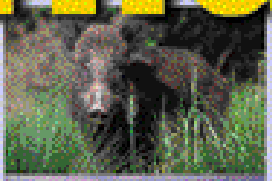
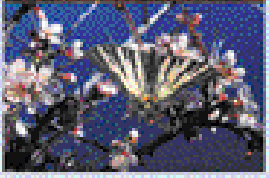
Wolfgang Fremuth
(Editor)

Albania

Guide to it's Natural Treasures





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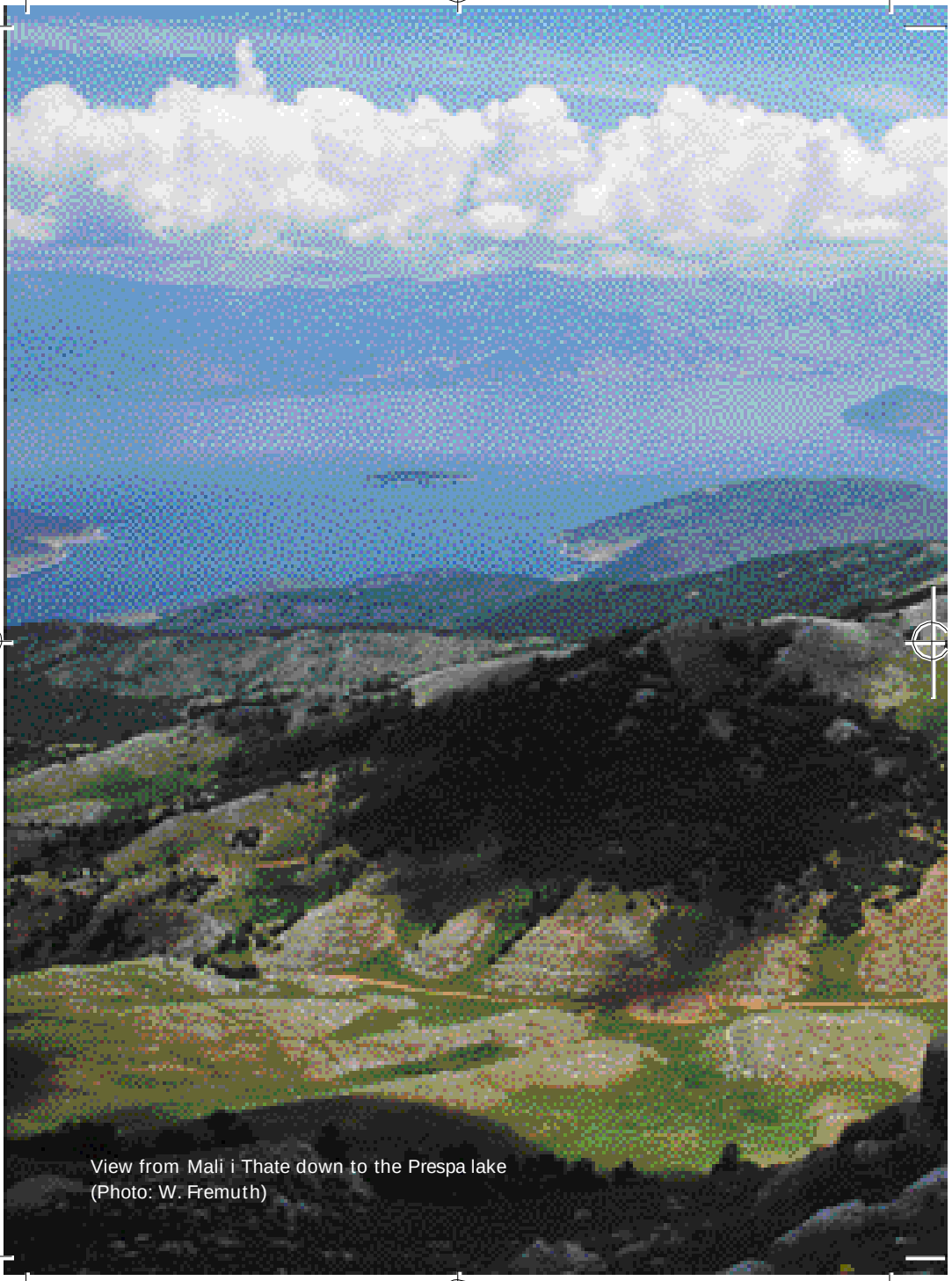
ECAT TIRANA

verlag herwig klemp



View from Mali i Thate down to the Prespa lake
(Photo: W. Fremuth)

Riparian vegetation at the “ Blue Eye” , Delvine
(Photo: F. Bego)

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Citation:
Fremuth, W. et al (2000)
Guide to Albania. Guide to it's Natural Treasures
ECAT-Tirana, Tirana

Verlag Herwig Klemp, D-26209 Hatten, Germany
Tel. ++ 49-4481-981 39 · Fax ++ 49-4481-981 49
www.herwig-klemp.de

Layout and production:
CONCEPTDESIGN Norbert Bretschneider, Geisenheim
Printed in Germany.

ISBN 3-931323-06-6

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(Photo: W. Fremuth)

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Ancient town of Apolloni a (Photo: F. Bego)

CHAPTER 0

Preface

For more than forty years excursions of young biology students aiming to investigate the fauna and flora of the Balkan region and the shores of the Adriatic Sea were halted by the nearly impermeable border between Albania and Yugoslavia or Albania and Greece.

These students report how they have been standing at the border with a longing look to the other side and some even claim that, favoured by lucky circumstances, they were able to enter some 50 or 100 meters in this forbidden world.

What was it that made this area so interesting for this young scientists; beside the normal thrill of the inaccessibility?

It was known from biological studies and international co-operation from the precommunist time that the Albanian territory included areas ranking at the top of Europe's high biodiversity reserves. In the beginning of this century, intensive systematic assessments were carried out by local and international researchers in order to describe the treasures of this rich life reservoir.

From this angle one easily understands that with the opening of Albania towards its neighbours and its efforts to join the European Community, this again this region, now accessible, attracts numerous specialists carrying out biological studies and assessments.

But fortunately, in a world of nearly immediate and nearly unlimited communication, the sensibility for our natural treasures and knowledge about the need for their protection and preservation is not limited to a small group of scientists but is more and more part of a common understanding of most European societies.

It is in this context that the Guide to Albania´s Natural Treasures presented here has been composed.

It is a short presentation of the history and a description of the natural heritage of this region prepared by local specialists who have maintained their commitment for the wonders of Nature.

This book is not a systematic study. It presents the high variety of fauna and flora of Albania to a wider public. It is based on the principle that information cannot be counter-productive to nature protection.

It also aims to sensitise and inform the greater public about nature protection taking into account economic and ecological considerations and requirements.

The presentation of medicinal plants, their use and perspectives for their future economic and ecologically sound exploitation represents a key in order to increase the awareness for the protection of this natural heritage.

The National Environmental Agency of Albania and the Programme LIFE issued by the European Commission through ECAT TIRANA as well as the Center for International Migration (CIM) have supported and sponsored the publication of this Nature Guide. May its success recompense their commitment.

MARIETA MIMA · WOLFGANG LOHR
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CHAPTER I

Albania: A Country between Mountains and the Adriatic Sea

Albania in brief

Albania or "Shqiperia" is a small country squeezed in between a high range of mountains and the Adriatic Sea. The country has a surface area of about 28,748 km² and is, therefore, even smaller than Belgium.

In the north, it borders the Federal Republic of Yugoslavia particularly Montenegro and Kosovo. In the west, it has a frontier with Macedonia and in the south it adjoins Greece.

The Albanian capital is Tirana with about 550,000 inhabitants. The entire population of the country comprises about 3.2 million people. It is estimated that the population growth is about 2.5% each year. The average age of the Albanian people is 28.5 years. There is a very small minority of Greeks (about 70,000 individuals) as well as the Gypsy tribe Roma and even fewer Macedonians.

Even though it was forbidden to practise religion for a period of 23 years (1967–1990), 70% of the population confess to being Sunnitian Islam. About 20% belong to the Greek-Orthodox church whereas the remaining 10% belong to the Roman-Catholic Church.

At present, the political system is a Parliamentary Republic with a brand new constitution put into force on the 28th November, 1998 which is celebrated as a national holiday; Constitution day. Since the 24th July, 1997, Rexhep Mejdani has been the President with the Government led by the young Pandeli Majko who was replaced by the also young Ilir Meta. They belong to the Socialist Party of Albania. The Democratic Party, headed by Sali Berisha, forms the opposition in the Parliament. Berisha was the Albanian President from 1991 until 1997. After the communist area ended in 1991 in the so-called revolution, Berisha, a cardiologist and the former personal physician of the communist leader Enver Hoxha, took over political power.

During the revolution, most of the infrastructure – especially enterprises owned by the state – were ruined leading to mass-unemployment of about 70% in 1992. Increased, but weak economic growth was severely damaged by the breakdown of the pyramid games in March 1997, which led to general riots and the fall of the Albanian President Berisha and his Prime Minister, Meksi. New elections in July 1997, stopped the uproar and with the help of foreign aid, internal stability was regained. At present the number of employed people is estimated at about 1.5 million people.

The young history of Albania helps to explain the current poverty of the Albanians. The per capita income of Albania is about 640 US dollars according to the World Bank (as at September 1998). A closer look to the history of the period following World War II

shows that the splendid the isolation of the Balkan country in the seventies and eighties until the death of Enver Hoxha in 1985 is also a factor which kept the country poor.

In January 1946, the Peoples Republic of Albania was founded by Enver Hoxha. He led the communist party for a long time after he had successfully fought as a partisan against the German and Italian occupying forces during World War II which made him very popular.

He led the country, and the party, until his death in 1985. However, by this time Albania was isolated, contacts with other countries, even the Soviet Union, were minimal and even the good relationship with China had ended. His successor, Ramir Alia, tried to change the totalitarian Stalinist government. He opened the country to foreigners and encouraged economic co-operation with Western countries. However, the administration remained centralized and the economy was planned in five year terms.

The isolation of the country and the self-chosen autocracy led to the agricultural revolution in the sixties and seventies which tried to convert both suitable and unsuitable land into agricultural areas. Meanwhile, these areas were abandoned and are now out of Production partly because of the erosion which occurred but mainly because the production was uneconomical

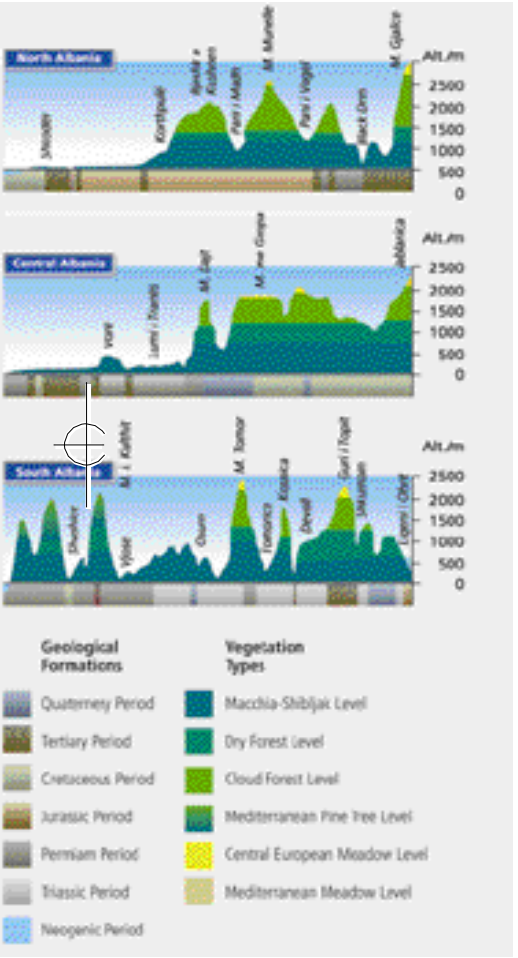
Skanderbeg Place Tirana
Natural Hisotorical Museum , Tirana
Mausoleum of Enver Hoxha , Tirana

Today the remains of this agricultural policy is still very visible in the form of terraces dug into almost all the hills and mountain slopes of the country.
Many dams have been constructed along the rivers to produce electricity but also to gain enough water during the dry summer season for irrigation purposes.

Geography

Generally, the country consists of high limestone mountains, with about 76% of the country having an elevation of 200 m or higher, a narrow fertile plain and the Adriatic coast. The coastline has a length of about 470 km. The longest distance north to south measures 340 km and the greatest width east-west is about 150 km. The Otranto strait has a distance of only 72 km between Albania and Italy at the peninsula of Karaburun.
Geographically, the country lies between 39° 38' and 42° 39' north and 19° 16' and 21° 4' east. The country can be divided into four parts:

- The north Albanian Alps.
- Lower Albania in the west.
- The mountainous eastern part of Al- bania.
- The Albanian Epirus in the south.



Geological Profile of Albania

The north Albanian Alps

The Albanian Alps mountain chain stretches from north-west to south-east, extending from Shkodra to the River Drin. The highest mountain of this part of Albania is Mount Jezerca with an elevation of 2,692 m.
The deeply cut valleys contain rivers, settlements and road infrastructures and the steep slopes of the high mountains characterize this part of the country. The deep valleys retain their snow load in the shaded parts until September and agriculture is mainly grazing

Because of the geography, this area is the poorest region of the country and there is almost no tourist infrastructure which could increase the very small income of the people there. Therefore, the population density here is very low and only a few cities or bigger settlements can be found like Kukës, Bajram Curri, Morina, Hani Hot, Puka or Shkodra.

The dominating river in the region is the Drin. The 285 km long river has its origin at the Ohrid Lake as the Black Drin and unites with the White Drin coming down from Kosovo to the famous River Drin which finally forms the lake Shkodra (Scutari Lake). The lake is very close to the Adriatic coast and is shared between Montenegro and Albania. Two national parks can be found in the region: Thethi and Lura (Burreli).

Lower Albania

Along the Adriatic coast, the fertile lowlands of Albania can be found including the Shkodra plain in the north alp to Vlora in the south. This area is approximately 200 km long and 50 km

.A Agricultural Landscape (Photo: F. Bego)

<11 Scenic Landscape (Photo F. Bego)

wide. Due to wet winter seasons and water carried by many rivers, streams and creeks supplying the plain with water throughout the year, this is the most important agricultural area of Albania. The capital Tirana lies at the eastern edge of this plain at the feet of the Dajti Mountain. The most important port of Albania, the city of Durres, is also located at the western boundary of the plain. Along the Adriatic seashore, ecologically valuable lagoons can be found. South of Durres, the Karavaste lagoon is located, the National Park Divjaua and a sea resort. North of Tirana, the Kune-Vainë lagoon can be found whilst the Mali i Skenderbeut borders the fruitful plain of the Albanian lowlands. This massif is famous because of the castle of Scenderbeg in the mountain village of Krujë.

The Eastern Mountains Region

This part of Albania stretches from the River Drin to Elbasan. Compared to the north, the mountains are not as high and the valleys are broader with the transitions between mountains and valleys not as pronounced. Nonetheless, the mountains are impressive. In the east, the region is characterized by the three picturesque lakes Ohrid, and

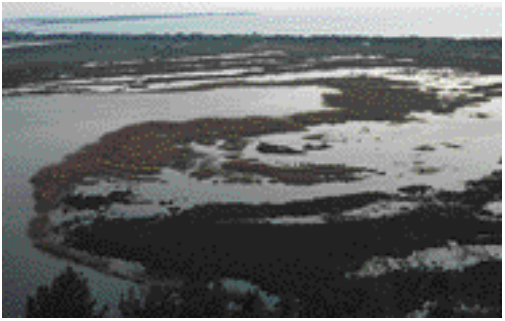
the Great and Little Prespa. Lake Ohrid, at an altitude of about 680m, borders Macedonia; Great Prespa belongs equally to Albania, Macedonia and Greece; and Little Prespa belongs to Albania (20%) and Greece (80%) where it is fully protected within the Greek Prespa National Park. Recently (16. 2. 99), the Albanian Government decided to protect their parts of the three Lakes with a new Prespa National Park along the banks of the two Prespa lakes. With this decision, the gap of

<11.A *Argynnis paphia* (Photo: W. Fremuth)

.A Subalpine meadow in summer (Photo: F. Bego).

protected sites around the lakes is now closed. The bank of Lake Ohrid is now also protected by a landscape protected zone (see Chapter III).

The highest mountain of Albania is the Korab Peak, bordering Macedonia, with an elevation of 2,751 m. Within this mountain chain, the residues of the glaciers of the last ice age can still be found in the form of small lakes. The material which built these impressive mountains is serpentine-stone although in rare places a coverage of sand- or limestone can also be found. Based on this geological formation and due to the climate conditions, beech trees are the main dominant tree species found in the north and central parts of Albania.



To the south, due to a more Mediterranean influence, pine trees become more common. The dominant rivers in this part of Albania are the rivers Shkumbin and Devoll. The backbone of this area is the mountain chain called Mokra, starting with the Jablanica massif at Lake Ohrid and stretching to the west. The Jablanica Mountain has an elevation of 2,259 m and forms the border with Macedonia.

The Albanian Epirus in the South

The southern part of Albania is again a mountainous region. Here the mountains touch the coast of the 'Albanian Riviera' as the coast between Saranda and Dhermi is called. This part of the country has the most picturesque landscape of Albania's coastline. The steep slopes of the mountains stretch down to the coast of the Ionian Sea. The highest mountain is the peak Papingu, 2,489 m above the sea level. Butrint lake, located south of Saranda, opposite the island of Corfu, is another precious ecosystem that Albania can offer to interested visitors.

Climate

The climate of the country is just as diverse as the landscape. A typical Mediterranean climate characterizes the lowlands and the plains whereas the mountainous areas have, in principle, a typical continental climate with

.A Summer pastures at Jablanica mountains (Photo: F. Bego).

<11 Karavasta lagoon (Photo: T.Bino).

a slight Mediterranean influence. However, there is a significant difference between the north and the south: in the south, the summers are drier and the differences between summer and winter temperatures are not as great as in the north.

In the south, but also in the plains of Central-Albania, the summer season is usually very hot with temperatures frequently reaching 40° C or more; moreover, during the night, the temperature does not decrease significantly.

These high temperatures noticably slow down public activities during the day between June and September. During this period, time is often spent either at the sea shore (preferably in the water) or on the beautiful mountain lakes Ohrid and Prespa, where the climate is more moderate but still warm enough for swimming in the clear waters of the lakes.

The middle of October sees the beginning of the rainy season. The amount of precipitation reaches its maximum during November although December and January are still wet months with hard rainfall in the plains and snow in the mountains.

The rain showers are short and sharp and within a few minutes the amount of water creates torrents washing down the eroded soil to the sea. The over-exploitation of the natural vegetation in most parts of the country together with the

A Prespa Lake with ice (Photo: W. Fremuth).

Table 1: Typical climate data for Tirana.

	January	February	March	April	May	June	July	August	September	October	November	December
Temperature in °C	18,5	22	25,5	27,5	32,5	37,5	38,5	40,5	35	30,5	25,5	22,5
Precipitation in mm	135	152	128	117	122	86	32	32	60	105	211	173
Average relative moisture in %	83	83	83	83	83	74	72	75	82	85	86	83

extreme rainfall has resulted in valuable soils being irretrievably washed away.
In the interior part of Albania, there is no further balancing impact of the Mediterranean Sea climate, therefore, the daily differences between maximum and minimum temperatures are considerably higher than at the coast. The annual precipitation in the mountainous areas is also higher than in the lowlands at the coast. Typical climate data is given for Tirana in Table 1.

The vegetation of Albania

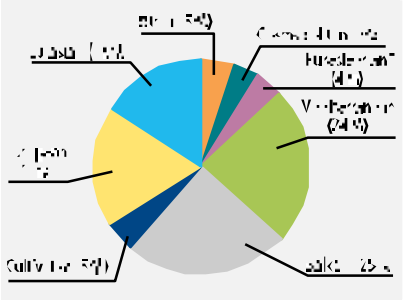
The relatively high amounts of precipitation, along with the topography of the country – high mountains and deep valleys – ensures a rich and diverse vegetation in the country.

<11 Dryas octopetala, a tertiar relict (Photo F. Bego).

Flora

Albania is an exceptional countr y within Europe regarding flora and vegetation with 30% of Europe's flora represented. The countr y possesses about 3,250 species of vascular plants; 165 families and more than 900 genera have been described in an area only 0,27% of Europe. That means that you can find 11 different species per hectare, whereas in Germany, for instance, you will find only 0,91 species per hectare. Out of this total number of known plants, 850 plant species can

Composition of Albania's vegetation.



only be foun d in the region and 30 species are recorded as endemic for Albania. Since a systematic registrat ion of species has not been carried out, it is quite possible that new species are waiting to be discovered.

This diversity of species is due to the geographic position, climatic, oro- graphic and geological conditions and the hydrology. These conditions pro- duce a variety of habitats and vegeta- tion types within the countr y, includ- ing mount ain ecosystems, alpine and sub-alpine pastures and meadows,

Mediterranean shrubs, grassland and marshland, streams and rivers, lakes and reservoirs, coastal lagoons and marshes, sand dunes, river deltas and riverine vegetation, and rocky coastal and marine ecosystems.

Apart from the more common species such as Eurasian plants (517 species), there are also a large number of steno- choric species, *i.e.* species which grow only under specific conditions at re- stricted locations, such as Balkan plants (800 species), sub-endemic, restricted to Albania and the directly adjacent countries (120 species) and endemic plants which are restricted in their dis- tribution *only* to Albania (30 species). The Mediterranean flora of Albania is also very important. It represents about 24% of the total flora and can be divided in Euro-Mediterranean 8%, Steno-Mediterranean 7%, Atlantic-Mediterranean %,Turanian-Mediterranean 1,5%, Orophyte-Mediterranean 1,3%, etc.

The "European" floral element repreents about 18% of Albania's flora, and the "Eurasian" and "Euro-Siberian" about 14% and 4% respectively.

Albania's flora was formed during the Tertiary Period when the territory of Albania was finally formed. Land movements, sea regression and trans- gression, and strong climatic changes are the main factors that have altered the Albanian flora time after time. The most recent cooling trend began in the early Tertiary when the tropical and sub-tropical climate changed into a cold climate. The widespread glaciers with- drew repeatedly over the northern hemisphere and the habitats of the

mountain plants changed, the plants migrated down to lower places and some others disappeared. The flora of tropical and sub-tropical areas was destroyed totally or changed because climate and geo-morphology altered drastically. The surviving species began an enormous adaptation and the origin of Albania's flora is thought to date from the late Miocene period.

Genetically, Albania's flora has many similarities to other flora:

- **Ancient Mediterranean**; species have their relatives in the Iberian Peninsula or France. Examples are *Ramonda serbica, Viola kosaninii*, *Genista hesertiana* and *Geum coccineum*.
- **Archotertiary species of East Asia**; species have reached Albania via two routes:
  A: southerly via the western Himalayas, South Anatolia, Crete, Peloponnese and Pindi, examples are *Wulfenia baldaccii, W. carinthia ca* and *Forsythia europaea,* and
  B: northerly, via the northern Himalayas, the Caucasus, the mountains of North Anatolia and the Balkan mountains, examples are *Pinus peuce, Dioscorea balcanica* and *Aesculus hippocastaneum*.
- **Present Mediterranean**; including all the Mediterranean plants numerous in Albania. The two principal branches are:
  A: eastern Mediterranean with *Podocisus caramanicus, Arbutus andrachne* etc., and
  B: western Mediterranean with *Pistacia lentiscus* etc.

The distribution of the species along the border explains the history of the Albanian flora as well as its connection to other vegetation. Based on the data, Albania has a stronger connection with the north with more than 550 species having their southern border of distribution in Albania. These occur mainly in beech woods, alpine pastures and the alpine meadows belt up to the Tomorri Mountain (Central Albania). Examples are: *Betula pendu- la, Picea abies.*

The relationship of Albania's southern flora to other flora of the south is poor. About 150 Mediterranean species have their northern border of distribution in Albania, such as *Trifolium auranti - acum, Scabiosa taygetea, Arbutus andrachne, Sideritis raeseri* and *Morina persica*. These can be found mainly in

A *Xylocopa violacea* on *Lathyrus spec.* (Photo: W. Fremuth).

forests and evergreen Mediterranean shrub belts (maquis).

The relationship with western Mediterranean flora is also poor. Only 40 western species have the eastern border of their distrinution in Albania and a great number of them are in the west of the country, along the coast, such as *Phyllirea angustifolia, Brassica incana* and *Quercus robur* with only a small number inside the country.

Species originating from the east are differently distributed in Albania. Those of the eastern Mediterranean can be found all over Albania, from the high mountains to the coast, whilst Balkan species, such as *Poa ursina, Sesleria comosa* and *Daphne cneorum*, have their border to the east and north east of Albania.

The endemic species are mainly distributed in the north (mainly in the Albanian Alps), north-east and in some limited areas of the south-east of the country.

There are also so-called paleo-endemic plants, or relicts, which can be found in the country. These are ancient flora, largely destroyed as a result of climatic and geological changes that have caused their geographic isolation. Typical species of this group are *Wulfenia baldaccii, Forsythia europaea, Gymnospermum shqipetarum, Aster albanicus* subsp. *paparistoi, Ajuga piskoi., Ranunculus hayeki, Dioscorea balcanica*, (S/endemic [1]), *Viola kosaninii* (S/endemic), *Ramonda serbica* (Balkan endemic) and *Narthecium scardicum* (Balkan endemic). *Wulfenia baldaccii* found in the Albanian Alps (northern Albania) has relatives such as *W. carinthiaca, W. orientalis* and *W. amherstiana* which can be found far away in the southeastern Alps (Italy and Austria), Syria and Afghanistan.

Neo-endemics make up the majority of the endemic flora. They represent the recent geological epoch and are unable to spread to other areas because of the isolation, geographically and ecologically, of their habitats. Many are located in mountain chains *e.g.* in the Alps (maja e Hekurave, Shkëlzen, Pashtrik) can be found *Lunaria telekiana, Ligusticum albanicum, Ranunculus hayeki* and *Sanguisorba albanica*, and in north-east Albania (Koritnik, Gjallicë, Korab), *Moltkia doerfleri, Ranunculus degenii, Centaurea kosanini, Trifolium wettsteinii*, (S/end.) and *Draba korabensis* (S/end.).

A few neo-endemics can be found in the central, east & southern mountain chains e.g. *Cistus albanicus, Carex markgrafi* and *Hypericum haplophylloides.*

Endemic species are the most important and unique, yet sensitive, elements of the flora. At present the conservation and protection of their natural habitats, and their presence in the Botanical Garden, is of great importance.

According to the "Red Data Book" of Albania, about 320 species – that is about 10% of the Albanian flora – is considered rare or endangered. Of these, 10% are endemic, 39% sub-endemic, with a distribution along the Greek, FYROM and Yugoslav borders, and 15% Balkan distribution.

[1]) S/endemic means sub-endemic species which are present only in one region of Albania but nowhere else in the world.

Great efforts are being made to conserve the most important elements of Albania's flora and their natural habitats through specially protected areas designation *e.g.* National Parks and Strictly Protected Areas.
According to IUCN categorisation, the most important examples are:

– **Extinct -(Ex) or Probably Extinct -(Ex?):** *Aesculus hippocastaneum L.* (*endemic to the Balkans*), *Leontopodium alpinum L., Taxus baccata, Hydrocotile vulgaris, Leontopodium alpinum, Wulfenia baldacii.*
– **Endangered-E.:** *Fraxinus excelsior, Picea abies, Pinus peuce* (*Balkan endemics*), *Arctostaphyllus uva-ursi, Colchicum autumnale, Coryllus colurna, Betula pendula, Laurus nobilis, Sideritis raeseri, Tilia platyphyllos.*
– **Vulnerable - V.:** *Adianthum capillus-veneris, Trapa natans, Marsilea quadrifolia.*
– **Rare R.:** *Aconitum lamarckii, Crepis albanica, Astragalus autranii, Bornmuellera baldaccii, Achillea frassi, Hypericum haplophylloides, Cistus albanicus, Teucrium arduini, Cephalaria patricensis, Draba korabensis, Petasites doerfleri, Sanguisorba albanica.*
– **Insufficiently known -(K):** *Alchemilla albanica, Alkana sandwithii, Silene ungeri, Thymus teucroides.*

More information about this can be found in the National Herbarium, with 70,000 species, (Biological Research Institute, Academy of Sciences, Tirana) and the Botanical Garden of Tirana where a seed bank of the different plants of Albania has been established.

Vegetation

The vegetation types of Albania are as diverse as the flora with coastal community plants (*Zosterion maritima*), wetlands, mainly of the coastal zone (*Ruppion maritimae, Juncion maritimi, Salicornion fruticosae*), pastures and alpine meadows of high altitudes (*Nardion strictae, Arrhenatheretalia, Molinetalia, Brometalia erecti*), woodlands (*Fagetalia sylvaticae, Populetalia albae, Quercetalia pubescentis, Alnetalia glutinosae, Erico-Pinetalia, Vaccinio-Piccetea*) and hedgerows (*Quercion ilicis, Oleo-Ceratonion, Paulirion adriaticum, Cisto-Micromerietalia, Juniperionnanae*).
The vegetation of Albania can be divided into two parts – Mediterranean and Central European -corresponding to the the northwest – southeast axis, created by the principal mountain

chain. Vegetation south of this axis is nearly all Mediterranean, not only in the lower areas but also in the high mount ains. Typical Mediterranean tree species are pine (*Pinus halepensis* & *P. pinea*) or oak (*Quercus ilex, Q. trojana, Fraxinus ornus*) and evergreen shru bs of the maquis type such as: the strawberry tree (*Arbutus unedo*), tree heather (*Erica arborea*), myrtle (*Myrtus comm unis*), jasmine box/ mock privet (*Phillyrea* sp.div.) and pistachio (*Pistacia lentiscus*).

