuisine (Chinese, Arabian, Greek, etc.), including multilingual companies as well (McDonald's).



The Theatre

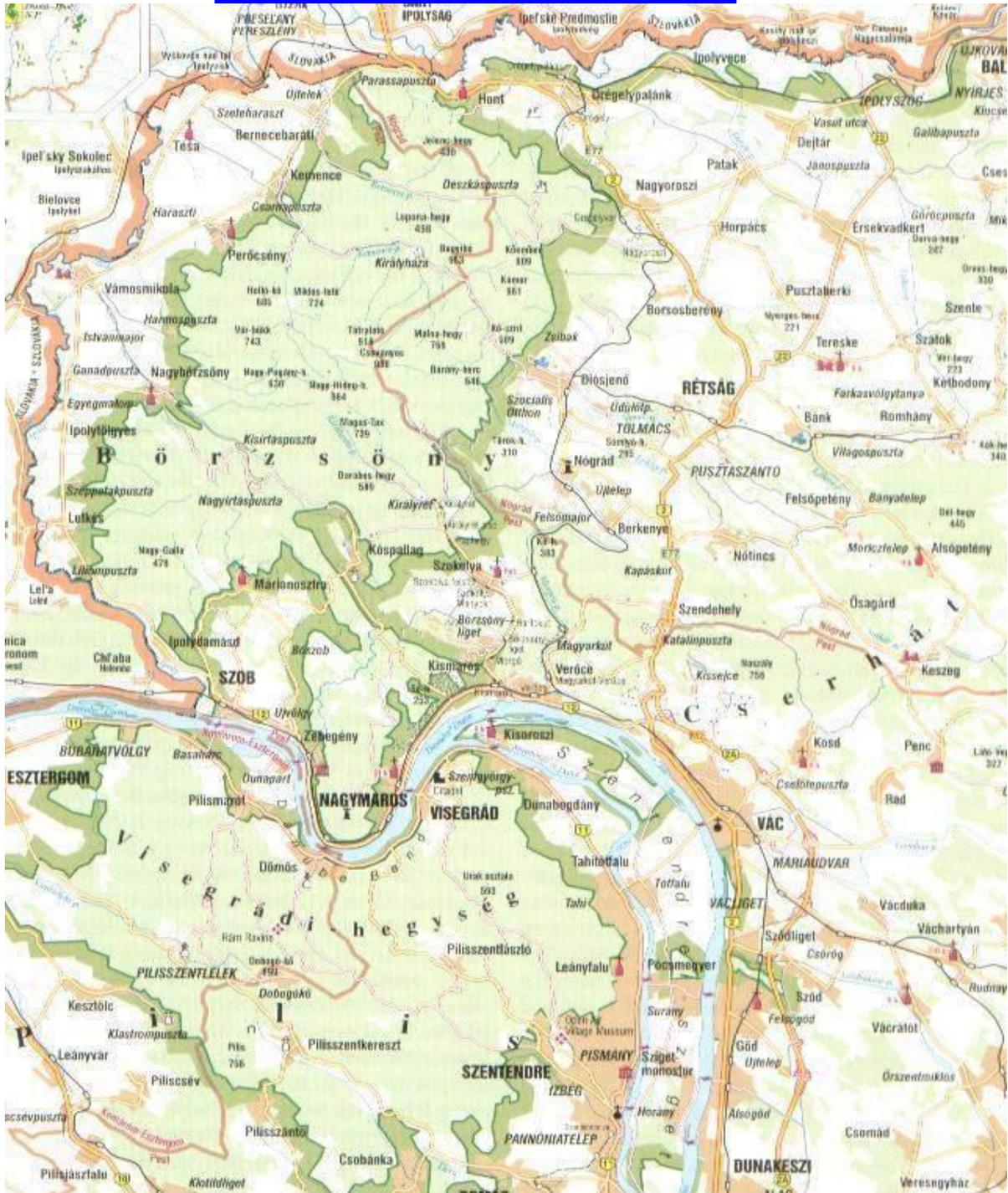
Pécs also provides a wide range of cultural programs. The National Theatre is 100 years old. The Symphonic Orchestra and the Ballet also have international reputation, music education is of high level at all stages. There are more than 30 museums and several art galleries within the town.

Concerning sports and recreation there are four swimming pools, two stadiums, an ice stadium and several tennis courts. In the close vicinity of Pécs, it is easy to find a golf course, horse trekking or sailing facility. Several billiard pools, bowling places, casinos and gambling places can also be found.

The woods of Pécs and Mecsek are famous hunting fields while the lakes near Pécs are excellent for fishing. The region has beautiful natural attractions. Mecsek, the Orf lakes, the Danube at Mohács and several natural reserve areas provide pleasant tourist routes and facilities.

Pécs has a standard level of health service. More than 200 run a private praxis as well of more than 1,000 physicians. The level of medical services at the clinics of the Pécs University Medical School is of European standard .

The Duna-Ipoly National Park



Europe's second longest river, the Duna strings unparalleled beads of natural assets across Hungary. One of her most picturesque sections is the Duna Bend, where thousands of years ago the river forced her way through an area between the Börzsöny and the Visegrádi Hills. Hungary's ninth National Park aims to preserve this beautiful landscape along the Duna, its adjacent forested hills, and a part of the magnificent valley formed by River Ipoly not far from the capital of 1.7 million residents.

The Duna-Ipoly National Park is an enchanting, beautiful area with a

unique atmosphere, and it encompasses a major part of the Pilis Hills and Börzsöny Hills, stretching between the Rivers Duna and Ipoly. Its territory exceeds 60,000 ha. The size of the area that enjoys strict protection is 9110 ha. At many places, the Park's boundaries coincide with the Slovak-Hungarian borderline.



Saker Falcon

Both the National Park and the international significance of the National Park is enhanced by the fact that the Global Strategy of the Convention of Nature lists wetlands and temperate climate deciduous forests of mixed tree composition among the ecosystems which deserve the highest level of protection. Therefore, the forest-covered Pilis and Börzsöny Hills, along with the Rivers Duna and Ipoly are equally worthy of particular attention. Another important fact is

that a part of the National Park, namely the Pilis and the Visegrádi Hills have been included in the international network of biosphere since 1981. They form part of the research programme that was launched by UNESCO in 1970 bearing the name: "Man and the Biosphere" (MAB). The nature reserves designated under this programme are destined to preserve declining plant and animal communities and ecosystems around the globe. There are five biosphere reserves in Hungary, and one of them is the Pilis .

The unrivalled character of the region is provided by the fact that three large landscape types meet here> river valleys, hills and lowland plains. This is the only National Park in Hungary where most part of the plant and animal communities along with the harmonious unity of plain and mountainous areas, can be preserved and presented together .

The unique example of the connection between the hills and the Duna is the Duna Bend, together with the gallery forests flanking the riverbanks. The pyrogenic rocks, rock formations, the V-shaped valleys and the ravines of the Visegrádi Hills all recall the volcanic activity that raged here in times long gone. The fascinating andesite agglomerate 'pyramids and tower' of the hills have been jointly formed by wind erosion, frost and water .



Szentendre - from the River Duna - photoed by Aranyi Laci

The sedimentary Pilis Hills are the most outstanding block of the Dunazug Hills. They have a varied geological structure, recalling ancient geological periods. Their height exceeds 700 m. they consist of limestone and dolomite rocks, and their surface is dotted by a multitude of rocky outcrops, cliffs and barren slopes. The most majority of the almost 200 caves within

the National Park are situated in the Pilis Hills. The underground formations provide an excellent opportunity to study the cavity-forming effect of both warm water ascending from the depths, and cold atmospheric water oozing deep from within the surface. The caves are also rich in pale ontological and archeological findings. Due to their extraordinary formations and scientific and cultural historical importance, nine caves have received strictly protected are status.

The Börzsöny are typical medium elevation hills. They indicate a kind of relationship with the Visegrádi Hills with respect to their origin and structure. Their special geological feature is the open/air layer of andesite lava and the numerous screes branching off this lava. This range of hills has many independent peaks, but no plateaus. The side ridges, valleys and the remains of the volcanic caldera make the landscape look very rugged. These features are the result of volcanic activities during the Tertiary period, which creates a 'high mountain atmosphere' in many places.



Szentendre - in the winter

The terrain of the Ipoly Valley has been shaped by the river that used to meander unbridled along her bed for a long time. The swamps, alder woods and oxbow lakes along the river are product of the recurrent floods and subsequent withdrawals of the river's water. The regulation of the river on/going for nearly 20 years manifests itself nowadays in the form of cut-off bends, tidy banks and dams, but a 12 km section of the river has been fortunately from the regulation, and there the river still dictates. The capricious floods ensure the valley's relatively undisturbed character and the survival of its natural as sets.

The River Duna with its fluctuating sedimentation and shoals constantly building and diminishing in the gravel bed represents a distinguished heritage. The larger and smaller islands that have formed in the river between the towns Esztergom and Budapest also belong to the National Park. The largest and oldest on is the Szentendre Island being a result of the extensive building processes of the river. The loose river sediment has heaped up in sand dunes because of the wind shaping the surface, leading the landscape a lowland plain character. Nevertheless, not the whole of the island has been put under protection, but rather its most valuable parts. The other 'ancient' island on the River Duna, which has been meandering in its present bed for approximately two thousand years, is the Kompköt Island. A place mentioned in 800-year-old chronicles. On the island of the Duna, flood plain woods are verdant in their entralling beauty.



Little islands on the River Duna - photoed by Aranyi Laci

The hydrography of the whole region is fundamentally determined by the River Duna. Hydrographical conditions are distinctly different, depending on the type of ground rock. The karstic Pilis Hills are rather rich in karst water and their springs generally abound in water. In the Visegrádi Hills the extent of direct run-off is higher, and there are more springs but with less discharge. The Börzsöny Hills constitute a climatic dividing line with many different microclimatic areas. They are extremely rich in springs. More than 40 of its 335 springs rise at height of 600 m above sea level, which is unique in Hungary. The hydrological assets of the National Park include gentle, still backwaters, most lakes and marshes along the Ipoly Valley. The most important water base of the capital city and of the settlements in the Duna Bend can be found here.

Concerning the flora of the Duna-Ipoly National Park its diversity and transitional character is to be emphasized. The reason for these qualities lies on the one hand in the variegated pattern of the ground rock, and on the other hand, in the fact that this region is situated in the border area between the Sub/Mediterranean and the Continental climatic zones. The Duna bend can be regarded as link between the vegetation types of the Trans-Duna Hills and the Northern Hills. The flora is extremely varied and complex in the Park: it ranges from the characteristic flood plain plant communities through sandy plain grasslands to various types of vegetation prevalent in medium and higher latitudes and from marshes to swamp forest. The dominant landscape feature is the closed forest cover. Numerous plant species and plant communities reach the limits of their range in this region. Such species include, for example, a hellebore, which can no longer be found in Transdanubia.