Grassland commu nities are represented by Mediterranean winter pastures, in lower and middle areas, and by Mediterranean sub-alpine pastures in the higher parts of the countr y. However, this division is not absolute, there are cases of one area having a variety of types *e.g.* rivers and valleys with an east-west course and cool and warm air mass flows.

Vegetation on the northern side of this axis is represented mainly by the plant commu nities of Central Europe. They are dominated by broadleaf trees such as beech (*Fagus sylvatica*), horn beam (*Ostrya carpinifolia*), sessile oak (*Quercus petraea*), evergreen trees such as: Austrian pine (*Pinus nigra*), silver fir (*Abies alba*), Heldreich's pine (*Pinus heldreichii*), Scots pine (*Pinus sylvestris*) and Norway spruce (*Picea abies*). The high mount ain peaks are dominated by sub-alpine and alpine pastures.

The vegetation of Albania has four zones according to altitude.

1. Forests and Mediterranean shrubs;
2. Oaks;
3. Beeches;
4. Pastures & alpine meadows.

The separation into four zones of vegetation is due to climatic conditions, primarily temperature and hum idity, with the temperatures of the north lower than those in the south.

1. . Forest & Mediterranean shrub zone. This belt is mainly dominated by commu nities of *Quercetea ilicis, Alnetea glutinosa* and *Populetalia albae* which cover about 42% of Albania, mainly the western lowlands, beginning at the coast and ending at the mount ains, bordering Greece and FYROM, at a height of 400–1 ,000 m. Mediterranean forest consists of Austrian pine (*Pinus nigra*), stone pine(*P.*

<11 Dajti National Park Albania (Photo: W. Fremuth).

.A Beech trees (Photo: W. Fremuth).

A *Arbutus unedo* (Photo: F. Bego).

pinea), and forest islands of oak: *Quercus ilex, Quercus robur, Quercus pubescens*, or other broadleaf trees such as *Populus alba, Ulmus campestris, Alnus glutinosa* which are accompanied by grassland and hedgerows.

Mediterranean shrubs consist of evergreens of the maquis type, *such as* strawberry tree (*Arbutus unedo*), tree heather (*Erica arborea*), myrtle (*Myrtus communis*), guelder rose (*Viburnum tinus*), shkopkuqja (*Arbutus andrachne*), wild olive (*Olea europaea* var. *sylvestris*) and *Pseudomaquis* (communities of *Buxus sempervirens*).

The other shrubs, mainly hedgerows with thorns, that naturally grow in moist areas than maquis are: Jerusalem tree (*Paliurus spina-christi*), cermëdelli (*Cotynus coggygria*), forsythia (*Forsythia europaea*), sumach (*Rhus coriaria*), pomegranate (*Punica granatum*), bladder senna (*Colutea arborescens*), wild pear (*Pyrus amygdaliformis*), hawthorn (*Crataegus* sp. div.), cornelian cherry (*Cornus mas*), shrub vetch (*Coronilla emerus*) and pistachio (*Pistacia terebinthus*). Short xerophyllous shrubs, in general with small leathery leaves, thorny branches, aromatic and grey are represented by communities of *Oleo-Ceratonion*, for example *Oleo-Lentiscetum*, *Oleo-Euphorbietum dendroides*, or *Cisto-Ericion*.

Close to the coast, specific communities of *Cakilo-Xanthietum italici, Ammophiletum arundinacea, Ephedretum distachia* and *Limonietum anfracti* can be found as well as many other halophytic, psamophytic and freshwater aquatic communities.

2. . Oak zone. This belt lies above the Mediteranean Shrub zone up to 800–1,250 m. The dominant communities are *Carpinion orientalis, Quercion petraea* and *Ostryo-Carpinion orientalis*. Of the oaks, the more common are: downy oak (*Quercus pubescens*), oak spec. (*Q. frainetto*), durmast oak (*Q. petraea*), Trojan's oak (*Q.trojana*), turkey oak (*Q. cerris*), and of other trees: manna ash (*Fraxinus ornus*), hop hornbeam (*Ostrya carpinifolia*), hornbeam (*Carpinus betulus*), sweet chestnut (*Castanea sativa*), field maple (*Acer campestre*) and the large-leafed lime (*Tilia platyphyllos*). In the upper levels of this belt, Austrian pine (*Pinus nigra*) and silver fir (*Abies alba*), typical species of the beech zone, can also be found.

The most common shrubs here are: hawthorn (*Crataegus* sp. div.), eastern hornbeam(*Carpinus orientalis*), cermëdelli (*Cotynus coggygria*), junipers (*Juniperus oxycedrus* & *J. communis*), bladder senna (*Colutea arborescens*), black broom (*Lembotropis*

nigricans), blue broom (*Genista tinctoria*), cornelian cherry (*Cornus mas*), dogwood (*C. sanguinea*) and Jerusalem tree (*Paliurus spina-christi*). In the oak zone of central and southern Albania, the endemic species *Forsythia europaea* (forsythia) is found.

The oak zones are situated in more populated areas and are, therefore, more endangered since stands are being replaced by cultivated apple, nut and chestnut.

3. . Beech zone . This is the most common afforested species with the upper vertical border 1,700 to 1,900–2,000 m. The principal vegetation that creates this belt are beech, pine and fir communities.

The beech zone (*Fagion sylvaticae*) usually has simple forests including *Pinus nigra, P. peuce, Abies alba, Acer pseudoplatanus, Ostrya carpinifolia, Sorbus aucuparia* as well as shrubs including *Vaccinium myrtillus, Rubus ideaus, Erica herbacea & Ilex aquifolum*.

This belt also has forests of Austrian pine (*Pinus nigra*), the most common pine of Albania. In general, this pine is included in *Erico-Pinetalia* communities but often, especially in the lower zone, it create communities of *Quercetalia pubescenti-sessiliflorae*. The other pines growing in this belt are *Abies alba* and *A.borisii-regis, Pinus sylvestris, Picea abies* and communities of *Pinion leucodermis: Pinus leucodermis, P. heldreichii* and *P. peuce*, the latter two being very rare.

4. .Pastures & alpine meadows zone . This belt lies in the upper level of forests and consists of grassland and hedgerows. There are two types of pastures: Mediterranean and Central European.

The dominant flora is of the family *Graminae*, especially in the north and east, where Central European pastures can be found. The common species are of the genera *Festuca* (*F. bosniaca, F. adamovici, F. panciciana, F. paniculata*), *Poa* (*P. alpina, P. cenisae*), *Nardus* (*N. stricta*), and a few species of the genera *Koeleria* (*K. splendens, K. eryostachia*), *Sesleria* (*S. tenerrima, S. coerulans*), *Trisetum* (*T. flavescens*), *Agrostis* (*A. capillaris*) and *Phleum* (*P. alpinum*).

Pastures of this belt are full of species of the family *Leguminosae*, such as: *Trifolium alpestre, T. badium, T. velenovski, Onobrychis alba, O. montana, Anthylis vulneraria* and *Astragalus angustifolius*.

In the alpine pastures of this belt, shrubs and hedgerows of the genera *Rosa, Daphne* and *Genista* can be found. Moving from the north and east to the south and west, the plants are mainly Mediterranean.

Fauna

The fauna of Albania is also very diverse: about 84 mammal species, 320 bird species, 37 reptile species, 15 amphibia, 313 fish species with 4 endemic species, and last but not least 3850 insect species are known in the country. Among the insects, about 900 butterfly species have been described. The number of other non-insect invertebrates is

unkown and there are no systematic records of either molluscs or annelides. In the isolated valleys and mountain ranges, mammals like bear, wolf, lynx, jackal, roe deer and red deer can be found. The formerly numerous wild

Table 2: Red Data Book of Albania.[2]

Taxon	ct	ngered	erable		ntially endangered / dent / not ke ge	olute number of species	tive endangement	n number of species
FLORA								
Funghi	3	15	7	15	5	45	–	–
Lower Plants?	–	3	1	21	–	25	–	–
Vascular Plants	–	23	21	72	14	130	3,6%	3250
TOTAL	3	41	29	108	19	200	–	–
Vegetation Societies	2	24	30	43	5	104	–	–
FAUNA								
Mollusques terrestric	–	3	1	21	16	41	–	–
Mollusques aquatic	–	6	–	27	13	46	–	–
Crustacea	–	1	1	53	4	59	–	–
Echinodermata	–	1	–	13	3	17	–	–
Insecta	–	4	40	57	20	121	2,6%	3850
Pisces	–	13	9	25	13	60	15%	313
Amphibia	–	–	1	3	11	15	26,7%	15
Reptilia	–	–	–	23	13	36	62%	37
Aves	6	10	17	30	41	104	19,7%	320
Mammals	1	7	8	6	11	33	26,2%	84
TOTAL	7	45	77	258	145	532	–	–

[2] Libri i Kuq (Bime, Shoqerime Bimore dhe Kafshe te Rrezikuara) (1997), Shoqata per Ruajtjen dhe Mbrojtjen e Mjedisit Natyror ne Shqiperi, Shoqata per Ruajtjen eShpendeve dhe Gjitareve te Shqiperse, Shoqata e Biolo- geve te Shqiperise, Tirana, Albania

boar have become quite rare in the last few years. The loggerhead turtle (*Caretta caretta*) has been described and even the most endangered mammal of Europe, the Monk seal (*Monachus monachus*) is believed to inhabit the Adriatic coastline of Albania although there are only few recent records. Dolphins can also be found in the Adriatic sea and a high variety of fishes and other marine fauna elements.

A rich ornitho-fauna can be found in Albania; eagles, falcons, pelicans, cormorants, and especially the globally endangered pygmy cormorant are all present. The very rare slender-billed curlew (*Numenius tenuirostris*) has also been described for Albania and at least during the spring and autumn migration the bird crosses the country and rests in some places.

A glance at the red data book (table 2) of Albania shows that reptiles are the most endangered animal group with 62% considered as endangered. Amphibia and mammals are also threatened with 26%. Loss of habitat, particularly through transformation into agricultural areas in the past, is considered an important contributory factor.

Language and History

The Albanian language belongs to the Indo-European language group. Some experts believe that the recent Albanian language is based on the Illyrian language, the idiom of Albania's ancestors which settled in the 2nd millennium BC. At that time, they occupied the western Balkans and, in the second half of the 3rd century BC, an expanding Illyrian kingdom based in Shkodra bloomed. The booming country came into conflict with the the Roman empire, the superpower of that period, which sent a fleet of 200 boats against the Illyrians. However, they resisted and a second fleet was sent in 219 BC. In this battle, the Illyrians were supported by Philip V of Macedonia. A long war followed and finally the Romans gained control over the whole of the Balkans in 167 BC.

Despite the Roman occupation, the Illyrians preserved their own cultural heritage and language. A prosperous period followed in which trade with the neighbouring countries increased and transport infrastructure, like the famous Via Egnatia which ran from Durres via Thessaloniki to Constantinople (Istanbul), was established. At present, the road is being reconstructed as the E8 running from Durres via Tirana, Elbasan to Ohrid, Skopje, Sofia and Istanbul.

A strong influence on the culture and language was exerted by the Ottoman occupation which lasted from 1389 to 1912 when Ismail Qemali formed an independent Government in Vlora. In 1913, the London ambassador's conference decided to hand over the Kosovo area to Serbia.

After the first World War, Tirana became the capital of the country. In 1928 Albania was declared a kingdom by Ahmet Zogu who crowned himself as King Zogu I of Albania. He was

<11<11 *Stenella coeruleoalba* (Photo: F. Bego).

<11 *Emys orbicularis* (Photo: F. Bego).

ousted by Mussolini who invaded Albania in 1939.

The Albanian commu nist party was foun ded by Enver Hoxha in 1941 who became the first secretary of the party unt il his death in 1985. The communists led the resistance against the Italian and German occupants in the Second World War. In fact, the Albanian partisans led by Enver Hoxha, and using their own forces, successfully repelled the Italian and German occupants from their countr y.

After that, the regime of the communist leader Enver Hoxha led the country to its celebrated isolation which only ended after his death in 1985.

Practical hints for travellers

.A Plazhi i Palarër (Photo: T. Bino).

<11 Badeszene (Photo: W. Fremuth).

T Promenade (Photo: Rossen Iliev).

The Albanian Riviera is always worth exploring in the weeks during the hot season in July and August. Dhermi, a picturesque, small town south of Vlora as well as Vlora itself is a lovely place to spent some relaxing days during the summer days. For bathing holidays, the area of Saranda is also quite suitable.

If lying at the beach becomes too monotonous, there are many trips and sightseeing tours possible which will give a deeper insight in the ancient history of the country, it's culture and people.

Archeologists have found a lot of prehistorical sites although, unfortunately, the conservation methods applied have not always left them in a state whereby they can be visited. However,

happily, there are many monuments from antiquity and later which can be visited and which will give an excellent impression of the country's history. Monuments of the Illyrians, Greeks and Romans are numerous but scattered all over the country.

Shkodra has the remains of the walls of an old fortress and Lezha still has the old walls and portals on entering the old town. In Durres, the old Roman amphitheater is worth visiting as well as the old town walls with their towers. Scattered throughout the

.A Dhërmin (Photo: T. Bino).

Butrinti (Photo: T. Bino).

town, remains of the Roman period can also be seen.

Modern day Elbasan is dominated by a huge Chinese steel mill which is polluting the valley of the Shkumbin river and a cement factory emits additional pollutants. However, the ancient centre of Elbasan is well worth a visit. The Romans founded Skampa (Elbasan) in the 1st century BC as a stopping off point of the Via Egnatia which starts in Apollonia where the impressive remains of a huge town wall with different, ancient houses and buildings are still preserved. Stout stone walls with 26 towers were added in the 4th century AD. The recent name was given by the Turkish occupants who improved the fortress against Skënderbeg and renamed the town El Basan (the fortress). Not far from Elbasan, along the road from Tirana, the Petrela Citadel guards the valley of the Erzen river.

Berat has the ruins of an old Illyrian town wall and Byzantine churches. It is sometimes called the town of the thousand windows due to the many openings in the white-plastered, red-roofed houses on terraces overlooking the Osum river. It is considered as the second most important museum town of Albania. High above the gorge of the river Osum the citadel was built in the 14th century sheltering small orthodox churches. A seven arched stone bridge connects the Christian quarter with the rest of the city. North of Berat, and in the valley of Ballsh, most of Albania's crude oil is extracted. Bad maintenance and carelessness have caused severe environmental pollution.

Byllis, south-west of Berat and south of Ballsh, lies on a high mountain and has the ruins of an ancient Illyrian town wall, a theatre and a long column hall.

.A Kruja castle (Photo: F. Bego).

<11 Scanderbeg tower, Kruja (Photo: W. Fremuth).

In spite of the bad road, it is worth visiting this town.

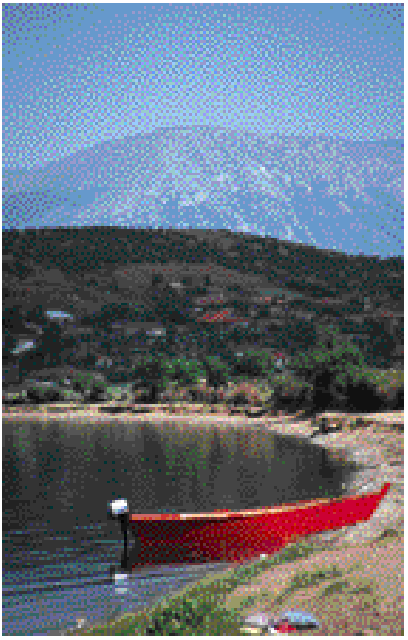
Saranda, the biggest city in the Albanian Epirus also has a few ruins from the Illyrian period. From the early Christian period, a church with floor mosaics has been excavated.

Saranda serves as a good starting point to visit the archeological site of Butrint 18 km south of the town. It is said that Greeks from the island of Corfu, which is only a few km away, settled in Butrint in the 6th century BC. At that time, Butrint was a fortified trading city and had an acropolis like Athens. The Romans took over the town in 167 BC and the Byzantines converted the town to an ecclesiastical centre. Italian archaeologists excavated the ruins in 1927 and important sculptures are on display in the National Museum of History in Tirana.

A must for all visitors are the ancient and museum towns of Kruja and Gjirokastra. Kruja, only about 30 km north of Tirana, is a fortress of Skënderbeg. A newly built museum tells the personal history of the national hero.

Gjirokastra, with an old fortress and a picturesque old town. The citadel lies above the Drino valley and was built to control the traffic leading from Fier to Ioannina in Greece. The roads in the town and the buildings, even their roofs, are all produced from the same white and grey stones.

The Lin peninsula at lake Ohrid is a beautiful landscape with the ruin of an early Christian church which has exquisite mosaics on the floor.



Peninsula Lin, Ohrid lake (Photo: W. Fremuth).

Korça offers an excellent museum of middle-age art with a rich collection of icons.

The best overview of the cultural heritage of Albania can be found in the museums in Tirana. There is an archeological museum providing a good insight into the ancient history of the country. An ethnographical museum provides an overview of the national costumes of the different tribes and ethnic groups and a national art gallery displays the creations of the artists from the more recent history of the country. A rich ethnographic exhibition can also be visited in Shkodra.

CHAPTER II

Scanderbeg's Heritage

The Albanian Epoch of Gjergj Kastrioti-Scanderbeg

Scanderbeg, a famous historical figure with his personality and complex nature, has become almost a legend in Albania, even the numerous sayings based upon historical reality have themselves become legendary.

Precisely for this reason, the most decisive epoch in Albanian national history remains the period when Scanderbeg lived and fought at the head of the people. Of him, the people have now created a hero, during many decades of struggles to protect their land, freedom and independence; and to safeguard their own national identity. Among the main elements of these common strug- gles the people on one side and the leaders on the other, the latter is a fig- ure with a famous name. Professor Aleks Buda has said: "Scanderbeg looks like a giant, mount ainous oak that needs such distance in order to judge how much he dominates the sur- roun ding environment." However, it is important to realise that the Scander- beg epoch cannot stand isolated from previous and succeeding historical pe- riods of Albanian history. However, in the end, as in all historical periods, the Albanians have showed, in a lofty manner, their bravery, their love for their fatherland and their resistance.

In the second half of the XIVth century, after the downfall of the empire of Czar Dushan, the Albanian principalities of Balshaj, Topiaj, Komnenaj and Shpataj, recovered their strength. The main towns, in which were produced handicrafts, were the commercial and cultural centres. At this time, the early seeds of political development were sown not only by virtue of the general development of the country but also in the relations with neighbouring nations, particularly concerning cross-border disputes. The feudal process of parcelling out land, that was a characteristic of the Balkans as well as the rest of Europe, began. It had the tendency to create a concentrated power throughout a country peopled by a population with the same language, culture and habits and given the ethnic name of Arberi.

It is not a coincidence that Balsha II included, under his domination, the most important commercial centre of the country, the town of Shkodra, during the years of 1360–1380, in an attempt to unite for the first time the largest part of the Albanian province; from Shkodra and Prizren to Berat, Vlora and Himara. However, precisely during this period, almost all the fortresses in the north of Albania were occupied by the Ottoman forces that had begun their invasion of the Balkan, and other, countries.

In their bid to conquer Macedonia and Albania, the Ottoman invaders met with strong Albanian resistance. However, only later did this resistance take on a more organised form and so became really problematical for the biggest and most powerful empire of

that time. This coincided with Scanderbeg leading the resistance of the Albanian people.

During the period of 1443–1449, a historically decisive change occurred in Albania that did not happen in the rest of the Balkan region. Scanderbeg, after several victories and defeats, became the leader of the country; he was a good ambassador of the country as well as with the affairs of the Ottoman army.

His experience taught him to fight against disharmony and promote the union. According to a contemporary historian of that time, Marin Barleti, when Sanderbeg delivered a speech to his fighters he said: "I have not brought you freedom, but I found it among you ..., I have not brought you arms, but I found you armed." Scanderbeg, it appears, considered the union and the support of the people as a decisive means to succeed. In the spring of 1444, he took the initiative to call an assembly in the town of Lezha. The leaders of the different Albanian provinces, that had separated and led isolated political lives even though they shared a common language, land, culture and, above all else, the common interests of the struggle against the enemy, now joined forces and founded the organ that in history is known under the name of Bond of Lezha or The faith-bond of Lezha.

This act of Scanderbeg gave him the ability, for 25 years, to repel the consecutive skirmishes, battles and encirclements undertaken by the colossal forces of Sultan Murat II and his son Mehmet.

Three times, between 1474 and 1478, by turns the biggest cannons that were known to the military of that time and which terrified many countries, failed to break the walls of Kruja. In the well-known battles *viz*. Torviolli, Drini and Uje Bardhe, Scanderbeg, professional and great tactician, waged guerrilla warfare on the Albanian oppressors. Sometimes, Scanderbeg managed to attack the enemy in their rear as they advanced from their bases in Scopje and Manstir. Scanderbeg's military skills turned the Black Drini and Upper Shkumbin valleys into a graveyard for the Turkish army that was numerically his superior.

The Turkish empire was a real danger for all of Europe at that time – even the Italian humanists tried to collectively organise themselves against the Ottomans. The Turks regarded Albania as the most suitable bridge to reach Italy. Elsewhere in Europe, events in both Albania and Hungary galvanised unity. The Albanians were showng that the Ottoman empire could be repelled. "The invasion of Europe is certain" wrote the English cavalry soldier John of Newport in 1456, himself a volunteer in Scanderbeg's army, "because there is no other power to resist should the Albanian fortress fall".

It is true that immediately after the downfall of the last fortress of Albania, in 1447, Mehmeti II feeling secure, attacked the south of Italy, fulfilling his 25 year long dream.

It does appear strange, that a small country like Albania, with few people or resources could have held out for a quarter of a century against such a super-power. Afterwards, during the time that the Albanian resistance succumbed following the death of Scander-

beg, the economy faltered and towns de-populated as the people moved from the fields to the highlands. Historians have still probably not had the final word on the Scanderbeg period either in relation to the happenings of the time or to the social situation. There is still much to learn of the man, his life, his struggles and his relations.

It's worth pointing out that until the beginning of the XVth century, Albania had the same socio-economic and cultural development as other countries of the Adriatic-Balkan countries. At this time, there was a development in both agriculture and the economy; agrarian land was increased as was agricultural trade while the towns were the centres for artisan products both for the home market and internationally. Albanian towns played an important role in the Adriatic region as a supplier of grain, salt, fish, building material from home and abroad.

In the north and north eastern part of the country, state land (pronje) was worked by peasants leaving the landowner (pronjarit) free to move around. This concept gave the Albanian language the concept of property (prone) which spread to other parts of the country.

It's important to mention the relations between Albania and its neighbouring countries because there was an understandable, mutual interest in regard to the large and incomparable force of the Ottoman Empire. Bordering countries were also threatened by Turkey and they were interested to have Albania as an ally. Therefore, Scanderbeg tried to co-ordinate his actions in Albania with the Hungarians during the period of 1443–1444, 1448 and 1456 and the Italians between 1463–1468. Different in-

.A Saranda (Photo: T. Bino).

terests and different perspectives and driven by different motives have meant that the Albanian record of this period is not in keeping with other records, particularly the Italian.

Finally, it must be said that Scanderbeg was a legendary figure and so history is often confused with legend as tales have been passed down during the years and centuries. The fantasy and the impact of the Albanian Renaissance that is far from the historical reality, has created the image for the National Hero and the legend that is Scanderbeg. Some of these legends are worth recounting.

Near to the town of Kruja, on the way to Qafe Shtame, in the gorge that is as deep as an abyss, is a large rock 'The rock of tears'. It is so named because a group of girls and women, after Scanderbeg died, and following the Turkish invasion of Kruja, tried to escape from the invaders. They held hands and near the rock jumped into the abyss. None survived.

Also after the death of Scanderbeg, men in the northern regions of the country, as a mark of respect for the death of their leader, cut the sleeves of their coats (made of a kind of felt) symbolising in this way their own arms had been cut. The coats worn by men of the north are, even today, cut in this way.

Another legend is that the Turks, after entering the town of Lezha where the remains of Scanderbeg lay, raided his grave and hung his bones on their necks as amulets in order to become as brave as he was. It is also said that Scanderbeg ordered every married couple, on their wedding day to plant one or more olive-tree saplings. This is meant to explain the number of olive-trees around Kruja, a cold place.

In a way of explaining the strength and the common greatness of Scanderbeg, legend has it that near to the field of Dosdove, scene of one of the battlegounds with the Ottomans, in front of the mountains of Pishkash, there is 'The table of Scanderbeg'. It is a big flat rock which gave the idea that Scanderbeg was even a physical giant that used the rock as his table. Even in the fortress of Petrela, there is a hole in the surrounding rocks that strangely outlines a horse and legend has it that this was Scanderbeg's horse.

Apart from all of these legends, and despite the scarcity of extant, written works from this period, there are many literary works about Scanderbeg throughout the whole Albanian historic period. The first work that is known is a historical chronicle written by Marin Barleti, a contemporary of Scanderbeg although opinion is divided about some of the biographical details of Scanderbeg that are presented. There is also a history of Scanderbeg written in verse by the famous Renaissance writer Naim Frasheri. Following independence another history was written by the scholar, translator, poet and politician Fan. S. Noli and another work worth mentioning is the poem entitled "The gift of Scanderbeg". After the Second World War, two famous literary works were dedicated to Scanderbeg, one was the novel of Ismail Kadare "The fortess" and the other "Scanderbeg" by Sabri Godo.

Other tributes have been paid through opera and film as well as by foreign writers and other artists.

CHAPTER III

The Natural Heritage of Albania

The North

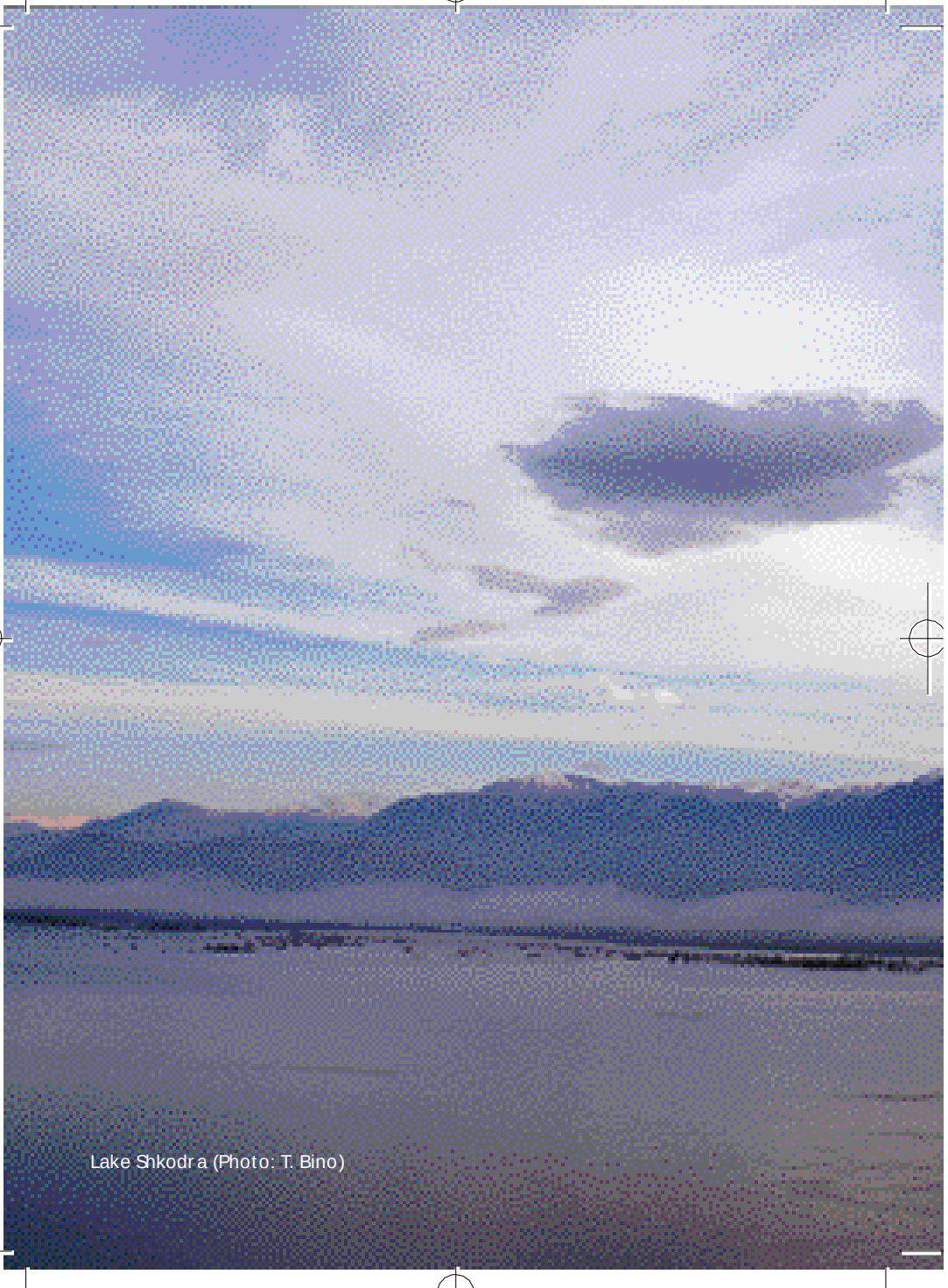
The northern part of Albania is a mountainous area and therefore called the 'Albanian Alps'. The area is composed of high mountains and deep valleys. Due to the steep slopes, there is only sparse area for agriculture in the valleys. Therefore, the region was always a ver poor area. The northern region of Albania is also characterised by freshwater ecosystems like lake Shkodra and the river Drin. These picturesque, alsmost untouched, alpine landscapes will be very attractive to nature loving tourists in the future. Almost untouched nature is still waiting for visitors to be discovered. The northern region of Albania is also characterized by the freshwater ecosystems like the lake Shkodra and the Drin river.

A Vermoshi valley, North Albania (Photo: F. Bego).

♦ Lake Shkodra

Description of the area

Lake Shkodra is located in the north eastern part of Albania, on the Albania-Montengro border. It was created through the tectonic shifts and strong movements of the earth's crust. During early historical times, the lake looked more like a river with numerous springs around itself.
It is located nearby Shkodra town and



Lake Shkodra (Photo: T. Bino)

the old fortress of Rozafat. Shkodra is one of Albania's oldest towns and, two thousand years ago, it was the centre of the Illyrian tribe of Labeats. This is the reason why this lake has had two names: Lacus Labeatus and lake Shkodra. In the area that the lake occupies today, there are many villages and gardens through which streams, originating in the mountains, meander.

Lake Shkodra is the biggest in the Balkans; its total surface area is 368 km^2, of which 149 km^2 are within Albania. During the period of its maximum level, the surface area can increase to about 600 km^2. It is surrounded by meadows at the foot of Mount Taraboshi.
The river of Moraca in Montenegro is the main supplier of the lake water along with water originating in the Alps via underground passages which form springs, or 'eyes' around the lakeside.
The beauty of these 'eyes', like Shegan, Hurdhana, Kosani and others is really amazing, especially in summer time. Early in the morning, it appears as if the 'zanas' (or nymphs) come out of the clear, deep, cold waters which are surrounded by huge calcareous stones. The river Buna is the only outflow of lake Shkodra. Just 1.5 km from the outlet, in the western side of the fortress of Rozafat, the river is joined by the river Drini. The 44 km long river Buna, which is navigable (an unusual feature in Albania), discharges into the Adriatic sea. The Buna is one of the larger Mediterranean river basins. Its annual average flow is 320 m^3/ sec, which more than doubles when it is joined by the river Drini. When the river Drini has larger than normal outflows, it blocks the outflow from the lake into the Buna, causing the lake to almost double its surface area.

A View of lake Shkodra as seen from Cukali (Photo: F. Bego).

The average depth of lake Shkodra is 7–10 m, with a maximum of about 44 m. It is sub-tropical in nature with average surface water temperatures in January of 7°C and in August of 26.4° C. The annu al average tempera- tur e of the lake is 1.4° C which is high- er than the annu al average tempera- tur e of the air. This lake plays an important role in the thermal regime of the town of Shkodra and all areas surroun ding it.

Lake Shkodra gathers water from a drainage basin of about 5,179 km², of which 1,025 km² are within Albania. The basin of the lake collects the highest rainfall in Albania; in the moun - tain zones 2,500–3,000 mm precipitation falls per year. However, paradoxically, the streams that flow from the Alps are dry because the calcareous formations absorb the water before it reaches the lake.

Flora and fauna

Lake Shkodra is characterised by a rich flora and vegetation with more than 80 species of aquatic and shoreline macrophyte plants described *e.g. Potam ogetoniacea, Cyperaceae* and *Ranunculacea*.

The flora of the lake is phylogeneticall- y and ecologically conn ected with that of the sea and coast *e.g. Najas marina*, present in lake Shkodra, is in its element in briny water.

The lake has few endemic species although it supports a considerable number of endangered plants *viz. Marsilea quadrifolia, Nuphar luteum, Nymphea alba, Trapa natans & Sagitaria sagitifolia*.

Aquatic vegetation plays an important role in this ecosystem; vegetation dominates the life forms. It is represented by numerous plant associations: at 3m depth, the association of *Najadetum*

A *Nuphar luteum* (Photo: F. Bego).

Trapa natans (Photo: F. Bego).

T *Nymphea alba* (Photo: F. Bego).

marinae is found, dominated by *Najas marina* spp; in shallower waters associations dominated by *Potamogeton spp.* are observed including *Miriophyllum spicatum* and *Ceratophyllum demersum* .Occasionally,underwater meadows of the genus *Chara* are met. The most important associations of stalked and floating plants are domi- nated by *Phragmites australis, Schoenoplectus lacustris, Nuphar luteum, Nymphaea alba* and *Trapa natans*. In some places, they invade large areas of shallow waters and wet shores. Especially beautiful are the blooming water-lilies in the shallow waters. During spring, *Leucojum aestivum* can also be seen in the wet meadows of the lake. The wooded vegetation is mostly concentrated in two zones, in Dobrac, near the town of Shkodra and in Buze Uje, from Kamica to in Shegan. These afforested areas are mostly of *Salix fragilis* and *Fraxinus ornus.*

In lake Shkodra, 49 species of fish are found. Of these, 40% are species of the family *Cyprinidae*, showing the subtropical character of the lake. Two of the most important species are *Cyprinus caprio* and *Alburnus alborella*, which are traditionally used in local cooking. Whilst cyprinids, dominate the lake, the surrounding waters – cold and clean – are dominated by the *Salmonidae* family; in the lake there are 6 species of trout. Several fish species use the lake to migrate to the sea *e.g. Acipenser sturio*, a threatened species world-wide, *Anguila anguila*, *Mugillidae* & *Alosa falax nilotica*.

208 species of birds have been observed at the lake, amongst them large numbers of cormorant (*Phalacrocorax spp*), *grebe* (*Podiceps spp*), pochard (*Aythya spp*), coot (*Fulica atra*), black-headed gull (*Larus ridibundus*) and little egret (*Egretta garzetta*). At the lakeside in summer, grebe (*Podiceps*), water rail (*Rallus aquaticus*), moorhen (*Gallinula chloropus*), coot (*Fulica atra*), whiskered tern (*Chlidonias hybrida*), little ringed plover (*Charadrius dubius*) and the little bittern (*Ixobrychus minutus*) all breed. Lake Shkodra is located on a major European migration route and during wintertime it looks like an airport with the number of birds covering its surface. Among the birds of the lake, several of them are threatened on a world scale like the Dalmatian pelican (*Pelecanus crispus*). However, rare species like the great white egret (*Egretta alba*), spoonbill (*Platalea leucorodia*), glossy ibis (*Plegadis falcinellus*), griffon vulture (*Gyps fulvus*) and Caspian tern (*Hydroprogne tschegrava*) can be found here. It, therefore, represents an important centre for the regional avifauna and can be considered as a very divers bird lake in Albania. In 1999, about 30,000 individuals were counted.

The microfauna that lives amongst the macrophytes of the shoreline is also very rich; the zoobenthos, mainly the larvae of insects, annelids and molluscs, plays an important role.

How to reach the area

From Tirana, the west side of the lake can be reached by following the national road to Shkodra. Here, the river Buna should be crossed and the road followed to mount Tarabosh where ex-

cellent views of the lake are possible. The east side is reached by crossing Shkoder and travelling in the direction of Shkoder-Hani i Hotit from where the lake can be reached from one of the many side-roads.

Attractions

Among the historical and cultural destinations that are located near the lake, the most important one is the fortress of Rozafat. The road along the mountainside of Tarabosh has an especial beauty and, travelling on this road, two picturesque villages – Shiroka and Zogaj – can be visited.
The forests of Dobraç and Buzë Uji make a relaxing resting place whilst in Kosan and Shegan the wonderful 'eyes' of this lake can be seen. Not far from the shoreline, egrets, cormorants, grebe, gulls and terns can be observed.
Continuing along the valley road of Përroi i Thatë, in the eastern part of the lake, very interesting canyons and mountain tops can be enjoyed as well as the tourist villages of Razma, Boga and Ducaj. The retaurants nearby the lake serve *Cyprinus carpio, Anguilla anguilla* and other fish freshly caught in the lake.

♦ Thethi

Description of the area

The picturesque area of Thethi is located in the centre of the Alps. Thethi constitutes the upper part of the Shala valley, through which flows the river Shala, itself a tributary of the river Drin. The source of the river Shala are

A Rural landscape, North Albania (Photo: F. Bego).

the springs of Okoli, located on the south eastern side of mount Radohima, in Thethi, 1,200 m high. This part of the river, called the river Thethi, flows into the mouth of the stream of Kapreit.
The Valley of Thethi is bordered by the Valbona valley on its eastern side and the Valley of Perroi i Thate on its western side. It is located in the middle of a circle of mountain tops – Radohima, Arapi and Alisë. Thethi looks like a trough and glaciation has played an important role in its formation. The séracs hanging from the abysses of the

slopes, even those that are devastated, constitute the starting point of many streams that flow down these slopes. The calcareous rock formations originated in the mesozoic era but were subsequently devastated by tectonic forces. The relief, in contrast, is alpine. In the village of Thethi (800 m altitude) in Mardedaj, the valley-bed gradually grows narrower and forms the grandiose canyon of Grunas, with massive calcareous formations. The valley, nonetheless, has a sandy character.

Thethi characteristically has a mountain climate and an annual, average temperature of 10° C. Winters are cold (January averages 0° C) with rain and snow and summers are cool (July averages 19° C). It is distinguished by exceptional precipitation, reaching 2,921 mm/year. The wettest season is autumn, while winter is dominated by snow which begins to fall in late autumn and remains until after spring reaching a maximal height of 280 cm.

Flora and fauna

Thethi is characterised by forests, alpine and sub-alpine pastures and meadows. The National Park of Thethi covers 2,300 ha beginning near Grunas at 760 m altitude. Between 700–1,800 m, the forest is dominated by beech (*Fagus silvatica*) on both sides of the valley. It is associated in some places with *Populus tremula, Acer pseudoplatanus, Abies alba* and *Taxus baccata*, etc. In some places *Pinus nigra* is also present. *Pinus heldreichi* is found higher than Thethi on the upper slopes of the eastern side of the valley with another stand in Okoli. *Picea abies* can be found at Qafë të Pejës, the

southernmost edge of its range in Europe. At an altitude of 760–850 m, *Carpinus orientalis, Fraxinus ornus* and *Corylus avellana* dominate.

In these places, many medicinal plants grow that are important economically for the population of Thethi.

In Thethi, numerous plants are threatened. The endemic species *Wulfenia baldacci* is found in Shtegu i Dhenve and at high altitudes, the endemic plants of *Petasites doerfleri, Lilium albanicum* and *Viola ducagjinica* all grow. Furthermore, *Teucrium arduini, Micromeria parvifl ora, Athamantha turbith and Asperulla scutellaris* all grow together with the Balkan species *Campanula albanica*. Other plants that are considered threatened like *Colchicum autumnale, Gentiana lutea* and *Atropa belladonna* can also be found here. The river that flows through Thethi is rich in *Salmo trutta marmoratus* and *Salmo trutta macrostigma*. Thethi is one of the rare places where *Salamandra atra* is found, alongside other threatened amphibians like *Triturus alpestris, Bombina variegata, Algyroides nigropunctatus, Lacerta agilis*, and *Coronella austriaca, Vipera spec.*

A Mushrooms *Amanita sp.* (Photo: F. Bego).

In the forest, resident birds include woodpeckers (Piciformes), falcons and hawks (Falconiform es) and capercallie (Tetrao urogallus). There are also some important large mamma ls: in the for- est, the brown bear (Ursus arctos); along the river, the rare otter (Lutra lu- tra); in the tops of the mount ains, wild goat (Rupicapra rupicapra) and lower down , the roe deer (Capreolus capreo- lus). In Thethi, red squirrel (Sciurus vulgaris), pine mart in (Martes martes), polecat (Mustela putorius), wolf (Canis lupus) and fox (Vulpes vulpes) can all be observed.

How to reach the area

Thethi must be visited in the warm seasons when many natural treasures can be seen. Departing from Shkodra along the national road to Mbishkodra, Koplik is reached. There, tur ning east and continuing on the road along Per- roi i Thate, 30km along this valley, the tops of mount ains can be seen, some with canyons having a depth of more than 20 m, and the pretty villages of Ducaj and Bogaj. The road then rises in Okoli of Boga and then at 1660 m Qafë e Tërthore is reachend his pass divides the valley of Përroi i

In Thethi, is also the Tower of Closs- ing, an interesting museum built at the top of a giant rock, for people that hide themselves away (in case of blood-revenge). On the western slope of the valley, higher than Thethi, and beyond the beech forest is a tourist centre.

From Thethi, other villages of the valley Shala can be visited before retur ning to Shkodra by another road that crosses the villages of Shoshi and Pult of Dukagjini.

The road then rises in Okoli of Boga Qafa e Tërthores is a view worth seeing; at this point it is like being in a helicopter looking down the Shala river where the tops of mount ains can be seen. There are also some rare plants, a lake and snow in some places. At Qafa e Tërth ores, the road descends to the village of Thethi where there are characteristic alpine houses with their wooden roofs. There are many old tr a- ditions to be observed e.g. women's dresses and men's wear, their habits and songs which can still be heard on the lute. In Thethi, there are also beech woods and a rich trout river. Climbing up toward the upper river, the springs of the river Shala can be seen. Down from the village, the valley forms a pic- tur esque canyon which can be seen crossing the bridge which leads to the large waterfall of Thethi

♦ Valbona

Description of the area

Valbon a is the largest river of the Alps. It is in the centre of the Eastern Alps and its valley is one of the most impressive places within them. The upper side of the valley of Valbona is the most att ractive part of it. At the beginn ing of the valley is the glacial trough of Vali that spreads between the tops of mount s Ali and Popluka in the south west of the Jezerca block. This trough ends at the village of Rragami. Furth er along the valley, when the river is joined by the stream

of Çerem, the valley becomes shallower, with numerous narrower and wider aspects, divided by passes. This area is carbonaceous and formed by glaciers and tectonic detachments. In this part of Valbona, the tributary of the Kukaj stream ends.

The valley of Kukaj is typically glacial, formed between the mountains of Jezerca and Kollata. The Valbona river is very impressive with its springs on the eastern slope of Qafa e Valbonës. At the waterfall of Valbona, the water disappears under the calcareous gravels of the valley. During the summer, for a distance of 7 km, until the village of Valbona is reached, the riverbed is dry because the valley is a carse. The permanent flow of river water continues again in the village of Valbona. This is the main tributary of the river Valbona. In the village of Shoshan, it is joined by the river Gashi and then

passes through the village of Bujan ultimately flowing into the river Drini.

The climate of Valbona is mountainous, with severe winters and much rain and snow (2,082 mm), frosts and strong winds; temperatures can fall to –20 °C.

.&.& Valikardhi lake – a glacial lake next to the Black lake. Bulqiza distr. (Photo: F. Bego).

.& A catholic church at Hoti village, North Albania (Photo: F. Bego).

Flora and Fauna

Valbona is one of the most afforested valleys of the Alps. The National Park of Valbona covers an area of 8,000 ha. At high altitudes (600–1,200 m) in the regions of Valbona and Rragami, beech is found. On the sandy earth from Rragami to Valbona (900–1,000 m), the magnificent forests of *Picea abies*, a floral characteristic of Central Europea, grow. It constitutes the largest area of this species in Albania.

Pinus silvestris, Abies alba and *Pinus nigra* are also represented in some places. In Valbona, many threatened species are found *viz. Achillea grandifolia, Minuartia baldaccii, Plantago reniformis, Scrophularia bosniaca, Teucrium arduini* and *Trifolium pilezii*. Among them is the endemic *Lunaria telekiana*.

In the crystal clear waters of the river Valbona, the fish are of high quality, among them *Salmo trutta marmoratus*. In Valbona, is also found *Salamandra salamandra, Triturus alpestris, Rana temporaria, Bombina variegata and Vipera spp.*

In the forests of Valbona live many different birds, among them capercaillie (*Tetrao urogallus*) and hazel grouse (*Bonasa bonasia*). They are also the home of many important mammals *viz.* brown bear, wildcat, pine martin, polecat, wolf, wild goat and roe deer. Along the river Valbona, otter can be found, feeding on fish.

How to reach the area

Some roads do lead to Valbona but none of them are good. The best way to travel is from Shkodra to Koman and then take a boat across the lake to Fierza village. The route then goes to the town of Bajram Curri town and then via Dragobi to Valbona village.

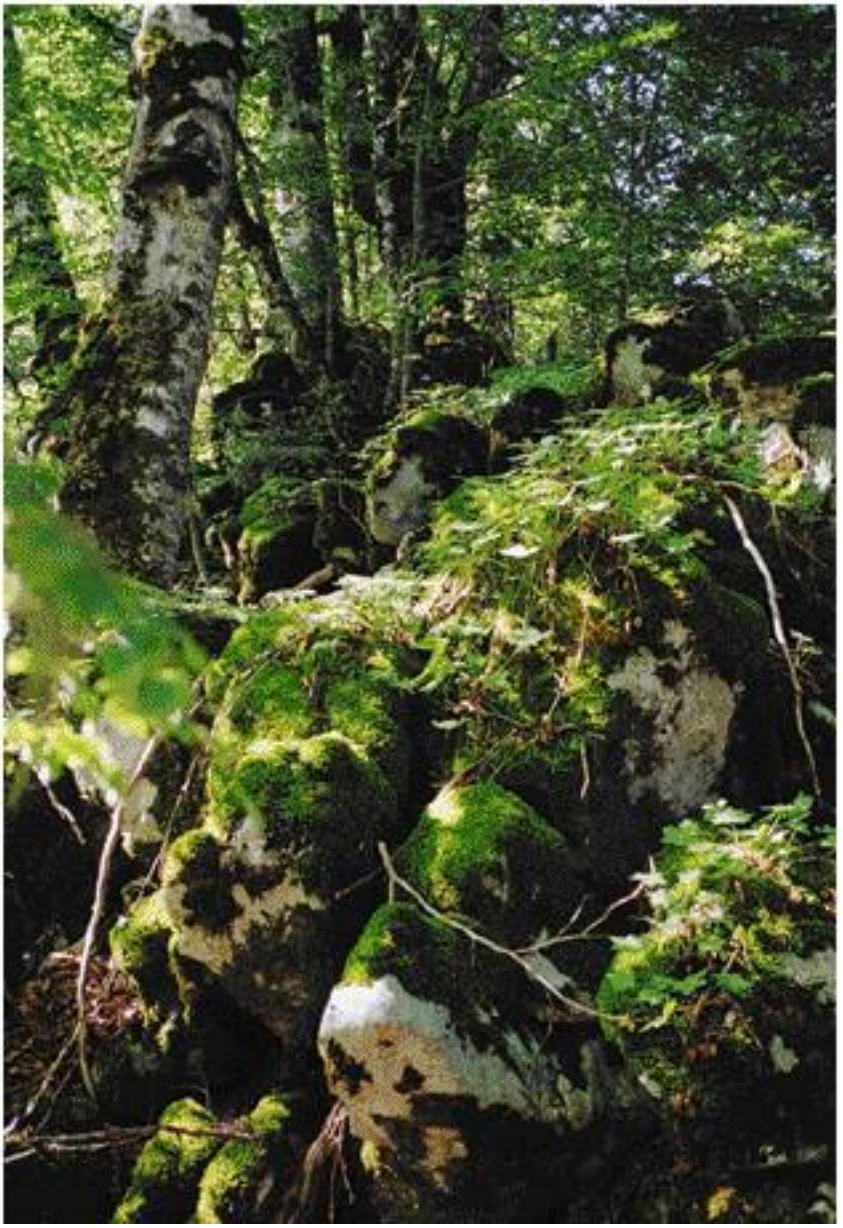
♦ Lura

Description of the area

The mountain chain of Lura is between the valleys of Drini i Zi, Mati, Serriqe and Zalli i Bulqizës. From the central part, placed between the Pass of Porta, the Pass of Komi, the Uraka valley, the Pass of Murra and Fushë Muhur -Grykë Noka-Arren, there are magnificent views. There are many mountains greater than 2,000 m in altitude as well as deep depressions that go down hundreds of metres. The area also has an interesting geomorphology. The Lura mountain chain is in the centre of the range and bordered by the valley of Lura on one side and the valley of Zall Melthi on the other.

Along this high mountain chain which looks like a crest is a structure, formed by erosion, which has the appearance of a giant arch – the Nezhda of Lura. It is on the eastern side of the Garland of Lura and is a glacial relief. Here there are many glacial séracs including the glacial lakes of Lura, the most beautiful of which are on the north eastern side. In Lura, there are 12 lakes on the eastern slope of the Nezhda of Lura. The largest ones are the great lake, the Lake of Pines, Black lake, the Lake of Cows and the Lake of Flowers.

The Lura lakes are one of Albania's pearls. As the locals say, viewed from



above on the tops of the mountains these lakes seem like eyes. The clean water, forest and sun attract large numbers of tourists. The weather is cold in winter and cool in summer; in January the average temperature is below 0° C with some metres of snow whilst in July it is 15–16 °C.

Flora and fauna

The National Park (about 1300 ha) is around the Garland of Lura, in the lakes of which are meadows of water-lilies (*Nymphae alba* and *Nuphar luteum*) that give an especial beauty to the landscape.

The vegetation is mainly *Fagus silvatica, Pinus heldreichi* and alpine pastures. In general, at heights of 1,600–1,700 m. *Fagus silvatica, Pinus nigra*, and *Abies alba* dominate whilst at higher altitudes *Pinus peuce,* and in particular places *Pinus heldreichi*, are found. Lura has a high diversity of plants with a few endemic species. There are also a number of threatened species like *Campanula tymphaea, Gentiana lutea, Caltha palustris, Achillea fraasii, Arabis bryoides, Crepis baldaccii, Metampyrum heracleoticum , Narthecium scardicum* and *Paeonia mascula.*

Lura is distinguished by the number of endemic species of molluscs, crabs and insects. It also provides habitat for different threatened birds and mammals e.g. capercaillie, brown bear, lynx, wild cat, pine martin, polecat and wild goat. In the lakes, *Salmo trutta fario, Triturus alpestris* and other animals are found.

How to reach the area

The most picturesque aspects of Lura are the lakes and forests. The road, which is not good, leads to the lakes. Here, there are no settlements and during summer only herdsmen, with their cattle, can be seen in the highlands. In Fushë-Lurë, there is one hotel with about 20 rooms.

To reach Lura from Tirana, it is necessary to take the road through Milot, Rubik, Rrëshen, Perlat, Bulqizë, Krej-Lurë, Fushë-Lurë and finally Nezhda-Lurë where the lakes are found. In Nezhda-Lurë, the lakes of Lura lie on both sides of the road.

♦ The Lagoon System of Kune-Vaine

The lagoon system of Kune-Vaine is located on both sides of the mouth of the river Drini in the district of Lezha in the northern coastal region, where, from Shengjini to the mouth of the river Mati, the coastline is low and marshy. It includes the coastal lagoon of Vaine and Ceka in the southern part of the river and Kune, Merxhani and Kenalla on its northern side. The lagoon system is 10–15 km long and 3 km wide with a surface area of about 2,188 ha, among them 1,165 ha of water, 215 ha of forest and 700 ha of wetlands.

The lagoon of Vaine itself has a total surface about 8.95 km^2 with a maximal length of 4.25 km, and width of 2.25 km. The main parts of the lagoon are Ceka (4.9 km^2) and Zaja (2.4 km^2). The

<O Inside a beach forest, placed on limestone rocks (Photo: F. Bego).

average depth of the lagoon is 0.7 m, while the maximum is 1.7 m and it is joined to the Adriatic sea through a 1.5 km long channel. They are a mosaic of brackish waters interspersed with salt-marshes, islets and reedbeds. It is bordered by a dike separating it from the drained coastal plain in the east.

The lagoon of Merxhani has a total surface of about 3.1 km², a maximal length of about 4.8 km and width of 2.1 km. The average depth is 0.75 m, while the maximum is 1.3 m. The lagoon of Kenalla is located in the north east extremity of the lagoon system of Lezha and is much smaller than the other lagoons. It receives the untreated sewage of Shengjini. Its surface is about 0.2 km², with a length of 750 m and width of 500 m. It is also deeper than the other nearby lagoons with an average depth of 4.2 m. and a maximum depth of 13.5 m.

The river Drini crosses through these lagoons before reaching the Adriatic sea. At this point, the river-bed is wide

.& View of Kune, Wetland Lezhe (Photo: F. Bego).

<O Reed beds along the Ceka lagoon – Lezhe (Photo: F. Bego).

and shallow and, therefore, during the rainy season both sides of the river overflows creating, in this way, the seasonal wetlands.

The lagoons and their surroundings are very attractive: not only do they have a Mediterranean climate and a rich variety of flora and fauna but there are many landscapes, mount ains, sea, coastal forests and the lagoons themselves. They are very important ecologically and the whole area has been designated a Managed Nature Reserve. It also has hunting reserve status.

.& *Plantathera chlorantha* (Photo: F. Bego).

.&• Alluvial forest with *Ulmus*, *Fraxinus* and *Quercus sp.* (Photo: F. Bego).

• *Orchis sp.* (Photo: F. Bego).

T *Orchis simio* (Photo: F. Bego).

Physical data

Geographic position . The wetland complex of Kune-Vaine is one of the most interesting lagoon systems along the Albanian coast. It forms part of the western lowlands or coastal plain and is formed from Quartenary deposits that are mainly of alluvial origin.

Climate . The lagoon area of Kune-Vaine is noted for its mild climate conditioned not only by the low relief, but also from the warm air masses of the sea. The west side of this zone is entirely open and is, therefore, also impacted by the penetration of cold air masses from the continent which frequently descend through the river valleys. The average annual temperature is 16.7° C with an average temperature in January of about 7° C and in July of 24–25 ° C. The lagoons receive 2,550 hours of sunshine/ year over a 95 to 120 day period; cloud appears on 112 to 118 days.

Winds are present during almost the entire year. Most frequently, the winds are from the east and north east (68%) but sometimes from the south (18.1%) and the west and south west (13.9%). The averageprecipitation/year is 1,418.7mm mostly from rainfall. Snow and hail are rare with, in general, only 3–4 freezing days. During April–October, there is much dew whilst during the December–February period there is rime.

Subterranean waters. Underground water is profuse, of high mineral quality and used for drinking water for the local population. There are 8 capillary wells of 50–70 m depth flow at a rate of 1,000–2,000 litre/ s.

Flora and Fauna. The lagoon complex of Kune-Vaine has a rich and varied flora with 277 species representing 67 families and 202 genera. The most important families are *Gramineacea* (35 species), *Cyperacea* (16 species), *Chenopodiacea* (16 species), *Legum inosae* (20 species) and *Compositae* (16 species). Of these, 16 species are endangered.

The aquatic vegetation is mainly *Zostera noltii* and *Ruppia cirrhosa* which, together with the accompanying algal species, form an important flora for oxygen production and is indispensable for the aquatic fauna. The monophytic association of *Lemna minor* form small green spots that are found mainly in pools and freshwater.

A relatively large part of the lagoon surface is covered by hygrophyllic vegetation represented by associations of *Phragmites ausyralis* (widely spread, especially in Ceka lagoon and along the shores of the river Drini), *Typha angustifolia* (growing in the flow of the Drini river and along the shores of the chann el) and *Scirpus spp.* (particularly *S. maritimus* and *S. lacustris*).

The halophyllic vegetation includes the surface plants associated with higher salt tolerance in comparison with the lagoon system of Kune-Vaine. The dominant species are succulents, amongst which the most important are:

- Associations dominated by species of *Arthrocnemum* such as *A. fruticosum, A. perenne, A. glaucum* and *Sal-*

icorna europea. These associations remain virtually throughout the year provided water in the form of rainfall and tide is present; they can disappear briefly during the summer.

- Associations dominated by species of *Juncus* such as *J. acutus* and *J. maritimus*.
- Associations dominated by species of *Scirpus holoschoenus, Sacharum ravennae, Plantago crassifolia* and *Schoenus nigricans*. These associations are fragmentary and tend to cover small surfaces, mostly in depressions between and behind the dunes.

Dune plants are another characteristic element of the lagoon system. The dunes are a narrow belt 10 km long and up to 30–40 m. wide. Their height is rarely greater than 1–2 metres. The sandy belt near the seashore is devoid of plants but pioneer species like *Cakile maritima, Xanthium strumarium* and *Salsola kali* soon appear.

Forests constitute about 200 ha or 10% of the total surface of the complex. The main forest species are alder (*Alnus glutinosa)* and narrowleaf ash (*Fraxinus angustifolia)* which reach a height of 15–20 m and are associated with a thick shrub undergrowth. Here are met numerous species such as: *Rubus ulmifolius,* hawthorn *(Crataegus monogyna) , Rosa sempervirens* and *Tamarix dalmatica*. The white poplar (*Populus alba)* cover modest areas (about 4 ha) while maritime pine (*Pinus pinaster),* stone pine *(Pinus pinea)* and Aleppo pine (*Pinus halepensis)* , with a height of 10–15 m, are found over the dunes and have been cultivated since 1970 over a 60 ha area.