A groups of children in Esztergom - photoed by Aranyi Laci

Among the botanical highlights of the region, there are several species that are endemic to the Carpathian Basin, and do not appear anywhere else. The relict of the earlier geological eras is also very much valued. In this respect, a unique botanical pride of the national park is the Pannon Ferule, with a stronghold in the Pilis Hills. So far, 170 protected plant species and 10 strictly protected species have been described from here. Several of them only live within the National Park. In the habitats of limestone ridges of the Pilis Hills, expert eyes can come across the beautiful flowers of *Knautia Kitaibelii* and *Pennycress*, as well as endemic representative of ligneous plants, i.e. the Hungarian wild pear. The *Danaa cornubiensis* and the Blood Wort can be found at some places of the Visegrád Hills. The elder-leaved Catnip blooms in closed forests of the Börzsöny, whereas the Yellow Erysimum and the Saxatile Erysimum grow on the grassland slopes, in eradicated meadows and rocky grasslands. A typical mountain flora element, the red Bent Grass has up to present only appeared in the Börzsöny Hills.



Esztergom - the Cathedral - photoed by Aranyi Laci

Thanks to the diversity of habitats, the fauna of the National Park is rich in species. The proportion of rare, endangered species within the fauna is high. The number of protected and strictly protected animal species living in this area exceeds 500. One of the most spectacular is the butterfly group, which is represented by numerous rarities. Among the butterflies of hilly

meadows, the stable populations of the small Apollo Moth and the sky-blues Adonis Blue of sandy plain grassland are of outstanding value. Many, Europe-wide endangered species of dragonflies are also apparent in this area. The riverbed of the Duna is a particularly precious habitat, since the flow of the river accelerates at the Duna Bend, which, coupled, by the gravel bottom, provides habitat to rare water snail species. Some species that require a great amount of oxygen and are very sensitive to contamination only occur in certain sections of the Duna, and do not live at all in any river in the world. Such species include *Theodoxus transversalis* and *Theodoxus danubialis*. In the rivers, brooks and swamps, endangered freshwater fish species can be found as well. One of them, the Danubian Semling is one of our most treasured asset, together with the Red Book listed European Mud/minnow. As wetland habitats and environmental pollution increases, amphibians are on the decline. That is why it is so significant that the National Park holds populations of almost all amphibian species native to Hungary in their proper habitat. The protected area is an important refuge for our reptiles as well. The endemic Snake-eyed Skink can be found on dry grasslands, whereas Pond Tortoises appear at times in marshlands and backwaters along the River Ipoly.



The almost destroyed Duna Bend - photoed by Aranyi Laci

The area of the National Park - due to the extensive forests - teem with songbirds, and there are good populations of raptors, too. The woodpecker fauna of the different hills is very species-rich even by European standards. In particular, the population of the White-backed Woodpecker in the Börzsöny Hills is very precious. The island and shoals in the Duna, as well as the swamps and meadows in the Ipoly flood plain are important nesting and roosting places for both waders and waterfowl. In winter, large flocks of wild ducks, geese and some divers appear on the Duna from Northern Europe.

Thanks to its undisturbed caves, the Pilis Hills are an important stronghold of bats, but one can find colonies in the Börzsöny Hills, too, especially in the abandoned mine shafts and in tree holes. Besides several protected small mammals, the presence of larger animals – such as the Otter – is worthy of mention. Big game animals are also visible in many places.



Visegrád - the Castle and the Salamon Tower - - photoed by Aranyi Laci

The continuous presence of man from the Ice Age onwards has been confirmed by evidence found at archaeological excavations. One of the borderlines of the Roman Empire extended to the Duna, since the territory of today's Transdanubia is known to have formed a part of the Roman Empire under the name Pannonia. This region has preserved the remnants of numerous bridges, roads and watchtowers, along with other kinds of archaeological findings.

At the time of our ancestors' settlement, the Pilis region adjacent to the good shallows of the River Duna became the dwelling place of the princely tribe. Prince Géza settled in the territory of today's Esztergom. The territory, which used to teem with big game, functioned as a popular hunting ground of Hungarian sovereigns as indicated by the geographical place-names like Királyháza or Király-kút. One of the region's most important towns is Visegrád. Its name was familiar to most European ears in the 14th and 15th centuries. Visegrád had its hay-

day during the reign of King Mátyás, who, in his Renaissance palace, received many of the most famous personalities of the age, such as monarchs and artists. The Drégelyvár Fort at the edge of the Börzsöny Hills recalls the 150 years of Turkish occupation in Hungary. A handful of Hungarian defenders were defeated only after a heroic battle by the overwhelming Turkish army.

The extensive forests provided a secure livelihood for those living there. The very first forest-related craft, namely charcoal burning started as far back as the 13th century. From the 18th century, wood felling was closely connected to conversion of timber, coal and lime burning, as well as to production of potash. One can still find remains recalling these old professions (e.g. lime-burning or timber-floating locations). In the Middle Ages, ore mining (gold, silver, copper) was well developed in the Börzsöny Hills. Nowadays, characteristic activities in the territory of the National Park are regulated forms of forestry, agriculture and locally small-scale vegetable and Fruit-production. Industrial activity has been kept out of the protected area. The popularity of hiking in nature has been gaining steady ground since the early 20th century, and there has been a rapid increase in tourism during the past decades .

Quite a number of the Park's important points can be approached by either road, train or boat, but the more tranquil, undisturbed central parts are only accessible by backpackers. A favorite means of transportation of hikers visiting the Börzsöny Hills is the narrow-gauge railway built in the turn of the last century, which still transport passengers on a 10 km -long stretch. A wonderful display of the cultural historical sights is the Open Air Village Museum opened in 1972 in Szentendre.

Natural habitats adjacent to the Duna-Ipoly National Park are being prepared for designation as protected areas in the territory of neighboring Slovakia. There may arise a good opportunity to declare a bilaterally protected area in co-operation with Slovak conservationists, as well as to manage and develop the region in a complex, ecologically conscious way .

Budapest, the Capitol – in the Heart of the Duna-Ipoly National Park



The first town, built by Celts, occupied about 30 hectares along the slopes of Gellért Hill (first century BC). Archaeological

finds suggest that it may have been a densely populated settlement, with a separate district of craftsmen (potteries and bronze foundries). It may have been a trading centre as well, as coins coming from different regions would indicate.

The town was occupied by the Romans at the beginning of the Christian era. Its inhabitants moved to the Danube plains, to a city retaining the Celtic name (Aquincum), in the first century. In AD 106, the city became the capital of the province Pannonia Inferior. The headquarters of the governor and significant military force were stationed here, and its population numbered about 20,000. It was frequently involved in wars on the border of the Roman Empire (formed by the Danube).

In the early fifth century the Roman defence lines were swept away by the Goths and other peoples fleeing westwards from the Huns. During the flourishing period of the Hun Empire (after AD 430), this crossing point over the Danube retained its significance. No

Romanised population remained in the city: they were replaced by Ostrogoths and Huns.

White Waterlilies in Margit Island - photoed by Aranyi Laci

In the 400 years following the dissolution of the Hun empire, the inhabitants of the territory of Hungary often changed in the turbulence of the Great Migration Era: Gepids, Longobards, Avars and other long forgotten peoples of Germanic and Central Asian stock followed one another. Avar rule was the longest, lasting more than 200 years. The Avars were followed by the Franks, when the Danube again became the eastern

borderline of a West European empire. In the ninth century, Pannonia became part of the Moravian Empire. There is no trace of any significant urban development during the Great Migration Era.

The Hungarian appeared around the end of the ninth century or much earlier, establishing the seat of their prince near the crossing of the Danube. They quickly recognized the geostrategic significance of the place. Óbuda, the territory of the civilian city of Aquincum, became the first centre of Hungary.

The princely (and later, royal) seat was moved to Esztergom in 973, and returned to Óbuda only in the thirteenth century. The Western European type of urban and bourgeois development began in Pest, which had a mixed German - Hungarian population in the thirteenth century.

In the middle of the thirteenth century, after the Tatar invasion, significant fortification work began all over the country. This was when the royal castle and the walled city were built on Castle Hill, on an elevated terrace of the Danube, which could be easily defended. This third city was called Buda, its inhabitants presumable coming mainly from Pest. In the Middle Ages Buda gradually emerged from among the Hungarian towns, and it reached its peak in the second part of the fifteenth and the early sixteenth centuries.

A group of children in Margit Island - photoed by Aranyi Laci

At that time the Hungarian kingdom extended over a large territory, including a significant part of the Balkans, and subsequently uniting with Poland and Lithuania. The rule of the Hungarian Crown extended from

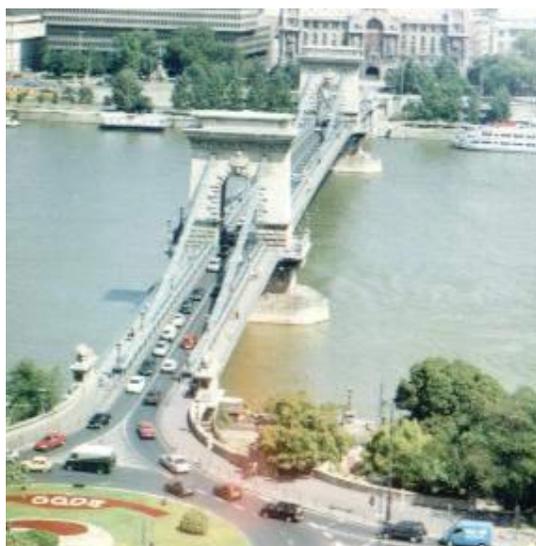


the Baltic to the Adriatic Sea. The Hungarian kings established a highly centralized authority. While the German region of Europe was breaking up into small principalities in the late Middle Ages, a strong Hungarian empire was unfolding on the eastern side of Central Europe. Buda, the centre of the empire, was also a major urban settlement in political, as well as economic and cultural terms.

At the turn of the fifteenth and sixteenth centuries Buda had 12,000 -15,000 inhabitants, Pest 10,000, and Óbuda only 2,000-3,000. Thus the total population of the three towns that constitute the present Hungarian capital stood at roughly 25,000- 30,000 - a big city in Central Europe in those days, ranking with Vienna, Prague, Krakow and Danzig. There was no urban centre of comparable significance in the Balkans. Moreover, no other city between Constantinople and Vienna had a population of over 5,000.

The economic role of this centre was enhanced by the important trade routes crossing the Danube at Buda, linking Eastern and Western Europe together. Cattle for slaughter played an important role in East-West economic relations, driven from the grazing lands of the Hungarian Plain to the cities of the northern Italy, Austria and Bavaria. Its role in the wine trade was also renowned.

Attached to the royal seat, crafts were able to flourish in the city. The treasury made its purchases and the needs of the army were also partly met in Buda. The great majority of craftsmen lived in Buda. A large number of German settlers were active in commerce and trade, and there were Armenian, Greek and even Arab merchants in the city. About half of the urban inhabitants may have been Hungarians .