Shrubs are another important component of the lagoons complex. The most important are:

- The marine species of Tamarisk (*Tamarix spp.)* found mainly in Vaine and Kune *e.g. T. dalmatica* and *T. hampeana* which reach a height of 4-5 m. In addition to these species *Vitex agnus castus and Rubus ulmifolius* are also found.
- Willow species *(Salix spp.*) which grow on the very narrow belts along the shore of the river Drini. The most common species are *Salix alba* and *Salix elaeagnos.*

The main types of plants that are present in the Kune-Vaine lagoon system:

Aquatic vegetation : *Zoostera noltii, Ruppia cirrhosa, Lemna minor*

Hygrophyllic vegetation : *Phragmites australis, Typha angustifolia, Scirpus maritimus* dhe *Scirpus lacustris*

Halophyllic vegetation :

- Associations dominated by the genus *Arthrocnemum*: *Arthrocnemum fruticosum, A. perenne, A.glaucum, Salicornia europaea, Limonium vulgare, Inula crithmoides, Halimione portulacoides, Artemisia coerulescens*
- Associations dominated by the genus *Juncus: Juncus acutus, J.maritimus*
- Assocations dominated by the genera *Scirpus, Saccharum , Plantago and Schoenus: Scirpus holoschoenus, Saccharum ravennae, Plantago crassifolia, Schoenus nigricans*

Psamophyllic vegetation : *Cakile maritima, Xanthium strumarium, Salsola kali, Cyperus capitatus, Sporobolus pungens, Echinophora spinosa, Eryngium maritimum, Medicago marina, Ammophila arenaria*

Forest vegetation :

- Associations dominated by *Alnus glutinosa and Fraxinus angustifolia: Ulmus minor, Quercus robur, Populus alba, Rubus ulmifolius, Crataegus monogyna, Rosa sempervirens, Tamarix dalmatica, Hedera helix, Smilax aspera, Periploca graeca, Clematis viticella, Lythrum salicaria, Asparagus acutifolius, Galium aparine, Agrostis stolonifera*
- Associations dominated by *Populus alba*
- Associations dominated by the species of *Pinus filiation*: *Pinus pinaster, Pinus pinea, Pinus halepensis, Rosa sempervirens, Rubus ulmifolius, Lagurus ovatus*

Shrubs:

- Associations dominated by the genus *Tamarix: Tamarix dalmatica, Tamarix hampaena, Juncus acutus, Arthrocnemum glaucum*
- Associations dominated by the genus *Salix*: *Salix alba, Salix elaeagos, Ditrichia viscosa, Lythrum salicaria*

***Pinus* species:** *Rosa sempervirens, Rubus ulmifolius, Lagurus ovatus*

Shrub vegetation :

- Associations dominated by the genus *Tamarix: Tamarix dalmatica, Tamarix hampaena, Juncus acutus, Arthrocnemum glaucum*
- Association dominated by the genus *Salix: Salix alba, Salix elaeagos, Ditrichia viscosa, Lythrum salicaria*

Fauna

Drini delta is an important over wintering site for the endangered pygmy cormorant (*Phalacrocorax pygmeus)* as well as the otter *(Lutra lutra)*. In the area of Kune-Vain as a whole, several species occur that are currently placed on the various appendices of international conventions *e.g. Rhinolophus euryale,* greater horseshoe bat (*R. ferruequinum)*, mouse-eared bat (*Myotis myotis)*, *Apodemus mystacinus,* spotted eagle *(Aquila clanga),* ferruginous duck (*Aythya nyroca)*, red kite (*Milvus milvus)* and black kite *(M. migrans).*

The lagoon system of Kune-Vaine has the status of Important Bird Area (IBA) and Specially Protected Area (SPA). Different parts of the complex also have different protected status *e.g.* Vaini has the status of hunting reserve (Managed Nature Reserve) while a part of Kune (about 300 ha) has the status of nature reserve.

This lagoon delta complex has five separate systems of coastal wetlands as well as forests, shrubs, pastures and agricultural land under culture making it an area of both national and regional importance.

In total, there are 11 species of *molluscs,* 24 species of *reptiles,* 196 species of *birds* and 23 species of *mammals.* The most studied group are the birds of which ducks (*Anseriformes)* and rails (*Ralliformes)* are the most important, forming 88% of the winter avifauna (in 1997).

Five species of grebe (*Podicipedidae)* can be found in the lagoon system of Kune-Vaine as well as species unusual for Albania *e.g.* the red-throated diver

(*Gavia stellata*) and the common scoter (*Melanitta nigra*).

The Drini delta is an important overwintering for storks (*Ciconiformes*) and in particular to the little egret (*Egretta garzetta*) whose numbers here are the highest in the country. The southern part of the Delta is one of only two winter sites for the bittern (*Botaurus stellaris*) in Albania. The duck population generally varies very much from one year to the next, although, generally dabbling ducks are commoner than diving ducks. The dominant dabbling duck is the wigeon (*Anas penelope*), with 3,736 individuals in 1997, and other species found are teal (*Anas crecca*) and shoveler (*Anas clypeata)*. Among the diving ducks, the most common is the goldeneye (*Bucephala clangula*) with 238 individuals counted in 1997.

The rails are more concentrated in Ceka (Vaine) and are represented by the coot (*Fulica atra*) with 2,039 individuals in 1997. The number of waders both in species (10 represented) and population remains generally low, the most usual species are the lapwing (*Vanellus vanellus*) and redshank (*Tringa totanus*).

The littoral zone of the Drini delta, from the viewpoint of the fauna, has a large species variety expressing the good ecological conditions of the water here. The most widespread groups are molluscs (12 species), crustaceans (56), birds (51) and mammals (3). The waters near the coast are visited by dolphins (*Delphius delphi* and *Tursiops truncatus*) while in the past monk seals (*Monachus monachus*) have been observed. Among the birds, 27 species are winter visitors, 11 species are permanent, 3 species are summer visitors and 10 species are transitory.

The wetlands of the Kune-Vaine complex are without doubt the most important habitats with more than half covered by reedbeds. These are particularly well developed in Ceke and are of considerable importance as dwelling and breeding places for many waterbirds, of most note for the bittern (*Botaurus stellaris*). In terms of the large number of individuals and species that it holds, Ceka is the most substantial single lagoon in the Drini delta with 9 species of molluscs, 11 species of crustaceans, 11 species of mammals, 120 species of birds (of which 37 species are winter visitors, 30 species are permanent, 33 species are summer visitors and 20 species are transitory) and 8 species of amphibians. Amongst the macro-zoobenthos, can be found *Hydriodes sp., Cardium edule, Balanus sp.* and *Carcinus aestuarii* (Sedentaria).

The fresh or slightly salty water of the marshes, especially those in Merxhani have a particular importance for turtles like *Emys orbicularis.* Other reptiles like *Natrix natrix* and *Natrix tesellata* are usual also found in these environs. The waters are visited by otter (*Lutra lutra*) while others use the shoreline including fox (*Vulpesvulpes*), weasel (*Mustela nivalis*) and polecat (*Mustela putorius*). The water surfaces are thickly populated by insects and several bat species like *Rhinolopus sp., Myotis sp.* and *Pipistrellus sp.* are attracted.

The lagoon system has a rich variety of fish; amongst those with economic val-

Velipoj e reserve (Photo: T. Bino)

ue are *Mugil cephalus, Lisa saliens, Lisa auratus, Lisa ramada, Dicentrarchus labrax, Anguilla angilla and Sparus sp.* There are also some endangered in the lagoons *viz. Lichia amia, Seriola dumerili, Diceutrarchus labrax, Sparus auratus, Lampetra fluviatilis, Lebistes reticulatus* and *Argyrosomus regius.*

The history of the area

This area has been populated since ancient times. The oldest dwellings date from the IVth century BC and can be seen in Lezha (the Illyrian city of Lisus from antiquity) and Shengjini (Nympheu in antiquity). In both Lezha and Shengjini islands are two, more recent rural dwellings. Excavations of the Middle Ages can also be found in Lezha. The inhabitants at these times were the indigenous tribes of Pirust and Abrenjs who were reknown as navigators.

The town of Lis was an important economic and political centre of the last rulers of the Illyrian Kingdom. It reached its zenith in the second half of the IIIrd century to the beginning of the IInd century BC with the issuance of bronze money. It was an artisan and commercial centre as well as a port. In 213 BC, it was temporarily invaded by Philip V of Macedonia and in 168 BC by the Romans after which it was included in the Roman Ilyric province. Later, in the IVth century, on the ancient walls of Acropolis, a mediaeval fortress was built. Lis continued to blossom in the VII-VIIIth centuries when the town was an important centre for salt production and trade.

It was here, in March 1444, under the leadership of Scanderbeg (see Chapter 2) that the Assembly of Lezha, where the 25 year resistance against the Turkish invaders began, was held.

In the nineteenth century, Lezha town had 3,500 inhabitants while in 1936 it had no more than 1,000. After the 2nd World War, Lezha increased in size and slowly developed. With its strategic position, as well as its numerous historical monuments (Akrolisi, the historical centre of the town, the Middle Age fortress, the Scanderbeg Memorial, the ethnographic Museum and the Churches of Shenkolli and Lleshi (dating from 1385) with their religious objects, Lezha has become an important economic, commercial and tourist centre.

The ancient town of Nimpheu grew at about the same time as Lisi. In the XIVth century, the well protected port of Meda was important in connection with the foundation of the Arber State. Lezha-island, a village in the south of Lezha, was called the Greater island of Meda in the Middle Ages. It's located on both sides of the road, parallel with the downstream of the Drini, extending from the southern extreme of Lezha town to the south west of the Hunting Hotel. During the Ottoman invasion, the area was abandoned and only during the XVIII–XIXth centuries was it re-populated, by highlanders from the Overshkodra region.

Shengjini-island, located in the south west of Lezha, has a similar history. With the arrival of the Turkish invaders, the Catholic inhabitants deserted the village to avoid coming under the influence of Islam. It, too, was re-popu-

lated at the beginning of the XVIII[th] century with inhabitants originating from Greater-Highland (Shkreli).
Near the Kune-Vaine system are located many other protected areas with interesting landscapes such as Velipoja and Kepi i Rodonit.

Main human activities

The main local activities are agriculture, fishing, hunting, industry and tourism.
Agriculture is extensive and is mostly pasture of small livestock and cattle which also occurs within the nature reserve of Kune. Both vegetables and fodder for stock are produced and considerably large areas are cultivated with wheat, used mostly for family consumption. In the last few years, cash crops, tomatoes, water melons, cucumbers, cabbages etc., are being produced. Donkeys and asses are mainly used for work and transport although there is some mechanisation.
Stock-breeding is the second most important economic activity in this area and accounts for some 35% of the income of the local inhabitants.
Fishing on the lagoons is a traditional activity and 10% of families owe their living to the riches of the water. Unfortunately, illegal fishing using explosives is common practice and fishermen commonly catch, and skin, otters.
Bee-keeping is another traditional activity and the bees can be regarded as a good indicator of a still healthy environment.
Forestry is no longer an important activity due to the reduction in the number of trees, now covering an area of

.& Velipoje reserve (Photo: T. Bino).

only about 400 ha. The wetland forests in Vaine and Kune have been damaged by fires and uncontrolled cutting.

Industry is primarily concerned with food production e.g. flour mills and fish oil although some manufacturing also takes place *e.g.* bricks and furniture.

Tourism is another important source of income and has a great potential for further development. The area has many landscape types, mountains, lagoons, coastal forests and the sea itself. The most popular region is that between the Kune lagoon and the sea embracing the coastal pine forest. There are many walks possible, fishing, rowing, skiing or just watching rare birds.

The town of Lezha has some important archaeological remains (see above). It is also known locally for its wine and other speciality drinks as well as having a rich native culture. One tourist site worth seeing is the *Hunting Hotel* (Ishull-Lezhe) with its special architecture. Built on a slope of 40° using stone and mostly pine wood and surrounded by woods, it is an oft-frequented place by natives and foreigners alike during all seasons. It has just 12 rooms with a capacity of 24 beds, good conditions, bathrooms and showers, colour TV and minibar. Water is uninterrupted for 24 hours and there is an international telephone connection. Within the complex, there are also three Danish-style villas with two double rooms (in total 12 beds). The two restaurants serve from 07.00 to 23.00 and there is a bar and one shop that sells local, artisan product. The cookery is characteristically Al- banian with sea specialities. Further- more, the staff speak English, French and Italian. Renci mountain is very green although spoilt by human use. Nonetheless, it offers an opportunity for future tourism; climbing, picnics, a small hotel and campsites.

Shengjini has a wide and beautiful beach, one of the best resorts in Albania. It offers many opportunities for a recreational rest as well as various activities like cruises, fishing, diving and beach volleyball. Restaurants and handicraft centres are also available. There is a holiday complex of 2 buildings with a capacity of 220 beds for adults and 2 buildings for children with a capacity of 420 beds. Rooms are double or for four persons with minimum amenities. There is a reading-room, library, table-tennis room, billiard-table, a ballroom, 2 volley-ball grounds, a football pitch and a place for children to play. Two, relatively large, but rather spartan, restaurants are nearby.

.& Aspects of coal production – old traditional way (Photo: F. Bego).

Nature -tourism . The lagoon system of Kune-Vaine is very suitable for eco-tourism. It offers high biological variety, rich habitats for over-wintering and breeding water-birds and fish. The coastal vegetation, autumn al colours, Mediterranean plants and pine forests create wonderful landscapes.
There are some characteristic artisan activities especially carpet manufactur e. Charcoal production for export has also recently start ed and could create a new threat to the forests.

The needs to better protect the area

The problems caused by hum an exploitation will require an urgent and effective intervention to ensure a better protection. Rigorous control is a necessity for all local activities thr ough the drawing up and implementation of an appropriate management plan. An important first step has been taken by the establishment of an Administrat ive and Management Auth ority for the area.
Many of the negative social impacts and loss of traditional values can be prevented by developing a local communities based tourism att racting visitors by promoting traditional architectur e for the buildings, wearing traditional clothes, using traditional songs and dances and serving typical foods of the region.

How to get there

Kun e-Vain e is conn ected with other coastal town s and Tirana thr ough the north-south corridor that run s from Hani i Hotit (at the Montenegrin bor-

der) to Kakavije (at the Greek border). There are good railway conn ections with Tirana, Durr esi, Vlora, Hani Hotit and Pogradec in the east. The main distances in km are:

Tirana–Lezhe	69 km
Tirana–Shengjin	76 km
Tirana–Kun e-Vain e	72 km
Hani i Hotit–Lezhe	81 km
Hani i Hotit–Shengjin	89 km

The asphalt road that conn ects the Shengjini district with Lezha is 18 km although, other, longer non-metalled roads also exist. The distance from Ishull–Lezhe–Vaine and Lezhe–Ishull Shengjin is 7.5 km but the road is not in good condition.
There is an urban minibus service connecting Shengjini and Lezha. The airport at Rinas can be used for intern al flights and there is a boat conn ection with other areas of the coast thr ough Shengjin.

The South

The South is the incomparable part of Albania, where the contrast of landscapes, vegetation belts, extremely high mountain peaks, often covered by snow, and deep valleys of cold, clear water are unequalled. Deep springs of limpid, pure water contrast with abyssal precipices where the scent of mountain tea, marjoram and trigonella penetrate the senses. This is wild and attractive nature, the living environment of diverse fauna: fish, molluscs and marine water birds, golden eagle and bear. The extraordinary shoreline reflects the blue of the seascape, the silver of the steep hills and small, gravel bays and the green of shrubs, citrus and olives. This special natural mosaic is the scene of the ethnographic treasures of an ancient people, playing the 'cula' and the polyphonic 'iso' and the scenes are of the Middle Ages with castles, grand and great, untouched and proud, symbols of life, joy, but also transition.

Albania's natural southern treasures, have been great attractions for visitors for a long time. They have been the inspiration of many Albanian poets, a subject for their poems and publications like 'O malet e Shqipërise dhe ju o lisat e gjatë …' by Naim Frasheri. Throughout history, poets and academ- ics have written about the rich arable

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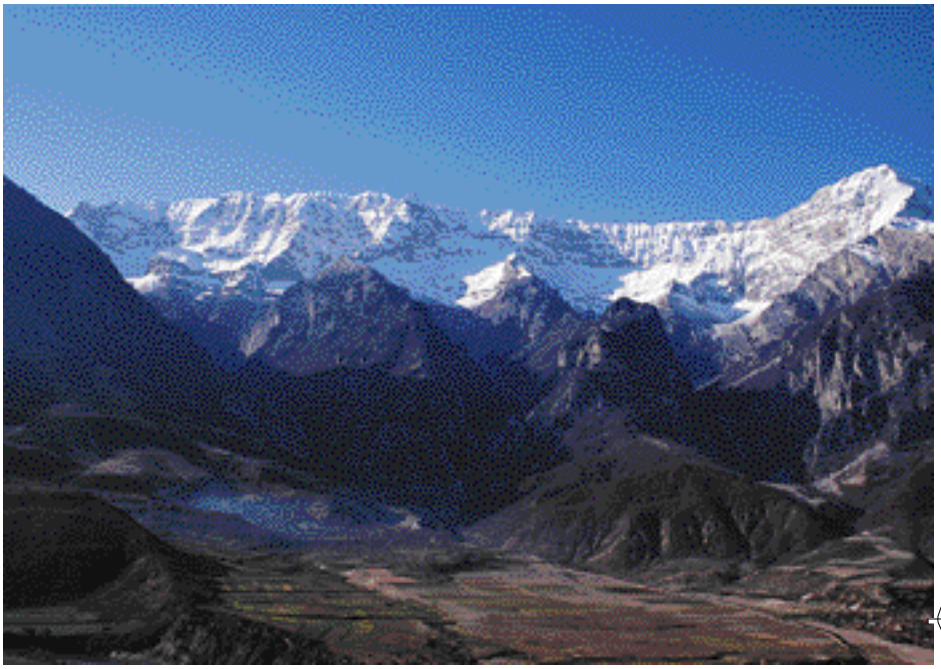


land, fertile pastures and the herdsmen of Epir and other Ilirian tribes. They described the flora and fauna and the underground riches. Visitors are surprised by the high mountain tops, rocky and steep, alternating with deep valleys of cold, clear water. The rivers of Vjosa are mentioned as a river flowing through a narrow valley between the Tomorri mountains 'with one hundred springs, that rise from its feet' (Plini, shek. I p.e.s.).

The south of Albania is a physical – geographical unit and an ethnic – cultural one too. It includes the mountains from Devolli valley in the north up to Konispol in the south, and from Leskoviku in the east up to the Ionic Coast and Adriatic (Vlora Bay) in the west. The entire area is about 13,000 km^2 with mountain landscapes, carse and a Mediterranean mountain climate. The main feature is an alternating, complex of mountain chains and valleys. Geologically Jurassic calcareous rocks (limestone) dominate forming the main mountains and river-beds whilst complexes from the Cretaceous form the mountain plains. Terrigenous and alluvial deposits are characteristic of valleys in hill complexes in the east. The landscape is characteristically mountainous with steep slopes alter-

<O Typical mediterranean vegetation with *Agave americana* (Photo: F. Bego).

.& Vijosa luginë (Photo: T. Bino).

nating with valleys, creating in some places canyons and narrow gorges. In general, the western slopes are steeper than those of the eastern side creating a typically non-symmetrical landscape. The valleys are connected to each other by passes and gorges, creating a wild, fragmented panorama; the most scenic is Këlcyra Gorge through which flows the River Vjosa.

The mountains rise directly from sea level, the highest peak is mount Drita (2,486 m) in Nemërça. Here, all the different landscapes can be found from tectonic uplifting and cutting to carse formations and cliff complexes. Carse is observed from sea level to the high mountains, but mainly distributed in the mountain ridges and mountainsides. Glaciation is isolated and seen in only 10–12 mountain tops at altitudes over 1,800 m.

Climatically, the Mediterranean has the greatest influence. The annual average temperature is 17.6° C in Saranda, 11.4° C in Leskovik and the mean annual precipitation, mainly from the west, is 1,279 mm in Saranda and 1,163 mm in Leskovik.

The climate and geology have not led

.& Alpine meadow (Photo: W. Fremuth).

<O *Romulea spec.* (Photo: W. Fremuth).

to fertile soils and most of the rocky, inclined land is non-arable. Where it occurs, it is to be found only on the hills and low mountains – a few crops and citrus, olive and grape plantations.

Flora and fauna

The flora is sparse and represented by just a few species; only in the high altitudes are there real forests. The natural vegetation is low and usually in the upper part of the valleys and hills. Much has been cleared for agricultural land or cut for construction materials and heat. Livestock grazing, especially by goats, and burning for pasture regeneration have also had a negative impact. There is now some attempts at reforestation using pine (*Pinus nigra*), Italian cypress (*Cupressus sempervirens*), sweet chestnut (*Castanea sativa*), poplar (*Populus spp.)* and the locust tree (*Robinia pseudoacacia*).

The region is covered by southern and western European vegetation albeit growing at lower altitudes in Albania. Mediterranean shrubs extend up to 800–900 m. with maquis covering the river valleys stretching eastwards to Kolonja and Leskovik. However, the area is becoming smaller because of deforestation and replacement with olive or citrus plantations. The oak zone rises to 1,200 m and covers the greater part of the eastern mountainsides. Above them lies Mediterranean pine with pines and firs and, in a smaller area (Tomorr, Kulmak and Nemërçkë), beech, at the southern end of its

& Solitary bee nest in clay brick walls (Photo: W. Fremuth).

range. Above 2,000–2,200 m lies the alpine zones of herbaceous species, such as medical and aromatic plants.

The wild, cold and dry weather conditions together with hunting and deforestation have put great pressure on the fauna of the area. Nonetheless, rare animals in the region are the brown bear (*Ursus arctos)* living in Leskovik, the Qelqa mountain and in Kokojka of Frashri; the wild goat (*Rupicarpa rupicarpa*) in Çika, Malin i Gjerë, Golik and Nemërçkë; roebuck in Kazanja, Stugara, Llogora, Tomorri, Kulmakë and Frashër; the wild cat (*Felis silvestris*) in Kreshovaa and Trebeshina; the lynx (*Lynx lynx*) in Lunxhëri; the jackal (*Canis aureus*) between Markat and Konispol. More frequently can be seen wolf (*Canis lupus*), fox (*Vulpes vulpes*), polecat (*Martes foina*), wild boar (*Sus scrofa*), rabbit (*Lepus europaeus & L. capensis*) and badger (*Meles meles*).

Of the birds, golden eagle (*Aquila chrysaetos*), rock partridge (*A lectoris graecus*), capercaillie (*Tetrao urogallos*), rock and stock dove (*Columba oenas & C. livia*) turtledove (*Stroptopelia turtur*) and quail (*Coturnix coturnix*) can all be found in the mountains of the region.

♦ Tomorri National Park (Berat)

Description of the area

Tomorri, one of the higher mountains of Albania (2,379 m), and the second highest of the chain after Nemërçka (2,416 m), rises directly above the Western lowlands between Tomorrica valley and Osumi valley. It is about 19 km long and 6 km wide. An area of 6,000 ha around the top, because of its special natural and biological values, has recently been declared a National Park.

Tomorri is a non-symmetrical mountain because of tectonic lifting; the eastern mountainside has a wide, fragmented ridge, steep-sided crests contrasting with the near vertical northern side. It was formed in the Cretaceous period and is largely calcareous with terrigenous deposits in the plain regions and valleys. There are many depressions and karstic wells both above and underground, often covered by snow during winter which supplies all the karstic springs at the foot of mount Tomorri, in Tomorricë and Osum. Sotira spring in Tomorrica forms a real river, with a narrow valley and steep slope. Tomorri also has moronic hills and glacial depressions that form alpine pastures in the crest. Descending south east from Tomorri, there are many karstic forms, culminating in Kulmaku pass (1,473 m) in the north and Siraku pass (1,360 m) in the south which border the other peaks continuing to mount Kulmaku.

Tomorri has a typical mountain climate with a cold dry winters and strong winds. The annual average temperature is –2° C and the snows which begin in October last until June/July. The summer is also, in general, fresh. The annual average precipitation is 1,800–2,000 mm on the southern mountainside and 1,300–1,500 mm on the eastern side

Flora and fauna

Vegetation has a well-defined distribution vertically. On the western side of the mountain up to 500–600 m, Mediterranean maquis including mainly the strawberry tree (*Arbutus unedo*), *Erica arborea*, *Pistacia lentiscus* all grow; an oak zone reaches to 900–1,000 m, and above this, to a height of 1,700–1,800 m, lies beech and pine; in calcareous areas more Heldreich's pine (*Pinus heldreichii*), Bosnian pine (*P. leucodermis*) are found. In the canyons and windless ar- eas of the Osumi valley, forests of Holm oak (*Quercus ilex*) and jasmine box/ mock privet (*Phillyrea media, Ph. angustifolia*) and evergreen shrubs like the strawberry tree (*Arbutus unedo*), tree heather (*Erica arborea*) and jas- mine box/ mock privet (*Phillyrea me- dia, Ph. angustifolia*) dominate.

The vegetation belts on the eastern side are different. Maquis is isolated and oak, maple (*Acer spp.*) and ash (*Fraxinus exlesior*) dominate. Forests of beech (*Fagus sylvatica*), Heldreich's pine (*Pinus heldreichii, P. leucodermis*) also dominate this area and Austrian pine (*Pinus nigra*) grows at altitude. Of great interest here is that horse chestnut (*Aesculus hippocastaneum*), an endangered and rare tree in Albania, can be found. In the valleys, evergreen shrubs and pines also grow.

The northern side of Tomorri National Park is much dryer and colder; in summer it is covered by the grassland vegetation of Mediterranean alpine pastures. The flora is rich in endemic plants like *Astragalus autranii*, and only grows in Çuka Partizani.

The habitat at lower altitudes – oak forests and agricultural lands – provides optimal conditions for the predatory wolf (*Canis lupus*) and fox (*Vulpes vulpes*) and non predators like hare (*Lepus europaeus, L. capensis*) and wild boar (*Sus scrofa*); the latter is common in arable areas, particularly corn. At higher altitudes, wild goat (*Rupicarpa rupicarpa*) and sometimes roebuck (*Capreolus capreolus*) can be found. Brown bear (*Ursus arctos*) has now disappeared despite being populous at the beginning of the century. Of the birds that live at high altitudes, golden eagle (*Aquila chrysaetos*), sparrowhawk (*Accipiter nisus*), eagle owl (*Bubo bubo*) and little owl (*Athene noctua*) can be found. Capercaillie (*Tetrao urogallus*), black woodpecker (*Dryocopus martius*), rock partridge (*Alectoris graecus*) and turtle dove (*Streptopelia turtur*) are also present.

How to reach the area

The Tomorri National Park is under the administration of the Forest and Pastures Directorate of Berat and Çorovoda where information about the mountain, how to get to it, the pathways, attractions, risks and possible problems are available.

The area can be reached following the road from Tiranë (122 km) – Durrës (92 km) – Lushnjë (37 km) – Berat. Other possible directions are from Sarandë (177 km) – Gjirokastër (121 km) – Berat, or Vlorë (81 km) – Berat. Berat is an ancient city, one of the oldest cities of the country, over 2000 years old. From the typical buildings on the slopes of the two hills, the city is called "the city of one window above the other" or "the city of a thousand windows". The "Castle" and the ancient quarter make a deep impression.

The mountain can be visited by different paths in the Osumi valley, going from Berati to Poli and up to Çorovodë. A more dangerous route is the eastern one from Gramshi straight to Tomorica Valley in Ujanik and then in the direction of Terove via the passes of Kulmaku (1,430 m) and Devries (1,300 m). There are some settlements on the way; Small Tomorri, Ujaniku, Terova and Romasi. The roads are difficult and in poor repair so particular care is needed. It is impressive to sleep outside during the summer, near a shepherd's house in the mountain; the hospitality of the people there is quite special. Comfortable rooms can be hired in hotels at Berat or Çorovodë.

In the park itself, there are no notices or signs showing the natural, biological treasures or the risks. Visitors need to be very careful, ensuring their own safety against the larger predators.

♦ Llogora National Park (Vlorë)

Description of the Area

Llogara National Park, covers 1,010 ha, and is situated in the upper part of the

Dukati valley on the northern side of Llogara Pass. This Pass, at 1,027 m altitude, separates mount Çika (2,045 m) from the coastal mountains of Rreza and Karaburun, that together makes a physical and geographical unit which is naturally valuable.

The area is special for its rich and complex landscape with steep mountains, especially the western ones, abysses and precipices, some hundreds of meters deep. Stony-bottomed streams, deep and narrow in the canyon create a wild landscape. It is well known for its caves and karstic wells that often end in karstic springs; many of the springs are at the foot of the mountains, sometimes directly welling up from the sea; others are small and spring up in the altitudes of the Park. The wild and rocky shoreline of Rreza and Karabururn, with many isolated beaches and a few small, but very deep, bays provides an outstanding coast.

From Llogara Pass you can see all of Albania's "Riviera", a huge seascape of the Ionian Sea. The position of Llogara Pass, and the entire zone, is strategic, being a transboundary point of the Southern coastal zone with the rest of the Albanian coastal zone. The placename "Lightning Mountain", mentioned since antiquity and during the Middle Ages, is still used nowadays for a part of Çika mountain. Here there is a special pathway, also used since antiquity, which is now part of the Vlore-Sarande road; it is a quite remarkable zone, well-known, a pleasure to cross and unique in Albania.