The Chain Bridge - - photoed by Aranyi Laci

The cultural role of Buda was particularly significant during reign of King Matthias.

One-and-a-half of prosperity was followed by a long decline. Buda and Pest came under Turkish occupation for about 150 years (and served as the headquarters of the Turkish military administration.) That part of the country not occupied by the Turks became part of the Habsburg Empire. When, at the end of the seventeenth century, Buda was liberated from the Turkish rule, it became a provincial centre. When Buda was occupied, the Hungarian Diet moved to Pozsony and stayed there until 1848 .

During the peaceful eighteenth century, the total population began to grow, but the three cities only reached the size of their medieval population by the end of the century. However,

a population of 35,000-40,000 was not considered a big city in the Europe of the late eighteenth century, nor did the city have any significant international role .

The nineteenth century was dominated by the Hungarian's struggle for independence and modernization. The national insurrection against the Habsburgs began in the Hungarian capital in 1848 and was defeated a little more than a year later. In 1867, the Habsburg administration reached a compromise with the Hungarian nobility, and Hungary was granted a status equal to that of Austria within the Habsburg Empire. This made Budapest the twin capital of a dual monarchy. It was this compromise, which opened the second great phase of

development in the history of Budapest, lasting until World War I.

The Budai Castle

This was the period of belated but rapid industrialization, urban growth and of catching up with the rest of Europe. The city never had such a glorious era before or since. Once again, the city



became the centre of a large region. As the capital of the Hungarian Kingdom, which had a territory three times as large as today, it was the second most important urban centre of the Austro-Hungarian monarchy (after Vienna). In addition, it had an economic and cultural influence stretching beyond the borders of the empire, to the Balkans and northern Italy .

The population of the city trebled between 1875 and 1900. Of the large European cities, only Berlin recorded a similar rate of growth. When Óbuda, Buda and Pest were united, the Hungarian capital was a medium-sized city of 300,000 inhabitants, the seventeenth largest European city. In 1910, taking the present borders of the city, it already had a million inhabitants and ranked eighth in Europe, larger than Rome, Madrid or Milan. The rapid population growth fed upon all parts and nationalities of the monarchy. Migrants were attracted primarily by the vigorous industrial and economic boom.

From the 1870s was the age of the Hungarian industrial revolution; the benefits of which were mainly concentrated in Budapest. The city attracted the majority of newly founded banks, business associations and industrial enterprises. The city's growth was closely linked to the expansion of industry. It was quite unusual for a big capital to have such a markedly industrial character. In 1910, 44 per cent of those employed worked in industry.



The unique geographical position of the capital played an important role in the development of the economy. The Hungarian railway network was built before the industrial revolution (in the 1850s). All the main railway lines radiated out from the capital in all directions across the Carpathian Basin, towards Vienna, the Adriatic, the Balkans and northern Europe. The development of the railway network around Budapest was influenced primarily by political considerations: the Hungarian capital - politically still subordinate to Vienna - wanted to secure its control over the Carpathian Basin. The various railway lines met at the navigable section of the Danube, at the largest river port: Budapest.

Budapest is the largest river port of the Danube. According to some estimates, it was the world's second largest centre of milling industry early this century. Profits from the export of agricultural products of the Hungarian Plain all found their way to the commercial centre. Up-to-date engineering and electrical works also appeared, and by the beginning of the twentieth century, Budapest had become a centre of modern large-scale industry.

This rapid growth was very different from the urban growth of developing countries today. The inflowing labour quickly found employment and adjusted to urban society within a single generation. As the population grew, so the city expanded, and new residential suburbs were built. During the last decades of the nineteenth century, the city grew at a rate, which has never been matched since, even during the reconstruction after World War II.

So fast was a growth that it earned the description of an 'American tempo'. However, Budapest resembled Chicago only in the speed of its growth. The development was carefully planned and the effect was delightful. In 1870, the municipality set up the Council of Public Works, which elaborated a grand master plan, and the city had the power to realize it. Everything that marked the standards of the age could be found in the master plan: there was a system of ring roads and boulevards, and a network of urban public transport: the height of the buildings was set, green spaces were included, and so forth. Though a major part of the city was built within the space of twenty years, the result was not monotony but a harmonious uniform style.



The House of the Parliament

During recent years, it has become fashionable to discover the legacy of the turn of the century. Vienna has become particularly fashionable for art nouveau, psychoanalysis, Viennese music, and its delightful decline as the capital of the dual monarchy. It is not generally known, however, that Budapest also had an intellectual boom at the turn of the century. The young Bartók and Gustav Mahler were teaching at the Academy of Music at the same

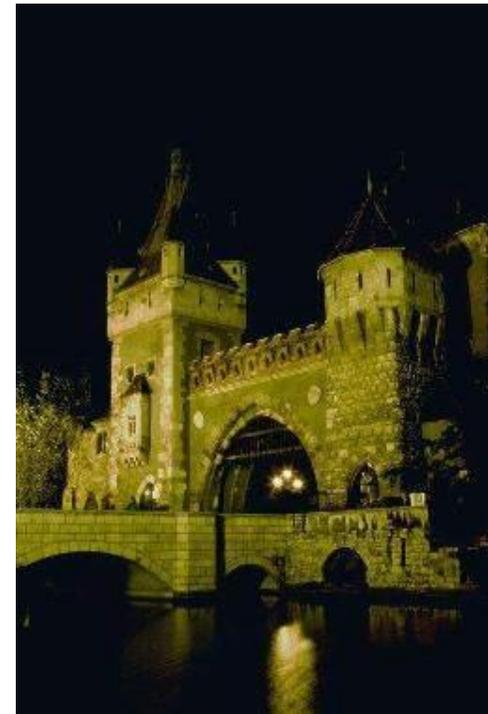
time, and the magnificent buildings of the Hungarian art nouveau were completed in quick succession. In Vienna, decay could be felt in its intellectual life: the imperial city was rooted in the political power of the monarchy, but this power had been already weakened. In Budapest, however, there was no sense of decay. The city was feeding upon the growth of the Hungarian economy, which still had great élan. Rapid development suppressed the sense of danger. Budapest was a dynamic, extremely optimistic city right until the final collapse .

The modern infrastructural development of the city was most impressive. Bridges were built over the Danube, and the first underground railway of the European continent was opened here in 1896. In 1873, electric lighting was brought to the streets. In 1887 trams appeared, followed in 1888 by the first suburban trains; in 1885 the first urban telephone exchange was installed; in 1896 the Post Office used battery-driven vans for delivering parcels; and in 1900 the Royal Hungarian Automobile Club was founded .

Vajdahunyad Castle

Within a few decades the capital was, it seemed, making up for the long centuries it had spent behind the rest of Europe. However, this rapid progress was founded on fragile foundations. The capital could not rely on a broadly modernizing Hungarian urban network and had to join the main trend of European urban development on its own. In 1910, it was a big city of 1 million inhabitants, while the population of the second and third largest country towns (Szeged and Szabadka) was only just over 100,000, both of them traditional agricultural market towns.

The First World War and its consequences are well known. The Austro-Hungarian monarchy was broken up. Budapest became the oversized capital of a small country, which could not regain its earlier international role in a hostile Carpathian Basin that had been cut into pieces. Its population continued to grow at a moderate pace, but it now resembled the urban growth of the developing countries, nurtured more by crisis in the countryside than by the internal energy of the city. By the 1930s, Budapest was beginning to overcome the consequences of World War I, when the next world war overwhelmed it, causing enormous damage to



its buildings, as well as to its population .

Under socialism, it has maintained a steady rate of development. With the dissolution of socialism in 1989, the city has entered the post-industrial age with the leading role of blue-collar industry being replaced by services and a white-collar workforce. Now Budapest is again

searching for its place among the major European metropolises. Budapest is once again becoming a Central European capital.

The Fertő-Hanság National Park



This land was once a wild place, a quagmire hunted by the apparitions of man's imagination. During the cold war, it was divided by minefields, artificial barriers and electronic fences of barbed wire. The infamous 'Iron Curtain' separated two political systems here, on the border between Austria and Hungary. Out of the 309 square km Lake Fertő, the fifth largest lake in Europe, only 75 sq km was left to Hungary after World War I. This part included - besides the water surface area - the northern corner of the Fertőzug area, the range of hills by Lake Fertő and Cikes in Mekszikópuszta (recently called Fertőújlak), as well as the Kis and Nagy-tómalom.

After the World War II, the time was ripe only in the middle of the 1980s to create a cross-border National Park by joining the two Landscape Protection Areas on the two sides of the border. As a result of preparatory negotiations and field surveys begun in autumn 1988, the Fertő-Hanság National Park was created in Hungary (1991) and in Austria (1992). Its total territory is 31,237 ha, of which 23,587 ha belong to Hungary and 7,650 ha to Austria. The National Park enforces its nature protection requirements complying with the IUCN regulations both on the Hungarian part and on the Austrian part.



Landscape in the Fertő-Hanság

This region of Hungary was developed by the flexure of the crystallized mass of the Eastern Alps along a rift between Vienna and Pannonian basins. The lake/bed was presumably created by tectonic movements, erosion and deflation while alluvial deposits made it impermeable.

Lake Fert is the westernmost alkaline lake in Eurasia. It is a steppe lake with fluctuating water levels, and it has dried out several times over the past millennium, the last time between 1865 and 1871. Its average depth does not even reach one metre. Its bottom is flat, horizontal, and it only deepens towards the middle by 50/60 cm. For several millennia, the lakebed was in direct contact with the neighbouring Hanság region, and during floods with the River Duna and its tributaries. From the middle of the 16th century, a series of technical interventions started to cut Lake Fert off from the freshwater marshland of the Hanság by means of constructions, canalizations and the building of causeways. The marshlands were finally separated from each other in 1912 when the sluice of the Hanság Main Canal was built at Mekszikópuszta. The most significant of Lake Fert's superficial inflows is the Wulka Stream, which supplies 60% of the lake's total discharge. The Wulka Stream flows into the lake Austria. The lake's second largest water supplier is the Rákos Stream, followed by the brooks originating from the springs at the foot of the Bozi Hills.

The Hanság region is also part of the National Park, which – as mentioned earlier – was once in permanent contact with Lake Fert. During the second half of the Tertiary period its area was covered by the Pannonian Sea, and later, as it gradually withdrew, by Lake Gyri. At the end of the Pleistocene era, the Duna, Rába, Kis Rába, Ikva, Répce Rivers, along with the Kardos, Keszeg Creeks and further watercourses covered the area with a thick layer of sandy-gravelly alluvial deposits. The present relief has been formed by the subsequent subsidence and by wind erosion. The draining of Transdanubia's largest marshland started at the end of the 18th century. By the first half of the 20th century, the Hanság was as much dissected by canals as it is today.