Flora and fauna

The special protected Park of Llogara includes the pine forests of Llogara, one of the most important of south-east Albania. The more common species are Austrian pine (*Pinus nigra*), fir of Macedonia (*Abies borissi-regis*), and *Pinus heldreichii*. The area has also mountain shrubs such as *Buxus sempervirens*, yew (*Taxus baccata*), holm oak (*Quercus ilex*), *Juniperus foetidisima* and holly (*Ilex aquifolium*) which create a high density, sub-forest.

The area Çike-Llogara-Karaburun in the only one where the Park's vegetative belts are well defined. This is due to the fact that there is an immediate rise from sea level to 2,000 m creating the conditions for all types of Mediterranean plants. The maquis and „Frigánea" type, with poorly growing and rare species, lie up to 700–800 m, typical species being oak sp. (*Quercus coccifera*), lentic (*Pistacia lentiscus*), sage (*Salvia officinalis*), Jerusalem sage (*Phlomis fruticosa*), rock rose (*Cistus spp.)*, Jerusalem tree (*Paliurus spina-christi*) and Spanish broom (*Spartium junceum*). Rarely does the strawberry tree (*Arbutus unedo*), oleander (*Nerium oleander*), sweet laurel (*Laurus nobilis*) and myrtle (*Myrtus communis*) thrive.

Among the rare maquis forest, stinking shrub (*Anagyris foetida*) can also be found. It is, however, endangered because it is a hard wood that is good for heat because it burns easily. It grows on the calcareous, rocky slopes just like the almond tree (*Amygdalus webbii*) and wild pear (*Pyrus amigdaliformis*). This shrub belt also maintains

annual grasses and perennial plants *e.g.* beard grass (*Andropogon sp.*) and Mediterranean blueball (*Scilla maritima*) which is found along the Ionic Rivera.

On the steep slopes of the western mountain sides of Çika, Rrëza and Karaburun , rising directly from the Ionian Sea, the most important species is macrolep oak (*Quercus macrolepis*), a typical tree growing to a height of 20–25 m, creating forests forming a belt at 400–900 m. Within these forests can be found other rarities such as holm oak, turkey oak and stinking shrub. Lower down can be found maquis with species like Jerusalem sage (*Phlomis fruticosa*), sage (*Salvia officinalis*) and oak sp. (*Quercus coc- cifera*).

Outside the immediate area of Llogara, pine communities are very rare. They lie between 800–900 m and 1,700–1,800 m height and the most common ones are Macedonian fir (*Abies borissi-regis*), Austrian pine (*Pinus nigra*) and Heldreich's pine (*P. heldreichii*). There are few broadleaf trees apart from field maple (*Acer pseudoplatanus*) in Çika, and horse chestnut (*Aesculus hyppocastanus*), wild hazel (*Corylus colurna*) and manna ash (*Fraxinus ornus*) at over 1,500–1,700 m.

Mediterranean sub-alpine meadows lie at over 700–1,800 m; the main reason why they cover such a small area. There are many grass species and some characteristic shrubs of the Mediterranean such as short junipers (*Juniperus nana, J. communis alpina*) and wild rose (*Rosa mollis, R. glutinosa*). There is also the endemic species of St. John's wort (*Hypericum hapllophyllioides*) in Çika and Llogora. The higher moun-

.& Karaburun peninsula (Photo: T. Bino).

tain peaks – Çika and Qorrja – are bare of vegetation.

The area has wolf (*Canis lupus*), fox (*Vulpes vulpes*), polecat (*Martes foina*), and wildcat (*Felis silvestris)*. The rarer species are wild goat (*Rupicarpa rupicarpa*) and roebuck (*Capreolus capreolus)* which inhabit the wildest and highest parts of the mountains. Wild boar (*Sus scrofa*) is very common, and characteristic, of Karaburun, but hunting, de-forestation, and the creation of drainage channels in the Dukati marshland at the foot of mount Rrëza are causing it to disappear.

Of the important birds, rock partridge (*Alectoris graecus*) are common living in large groups in many areas. There are golden eagle (*Aquila chrysaetos*), griffon vulture (*Gyps fulvus*), egyptian vulture (*Neophron percnopterus*), raven (*Corvus corax*), sparrowhawk (*Accipiter nisus*) and eagle owl (*Bubo bubo*) on mount Çika.

The coastal waters are clear with a high biodiversity and in them can be found dolphin (*Delphinus delphi* and *Tursops truncatus*), and possibly monk seal (*Monachus monachus*) in the bays and caves of Rrëza and Karaburun.

The National Park including all the forest and meadow areas falls under the Forestry Directorate of the Vlora administration which is a branch of the National Forestry Directorate. Both institutional strengthening and prevention of corruption are needed for these national treasures to be protected. It has been suggested that the whole Çikë-Llogora-Rrëzë-Karaburun - Sazan massif should be declared a National Terrestrial-Marine Park.

How to reach the area

The National Park lies about 54 km from Vlora City and is connected with an asphalt road. The possible routes are: Tiranë (147km) – Durrës (118 km) – Vlorë, or Sarandë (170 km) – Gjirokastër (114 km) – Vlorë, or Sarandë (133 km) – Himarë (76 km) – Vlorë. Today, there is no longer a tourist agency in Vlora for an excursion to the Park and the surrounded areas although this can be offered by different tourist agencies in Tirana (by bus or hire car).

In order to fully appreciate the park, a night stopover and visit for more than one day is recommended. Roads throughout the area are not in very good condition and are very narrow in some places. Vlora city, or ex-House Holidays in “Cold Water Spring” make excellent, comfortable bases where the local delicacies of baked lamb and cold beer or wine, home made cheese and yoghurt, fresh and tasty, can be enjoyed. Permission to climb mount Çika should be obtained from the Forest Directorate in order to ensure the safety of the visit.

.& Narta (Photo: T. Bino).

Attractions

From Vlora to Orikum, tourists can admire the scenic landscapes and seascapes. In Vlora, between the "Cold Water Spring" and the "Castle" there are important undersea springs which are still used as the city's water supply. Dukati Valley, at the foot of mount Rrëza by Orikum, is special for the fish *Sparus aurata*. The coastal bay is known as Pashaliman, the name of an ancient harbour. The marshland and surrounded hills (actually included in a military zone) cover the remains of the ancient city of Orikum including an ancient amphitheatre. There is also a Middle Age church over the hill, in the eastern part of the valley.

From Dukati to Llogora Pass, there are vertical belts of vegetation. At the Pass, there is a tree which is resistant to the strong southerly wind, the Juga. It is called "Flag Pine", and is a now a Natural Monument, symbolising the adaptation of the living world to changing natural conditions. From this Pass, there is a wonderful panorama of Vlora Bay and the Ionic Rivera.

In the Park, there is, as usual, no information for tourists about the area or wildlife. It is particularly important that visitors do not pick rare or endemic plants or disturb animals or birds. Strictly controlling problematic visitors who hunt or damage the natural environment would help to conserve the nature values.

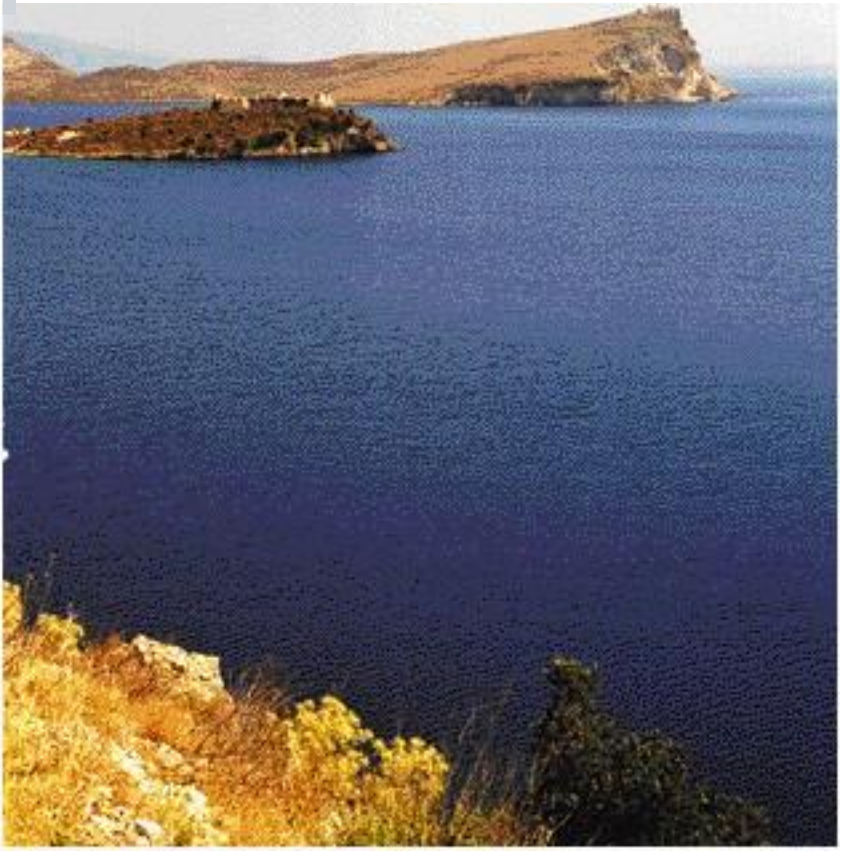
Another place well worth a visit is Narta Lagoon where a number of small, wooded islands are located, one of which houses a Middle Age church.

♦ The Ionic Rivera or "The Coast"

Description of the area

The area known as „Bregu" (The Coast), is a characteristic, physio-geographic unit, a very attractive and interesting region. At the same time, it is also a typical ethnographic unit of "laberia" with its own original, diversity of culture, customs and folklore. The area extends along the Ionic Rivera, from the western side of Çika mountain to the village of Nivicë-Bubar. It has a representative geology, geomorphology, climate and vegetation. The typical Mediterranean climate is the main factor influencing the soil, vegetation and hydrography. Nonetheless, the area has been greatly influenced by humans as a result of the importance as a tourist centre.

„Bregu„ is composed of limestone formations and is a typical karstic landscape of steep slopes, sink-holes and bare areas. The green terrigenous hills and valley from Borshi to Nivicë are being eroded. More attractive, is the mountain river gravel valley, with its wide deposition cone, beautiful beaches and huge fields, the most important and typical of which are Borshi or Qeparoi. Nowadays they are planted with citrus, olives and grapes. From the west side of Çika mountain, the "Dry Stream" flows which passes through the southern part of Llogora creating a deposition cone, the greatest and the most intact natural cone of the whole Adriatic-Ionic coast, as it falls to the sea. The shoreline is one of the most beautiful of the Ionic coast, full of contrasts; bays and rocky capes; high,



wave-cut cliffs and numerous grottos. The landscape is characteristic of the Albanian Ionic Rivera, but especially so from Dhermiu to Himara.

The Ionic sea modifies and freshens the dry, hot summers and warms the cool, wet winters. This makes the region a "climatic oasis" different from the other Albanian coastal regions. There are more sunny days per year (up to 136 clear days and 2,442 hours of sun shine) and the temperature rarely falls below 10° C, in summer reaching 25° C. The annual average rainfall is 1,370–1,570 mm per year but it does not fall regularly, in some cases the precipitation is up to 300 mm in 24 hours. Water sources are few, mainly karstic springs, the biggest being in Borsh and Lukove.

Flora and fauna

Mediterranean maquis covers mainly the brown-grey soils. The characteristic vegetation in the dry rock areas is Mediterranean *Schlephyllis* maquis although it has been largely destroyed (garriga or frigana) and is rare in species with few species at higher altitudes. It is composed of communities of kermes oak (*Quercus cocifera*), which forms rounded garlands because of over-grazing, fires or harvesting of fuel wood, accompanied by Jerusalem sage (*Phlomis fruticusa*), sage (*Salvia officinalis*), juniper (*Juniperus oxycedrus*), heady thyme (*Corydothymus capitatus*), rock rose (*Cistus spp.*) and

Jerusalem tree (*Paliurus spina-christi*). Diverse and species rich Mediterranean maquis covers entire hills and the wet mountainsides from Borshi to Nivica with different types of maquis replacing each other. The dominant species are lentic (*Pistacia lentiscus*), strawberry tree (*Arbutus unedo*), myrtle (*Myrtus communis*), tree heather (*Erica arborea*, jasmine box/ mock privet (*Phillyrea angustifolia*), oleander (*Nerium oleander)*, sweet laurel (*Laurus nobilis*), Spanish broom (*Spartium junceum*) holly (*Ilex aquifolium*), wild olive (*Olea europaea var. sylvestris*), judas tree (*Cercis siliquastrum*), cornelian cherry (*Cornus mas*) and monk's pepper tree (*Vitex agnus castus*).

Rare trees of this area are carob tree (*Ceratonia siliqua*) and shrubby gomphocarp (*Gomphocarpus fruticarpus*); the latter being found only in Qeparoi and in Borsh field. Tree spurge (*Euphorbia dendroides*), however, is common in Himara and Qeparoit. The commonest tree growing at altitude in the maquis belt is macrolep oak (*Quercus macrolepis*) which forms rare forests near Borshi, Piqerasi and Himara. In

<O Porto Palermo. Ionian coast of Albania (Photo: F. Bego).

Landscape of rocky coast of Ionian Sea (Photo: F. Bego).

stream valleys and shaded areas, holm oak (*Quercus ilex*) can be found whilst in the shrub land, Italian cypress (*Cupressus sempervirens*) grows. Grassland plants like Mediterranean blueball (*Scilla maritima*) and beard grass (*Andropogon sp.)* of great age are very common here. Tropical plants are also represented: *A lianthus glandulosa* in Borsh, the sea fig, an attractive plant, is widespread, the agave in Palermos bay, even fruiting bananas.

How to reach the area

The same inter-city route that goes to Llogora national Park, the Vlorë–Himarë–Sarandë road is recommended. During the journey, there are possibilities of tasting fresh fish and baked meats. Although there is no information office yet, one is to be established in the city.

A narrow, asphalt road, joins all the small villages passing from one landscape to another. The "bends of Llogora" extending from the Pass (about 1,000 m) to Palasa, above the coast offer magnificent, unforgettable views. Characteristic stone villages stretch in the steep slopes amongst the rocks with important centres of ancient culture; old churches, Middle Age castles etc.

♦ "Blue Eye" (Delvinë)

Description of the area

In the southern part of Muzina Pass on the eastern side, arise about 20 springs through limestone caves, 45 m below Drin valley, with water flows of an average 18 m^3/s. It is thought that they

.& Oleander (*Nerium oleander*), a typical Mediterranean shrub (Photo: F. Bego).

<O *Euphorbia dendroides* (tree spurge) common in the south in the region of Himore and Aeparait (Photo: F. Bego).

supply a large underground lake that drains all the groundwater of "Mali i Gjere" massif and Drino valley. The principal, freshwater spring (flowing at 6 m^3/s) is called "Blue Eye" (Syri i Kaltër) from the deep caves where the spring originates. It is a clear, beautiful, blue, green colour with a constant temperature (12.6–12.9 °C) eventually forming a river with lush, aquatic vegetation around the hills.

The waters of Bistrica springs have formed an artificial lake since 1963 and, via a mountain tunnel, power two hydro-electric turbines, a very important energy source for the region. The area is covered by common, vegetation such as oriental plane (*Platanus orientalis*), willow (*Salix sp.*), horn beam (*Carpinus betulus, C. orientalis*), tree heather (*Erika arborea*) and evergreen shrubs that comprise the vegetation of the lake shores, around the spring and along the river bed.

Bistrica springs are part of the Delvina

.& Blue Eye, nature monument (Photo: F. Bego).

Karstic springs of Borshi, Saranda distr., *Adiantum capillus-veneris* (maiden-hair fern) (Photo: F. Bego).

meadow, the only catchment area of the South. It is surrounded by hills and mountains which are connected to other areas by tectonic erosion passes, of which Muzina pass (570 m) is the most important. Through this pass, the metalled road connects the catchment of Drino valley and Gjirokastra to other parts of Albania.

The mountains are, in general, limestone and the hills and meadows are terrigenous. Descending from Muzina village, there are deposits of "terra rossa" some hundred metres wide. These are heavily eroded creating a magnificent scenic landscape full of streams and bare patches with a reddish colour. The mountain crown creates a karstic landscape; steep slopes and a rigid surface. There are also caves and deep abysses.

This is the warmest area of Albania, about 343 sunny days or over 2,700 hours of sunshine in a year (the annual average temperature is about 16-17.7° C). The annual average precipitation is about 1,300–1,350 mm in low-lying areas and up to 1,650–1,770 in the mountains. Low temperatures and snow are rare in the lowland.

Flora and fauna

The climate tends to unify the vegetation of the area. which is most frequently Mediterranean shrubs and oaks. Evergreen maquis are found around the springs such as lentic (*Pistacia lentiscus*), strawberry tree (*Arbutus unedo*), sweet laurel (*Laurus nobilis*), heady thyme (*Corydothymus capitatus*) and red juniper (*Juniperus oxycedrus*). Other shrubs such stinking shrub (*Anagyris foetida*), judas tree (*Cercis siliquastrum*), monk's pepper tree (*Vitex agnus-castus*), cornelian

.&.& *Orchis spec.* (Photo: F. Bego).

.& *Daphne oleoides* (Photo: F. Bego).

 Possidonia oceanica (Photo: F. Bego).

cherry (*Cornus mas*), Jerusalem tree (*Paliurus spina-christi*), mixed with kermes oak (*Quercus coccifera*), Spanish broom (*Spartium junceum*) and jerusalem box/mock privet (*Phylliriea media, Ph. angustifolia*) lie between 600–800 m or 1,000 m. They are accompanied by Mediterranean forests of macrolep oak (*Quercus macrolepis*), manna ash (*Fraxinus ornus*) and holm oak (*Quercus ilex*).

Oaks usually lie from 800–900 m to 1,100–1,300 m although the most important and common tree is macrolep oak (*Quercus macrolepis*) which creates rare forests but often at low latitude (up to 100–200 m). Other oaks are downy oak (*Quercus pubescens*), oak sp. (*Quercus frainetto*), Trojan oak (*Quercus trojana*), turkey oak (*Quercus cerris*), holm oak (*Quercus ilex*) and sweet chestnut (*Castanea sativa*). In the isolated valleys are Mediterranean fir communities mixed with maple (*Acer sp.)*, ash (*Fraxinus ornus, F. exelsior*) and hornbeam (*Carpinus betulus, C. orientalis*). Sometimes there is also Heldreich's pine (*Pinus heldreichii, P. leucodermis*) on the limestone slopes of Pylloi mountain and Heckel's rose (*Rosa heckeliana*), buckthorn (*Rhamnus rupestris*) and oil garland flower (*Daphne oleoides*) can be found in the sub-alpine pastures.

The fauna in the mountainous area is rich with species such as wild boar (*Sus scrofa*), rabbit (*Lepus europaeus,*

& Aquatic and riparian vegetation at Bistrica Lake (Dhrovjan), Delvina (Photo: F. Bego).

L. capensis), badger (*Meles meles*), jackal (rare, *Canis aureus*), wolf (*Canis lupus*) and fox (*Vulpes vulpes*). Deep in the mountains, it may still be possible to find roebuck (*Capreolus capreolus*) and wild goat (*Rupicarpa rupicarpa*) although, according to some sources they may be locally extinct.

How to reach the area

The "Blue Eye" can be reached by the road going through Muzina Pass: Tiranë (277 km) – Durrës (247 km) – Tepelenë (77 km) – Gjirokastër (45 km) – (Bistricë) Delvinë; another interesting direction passing through the same pass is Korçë (240 km) – Ersekë (195 km) – Përmet (107 km) – Tepelenë (77 km) – Gjirokastër (45) – Bistricë (Delvinë). Through them there is the possibility to visit Tomorri (Berat), or Vjosa Valley (Përmet), and Drino valley (Tepelena and Gjirokastra).

At Muzina Pass (570 m), there are two scenic landscapes: the Drino valley with the western side of mount Lunxhëri in the east, and the Delvina catchment in the west. Below lies the blue artificial lake and, between the steep slope and limestone rocks, there are the springs. Lower down, in the valley, immediately after the remains of a salt mine (Dhrovjan), the road passes above the dam and after about a hundred meters ends at the spring.

Saranda is connected to Greece, by ferry to Corfu, and by road to Himara. From Vlora, the route is Vlorë – Sarandë (159 km) – Bistricë (Delvinë) (16 km) passing along the "Bregu" Ionic Rivera. The road passes Krane bridge separating Bistrica and Delvina, two hydro-electric power stations, along the artificial riverbed on the left and the old riverbed on the right as well as the ancient church of Mesopotami and remains from antiquity near Finiq village.

There are few snackbars at "Blue Eye" (Syrin e Kaltër) but they do serve fresh trout from the lake. The night can be passed in Saranda (16 km), facing Corfu, where an attractive Ionic landscape can be enjoyed. There are historical and archaeological Middle Age settlements in the city centre and information is available either in the Municipality of Delvina or Saranda.

♦ Ksamil-Butrint Region (Sarandë)

Description of the area

If the shoreline from Saranda to Çuka Hills is followed, the rocky peninsula of Ksamil is reached. The mountainsides rise slowly from the Ionic Sea to Lake Butrinti (234 m) and the population of Ksamil is spread over the karstic plain peninsula. There are four rocky islands, a product of tectonic uplifting, 60–500 m from Ksamili Bay

which are covered by common Mediterranean shrubs. Over the limestone rocks extend schlerophillic shrubs named "garriga" (or "frigana"), poor in species and lying in the lower altitudes. They consist of communities of kermes oak (*Quercus coccifera*), Jerusalem sage (*Phlomis fruticosa*), sage (*Salvia officinalis*), red juniper (*Juniperus oxycedrus*), heady thyme (*Corydothymus capitatus*), broom (*Cistus sp.)* and Jerusalem tree (*Paliurus spina-christi*).

There are evergreen Mediterranean shrubs on the terrigenous slopes, especially on the low steep slopes falling to lake Butrinti, such as lentic (*Pistacia lentiscus*), strawberry tree (*Arbutus unedo*), myrtle (*Myrtus communis*), tree heather (*Erica arborea*), Jerusalem box (*Phillyrea angustifolia*), oleander (*Nerium oleander*), sweet laurel (*Laurus nobilis*), Spanish broom (*Spartium junceum*), holly (*Ilex aquifolium*) and wild olive (*Olea europaea var. sylvestris*). Often other deciduous shrubs like the judas tree (*Cercis siliquastrum*), cornelian cherry (*Cornus mas*) and monk's pepper tree (*Vitex agnus-castus*) are found.

In the archaeological centre of Butrinti, there is abundant vegetation, where the above species are mixed with trees such as holm oak (*Quercus ilex*) or other oaks. In contrast, the vegetation of the north eastern hills has little

.& Lake of Bufi (Sanranda distr.) (Photo: F. Bego).

<O Ancient town of Butrinti, Unesco-site (Photo: F. Bego).

schlerophyllic maquis and there can be found the rarity macrolep oak (*Quercus macrolepis*). Along the seaside there is Italian cypress (*Cupressus sempervirens*) and among the grasses, there are Mediterranen blueball (*Scilla maritima*) and beard grass (*Andropogon sp.*). Natural, tropical plants, such as sea fig (*Opuntia ficus-indica*) and agave (*Agave americana*), are domi- nant from Çuka up to Ksamil.

Lake Butrinti, is connected to the Ionic Sea by the Butrinti channel (2.9 km long), through tidal activity. It has a surface area of 16.3 km^2, being 7.1 km long and 3.3 km wide with a mean depth of 14 m increasing to a maximum 21 m. The lake, as well as the catchment area, was formed in the quaternary period. It had originally been a sea bay into which flowed the rivers Bistrica and Kalasa. However, silting over by the River Pavllo created a lagoon similar in its physical, chemical and biological parameters and similar to other Mediterranean lagoons.

The Lake is typically mesotrophic with a well-mixed surface layer to a depth of 7 m. Below this depth, mixing is reduced, creating a layering effect between the surface and bottom waters. It has a high salinity and is partly anaerobic.

The lake is famous for the blue mussel (*Mytilus galloprovincialis*) and fish such as *Dicentrarchus labrax, Mugil cephalus, Sparus aurata* and *Aguilla anguilla*. The marshland area, Vurgu Plain, is connected to lake Butrinti and the mountainous zone of Mursisa, north of the Ionic Sea. Within the marshland, water plants like reed (*Phragmites communis*) can be found and forests populated with elm (*Ulmus campestris*), manna ash (*Fraxinus exlesior*) and willow (*Salix sp.*). It is very important for water birds but also for malaria infection.

How to reach the area

Ksamili and Butrinti are about 13 km south of Saranda. Following the route to "Blue Eye" (Syrin e kalter) and Delvine, Saranda can be reached 16 m further away. The road going to Ksamil passes along the coast. At the end of Çuka Hill, is the artificial Çuka chan-

.& Traditional fishing practices in coastal lagoons (Photo: F. Bego).

<O *Arbutus unedo* and *Erica arborea* – Mediterranean maquis (Photo: F. Bego).

nel flowing from Bristica to the sea. Along the narrow pathway passing the foot of the mountain, agave grows and schlerophyllic maquis and other shrubs cover the area. In September, the beautiful flower Mediterranean blueball (*Scilla maritima*) is blooming. The road than passes through terraced olives and citrus trees from whence a wonderful panorama of the blue sea with Corfu can be seen.

Lake Butrinti and Vurgu Plain lie on the eastern side with the Plain of Mursisa in the south. In the sheltered areas of the lake, oysters are cultivated. The archaeological centre of the ancient city of Butrinti lies a little southward of Ksamil on the left side of the road; over the hill there is a Middle Age fortress; there is also a small museum in a part of the town called "Ugolini Tower" set up in the thirties by an Italian archeologist. On the other side of Butrinti channel, there is another Middle Age fortress.

In Butrint and Ksamil there are restaurants and bars with oysters and fresh fish in summer; in Delvina, fish soup with olive oil is a speciality. Saranda, where there are comfortable motels, is a good venue to overnight or in Çuka in ex-holiday homes.

♦ Vjosa Upper Valley (Përmet)

Description of the area

The area extends to the upper part of the mountainous Valley of Vjosa, an interesting place from a geological point of view, scenic landscape and biodiversity. In this narrow and fragmented valley, the river Vjosa, the biggest river in South Albania and springing from Pindi Mountain in Greece, flows. The valley from Mesarea, to the Albanian border, up to Dragoti in Tepelena, rises from 600–800 m up to 1,700 m with strong, steep slopes and horizontal, fragment- ed landscapes. There are river terraces along the valley, especially on the right side. One of these, Piskova terrace, on the right side of the valley, has an Ilyrian settlement where archaeological remains have been discovered.

The River Vjosa has been re-directed from Këlcyra to Dragoti and deviates from east to west. As it passes through Këlcyra Gorge, which is 13 km long, narrow, and 1,000 m deep, the river separates four mountain chains: Trebeshina from Dhëmbeli and Shëndëllia from Lunxhëria. The Valley collects the water of the karstic springs from the two mountainsides, the biggest being "Black Spring" "Uji i Zi" in Këlcyra.

The Valley is not symmetrical with a smooth right side, draining a system of rivers and streams, with steep slopes and great soil erosion on the left, the Nemërçka and Dhëmbel Mountains.

On the right side of valley, 8 km northwest of Permeti, lies the Valley of Lengarica which separates Dangëllin from the western side of the Lëskoviku region. The river flows along a narrow, 2 m bed for several km, flowing through limestone blocks and creating many channels with numerous caves and grottos in the canyon sides. These are connected to

each other by channels, the most famous being Pullumbi cave, on the left side, which has archaeological and natural artifacts; the materials unearthed indicate a prehistoric settlement. The two sides of the River Lengarica, in Benja, are full of thermal springs. They have a temperature of about 30° C and are sulphurous with a high concentration of minerals. The waters are believed to have great curative powers.

Following the metalled road along Vjosa valley, appears the large massif. There are 3–4 mountain peaks over 2,200 m, the highest being Dritës (or Papingu) peak at 2,486 m, which is also the highest in southern Albania. The eastern side of Nemërçka hugging Vjosa is quite steep, has wild landscapes and is asymmetrical. It is impossible to pass through it and it is used partially as summer pasture for grazing. The western side of the mountain is dry, bare and regular.

The area has a mountainous, Mediterranean climate. Warm air masses from the sea pass through the valley making the climate warmer. This is the main reason why evergreen trees such as strawberry tree, jasmine box/ mock privet and holly are able to grow; the same factors create the ideal conditions for figs, bajames and shegës and, in isolated areas, olives can be cultivated.

& The mountain road to Hotova national park (Photo: F. Bego).

The area falls under the administration of Permet municipality. The people there cultivate vegetables and grapes and the wine and rakia of Permeti are famous. It is the birthplace of the Frasheri brothers, famous Albanian writers, and the songs of Permeti are known throughout the country.

Flora and fauna

The vegetation is species rich, the valleys, especially, are covered by Mediterranean shrubs such as the strawberry tree, tree heather and oak, alongside other shrubs like judas tree and stinking shrub. The forests are mainly found in the valleys and other more isolated areas, on wet soils. The more common trees are oak and hazel and, less commonly, pines and beech. Beech grows in small areas, mainly in Nemër„ka, which is the limit of its southern range in Albania. The steep, limestone slopes are poor habitat for forests which have also suffered from systematic over cutting and fires.