The Great White Egret

The shallow bed of Lake Fert holds some 400-500 million cubic metres of alkaline water. The northerly winds may raise the water level by half a metre on the southern shore, whereas during southerly winds the water may simply run out of the reed-fringed leaving mudflats behind just like the sea at low tide.

The capricious lake of ours has been drastically overgrown by reeds since its water level decreased because of the artificial drainage of the Hanság. Within the reeds, the inner pools surrounded by reed mace, the more than 200 km long web of canals and the dense Great Fen-sedge are home to an exceptionally exuberant fauna. These habitats hold nesting bird species such as the Great White Egret, the Purple Heron, the Spoonbill, the Greylag Goose, the Bearded Tit, the Moustached Warbler and the Marsh Harrier. The fish fauna is similar to those other Hungarian still waters, but one finds here Pike Perch, Pike, Knife and dull golden-colours Carp.

The dense reeds are surrounded by hay fields and alkaline meadows. Of the latter, the most noteworthy ones are the following: Cikes, lying just outside Sárród-Fert újlak; Nyéki Szállás; Paprét within the Fert széplak pasture, and Legénytó.

In the alkaline meadows, there is an abundance of endemic or halophil Irano-Turanic plant species, which are considered rarities further west for example the Saltmarsh -grass, the Annual Sea-blithe, the Glasswort, the Sea Wormwood and the Sea Aster. Breeding birds include the Avocet, the Common Redshank, the Black-tailed Godwit, the Little Ringed Plover

and the Lapwing. Common Terns, Mediterranean Gulls, Red-Crested Pochards and Tufted Ducks nest on the 'Bird Island', among the nests of several thousand Black-headed Gulls.

The Nyéki Szállás site is an important roosting place for masses of migrant geese. Dozens of rarities - the Yellow Wagtail, plovers, the Blue-Throat, the Barnacle Goose, dotterels - are also present here nowadays, at the time of migration cranes, White-tailed eagles and peregrine falcons stop on this bird 'farm'.



Greylag Goose, the only nesting goose species of Lake Fert, accompanied by ducks

The rows of hills that stretch on the western side of the lake also represent valuable habitats within the National Park. Sixty-two protected plant species occur on the steppe meadows of the Szárhalmi Forest and the Fert rákos lime quarry, which is carved in Lajta limestone, as well as in the Downy Oak dominated karst scrub forest. Naturalists are enraptured by Pasque Flowers, the Yellow Pheasant's Eye, the Fly Orchid, the Variegated Iris and the Iris pumila. A glacial relict

bog meadow, called the Kistóhalmi bog, hides at the foothills. Its invaluable flora can perhaps be best illustrated by mentioning the Common Butterwort, the Fen Orchid and the Marsh Helleborine.

Amphibians and reptiles from the extensive marshes find winter refuge in the forests of the hills near Lake Fert. Hundreds of thousand of Edible Frogs, Marsh Frogs, Tree Frogs, Agile Frogs and Brown Toads march there when winter approaches, in the company of Spadefoot Toads and Fire-bellied Toads. The mass exodus of Warty Newts, Smooth Newts and the Grass Snakes gather here for winter rest.

The Hanság marshland, now to a major extent drained, was once the 'mother' of lake Fert, which was supplied by waters overflowing from the eastern and western basins of the Hany area. Until the middle of the 18th century, this extensive marshland appeared to passengers as an ancient, romantic, vast wetland. Only loachers, hunters and fishermen roamed this area covered by bogwoods, willow-groves, reed-belts and free-flowing waters, making their way across the marsh by boats equipped with boat hooks.



Small Pasque Flower, ornamenting the steppe meadow at Szárhalmi Forest and Siberian Iris

Because of the completion of the Hanság canal, at the beginning of the last century, the Hany area was split into a southern and a northern part. The core of the Southern Hanság is constituted by Lake Király and by the alder groves Csíkos and Boldogasszony. Among the meadows of this area, the Zsidórét is the most remarkable. The more extensive northern part that has survived in a rather disturbed condition has locally well-known forests, such as Korona, Vessz s, Öreg, Töll s, Pálfy and Figurák. Vast hay-meadows and wet ecosystems touch these forests. The major zoological highlights of the area the Meadow Viper population on Farkas Hill, and the Great Bustards around Mosonszolnok, Pusztasomorja and log.

In the part of Hanság around Kapuvár, there used to be extensive verdant patches of willow forest and alder forests. The remnants of centuries-old English Oak forests are found in

the periphery of the Fert - Hanság Basin, as well as in the flood plains off the river valleys terminating here. The most beautiful of all the Lébény oak forest and the Old Forest near Csáfordjánosfa. The snowdrop and starflower carpet of the former is a splendid spring ornament of the northern Hanság just like in the hardwood gallery forests in Szigetköz. The Old Forest at Csáford is in its turn the most gorgeous of the woods along the River Rápce. Its soil is soggy by floods in early spring, triggering a mass blooming of the Spring Snowflake, which is similar to the Snowdrop, but is more corpulent and its infinitive multitude has the appearance of a snow-covered landscape.

The alder-groves once covered 4,300 ha of the 57,000 ha territory of Hanság Draining commenced in the 18th century had an effect on bogwoods as well. According to eyewitnesses, after digging out the first ditches the marsh subsided at such a sudden speed that the water squeezed out from under the settled floating islands and rushed up in the form of fountains. Afterwards, the alder-groves of the periphery were cut down in order to be replaced by plough-lands.



Danubian Meadow Viper, a rare and devoutly protected species of drying meadows in the Hanság

The residual Csíkos alder bogwood is a strictly protected area of the Fert -Hanság National Park. Its flora preserved many precious flowers characteristic to the Hanság region, and the foliage of its trees hide colonies of Grey Herons and even the nests of Brown Kites, or occasionally Red Kites. These rarities justify the decision that the

Hanság wetlands will be the first to be restored in this area.

The most important area in the eastern Hanság, called the Lébény Hany, is the bog meadows. Characterized by *Solaria* species and Purple Moor-grass, their most beautiful flowers include orchids such as the Fragrant Orchid, the Early-Marsh-orchid, the Loose-flowered Orchid, the Marsh Gentian, the Fragrant Onion, and pink species, *Dianthus superbus*. The extensive alder and birch woods of the area hold the nesting Black Storks, the Black Woodpecker, the Hobby and the Honey Buzzard. Greater Spearwort grows in the reeds, while White Water-Lilies and Yellow Water-Lilies bloom among the floating vegetation, and flooded woods are adorned with Water-violets and Marsh Ferns.

The Tóköz area belongs to the eastern Hanság Basin is worthy of special attention. The lakes situated this area, i.e. Lake Fehér and Lake Barbacsi, are strictly protected. The edges of reeds and willow cospes hold Night Heron and Great White Egret colonies. Post-glacial relict bird species breed in the surrounding meadows, for example the Montagu's Harrier, the Eurasian curlew and the Short-Eared Owl. The Kestrel, the Common Buzzard and the White-tailed Eagle nest in the tall poplar trees if windbreaks and woods the European Mud-minnow and the Weather-fish is not uncommon in a little bay of Lake Kányi, called lake Tündér.

Grazing plays an important role in maintaining the alkaline habitats of the national park. The farm built on the bank of the Hanság Canal gives home to Hungarian Grey Cattle and a Water Buffalo herd, as well as to a Racka Sheep flock. In the 1940s, Grey Cattle grazed in this area by the hundred, but they became extinct here in the mid -60s. The National Park reckons as one of its duties to gradually resettle this breed here.

This land has been inhabited since ancient times. Findings excavated here date back to the polished Stone Age. However, findings from the Copper and Bronze Age are frequent along the Ikva Brook and on the outskirts of Sopronkőhida and Balf. The area was inhabited by Illyrians in the Iron Age and by Celts in the 2nd century B.C. the latter gave the town of Sopron its Roman name Scarbantia. The Romans arrived here at the beginning of the 1st century A.D., and ruled for four centuries. This is the place where Aquincum -Carnutum, the East-western road of the Roman province Pannonia, crossed the Amber Road that headed north. Several historical monuments in Sopron bear signs of the Roman Age. Cultural monuments within or at the edge of the National Park include the Mithras Sanctuary between Fert råkos and Märbisch, the stone quarry at Fert råkos and the ruins of Roman cottages at Sárrod.

Churches, castles, civil houses and certain sections of streets renovated in the 18th century still dominate the townscapes. One of the above buildings is the Baroque Gloriett in Fert doboz, with a most beautiful panorama over the lake. Another remarkable building is the

Széchenyi Castle in Nagycenk, built originally in a rich Baroque style, from where a two - kilometre-long alley of linden trees has been stretchi ng towards Lake Fert for more than 250 years.

The Directorate has a wide-range infrastructure for receiving visitors to the National Park, as well as for research, educational and maintenance work. To promote the so -called 'gentle tourism' of hikers, a cycle path was built round Lake Fert , and well -kept gravel roads await the cyclists in the Hanság area, too. By the lakes rich in natural sights, high -stands provide good opportunities for taking delight in the scenery .

Sopron – in the Heart of the Fert d-Hanság National Park



The one and a half kilometres wide strip of the Sopron Basin and the hills and highlands around were populated from of old, due to their advantageous sites. In the 4th-5th thousandth of years B.C. there already had been populated areas around the Amber Road, the ambience of which became the centre of the latter town (from the exhibited material of the shows "Landscapes and Remnants of the Amber Road" edited by János Gömöri, and "Three Thousand Years along the Amber Road", exposed in the Fabricius House). The Amber Road itself was never called this way, and the Romans had only to modernise an already existing system of commercial roads. They did this by having covered the dirt road by stone tiles, hence it became dustproof. In the Neolithic, the representatives of the Trans-Danubian culture of line-ornaments left prestigious records around the area. The population of the villages, the Zheliz group, and the group of the Polish culture that produced handicrafts and tools out of stones both contributed to these collections. Six thousand years ago they were replaced by the group called Balaton Lasinja, who had already been keeping animals.



Walls of the Castle

During the after-war years most of the German-speaking population is evacuated. In 1950, Sopron loses her rank of a County Capital. During the socialism, the town lays in the so-called "border-line", and can only be visited with special permissions. In the course of the years, its industry is forfeited, partly consciously, partly because of the town's vague accessibility, and becomes rather culture-orientated. Since Sopron lays in the "border-line", and the Iron Curtain is so

much nearby, the harassments of visitors on the trains, public roads, etc. are regular. The mines around the area are cleaned up relatively soon after, but the "up -to-date" system of barbed wire, reacting by touch, runs kilometres long inside and alongside the border. The town tries to defend herself, as she can: during the Festive Days of Sopron her gat es get to be somewhat wider opened, and she really can show her hidden beauties to the visitors.

The city would like to become a site of the high quality tourism, entertainment, vintners, and conferences.



Views of the town