On the western side of Kokojka mountain, there are pine and fir forests, mainly of Austrian pine. Here, there is a special forest called "bredhi i Hotovës" (Hotova forest) with Macedonian fir (*Abies borissi-regis.*); this species is a relic of the large, ancient forests and is resistant to climatic changes, especially warmer weather. It covers 1,200 ha and has recently been declared a National Park.

Along the bed of the river Vjosa, grow oriental plane and willow trees. In a part of it, uniquely, (between Leskoviku and Kelcyre) *Arbutus andrachne* can be found; the only place in Albania

& Gecko (Photo: R. Iliev).

where this shrub grows. Together with maquis *Quercus pubescens*, field maple, lime, hornbeam, and *Ostrya carpinifolia* can all be found. The Trebeshinë and Dhëmbel mount ainsides provide rich summer pastures and near villages, winter pastures also.

The more common animals are wolf, fox, polecat, wild cat, rabbit, and roebuck. In the forest of Hotova, bear can rarely be found. The more common birds are rock partridge, golden eagle, turtle dove and rarely capercaillie.

How to reach the area

The asphalt road Tepelenë-Përmet-Leskovik passes all of the Vjosa Valley described above. The valley can be visited starting at Kelcyra gorge on the following inter-city routes: Tiranë (217 km) – Durrës (187 km) – Fier (84 km) – Tepelenë (42 km) – Përmet; Vlorë (121) – Fier (84 km) – Tepelenë (42 km) – Përmet; and Sarandë (114 km) – Gjirokastër (62 km) – Tepelenë (42 km) – Përmet. These roads pass the upper part of the Vjosa Valley, with its curved river bed and, starting at

Saranda, the Valley of Drino (Gjirokastra and Tepelena), "Blue Eye" "Syri i Kal-tër" (Bistricë) can all be visited. In Tepelena, near Dragot village, the road curves towards Këlcyra Gorge and after 20 km via the valley, Përmet City is reached.

It is also possible to approach Përmet from the east via Korçë (133 km) – Ersekë (88 km) – Përmet. These roads are metalled but quite narrow and mountainous. Although there are extraordinary views of the mountains and valleys, it is necessary to drive extremely carefully because of the dangerous road.

Permet City is a most comfortable place to stay overnight and eat. The area is known for its hospitality and all the villages and the city people have their own special traditions. If the visitor wishes to visit places beyond the made up roads, it is recommended to take information that can be found in Permeti Municipality or in the Permet Forest and pastures Directory it is also recommended, in such areas, to use local people of the area as guides.

<O Old woman (Photo: R. Iliev).

♦ Drino Valley (Gjirokastra-Tepelena)

Description of the area

This area includes Gjirokastra and Tepelena as well as the Drino Valley including the most important branch of the river Vjosa. The valley, itself, lies between mounts Malit të Gjerë and Kurveleshi and mounts Lunxhëri and Bureto and is 60 km long from the Greek border at Kakavije to Tepelena.

It is thought that the valley, in its central part, was once a lake, about 45 km long, stretching from the Greek border to Hundëkuq, near Lekël Village at Tepelena. This part is nowadays wide and symmetrical and can be admired from Muzina pass right through to Jorgucat. Limestone rocks hug the left side of mount Malit të Gjerë and many mountainous streams have created gravel deposition cones. Their right side has been eroded and is now irregular. The last part of the valley, the id Dropulli plain is 7–10 km wide. The lower part of Dropulli, from Hundekuq to Vjosa, is quite narrow with terrigenous slopes so steep it is not possible to stand.

The valley is under the influence of warm and wet winds from the sea, as

well as cold continental winds blowing from the higher altitudes. There are 137 rainy days in the area (sometimes with a daily precipitation of 318 mm) and 35 cloudy days on average each year although cloud is a principal fea- tur e of the area. The high precipitation and groun dwater ensure the river Dri- no flows all year.

Karstic springs are the main sources of the water supply for urban, industrial and agricultura l needs. In Gjirokastra, at the foot of the mount ainside of Malit të Gjerë, springs Viroi, the water of which originates from a cave. The waters collect in an artificial scenic lake which can be viewed from a near- by comfortable resting place. The river

.& ??? (Photo: •••).

Man selling his haravest of olives (Photo: R. Iliev).

mouth has a high water flow during the winter but less during summer.
On leaving Tepelena, near Dragoti bridge at the curve of the Përmeti road, there are some karstic springs called "Cold Water Spring" "Uji i Ftohtë" which are currently used for producing fresh drinks. The landscape around the springs is very green and attractive and the tourist here may have a rest and enjoy the breath-taking panorama. In south east Gjirokastra, there are the Glina Springs which, being low in minerals, are used as a source of mineral waters for commercial use.

Flora and fauna

The common vegetation communities are shrubs and oaks, distributed in different areas such as the Upper Dropulli (mainly shrubs) and Lunxhëri (shrubs and oaks). The lower part of the valley has greater vegetation cover because of the hilly landscape. In the river bed and surrounded areas, there is oriental plane (*Platanus orientalis*), willow (*Salix sp.)*, oriental hornbeam (*Carpinus orientalis*) and other shrubs. Re-forestation is taking place in some areas to prevent soil erosion but in other areas, crops and tree plantations have replaced the natural flora. Forested areas are rare because of overcutting.

Culture and history

The valley, since antiquity, is one of the most populated areas of Albania. On the lower slopes of the mountain and hills around the valley are several villages. They are characteristic of the area and form a well-defined ethnographical unit *e.g.* Dropulli (Upper and lower), Rrëza, Lunxhëria, Kardhiqi and Kurveleshi. The region has three important cities *viz*. Gjirokastra, Tepelena and Libohova. This area is the birthplace of many historic and cultural personalities as well as famous artists of Albania.
In Tepelena, the castle was home to Ali Pashë the monarch of south Albania during the Ottoman regime (shekulli 18-të * duhet saktësuar). The town and villages in the surroundings are known for their hospitality, folklore and colorful original, national costumes.
Gjirokastra is one of the major cities, attractively situated on the slopes of Mali i Gjërë. It is known as "stone city"; the locals being masters of stone which is the common element of both the houses and very narrow stone roads called "sokak" in the parochial dialect. This museum-city is an urban ensemble with a characteristic architecture. The ancient Castle of Argjiro stands out above the city and houses the national Museum of Weapons, a collection of all the kinds of weaponry used and produced by the Albanians from early times. The Castle is, at present, also a folkloric festival centre not only for the south but for all Albania.
In "Qafën e Pazarit", is the Museum of the First Albanian School and an Obelisk in honour of the Renaissance. It is symbol of the survival of the Albanian language and culture during different periods. In the city centre, the museum of the Topulli brothers, with its architectural values and historic

treasures of the Albanian resistance during the Ottoman invasion, can be found. The ancient mosque "Qafa e Pazarit" is also an important building.
The region is distinguished for its contrasts of different cultures and peoples as well as its nature. It is a mosaic of gjirokastrite cultures a thousand years old, the Greek culture of Dropulli and Pogoni villages, and laberia cultures of Kurvelesh. This is reflected in the dialects, songs, musical sounds and tools, national costumes, wedding and funeral habits. The gjirokastrit people are calm, gentle, willing to help and generous. The people are reknown for their polyphonic songs and dances and the sounds of their instruments, the "buzukut" and "culës dyjare".

How to reach the area

The area is linked with all the national roads of southern Albania. The main Kakavi-Tiranë road which joins Albania with Janina in Greece passes through the area. The main Tirana-Saranda road also does so via the Muzina Pass.
The routes to the valley from Tepelena are: Tiranë (232 km) – Durrës (202 km) – Fier (118 km) – Tepelenë (32 km) – Gjirokastër; Vlorë (114 km) – Tepelenë (32 km) – Gjirokastër; and Korçë (195 km) – Ersekë (150 km) – Përmet (62 km) – Tepelenë (32 km) – Gjirokastër. The latter road first passes the Tomorri National Park (Berat) and the upper valley of Vjosa (Përmet) as mentioned above.
From Greece, there are several routes possible: Janinë (128 km) – Kakavi (69 km) – Gjirokastër (32 km) – Tepelenë; or via Sarandë (64 km) – Gjirokstër (32) – Tepelenë. Another interesting route is the one going through Vjosa Valley (Përmet): Follorinë (Greece, about 340 km) – Kapshticë (about 230 km) – Bilisht (222 km) – Korçë (195 km) – Ersekë (150 km) – Përmet (62 km) – Tepelenë (32 km) – Gjirokastër. Possible places to eat are "Cold Water Spring" (Uje i Ftohte) Tepelena, and "Viroi" in Gjirokstër and hotels can be found in the centre of Gjirokastra City.

The East

The Balkan peninsula accommodates a real treasure of biodiversity and culture: the three lakes Ohrid, Greater and Lesser Prespa.
Sun, fresh air, a mild climate and clean water – surely this must be paradise. Yes, this is the region of the lakes Ohrid and Prespa in the triangle of the three countries Albania, Macedonia and Greece, with Albania the only country bordering all the three lakes. Here, high in this mountainous border area are the best conditions for spending excellent holidays.

The two Prespa lakes lay at an altitude of 850 m above sea level. The same elevation as the Korça plain, so called after the Albanian provincial capital Korca, through which flows the river Devoll draining the area down to the Adriatic sea. The river Devoll had, in earlier times, a natural connection to the Lesser Prespa lake. During springtime when the water level of the Prespa lakes rose due to the melting snow and heavy rainfalls occurring at this time, the water from the lake flowed into the Devoll river and thence to the Adriatic sea. However, in the sixties, the Albanian authorities decided to construct a channel in the river, operating it year round, diverting the waters to the lake and using it as a reservoir for irrigating the area around Korca in the rainless, summer period.
This area was also swampy in earlier times, the river Devoll and its underground waters forming at that time a lake – the Maliq lake – which played host to the largest pelican colony in the

Balkans. However, it has been drained to provide the agricultural land which is now being irrigated in summer time with the waters from the Prespa-lakes. However, in spite of this severe encroachment on the ecosystem by the former Albanian authorities, the area of the three lakes has largely kept its natural beauty. Embedded in mountains, the three lakes lay peaceful in their basins with almost no motorboats disturbing the calmness.

The clean water of lake Ohrid and the pleasant climate attracts a lot of visitors inviting swimmers to bathe during the hot summer period when the heat in the plains down at the shore of the Adriatric sea is unbearable.

The 350 km² large Ohrid lake is an oligotrophic fresh water lake which means that the lake water contains few nutrients. This results in very clear waters which allow the lake bottom to be seen at a depth of 30 m. Such nutrient poor lakes are quite rare on earth since most of the existing oligotrophic lakes have been enriched with nutrients emitted by humans. This process of eutrophication is caused by sewage, agricultural fertilisers and other sources of pollution. The same fate endangers lake Ohrid but international support is now helping to stop this process and, for example, sewage waste treatment systems are being constructed or are under construction around the lake.

.& ••• (Photo: F. Bego).

<O Turtle (*testudo hermannii*) (Photo: W. Fremuth).

Footprints of Brown Bear (*ursus arctos*) (Photo: F. Bego).

The lake is very deep. At its deepest point, close to the eastern ‚Macedonian side it reaches over 300 m where the high Galicica massif stretches to the sky reaching an altitude of almost 2,200 m. This massif and its extension in Albania, the Mali Thate or Dry Mount ain, divides the Ohrid basin from the Prespa basin, lake Prespa lying 160 m higher than lake Ohrid.

The two imposing karstic mount ains do not completely block the water flow between the thr ee lakes since there are large un dergroun d streams flushing down from the Prespa lakes to the lake Ohrid. The lakes are fed by two large fresh water springs. One lies on the Macedonian side, the Sveti Naum Springs, named after the old monastery which has now been guarding the springs for a millenium. The second spring lies on the Albanian side

.& Prespa lake (Photo: M. Schneider-Jacoby).

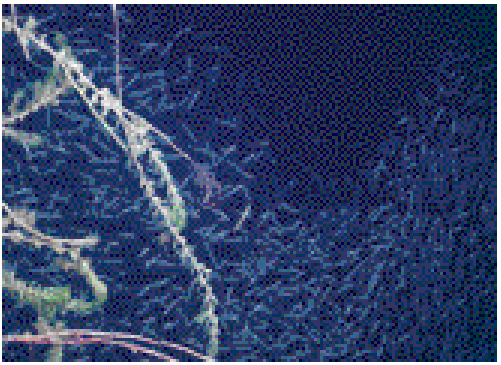
<O Fisherman, Prespa lake (Photo: M. Schneider-Jacoby).

approximately 10 km away at the foot of mount Mali Thate: the Drilon Springs.

This spring site was used by the former Albanian communist leader Enver Hoxha as a summer residence. Three buildings have been constructed on small islands, formed by the spring, and in the surrounding area. After Hoxha's death, the buildings were handed over to the state owned tourism enterprise Albtur ist who opened a restaurant in one of the buildings. The area has been well protected but the buildings were destroyed during the March riots in 1997. At present, the EECONET Action Fund together with Albanian NGO's are trying to conserve and protect the spring site as a natural habitat.

Pogradec, population 25,000, is the provincial capital at lake Ohrid and during the communist era, it was a summer resort for Albanian workers. Several hotels and labour holiday resorts were constructed along the road to Macedonia via Tushemist. Unfortunately at present, most of the accommodation has fallen into disrepair and been partially destroyed during the 1997 riots.

However, at present some private accommodation and private hotels have



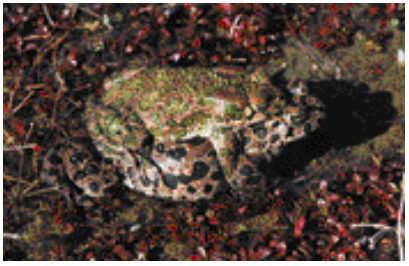
been reconstructed with an acceptable standard and moderate prices and are ready to accept guests. A number of restaurants along the road leading to the peninsula of Lin in the North have been constructed without permission or any observance of potential environmental problems caused by their construction.

The peninsula of Lin has been inhabited for a long time; it is said that the village was once a former control post along the Via Egnatia. The ruins of an old basilica constructed in the 5th and 6th century AD

.& Prespa lake, fishes (Photo: M. Schneider-Jacoby).

<O *Bufo viridis* (Photo: M. Schneider-Jacoby).

T *Chondrostoma nasus prespensis*. Endemic fish of the Prespa Lake (Photo: M. Schneider-Jacoby).



bear testimony to an old civilisation. The basilica was only discovered in 1967 and became famous for the excellently preserved mosaics on the floor. At present the ruin can be visited and, by prior arrangement with the local authorities, the mosaic can be viewed.

The mountains bordering lake Ohrid on the western side were once covered with natural, mixed deciduous forests consisting mainly of oak and beech trees. However, in the vicinity of Pogradec an impressive natural chestnut tree forest still remains, the trees having an age of over three hundred years.

It is now precisely these areas along the western side of the lake which are under most human pressure. Most of the forest ecosystems have now been degraded by intensive grazing of goats and sheep and harvesting of wood for fuel. The threat to the remaining afforested areas with their shrubby trees is being accelerated by the new privatisation process. Even the ancient chestnut tree forest has been privatised and the new owner has already logged vast areas of the old trees to merely provide firewood. Such use is neither economical nor ecologically sustainable.

Strong efforts have been undertaken to protect the remaining forests and convert the degraded areas to a more natural situation again. The Albanian NGO PPNEA, together with Euronature and the financial help of the German Government through their development agency GTZ, has been successful in establishing a large landscape protected zone along the mountain chain bordering the western side of the lake. This protected zone comprises an area of more than 27,000 ha.

The mountain chain included in this protected area is called Mokrra. Here, also, traces of an ancient civilisation can be found. Midway between Lin and Pogradec in the vicinity of Gradishta-Selca, there is an ancient rock cemetery dating from the 3rd century BC. A hill embedded in a valley of the Mokrra massif hosts several graves partly cut into the rocks and partly constructed as houses.

<O.& Remnants of an oak forest (Photo: W. Fremuth).

<0 Oak tree forest, core zone, Prespa National Park (Photo: W. Fremuth).

&. Prespa lake (Photo: W. Fremuth).

 Chapel of St. Mary (Photo: W. Fremuth).

Hermit chapel of St. Mary in Gllobok o near Bezmishti, Greater Prespa lake

The Prespa lakes, their natural beauty and their values regarding flora and fauna, conserve many cultural and historic values which may be considered as one of the most important factors in this region for tourists. There are many prehistoric settlements, churches and hermit chapels. The hermit chapels with their exceptional construction, contain many square metres of Byzantine murals and post-Byzantine paintings. The monuments of Prespa are numerous but those situated in Albania are, for many reasons, much less known.

The hermit chapel of St. Mary is located near the Macedonian border, inside the slope of a high rock, 1/3 of which some years ago was under the lake. Maybe this was the reason for the people to call it "Gospodca na globoko" (St. Mary in the Deep). In two natural cavities, one above the other, two alcoves were built by the hermits. The lower alcove was used as a church, the other as dormitory for the hermit. Years ago, in order to reach one of the alcoves from the other one, it was necessary to first descend to the lake and then go up. Now, the lake has receded and it is no longer necessary.

The interior of the church is entirely covered by paintings and there we find the ordinary Byzantine programme of the period. Platitera in the upper area, Evangelism beside it and on the rocky dome are, in order, scenes like Christ in heaven, Christ's entrance to Jerusalem etc. Some paintings are similar to those of St. Mary's church on Maligradi isle. There are some interesting scenes like Christ's lamentation, and of St. Alexander-called Akinidton from Siria. The inscription on the entrance says that "the temple is painted with the efforts and expenses of the monk Parthen" "në kohën e igumenimit të gjithëoshënar ieromonak Paisi, ktitorit".

K. Kallamata

South East Albania

Following the winding road of the famous via Egnatia and its side roads towards neighbouring south-eastern countries, different scenic landscapes can be admired: mountainous panoramas, magic lakes, hidden lakeside beaches, plains – few in number but rich in history – settlements of ancient civilisations, Byzantine churches, an ancient cemetery, handmade, mastercraft mosaics etc.

The extraordinary nature of this area has been the inspiration for many of Albania's famous writers. Lasgush Poradeci said of lakes Prespa and Ohrid "…and it is a poor man that wanders far away and never comes back again…"

Physical characteristics

The southeast part of Albania includes lowlands, valleys, canyons and mountains, lying north-south, 110 km in length, and east-west, more than 50 km wide, and covers an area of about 5,000 km^2.

The southeastern canyons and surrounded mountains are geologically complex. From a geological perspective, this region includes carbonaceous composites, mainly Triassic, Jurassic and Cretaceous limestone, limestone; igneous rocks of the middle Triassic; an ophitic belt creating large massifs and high landscapes; and rocks of the Oligocene, Miocene and quaternary period. The area is quite fragmented geomorphologically: there was a strong uplifting during the Neolithic period and further shaping by outside factors during their continental development.

The younger lowlands at Cëravë, Kolonjë, Korçë, Pogradec, Prespë, Përrenjas which were formed during the Pliocene-Quaternary period show strong fluctuations, descending frequently (Korçë, Pogradec, Përrenjas) but later showing uplifting (Kolonja, Prespa lowlands), completely changing their shape.

The climate is principally continental with low temperatures during winter (some of the lowest temperatures of

the country occur here). Sheqerasi and Vithkuqi (Korçë) experience some of the lowest temperatures. The annual average temperature varies between 7–10°C, although above 1,300 m it is only 3–6° C and even lower in higher places. The January mean temperature in the lower areas is from –1° C to –2° C and –5° C to –6° C higher up. The minimum in low areas is usually from –10°C to –13°C although in cold winters it can fall to –25° C. Generally, 150–200 days every year experience ice at the higher altitudes. In August, the mean temperature varies between 16–18 ° C although in the higher peaks it is only 12–14°C.

This part of Albania has a low total precipitation, varying from 900 to 1,200 mm and higher on the western mountainsides and rain falls on only 100–110 days each year. Precipitation during summer is particularly low. The first snows fall at the beginning of December, sometimes October and November, and continue to the beginning of April. On average, snow falls on 50–60 days each year to a depth of 30–40 cm, although this can be 1.5–2 m on the higher peaks

.& Gora Highland (Photo: F. Bego).

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The physical and geographical features divide the area into different zones: the lowlands of Korça, the lowlands of Përrenjasi, the plains of Pogradec, the watershed of Greater Prespa and Lesser Prespa, the plains of Kolonja, Upper Devolli valley, Upper Shkumbini Valley, Mokra Highland, Gora Highland, the mountains between Shkumbini valley and Devolli valley, the highlands between Devolli and Upper Osumi, Kolonja Highland, the mountains of Shebeniku and Jabllanica-Belica and Mali i Thatë.

Flora and Fauna

There is a great number of diverse species in the flora of the south east which is characterised by both mid-European and Mediterranean members. In general, the vegetation is represented by large-leafed and evergreen trees,

and in higher latitudes by sub-arctic pines. In the highest altitudes of the region, alpine meadows can also be found in Mali i Gramozit (mount Gramozi) and in the Mali i Thatë mountains (Dry mountain). The vegetation belts of this region lies much higher than their southern Albania counterparts because of the colder climate. Real forests here are few and lie at the high altitudes. It is apparent, however, that this zone has been greatly impacted in the last few years as trees have been cut to create arable land and to use the wood unsustainably and uneconomically for fuel and construction material. Overgrazing is compounding the problem and the vegetation is now changing.

The oak belt lies at 700–800m sometimes 1,000 m and there are several different types such as: Turkey oak (*Quercus cerris*), Trojan oak (*Quercus trojana*) and downy oak (*Quercus pubescens*) growing together. There are other large-leaf trees as well as oak such as: Mediterranean horn beam (*Ostrya carpinifolia*), black horn beam (*Carpinus orientalis*), maple-tree (*Acer obtusatum*) and manna ash (*Fraxinus ornus*).

Beech (*Fagus sylvatica*) grows at 900–1,000 m and right up to higher reaches of the forest at 1,900–2,000 m with more lush vegetation compared to other parts of Albania.

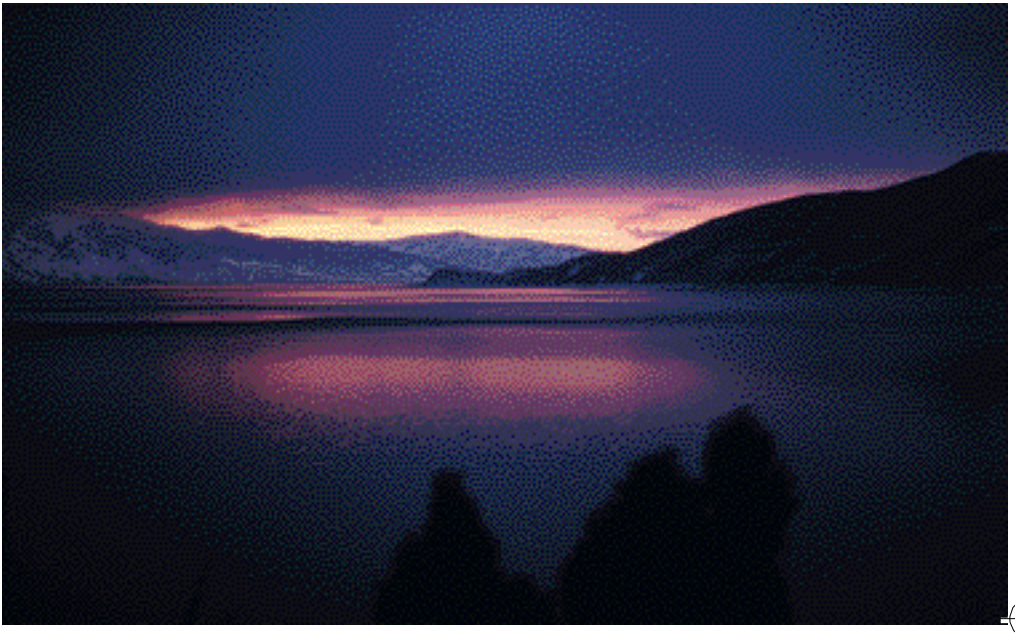
Of particular interest here is the mountain pine (*Pinus heldreichii*) and Macedonian pine (*Pinus peuce*) in Mokër, Guri i Topit and Gramoz.

Large mammals can still be found here: bear (*Ursus arctos*) in Bishnica Forest (Pogradec), Mali i Gramozit, Mali i Thatë, Morava and Bredhi i Drenovës, wolf (*Canis lupus*) in the entire region and quite numerous recently in Mali i Thatë. Other animals present are fox, roe deer, wild boar (*Sus scrofa*), wild cat (*Felis silvestris*), lynx (*Lynx lynx*), marten (*Martes foina*), rabbit (*Lepus europaeus, L. capensis*) and badger (*Meles meles*). Of the birds, golden eagle (*Aquila chrysaetos*) and rock partridge (*Alectoris graecus*) occur in the entire mountainous area of the region whilst rock dove (*Columba oenas*) and stock dove (*C. livia*) can be found on the steep slopes and caves as well as turtle dove (*Stroptopelia turtur*) and quail (*Coturnix coturnix*). The distribution of these animals is affected not only by the difficult climatic conditions but also unregulated hunting and de-forestation.

♦ Prespa National Park (Korçë)

Description of the area

In the area of the Prespa Lakes, there are numerous mountain peaks with the highest peak of Mali i Thatë (Pllaja e Pusit) at 2,287 m. They are mainly calcareous from the late Triassic and Jurassic period with some from the Cretaceous and terrigenous deposits from the Eocene and Pliocene periods. In the southern part of the area, the Rakicka and Llapishti highlands dominate with Mali i Ivanit at 1,763 m standing out with its characteristic peak formed by tectonic fluctuations. Surrounded by these high mountains lies the Prespa Lakes with a surface



area of 27,750 ha. Due to their special natural and biological values, they have recently been proclaimed a Na- tional Park by the Albanian Govern - ment.
The basin of the lake, as well as the overall relief, is generally quite steep. The lake has on the Albanian side deep cut, but shallow, bays like Akoll Cape and Gollomboçi peninsula and Kallamas, Goricë e Vogël and Pustec.
The greatest part of the watershed is hilly and mount ainous, the steep sides hu gging the lake in all directions. In a few areas such as Zaroshk, Pustec, Gollomboç, Goricë e Vogël, Kallamas, Shuec and Zagrodec of Lesser Prespa, the bays and shoreline plains are quite flat but generally the area is steeply mount ainous. The hilly relief from the north ern border to the south ern one, and south east of the watershed inclines 8–10°, up to a maximum 45°, seen at Mali i Thatë, Mali i Ivanit and mount Vejskovarit (1,532 m).
The Prespa watershed has a typically mountainous, Mediterranean climate. The winters are cold, 2.8° C, with much snow and ice and the summers are cool and wet, averaging 18.8° C. These temperatures mean that the annual, average temperature is only 10.6° C.
The Greater Prespa Lake, lying at 853 m, has a coast line of about 150 km, including many capes, being 26.3 km long and 26.6 km wide. In contrast, Lesser Prespa Lake, lying between Zo-

.A Sunrise at Prespa lake (Photo: W. Fremuth).

gradec and Shuec, is small measuring 10.6 km by 6.6 km. Greater Prespa is a deeper lake, the average depth is 18 m but it reaches about 54 m. It contains 5.2-milliard m^3 water! The total watershed of the lake is 1,425 km^2. The main input of water to the lake is atmospheric precipitation (about 760 mm) which, partly, falls as snow. It evaporates at a rate of 664 mm/year.

Through Wolf Gorge (Grykës së Ujkut), the lake is connected to Devolli Valley which is surrounded by high mountains and steep slopes, some nearly vertical. Treni cave, lying close to the lake, is below the level of the water. The surrounding mountainsides are sparsely vegetated with low shrubs and gravel stream out-falls form small deposition cones as they flow to the lake.

The intensive discharge of Greater Prespa Lake to Ohrid Lake occurs underground, Prespa being 160 m higher than Ohrid. The most important connection is Zaveri, southwest of Prespa, near Gorica Village. Here the water gushes out at a rate of about 16 m^3/sec. The water in Prespa circulates from its surface to the bottom resulting, every year, in the deep layers of water being oxygenated. The water of Prespa is colder than Ohrid because of its higher altitude and shallowness and during the winter, the waters are intensively mixed. Temperatures during wintertime sometimes go down to 0° C, and in some cases, during extraordinary cold periods (most notably February 1928 and January/February 1989) the surface freezes to a depth of several centimeters.

Flora and fauna

The vegetation of this area shows great diversity because species are represented from mid-European, Alpine and Carpathian regions. On some of the passes and gorges Mediterranean vegetation grows whilst at higher altitudes rare pines associated with the sub-Arctic.

Large leaf trees are generally dominant here with Turkey oak (*Quercus cerris*), Trojan oak (*Q. trojana*), downy oak

(*Q. lamigiuesa*), Mediterranen horn - beam (*Ostrya carpinifolia*), horn beam (*Carpinus orientalis)*, field maple (*Acer campestre*), maple (*A cer obtusatu m*) and mann a ash (*Fraxinus excelsior*) forming mixed woodlands between 1,000–1,400 m high. These woodlands are now being cut with the leaves being used as winter animal food, the wood for fuel and timber for constru ction.

The beech belt occupies only small, isolated areas, above 1,500 m, mainly in the south and south east because of the altitude and climatic conditions. Austrian pine (*Pinus nigra*) stands grow on the poorer groun ds. Alpine pastures occur in a belt between 1800 - 2000 m and are used for summer graz - ing. They consist of grasslands plants and shru bs such as small jun iper (*Juniperus nana*), roses (*Rosa spp.*) and medicinal plants.

On the western and south-western sides of the hills and mount ains, in the passes and isolated gorges aroun d the lakes, box-tree – a Mediterranean ma- quis shru b – grows as a rarity. Else- where, brier (*Paliurus aculeatus*) ex- tends over all the hills frequently mixed with other shru bs, sometimes amongst the sub-forest oaks or as a separate commu nity. The other shru bs foun d here are wild pear (*Pirus amyg- daliformis*) and different varieties of hawth orn.

The faun a of the area is poor in rela- tion to other areas of Albania. This is largely due to the disappearance of the

forests combined with harsh ecological conditions – climate, altitude and lack of water. There are now few species present and most of them are endan- gered. The bear is now largely extinct and foun d only at high altitude above the oak belt; wolves are also rarely sighted now, generally in the summer months. The most common carn ivore in Prespa National Park is the fox. The commonest herbivore is the rabbit (*Le- pus europeus*), flourishing as a result of

... Prespa lake (Photo: W. Fremuth).

.A ••• (Photo: •••).

Anthericum liliago (Photo: W. Fremuth).

the newly created arable land growing wheat and alfalfa. Rare, but interesting, birds of the area are rock partridge, quail, rock dove and golden eagle whilst several species of reptiles such as snakes still keep a foothold.

The lakes are, however, reknown for the populations of water birds which visit them, particularly on migration, but also as over winterers. Perhaps the most important species are the Dalmation pelican (*Pelecanus crispus*) and pygmy cormorant (*Phalacrocorax pygmeus*) but many species of duck also regularly use the lakes. Of particular importance, are the shallow parts of the three lakes which are used as feeding areas, especially to bottom feeders, and, where reeds occur, as breeding grounds. Unfortunately, the reed beds have been largely destroyed along the Albanian shoreline. Nonetheless, a census carried out in January 1999 by specialists from Albania, Macedonia and Greece on the Greater Prespa lake reported 37,050 birds of 27 different species, and on the Lesser Prespa Lake, 2,055 birds of 26 species. The majority of these species were from Scandinavia, the Baltic and North Russia *e.g.* the black throated diver (*Gavia arctica*) and a number of threatened species.

Fish species are also most valuable in this aquatic ecosystem with endemic species like the Prespa barbel (*Barbus meridionalis prespensis*), the bleak (*Alburnus albidus prespensis*) and the nose (*Chondrostoma nasus prespensis*).

There are also a great variety of amphibians, and frogs are particularly notable *e.g.* the tailless frog (Ecaudata) and marsh frog.

How to reach the Park

Prespa National Park falls under the administration of the Forest Directorate of Korca. It can be reached by following the main Tiranë-Korçë road (178 km) and then the road from Korçë to Zvezda Pass (20 km). From Greece, the road Bilisht-Zëmblak-Zvezda Pass should be taken to reach the Park, and from Macedonia, the Park can be accessed in Stenje-Goricë.

Attractions

Treni Cave in Lesser Prespa Lake is worth visiting and is situated on the western shore of the lake nearby Tren village. Objects discovered at the cave date from the Bronze Age**.** An iron age fortress was constructed over the cave and can also be visited. At Trajani Castle, one the biggest prehistoric settlements can be seen whilst an C8th wall remains in Zvezdë. There are numerous interesting churches and chapels, The most important are the Church of Saint Maria on Maligradi Island in Greater Prespa lake and the chapels Saint Maria in Glloboko near Bezmishtit, Mihal archangel and Gabriel near Trestenikut close to the Greek border and Ungjillizimit in Cërnapesh of Gollomboçit.

The mountains surrounded the lakes can be explored in all directions. Mali i Thatë and its neighbours can be visited either from Goricë e Vogël village following the road of "Arna Koshara"; "Bobolec" – "Sliva gorna"; "Cero" and "Arna Koshara" or, starting from G. Madhe village, where there are many roads. Visitors should really only drive in the mountains if they have a four wheel drive.

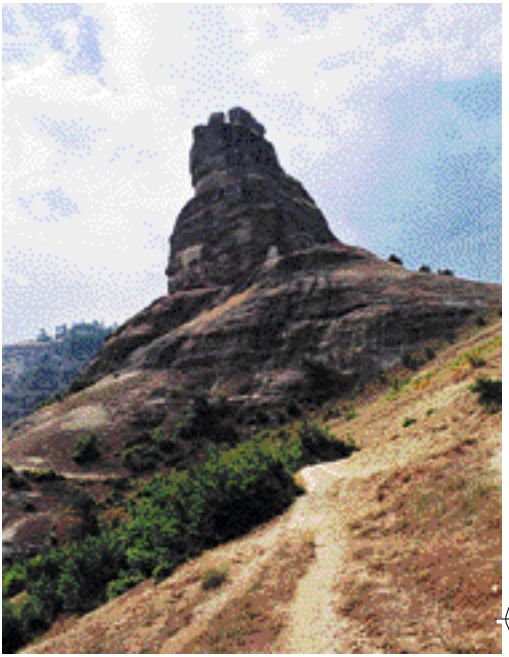
It is possible to make boat trips all around the lake from the surrounding villages at a cost of about Euro 4–15 depending on the time spent on the lake. There are possibilities to stay overnight in private motels, and camping as well as in the houses of the local habitants.

♦ The Protected Landscape Area of Pogradec (Pogradec)

Description of the area

Ohrid Lake lies in the south eastern part of Albania on Macedonian border at the cross-roads between the south, south east and centre of Albania and the routes to Macedonia, Greece and the Balkan Peninsula.

The area consists primarily of limestone rocks with a few Pliocene depositions of clay and sand. The whole eastern and western part of the territory is virtually enclosed by a mountain chain and the only entrance to the lake is through one of the high passes, Thana Pass (900 m) in the north west or Çerava Pass in the south east. There are some isolated lowlands covering a small area in the south and south west (the plain of Buçimasi) and the western lowland follows the shore up to the state border in the north. However, mountains dominate with the peaks of Mali i Thatë (2,287 m) and, continuing through to Macedonia, mount Galiçica (2,251 m). Other high peaks are mount Ahishtet e Gegës (1,513 m), Gjatë (1,158 m) and Shullërit (1,226 m) ending in the Çerava and



A Rock of Kamjes, Pogradec (Photo: F. Bego).

Tushemishti mountain chains (966 m). The lake itself lies at an altitude of 700 m. Nonetheless, there are both shallow water marshlands and wetlands close to the shore of Pogradec on the northern shores from the state border to Lin village), the Buqeza and Gur-Kuq lowlands. These areas are of great importance for ecological, economical and esthetical reasons.

The climate is typical of the high south eastern Mediterranean with cool summers and warm winters. The lake itself is large enough to affect the local climatic conditions. The water temperature of the lake is about 1° C higher than the air temperature during winter warming the climate and cooling it during summer. The weather conditions and comfort-

able temperatures, the annual mean temperature is about 11.6° C with an annual fluctuation 18.6° C, combined with sunny days create a wonderful environment from a tourist point of view preferred by both Albanians and foreigners from northern Europe and hot tropical countries. Generally, the highest temperatures are recorded during July and August (15 July until 15 August) and in spring and autumn May and September are the warmest months. Coldest temperature occur in January. Visitors should be aware that it can, at times, appear quite cold at the lake because of the cold continental air masses coming from northern Çerava. At other times, it can be balmily hot since the warm southern winds are not held back by the relatively low southern bordering mountains. The maximum temperature ever recorded is 39.6° C (19 August 1971 in Pogradec) and minimum is –14.5° C (4 January 1979).

Rain and snow mainly falls on the western and south western slopes of the mountains. Precipitation is generally less in the watershed than the areas immediately surrounding the lake because of its geographical position. The annual mean is 758 mm, with over 60% falling in autumn and winter (485 mm), summer is the driest season with 86 mm or 15% of annual value. Per- haps not surprisingly, July and August are the driest months.

During winter, snow falls between the end of October and the beginning of April, generally for 25–30 days each year, the majority falling in January (10–11 days). The mean depth is changeable, from a few cm, up to 1 m at altitudes over 1,000 m. Interestingly, hail is virtually unknown here, perhaps only one day a year and then for just 2–3 minutes.

The two larger lakes Ohrid and Greater Prespa are separated by mount Mali i Thatë (2,287 m) in Albania and mount Galiçica (2,251 m) in Macedonia. The Prespa lakes are 157 m higher than lake Ohrid and it is generally thought that the spring outfalls of lake Ohrid in Saint Naum and Tushemishti are fed by the Greater Prespa Lake through an underground flow under, or through, Mali i Thatë. Near Gollomboç village, Prespa lake water simply disappears under the massif of Mali i Thatë.

It has been calculated that precipitation accounts for about 58% of the water discharge from the lake Ohrid and evaporation 30%. The main supplier of water, on the other hand is the Crn-Drim River which accounts for about 70% of the water entering the lake.

The surface water temperature varies from 5.4° C in February to 21.9° C in August, about 1.4° C higher than the air temperature. The annual mean temperature varies between 16.5° C at the surface, 13.1° C in 20 m depth and 4° C at 40 m depth; from 100–130 m to the bottom the temperature is a constant 5.7° C.

Flora and Fauna

The vegetation consists primarily of Mediterranean species including maquis. Here, as elsewhere, because of the changes in altitude the vegetation occurs in fairly distinct belts. In the west, south and south-east along the shore line around Pogradec shrubs predominate. Nearer the western water

shed, these are replaced by oak but in the south-east, chestnut, beech and rare pines are found. Eventually, alpine pastures occur.

It is of particular regret that the chestnut forests have been totally destroyed, particularly in the south west between Vërdovë, Rëmenj, and Gështenjas.

Shrubs are the most common type of vegetation and include the sub-Mediterranean species downy oak *(Quercus pubescens* Ëilled.), black hornbeam *(Carpinus duinensis* Scop.) and manna ash (*Fraxinus ornus* L.). At higher altitudes and on the western sides of the slopes are mid-European shrubs like hazel (*Coryllus avellana* L.) which is commonly found between oak and beech.

Mixed oak forests (*Quercetum mix-tum*) generally grow between 800–1,200 m altitude but they too have been significantly impacted by human activity. Different maple species occur throughout the oak belt *e.g.* the wide-leafed maple *(Acer obtusatum*), manna ash, Mediterranen hornbeam (*Ostrya carpinifolia*) and the field maple (*Acer campestre*).

Beech (*Fagus sylvatica)* occupies a smaller area at over 1,500 m altitude and mainly the eastern slopes of the western mountain chain. In the forests, large leafed horn beam (*Carpi- nus betulus*) and sycamore (*A cer pseudoplatanus*.) grow among the predominating beech trees.

Alpine pastures lie on the higher mountain peaks at altitudes of well over 1,500 m although they also occur between the beech forests. They are very important for livestock throughout the year except winter. The plants are mainly grass with some shrubs like small juniper (*Juniperus nana*) and wild rose (*Rosa canina* L.), although many medicinal plants grow here.

Historically, the fauna of Ohrid and Prespa Lakes were almost identical. The lakes are of techtonic origin which has divided and isolated the fauna of the lakes. however when the lakes split, the river Drini created a new environment at Ohrid. This has resulted in lake Ohrid having a richer and more diverse fauna than lake Prespa. There are many more endemic freshwater species because species communities have become isolated, some new ones have evolved and some ancient relicts have survived. It has been determined that about 60% of the fish species, 72% of the flat worms 80% of the oligochaete shrimps and as many as 90% of mollusc species are endemic. There are also rare, freshwa- ter sponges some of which are, too, are endemic.

Large mammals are not, however, well represented due to increasing human activities. They have either been driven out or made locally extinct. The species found and their distribution is very similar to the Prespa National Park (see above).

A bird census taken on the lake in January 1999 in Albania, Macedonia and Greece reported 52,128 birds representing 26 different species including 1,500 red crested pochard (*Netta rufina*), a threatened species in Europe, 1,100 cormorant (*Phalacrocorax* carbo) and 50 black throated Diver (*Gavia arctica*).

Ten species and sub-species of fish can be found in the lake of which the Ohrid trout (*Salmo letinca*), Ohrid

salmon (*Salmothymus ohridano*) and *Pachilion pictum* are worth noting.

How to reach the area

There is a train to Pogradec from Tirana (140 km) which takes about 5½ hr and a bus also runs, taking around three hours to arrive. From Korça, a distance of 40 km it takes about 50 minutes by bus. The area can also be visited from Macedonia via Tushemisht (5 km) or the Thana Pass (25 km) by car (taxi).

Pogradec is a tourist centre and has many private "bed & breakfast" establishments as well as hotels such as the "Euro Korça", and "Tea".

Along the shoreline and in Pogradec there are many restaurants with their traditional cuisine of which fish is a speciality.

Attractions

Apart from Ohrid lake itself there are several other sights worth seeing. Of these, the principle ones are the Drilon springs complex (see above) one of the sources of the lake, the old Ilirian city of Down Selca, dating to 6000 B.C., the mosaics at Lini, the tourist village of Tushemisht and Bishnica Forest.

♦ Bredhi i Drenovës "Drenova Silver Fir Forest" National Park (Korçë)

Description of the area

"Drenova silver Fir Forest" (Bredhi i Drenovës) National Park, is, as its name implies, a forest of silver fir (*Abies alba*) situated near Drenova village, south east of Korça region. It is the smallest national park in Albania covering only 1,380 ha and was proclaimed a National Park in 1966. The Park lies on the western slopes of mount Morava (1,880 m) an important national and sub-regional core area and corridor for wildlife.

Mount Morava is part of the 60 km long and 10 km wide mountain chain of Morava-Mali i Vashës in the southern part of Morava. It is situated between Korça on the western side, the upper Devolli Valley on the eastern side and Kolonja in the south. The rocks are calcareous and the peaks over 200 million years old. The highest peaks are Maja e Lartë (1,808 m) and Maja e Rrumbullakët (1,788 m) although Maja e Elbit, Biglla e Drenovës and Boboshticës are all between 1,500 and 1,750 m high. The ridges of the chain have interesting and attractive reliefs and mushroom, column, even camel (Guri i Capit) shapes can be distinguished.

It is one of the coldest areas of Albania with an annual mean temperature of 10.5° C. In January, the mean temperature is 0.5° C and in July, 20° C. Freezing weather begins around the middle of November and lasts until the beginning of April, about 84 days in all. During this time snow falls for about 35 days to a depth of 50 cm. There is around 600 mm of precipitation each year.

The area has, since 1991, lost much of its work force to Greece. The main local economic activities are agriculture and

... Larvae of *Hyles euphorbiae* (Photo: F. Bego).

industry. Agriculture is extensive and only partly mechanised, vegetables and crops, particularly wheat, being grown. Stockbreeding is also important.

Flora and fauna

The rich and diverse vegetation of Drenova National Park is to be admired. The dominant tree is silver fir (*Abies alba*), very frequent in the whole area, and, in lower localities, Austrian pine (*Pinus nigra*). Higher up beech (*Fagus silvatica*) is present. Other interesting species of the National Park are yew (*Taxus bacata*), holly (*Ilex aquatipholia*), black juniper (*Juniperus communis*), hazel (*Coryllus avellana*) and cornel (*Cornus maas*). Turkey oak (*Quercus caeris*) is a rare species. Other plants growing are wild pear (*Pyrus amygdaliformis*), ash (*Fraxinus excelsior*), blackthorn (*Prunus spinosa*) and different types of berry (*Rubus spp.*).

Unlike other areas, the Park has a significant brown bear population, in fact this is the most populated area for bears in Albania, particularly in the oak and chestnut forests. Wolves and foxes are the most common carnivores and can be found everywhere.

How to reach the area

Drenova Region is connected directly with Korça City (10 km) and thence to all other Albanian regions by road. The region is in an advantageous geographical position as a centre of communication from Greece (Kapshtica) and Macedonia (Goricë and Tushemisht). The principal distances in km are:

Kapshtica – Korça	29 km
Tirana – Korça	186 km
Tirana – Drenova	196 km
Gorica – Drenova	54 km
Tushemishti – Drenova	45 km

There is a small, seasonal airport for small aircraft and helicopters in Korça. A local public transport system using minibuses connects Drenova region to Korça.

… *Vicia sp.* (Photo: F. Bego).

Meadow with *Orchids sp.* in Shelegura (Photo: F. Bego).

Attractions

The Korça region is attractive for visitors because of the unusual wildlife that can still be found here. It was also one of the first places that became an important trade and handicraft centre during the Neolithic period due to the surrounding fertile land. Bronze Age (2000–1100 BC) settlements have been found in Maliq and Treni and there was a rapid development of culture and products in the area during the Iron Age period. Finds in the castle at Treni show how life and society was organised.

Other stages of rapid development can

be seen in the ancient economic, cultural, and educational centre of Voskopoja (XVIth century) and Korça City. In one of the churches belonging to that period, there are excellent examples of mural paintings designed by Albanian painters.
In Korça city, there are several cultural buildings worth visiting; the Mediaeval Art Museum; the National Museum of Education and the characteristic architecture of the houses can be seen. From here it is possible to organise a climb up Mount Morava. In the surroundings, there are some interesting churches that are still standing, those at Mborje, Drenova and Boboshticë and Mborja Castle are worth a trip. There is also a scenic rock, Guri i Capit, which has been designated a Natural Monument because of its interesting shape and size. All around, traditional buildings, handicrafts, dances and songs, delicious traditional cuisine can all be enjoyed in the region of Korça and Drenova.

The West

♦ Karavasta

Every hunter and old fisherman speaks with nostalgia about the lagoon of Karavasta. Embraced by the two rivers Shkumbini in the north and Se- mani in the south, witnessing the sun - rise for just a few minutes in the east of the Divjaka's hills, is sufficient to recognise that life is beautiful. The lagoon's water, like an unlimited mirror, reflects the crown of high pines and from the Adriatic sea a light wind blows, bringing the aromas of the plants and the sounds of the foaming, wave-tossed sea. In the spring evenings, in the north-west, the sun hides behind the reeds, the Shkumbini flows quietly while the first mosquitos begin their night flights. The water reflects the forest and shimmering moon while thousands of fire-flies make their signals of love. Karavasta is beautiful; during winter with its quietness, in spring with its variagated, scented flowers, in summer with the shadows of the pines and in autumn with its misty rain.
The complex of Karavasta is located in mid-Albania and from the administrative point of view falls under the district of Divjaka and Lushnja (Rremas). It is composed of several natural subzones with different physical characteristics giving it a unique biodiversity. The wetlands (5,150 ha) form the most important sub-zone followed by the mixed forest of Divjaka (1,200 ha) in the north west.
There have been many studies of the flora and fauna which mention the lagoon for both the number of animals found and their diversity. Birds in general, and water-birds in particular, are the most important groups giving to the complex an international importance. During winter, flocks of ducks swim in the quiet waters of the lagoon. The shoreline of the river Shkumbin provide seagulls a place to rest near the channels that join the lagoon to the sea while eagles and falcons patrol the forest and lagoon.

The climate is typically Mediterranean with hot, dry summers and warm and wet winters. The annual average temperature is 15.8° C; July is the hottest month (24.4° C) while January is the coldest (8.5° C). Rainfall is about 950–1,200 mm/year although snow is rare. July is the driest month (24.7 mm) while November is the wettest (143.5 mm). The wind blows mainly from the east although during the summer season, it changes direction to west and north west. The highest wind speed occurs in January (3 m/s) while the lowest value is in May (2.3 m/s).

Karavasta is the biggest lagoon complex in Albania and it is considered the most important. It is up to now the only Ramsar site in Albania. For such a relatively small area, there are many natural habitats forming a unequalled complex. In a gradual procession, the water of the lagoon gives way to the vegetative shoreline with its salt-loving flora, continues with brushwoods, then the forests, to end with the dunes and a stable tract of sand. Apart from the birds (228 species), over 29 species of amphibians and reptiles, and 25 species of mammals have been documented in Karavasta. Many of the animals, and plants, are threatened or rare in Albania and globally.

The Karavasta complex is the most important bird area in Albania with over 51,000 individuals over-wintering. This represents a big portion of all water-birds observed in Albania and the density is higher than other Albanian and European wetlands. Some of those

A Dalmatian Pelican (*Pelecanus crispus*), Karavaste Lagoon (Photo: T. Bino).

seen are of intern ational importance *viz.* Dalmatian pelican (*Pelecanus crispus)* (6.4% of the world's population), the great white egret (*Egreta alba)* (1% of the regional population), the wigeon (*Anas penelope)* (3.1% of the region's population) and the avocet (*Recurvirostra avosetta)* (2.7% of the region's population). There is also a large breeding population with 781 breeding pairs. The most important species is the Dalmatian pelican (*Pelecanus crispus*), an endangered species world-wide which breeds here at the western edge of its range. However, more than 1% of the region's population of collared pratincole (*Glareola pratincola*) and little tern (*Sterna albifrons*) also breed here.

In total, 228 species have been recorded in the lagoon complex since 1932 including many globally thr eatened species.

Apart from the Dalmatian pelican (*Pelecanus crispus*), 5 other species found here are endangered *viz*. the ferruginous duck (*Aythya nyroca)*, the white-headed duck (*Oxyura leucocephala*), the spotted eagle *(Aquila clanga*), the imperial eagle (*Aquilaheliaca),*and the pallid harrier (*Circus macrourus*

Apart from its European importance, Karavasta is also important in the national framework, because it shelters 59 species of indeterminate statu s within Albania.

Other vulnerable and endangered animals seeking refuge in the complex are the loggerhead turt le (*Caretta caretta)* foun d in the coastal waters, *Testudo hermani* found in the forests and the otter (*Lutra lutra)* still regularly met on the banks of the river Shkumbini.

Habitats

1. . The sand belt

A belt of sand 100 m wide divides the Karavasta lagoon complex from the sea along a 20 km stretch from Shkumbini to the Channel of Myzeqea. It is bordered by forest in the north and the lagoon in the south. It has been formed by a silting process of material brought down by the rivers Shkumbini and Semani with concomitant erosion by the sea. The belt is poor in plants and, locally, it is known as "the Dead Groun d". The plants are all salt loving and serve to stabilise the dun es; among them are *Ammophilia arenaria, Alisma sp., Carex sp., Isolepsis sp., Juncus sp., Salmolus sp., Elymus arenarius, Eryngium maritimum, Medicago marina* and *Euphorbia paralias*.

The animals that live here are those which prefer open habitat. There are large colonies of breeding little terns

... Divjake Reserve (Photo: T. Bino).

with 350 pairs as well as oystercatcher (*Haematopus ostralegus*), Kentish plover (*Charadrius alexandrinu s*), little ringed plover (*C. dubius*), tawny pipit (*Anthus campestris*), and the fan tailed warbler (*Cisticola juncidis*).
Near the river Shkumbini both otter (*Lutra lutra*) and loggerhead turtle (*Caretta caretta*) can be observed from time to time.

Juvenile of *Larus argentatus* (Photo: F. Bego).

2. . Lagoons

Lagoons are the basic element of the biological variety of Karavasta. They are numerous and occupy a surface area of about 5,150 ha. The best known is the lagoon of Karavasta (made up of greater and Lesser Godulla) which lies in the central part while other, smaller wetlands lie to the north, around the river Shkumbini and the channel of Terbufi (outer Godulla, Spiaxho, Kulari and the marsh of Osmani), and to the south, near the channel of Myzeqea (the New Sector and Bedati). Karavasta's inland lagoon is about 4,330 ha, measuring 10.6 km (north-south) by 4.4 km (east-west), and is quite shallow, the average and maximal depths are respectively 0.7 m and 1.3 m.
The lagoon is connected to the Adriatic sea by three channels. The north east inlet is directly connected to the sea but often blocked by sediments. The central and southern inlets are known locally as the outer Godulla (850 ha) and the southern one communicates with the sea through a unique channel. The water circulation at both the entrance and exit is entirely tidal. During high-tide, sea water enters the lagoon through three channels and during low-tide exits the lagoon to the Adriatic sea. This circulation ensures that the lagoon waters are regularly enriched with oxygen. The lagoon is, of course, saline but the salt concentration is not constant throughout the lagoon and in summer the concentration is higher than in winter (due to evaporation).
The aquatic plants are dominated by *Ruppia cirrhosa* but here are also encountered other plants such as *Zostera noltii*, *Chaetophora aerea*, *Enteromorpha sp.*, *Valonia aegagrophyla* and *Cladophora sp.*
In the lagoon, most of the fish are those typical of Mediterranean lagoons *viz. Sparus aurata*, *Mugil cephalus*, *Solea vulgaris*, *Belone belone* and *Dicentrarchus labrax* (all of which are migratory) as well as other, resident species like *Gobius bucchichi*, *Cyprinodontidae*, *Atherina byori* and *Sygnathus sp.*
Water birds, both breeding and overwintering, use the lake in summer and winter. Ducks dominated with about 19 species represented, including teal (*Anas crecca*), pintail (*A. acuta*) and shoveler (*A. clypeata*).

Waders feed in the shallows of the inland lagoons of Spiaxho and Lesser Godulla, as well as in the southern estuary of the river Shkumbini. Here, lapwing (*Vanellus vanellus*) is the most common species followed by shanks and sandpipers (*Tringa spp.* & *Calidris spp.*) and plovers (*Pluvialis spp.*).
During the summer, the island of the lagoon, which is less disturbed by humans, is used by the breeding birds. Terns (*Sterna spp.*) build their colonies in the bare soil, pelicans build their nests of twigs whilst waders are everywhere. Successful breeding is largely dependent upon the disturbance by humans rather than biotic or abiotic factors. In this respect, 1996 was a good breeding season but 1999 was a very poor one.

3. . Forests

The forest of Divjaka is located on the north-west side of the lagoon. It is an old dune forest known locally as 'sope' and is limited in the east and west by saltmarsh and freshwater. The mature forest is found on the mature dunes but gives way to bushes and, on the shores of the lagoon, to grassy vegetation. It is mainly a coniferous forest with *Pinus halepensis* and *P. pinea* and broad leafed stands are rare although elm (*Ulmus sp.*), ash (*Fraxinus angustifolius*), oak (*Quercus sp.*), and alder (*Alnus glutinosa*) can be found.
In the Divjaka Reserve and the Kulari region, respectively in the south and north of Terbufi's channel, broadleafed woodland increases. In the eastern part, near the riverside, a white poplar (*Populus alba*) forest limits the agricultural ground, whilst to the north of the channel, is a mixed forest of elm (*Ulmus spp.*), narrowleaf ash (*Fraxinus angustifolia*), oak (*Quercus spp.*), and pine (*Pinus spp.)* covering hundreds of hectares.
The bushes of Karavasta are well developed because the conifers here do not have a full canopy so that light to the undergrowth is not impeded. Among the plants found are *Rosa spp., Ligustrum vulgare, Juniperus oxycedrus, Rubus fruticosus, Myrtus communis, Erica napuliflora and Cornus sanguinea.* In the saline areas in the middle of Terbufi's channel and the river Shkumbini, the surface is almost completely covered by dense growth of *Tamarix parviflora.*
Forest, bushes and water holes all offer excellent habitats for different species of insects, fishes, amphibians, reptiles, birds and mammals. In salty ponds the amphibians and fish feed on water-insects such as *Egretta garzeta, Ardea cinera* and *Nycticorax nycticorax* and waders like the black-winged stilt *Himantopus himantopus*. In freshwater pools, amphibia (*e.g. Triturus cristatus*) and reptiles (*e.g. Emys orbicularis, Natrix tesellata*) find shelter. In the bushes, the weasel (*Mustela nivalis*), the lesser white-toothed shrew (*Crocidura suaveolens*), the wood mouse (*Apodemus sylvaticus*) and different birds, mainly the nightingale (*Luscinia megarhynchos*), the blackbird (*Turdus merula*) and warblers (*Sylvia spp.*) can all be found. In the forest, the spoor of the roe deer (*Capreolus capreolus*), *Canis aureus*, badger (*Meles meles*) and fox (*Vulpes vulpes*) can be seen whilst the frogs of the forest (*Hyla arborea, Parus spp., Den-*

A Musk beetle (*Aromia moschata*) (Photo: W. Fremuth).

drocopos spp., Carduelis spp., Streptopelia and Caprimulgus europeus) can be heard. The forest is also the breeding grounds for some birds of prey like the goshawk (*Accipiter gentilis*), black kite (*Milvus migrans*), buzzard (*Buteo buteo*) and hobby (*Falco subbuteo*). Only a few years ago, the white-tailed eagle (*Haliaeetus albicilla*) bred in the coastal forest.

4. . Open areas

The open areas include all the ground covered by salt grass vegetation, agricultural land and uncultivated land which was previously cultivated but has been neglected for some years. The salt grass vegetation is mainly the halophilic association of *Salicornietum fruticosae*. The dominate species is *Salicornia fruticosa* together with *Limonium vulgare, Obione portulacoides, Juncus maritimus, Juncus acutus, Suaeda maritima and Arthrocnemum glaucum*.

The present agricultural land offers a mosaic that is almost organic and which has developed in conditions lacking modern agricultural methods *i.e.* pesticide treatment. Therefore, they are very appropriate places for the breeding of quail (*Cotunix cotunix*) and the Calandra lark (*Melanocorypha calandra*).

The uncultivated ground is today covered by halophilic vegetation with an attempt towards succession by higher plants. However, in a period of only a year these can be eliminated by rainfall offering an appropriate feeding place for numerous waders like the ruff (*Philomacus pugnax*). These places also serve breeding territories for Albanian rarities

like the stone curlew (*Burhinus oedicnemus*), crested lark (*Galerida cristata*), skylark (*Alauda arvensis*) and short-toed lark (*Calandrella brachydactyla*).
All the open areas, offer, during the winter period, feeding grounds for thousands of chaffinch (*Fringilla coelebs*), brambling (*F. montifrigilla*), Spanish sparrow (*Passer hispaniolensis*) and many others.
Both the agricultural and uncultivated grounds are criss-crossed by a network of freshwater channels where many amphibians like *Bufo bufo, B. viridis, Rana dalmatina, R. balcanica* and *Natrix natrix* and freshwater insects like *Anax partenope, Sympetrum sanguineum* and *Ishnura elegans* all find refuge.

Archeological remains

The area has been inhabited by humans since very ancient times and the oldest villages are Divjaka and Karavasta. Many archeological discoveries have been made dating from the Bronze Age, continuing with the Iron Age right through to the Middle Ages. Bronze Age graves have been discovered in the village of Germenji linking this zone with the other Illyrian cultures of the country. The metallic objects found, swords and knifes, are of Aegian origin showing that trade ties existed during the Bronze and Iron Age periods between this region and the world of Aegia. The region must have been of economic importance because a branch of the Via Egnatia, which connected west and east during the Roman period, passed nearby this place. The columns of this road, found in the village of Sultozaj, shows the existence of a road axis that connected not only the two large cities of Dyrrah (today Durresi) and Apollonia (near Fier) but also the Illyrian's sea shores with Thesalia and the border of northern Greece.
The well-preserved mediaeval fortress of Bashtova is another example of the strategic importance of the area. It was based in a Roman fortress, some hundred metres to the north-east of the river Shkumbini, near the village of Sultozaj where Pompei and Caesar confronted each other in 49–48 BC.
In succeeding centuries, archaeological remains are much fewer. However, the orthodox XVIIth century church in New Karavasta is worth mentioning.
Several villages are relatively new and due to the influx of population from other areas, an example being the Kosovars during the reign of Zogu I in the first half of the last century.
Following the reclamation of bogland after 1960, other new villages in the south were created.

A *Rana balcanica* (Photo: F. Bego).

The present

The complex of Karavasta was a bordered military zone until 1993 and admittance to some parts of the territory was strictly prohibited.

During the nineties, the social-political situation in Albania changed including the politics of the so-called borderlands. The Karavasta has, therefore, lost its former status and the belt of sand which was formerly heavily protected by the army is now visited more and more. On August 22nd 1994, the Council of Ministers decided that the natural ecosystem of the Karavasta lagoon and the Divjaka National Park should be included on the "List of the International Important Wetlands" of the Ramsar Convention.

In signing this convention, Albania agreed on the conservation of this zone and, in 1996, within the framework of a PHARE project, a management plan was realised incorporating the protection of this complex.

Population

The total population of the Karavasta complex is 16,500 inhabitants of which 6,500 live in Divjaka and another 1 000 live in a dozen villages of 500–1,700 inhabitants/village surrounding the lagoon.

Agriculture

Today more than 90% of the land is in private hands and agriculture is directed towards individual needs. With agriculture as the main activity of the region, each land-owner possesses on average about 1.5 ha. Most recently, fertiliser use has decreased markedly because of the economic situation in Albania which prevents the villagers from buying these chemicals. Animal husbandry is another important agricultural activity.

Fishing

The second economic activity after agriculture, is fishing. Around the Karavasta lagoon, the Company of fishermen has been founded with about 80 workers, of which 67 are fishermen. This company is unique having not only fishing rights but also the export of fish caught in the lagoon. One third of *Anguilla anguilla* caught here is exported from Albania. During 1976–1990, the quantity of fish caught was 124–250 tonnes/year but most recently the catch has fallen to 106 tonnes/year. This increased human pressure and over-exploitation of the fish reserves is beginning to affect the success of breeding birds here.

Tourism

The Karavasta complex has always been attractive for tourism both locally and generally. An asphalted road connects the village of Divjaka with the beach. Hotels and other accommodation, with a capacity of 1,600 beds were built during the communist period although new hotels have continued to be built throughout the nineties. At present, the number of tourists, mostly local, is about 8000 visitors/day in August.

Hunting

In Karavasta, hunting is more controlled than in other zones of Albania.

Since 1994, it is permitted by licence in the area of Kulari (to the north of Terbufi's channel and to the south of the river Shkumbini), in Outer Godulla and in Bedat. It is also permitted in agricultural land. However, poaching has also increased since 1997. Not only are most hunters unlicensed but they shoot outside the hunting season, even in the breeding season.

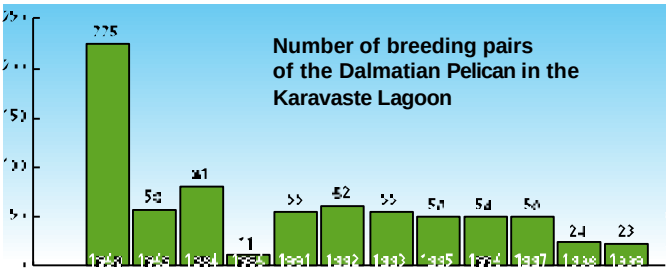
The importance of protective measures

In spite of its biological importance, the Karavasta is influenced by human activities which, if unchecked, will destroy the natural value of the area. See further Chapter V.

The case of the Dalmation pelican (*Pelecanus crispus)* is a case in point. Illegal hunting pressure and disturbance drastically reduced the number of pairs in their colony during the breeding season. Adult numbers decreased to such an extent that the colonies could not rejuvenate as the reproductive success was too low. As a result, this globally endangered species is on the verge of extinction here and will become so if urgent measures are not taken. It is necessary not only to control all of these illegal activities but also to raise public awareness about the value of this, and other, species for the economic future of the area. Only if the local population wants a rich natural environment, will conservation win through otherwise the flora and fauna will simply continue to be lost.

Fortunately, protective work has already begun and awareness of the Karavasta population about the national and international importance of the lagoon complex is being raised. The proposed measures stated within the objectives of the Management Plan for Karavasta are now widely supported. Some of the elements of the Plan are:

- Monitoring and management of the hydro-geomorphological system of Karavasta which will lead to long term opportunities for both fishing and the water birds.
- Monitoring and management of the different habitats in such a way as to conserve and increase the biodiversity.
- Monitoring and management of the habitats of breeding water-birds giving priority to the Dalmation pelican (*Pelecanus crispus)* colony.
- Developing agriculture and other activities jointly with tourism to improve the infrastructure but in accordance with the natural world.



View of ancient town of Apollonia (Photo: F. Bego).

- To undertake lobbying, training programmes, production of information and the raising of public awareness.

How to get there

The road from Tirana to Divjaka is 100 km and the journey normally takes about 2 hours. However, there is no public transport directly to Divjaka and it is necessary to change vehicles along the way. Taxis are available in the main towns and all transport in the area must be conducted using taxis with details available in the Information Centre. Divjaka has many private bed & breakfast establishments and there are some hotels at the beach. The town centre and beach area has many restaurants and locally caught lagoon or sea fish are cooked and served to a high quality.

Attractions

Walking is the most preferred activity in the area and the best way to enjoy the forests and lagoon. Taking the road to "Sopine Artirit" leads to a watch-tower overlooking the Dalmatian pelican breeding colony. Other places to visit are the lagoon of Lesser Godulla, Spiaxho's and Outer Godulla.

For more information, the visitor should call in at the information centre as well as contact the representatives of ASPBM in Tirana.

There are a number of historical monuments, museums and natural monuments which are worth visiting. Among them are:

- A XVIIth century Byzantine church in New Karavasta (24 km from Divjaka). There are a number of other

churches in different villages around the lagoon.

- The Middle Age Fortress of Bashtova built on a previous, Roman fortress to the north of the river of Shkumbini (50 km). It can be reached via the Divjake-Rrogozhine-Gose road or by boat on the river at Sultozaj.
- The abbey of Ardenica (50 km), built during the XIII–VIVth and XVII–XVIIIth centuries with its icons and murals has been completely restored
- In Apolonia (75 km), the Greek/Roman classical ruins date from the foundation by Corinth in 588 BC
- Berat (78 km) is a city that is listed as a World Heritage site. It has a fortress and Byzantine church with murals painted by the famous Middle Age painter, Onufri, as well as some buildings from the Turkish period.
- The fortress of Turra (60 km) was built on the coast and was used as a strategic point by Scanderbeg.
- The salt mine in Karpen (60 km) has been used since 1500 for the production of salt. The oak placed in the centre of the building is a Monument of Culture.

A The monastery inside the ancient town of Apollonia (Photo: F. Bego).

♦ Dajti National Park

The Adriatic plain is bordered in east by chains of mountains, extending from Lezha in north to Berati (Tomorri) in south. Just in the middle the Dajti mountain (1,600 m) rise over Tirana plain. The mountain consists mainly of lime stones of Cretacean and Eocene.

From the Dajti mountain a beautiful view down to the capital Tirana and even the Adriatic sea can be obtained. The slopes from Dajti terrace – a platform approximately 500 m beneath the peak and a well visited leisure site for citizens of Tirana – up to the top, about 3,500 ha forest, are protected as National Park. Due to the vicinity to Tirana it is one of the most visited National Parks throughout the year. Therefore is is also called capital's 'balcony'. A visit in Dajti is recommended to get a first impression of the vegetation and very quick view of vertical zonation which can be observed in the National Park and its surrounding.

Dajti has a wet and fresh climate (1,200–2,000 mm rain, yearly). The typical Albanian vegetation belts are well developed, from Mediterranean shrubs like heather, myrtle and strawberry tree (until 500 m), followed by the oak belt (until 900–1,100 m) and finally finished by the beech belt, often mixed with conifers (until 1,300–1,400 m). In the forests, endangered mammals find shelter like wolf, bear, wild bor, wildcat and others.

The peaks of Dajti are rocky almost without vegetation.

Due to its picturesque and dense forested landscapes, as well as for its vicinity to Tirana, Dajti has been always used as tourist and recreation site.

How to visit Dajti

A first contact with Albanian nature should be taken through a visit in Dajti Mountain, only 20 km far from Tirana. A narrow road winds up to the so called Dajti terrace. Fresh water from springs could be tasted on the way and will refresh those who decided to hike up the mountain. On the way to the Dajti terrace Pubs and small restaurants offering their service to refresh the visitor.

CHAPTER IV

The Natural Treasure of Albania: Medicinal Plants

Albanians, like other European nations, have a tradition for using their local flora and vegetation in their daily way of life. Apart from the obvious use for food, as a construction material and fuel, plants and trees have long been appreciated by Albanians. The Albanians interest for plants can be traced through the national costumes, wood, metal and mud handicrafts, the national songs and their fables. Floristic elements are often used as a motif in precious clothes, jewellery and with other objects like doors and carpets. In songs and fables, the more precious human features are compared to flowers and plants such as to smile as a flower and to have a cypress body. Many plant names have been given the names of plants or flowers growing in the vicinity such as Dardhe (pear), Mollas (apple) and qafa e Qershise (cherry Pass). Many plants names are used to name sons and daughters like Lule (*Flower*), Trendafile (*Rose*) Karafile (*Daisy*), rrapi (*Oriental Plane*). Many other plants and flowers are used as perfumes and in cooking, aromatic plants and spices being used in salads, and to flavour different foods including meat. Many are also used to prepare fresh drinks and sweets. Wood is still widely used for bottles and other objects used for milk, cheese and drinks and many kitchen utensils like spoons, forks and plates are also of wood. Plants have also long been used as sources of dyestuffs for wool and other clothes and household articles like carpets and blankets. The dyes are extracted from all parts of a range of wild flowers and plants. They are even used by women, sometimes, to dye their hair.

However, Albanians have long been exploring plants for their use as medicines and Albania has many ancient traditions with respect to medicinal plants that can be traced back to antiquity from archaeological finds. Many instruments used in medicine have been unearthed including spoons to measure drugs, pharmaceutical scales and boxes for creams.

Present day Albanians often prefer traditional medicinal plants, when combating different illnesses, to modern pharmaceutical drugs. In some cases,

… Stacks of *Hypericum perforatum*, a medicinal plant (Photo: F. Bego).

 Echinops spec. (Photo: W. Fremuth).

as with viral hepatitis recipes are kept secret and often known only within family groups. Other plants are used to make infusions and tea, for relaxation

A *Salvia officinalis* (Photo: W. Fremuth).

... *Chamamilla* (Photo: W. Fremuth).

T *Daphne oleoides* (Photo: W. Fremuth).

and for the brain and gastro-intestinal tract such as mountain tea (*Sideritis roeseri*) and marjoram (*Origanum vulgare, O. majorana*). Many common ailments like diarrhoea, bleeding and renal problems are first treated by the family using different plants and herbs. Of the list of medicinal plants used as infusions and teas are included sage species (*Salvia sp.*), camomile (*Matricaria recutita*) and mint (*Mentha*), spice plants like thyme (in the Prespa region predominantly *Thymus longifolius*) and origanum (*Origanum vulgare*). Some species are used in large amounts for the pharmaceutical industry, particularly in Germany like St. John's wort (*Hypericum perforatum*), hawthorn (*Crataegus sp.*) or nettle (*Urtica dioica*) are very interesting for the German market. These are exported to Germany every year in large amounts. Some species have, in the past, been traded in smaller amounts but have now, once again, become more fashionable *e.g. Hypericum perforatum* for pharmaceutical purposes and mountain tea (*Sideritis raeseri*).

Most of the species which are interesting for the German pharmaceutical industry and the spice and tea market, are common and more or less abundant in the Ohrid and Prespa region. Species like *Centaurea cyanus, Papaver rhoeas, Matricaria recutita, Urtica dioica, Achillea millefolium, Malva neglecta, Taraxacum officinale, Rubus idaeus, Rubus fruticosus* and *Fragaria vesca* grow around villages, on roadsides, in fields or in pastures and meadows of the lowlands. Often their presence is promoted by human activities and there is no harm in

their being collected from a nature conservation point of view.

Several species, however, are listed in the Red Data Book of Albania 1997 and, to be used as medicinal plants, they need to be propagated very carefully, assuming their status would allow it at all. These are *Agrimonia eupatoria, Colchicum autumnale, Dictamnus albus, Ephedra distachya* and *Sideritis raeseri*. Some species had been listed in a former version of the Red Data Book but have been withdrawn in the new list. They should, however, also be observed very carefully.

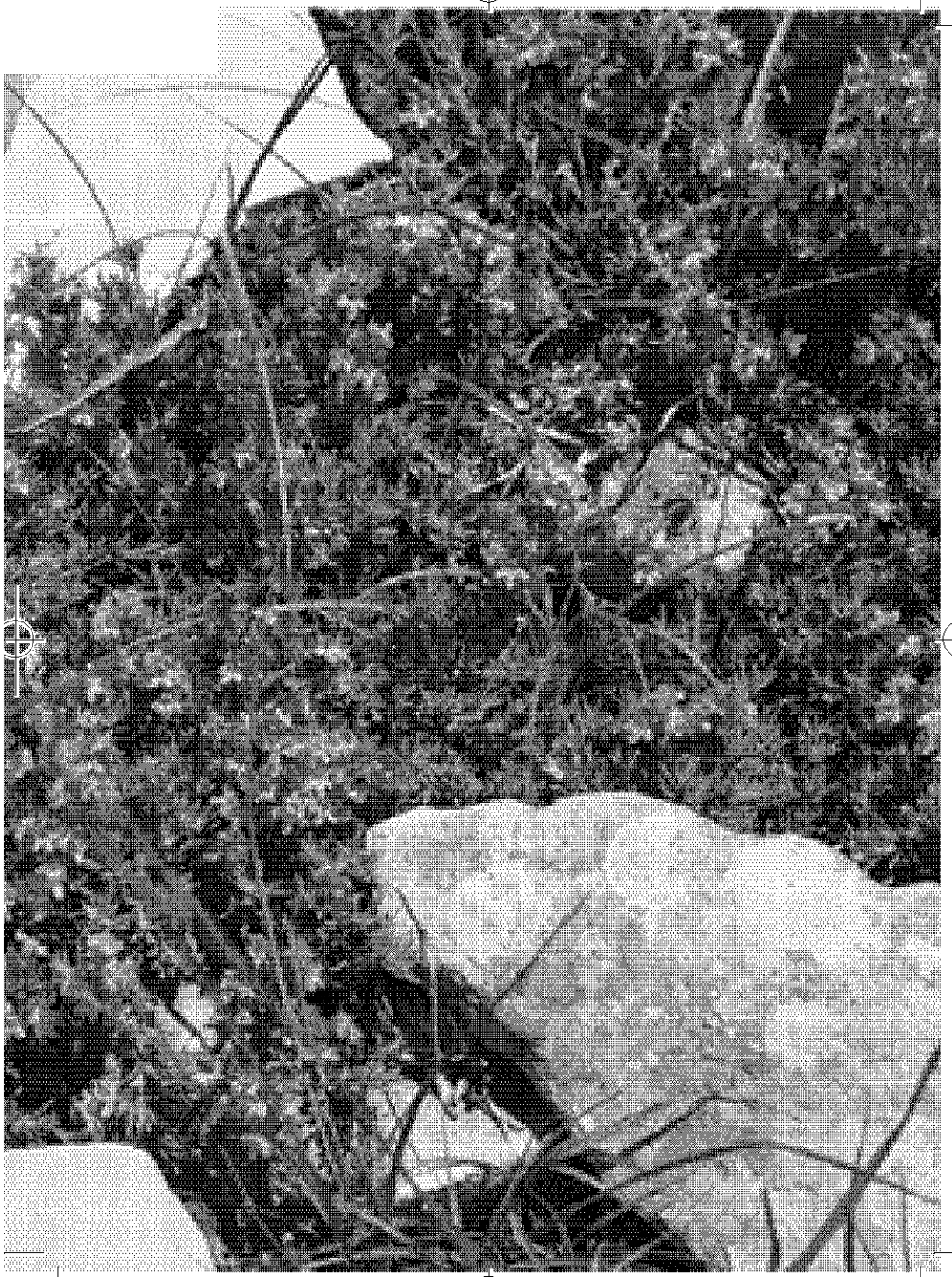
Collection of wild plants can be prohibited or restricted for listed species in a declaration of the Ministry of Agriculture according to the Law for the Protection of Medicinal, Tanning and Oil-bearing plants which is regularly updated. A list issued in 1997 includes 305 plant species and restricts collection, for example, of *Digitalis lanata* and *Sideritis raeseri*.

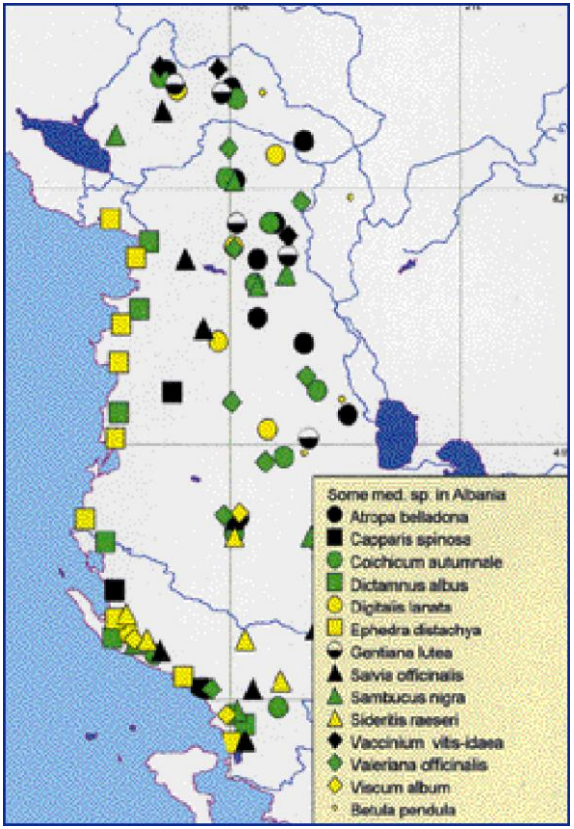
One species, *Platanthera bifolia*, a member of the orchid family is listed in Annex II of the Washington Convention (CITES). It is also subject to EU Wildlife Regulations, Annex B, which means that permits would be necessary for their collection although it is not recommended to collect orchid species in the wild at all. If people in the Ohrid/Prespa region would like to engage in the trade of saplings it should be based only on cultivated specimens.

A *Salvia spec.* (Photo: W. Fremuth).

T *Digitalis lanata* (Photo: W. Fremuth).

Thymus sp., Malr me Gropa (Photo: F. Bego)





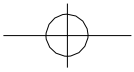
Distribution map of medicinal plants of Albania

As far as international trade is concerned, *Buxus sempervirens*, *Dictamnus albus* and *Lilium candidum (Lilium album)* are protected according to German law. For these species, as for the above mentioned *Platanthera bifolia*, German import permits are necessary. This also applies to *Arnica montana*, which might occur in the region.

The medicinal plants are Albania's real natural treasure of high economic value. Like all treasures these natural resources need to be well protected in order to keep their value for futur e generations. This finally means that the management of this resources and its exploitation have to be carried out very carefully.

... *Colchicum autumnalis* (Photo: F. Bego).

Rosa canina (Photo: F. Bego).



CHAPTER V

The Human Impacts on the Natural Treasures of Albania

Albania, as we have seen, has long been populated by humans. The mountain sides, valleys and river terraces have been used by generations for crop land and plantations. However, as elsewhere the impact that humans have had on the environment dates from very recent times, in the case of Albania since the beginning of socialism, 50 years ago. The greatest problem for modern day Albania is to find an economic solution to the sociological conditions. Much of the human impact of modern times is closely tied up with the poverty of the country. With little wealth, infrastructure or modern standards of living, most Albanians are forced to totally exploit Nature in order to survive. Although the country has a relatively small population, human impact is having a visible effect on landscapes and the flora and fauna of the country. The fact that there are few environmental laws and virtually no enforcement exacerbates the situation. It is true that there are still some pristine, wilderness areas largely untouched by human hand; mountain chains cut off from modern human activities where local villagers must walk along narrow mountain paths for several days and the only form of transport is the donkey. These however, are the exceptions and as one criss-crosses the country, the evidence of negative effects from human activities is everywhere to be seen.

The most obvious, in this mountainous country, is the destruction of the forests. Trees have been cut for firewood in a country without oil or central heating, and large areas have been cleared, often by fire, for agricultural use. Large tree stands have now been replaced by fields of maize, rye, potatoes and other crops and orchards, especially of plum-trees, have also been developed. During the last ten years in particular, the shrub and forest belt have been heavily impacted and erosion is so severe that the rock has been left bare. Many hills in the southern coastal areas have recently been terraced at altitudes of 700–800 m to create citrus and olive plantations. Overgrazing, especially by goats, has compounded this problem.

In many of the lakes and rivers, fish stocks have been reduced by uncontrolled fishing, often using very destructive methods like dynamiting. The composition of fish species has also been changed by the introduction of exotic species and many commercially important fish have now been replaced by non-commercial species. In some cases, as at lake Lura, water is taken from the lake and used for irrigation but also suffers itself from pollution from algricultural residues seeping back into the aquatic system. The in-

... Garigue: degraded Mediterranean evergreen shrubs (Photo: F. Bego).

crease in agricultural land led to widespread pollution of the lakes and rivers by both fertilisers and herbicides and pesticides. Ironically, the economic failings in the country over the last ten years have had the advantage that these forms of pollution have disappeared as the chemicals are no longer affordable by the local populations. Urban solid and water wastes are, however, causing eutrofication problems in Albania's lakes and during hot summer days, dead fish rise to the surface of the lagoon at Karavasta, starved of oxygen. Such effects can, if unchecked, affect all links in the food chain. Solid waste disposal is even approved by the local goverment in the forest of Divjaka. Another problem, to be seen at Karavasta, is the increase in the number of illegal homes being built around the shores of the lake.

Several rivers now boast small hydroelectric power stations and natural water courses of some rivers have been deviated altering their drainage patterns. Marshlands have also been drained for agricultural purposes and reed, for construction, has been overexploited around lake Prespa thus destroying a most important habitat for birds and other fauna dependent upon this environment. At lake Ochrid, sand is removed for construction and increased building along lake shores are taking their toll on the local fauna and flora.

Unlike other areas of western, central and eastern Europe, there is little industrial pollution in Albania. Most industry is concerned with food production *e.g.* flour, oil, fish preservation or domestic materials *e.g.* bricks and furniture. There is some light industry in Gjirokastra and Libohova but industrial pollution does occur at lake Shkroda, originating from the Montenegran side of the northern border.

Another risk for the flora and fauna is non-regulated hunting, particularly of birds of prey, pelicans and larger mammals and the collection of medicinal and aromatic plants that also takes place but has been inadequately studied. In 1995, eggs of the night heron (*Nycticorax nycticorax*) were illegally sold in Tirana's streets.

Another common problem is that in sensitive areas, which are attractive to tourists, there is no control or organisation, little information and few signs to help. Without adequate information and facilities, the tourists themselves can unwittingly adversely impact the very nature they have come to see. Litter, water pollution, soil degradation and disturbance of wild life can constitute a localised threat to wildlife. This book is hoping to make a significant and positive contribution to the way tourists behave by supplying information about Albania's diverse landscapes and natural values which has hitherto been missing.

Urgent action is required to protect, conserve and restore the natural habitats of Albania.

CHAPTER VI

Appendix

Further Reading

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Useful Adresses

Lakes Prespa and Ohrid

1. PPNEA is working for nature protection and preservation of the Prespa area. Its centre is in Tirana at the following address: Preservation and Protection of Natural Environment in Albania

Address:
Rr "Asim Vokshi"
Pall. 33, Shk. 4, Apt. 7
Tirana, Albania
Tel/Fax: ++ 355-42 22839
e-mail: ppnea@ngo.org.al
or: ppnea@ppnea.tirana.al

2. Forest Directory Korçë

Tel/Fax: ++ 355-824/2591 (at the entrance of Korça city)

.A Mirela Çekani, Dhurata Fraskeri; Irena Sherameti (PFNEA): Welcome in Albania. (Photo: W. Fremuth).

Prof. Dr. Lekë Gjiknuri, Arnulf Müller-Helmbrecht (General secretary of UN Convention on protection of Migraterry species CMS), Dr. Aleko Miho (PFNEA). (Photo: •••).

3. PIU – The office for World Bank Project implementation for Lake Ohrid Protection
   Tel. ++ 355-832/2175

4. The NGO Tourism and Environment can provide information and guides to visit Lake Ohrid in Pogradec City
   Tel. ++ 355-832/2309

NGO "Transboundary Nature" (Nat yra ndërku fitare) works on forest protection
Tel/Fax: ++ 355-824/3037.

Karavasta

6. In the District of Divjaka, visitors can obtain information in the centre of Divjaka at the Information

5. In Korça:

Centre opened by DET (Divjaka Ecotourism) and ASPBM (Albanian Society for the Protection of Birds and Mammals). Refer to ASPBM or PPNEA

7. ASPBM in Tirana is located at:
Museum of Scientific Sciences
Road of Kavaja 132
Tirana, Albania
Tel/Fax: ++ 355-42 290 28
e-mail: entela@ngoinfoc.tirana.al

Organisations

1. . Environmental Centre for Administration and Technology ECAT – Tirana

The ECAT Tirana is a link between the Governmental institutions in charge for environment protection like the National Agency for Environment Protection (NEA) and the private sector.
The task of ECAT is to facilitate and promote all sectors of environment protection and nature conservation. There are meanwhile several ECAT in Central and Eastern European countries established, such us St. Petersburg, Kaliningrad, Vilnius, and Riga.

2. . Euronature

Euronature was founded in 1987 when requests for environmental support and help reached several German NGOs. The rising number of inquiries caused three German NGOs to create a separate structure dealing with nature conservation projects throughout Europe. The three founders of Euronature, (DUH the German Environment Aid), BUND (Friends of the Earth, Germany) and NABU (Birdlife Germany) focused first on southern European countries like Spain, Italy, Greece and the former Yugoslavia.
After the fall of the iron curtain, urgent action has been necessary in Central and Eastern European countries. A strong emphasis in the work has been given to Poland and Hungary but projects are also carried out in Russia, Ukraine, the Baltic states, Czech Republic, Slovenia, Croatia, Hungary, Romania, Bulgaria, the Former Yugoslav Republic of Macedonia and Albania. A feature of Euronature's approach is to support local NGOs in almost all CEE countries and especially their network for enhancement of biodiversity conservation, CEEWEB.

3. . EECONET Action Fund

The EECONET Action Fund was founded by three Europe wide NGOs, Euronature, Eurosite and the European Union for Coastal Conservation, to co-ordinate and finance their efforts in the establishment of a Pan-European Network of protected sites in central and eastern Europe.
The Fund finances nature conservation measurements by purchase and leasing of sensitive areas which can contribute to a network of protected sites.

4. . Preservation and Protection of Nature and Environment of Alba- nia (PPNEA)
The organisation was founded in 1991 and is a membership organisation. The organisation is working in concrete projects but also at a political level. It has some subunits in the regions of Albania.

5. . Albanian Society for Protection of Birds and Mammals (ASPBM)
ASPBM is located in Tirana and has been active for years protection Nature in Karavasta. Its work is concentrated mostly in the protection of the bird communities and particularly breeding water birds using the cruelty to the pelican as its symbol. The ASPBM also provides regional public awareness and for the natural values of the Karavasta complex.

Colophon

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