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TRADITIONAL ILLEGAL CAPTURE AND HUNTING OF MIGRATORY BIRDS ON THE ISLAND OF CHIOS, GREECE Preliminary Report

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This report describes the annual capture of millions of migratory passerine birds on the island of Chios, Greece. The majority of the birds are caught on ixoverges, or lisensticks, a system based on a centuries-old custom of coating a sticky substance on sticks. The custom is also prevalent in Cyprus and the Dodecanese islands. This method is supplemented by other types of capture such as nets using live decoys, air-guns, and shooting. The report includes estimates of the numbers of birds lost annually to this practice, as well as lists of the species of birds captured and killed. Estimates of population decline since the early sixties are also included.

According to these estimates, eight million birds of about sixty different species are lost each year. The populations of these birds for a number of species have dropped to levels that are 30% to 90% of those observed in 1962 in Chios.

2.0 DESCRIPTION OF THE CAPTURE

Chios is an island in the Northeast Aegean which is on one of the major migratory pathways of birds. This passage is preferred by birds of Northeastern Europe which pass towards Asia through the Bosphorus and continue along the coast of Asia Minor, towards the Near East, culminating in Africa. Every autumn, millions of birds pass over the island of Chios.

This plenitude of birds on the island, as in most of the rest of the country, was always considered a divine gift for the people. Quotes from early travellers mention the hunting and capture of migratory birds in Greece. A French traveller written by Sonni de Mamecourt towards the end of the 18th century, describes images of Chios which still hold to this day.

"The Greeks capture many winged species. Towards the end of August the birds have gained some weight and are very tasty. The Greeks then wage war against them and kill a large number." (1)

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TRADITIONAL ILLEGAL CAPTURE AND HUNTING OF MIGRATORY BIRDS
ON THE ISLAND OF CHIOS, GREECE
Preliminary Report

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September, 1990, Chios, Greece

1.0 SUMMARY

This report describes the annual capture of millions of migratory passerine birds on the island of Chios, Greece. The majority of the birds are caught on ixoverges, or limesticks, a system based on a centuries-old custom of coating a sticky substance on sticks. The custom is also prevalent in Cyprus and the Dodecanese islands. This method is supplemented by other types of capture such as nets using live decoys, air-guns, and shooting. The report includes estimates of the numbers of birds lost annually to this practice, as well as lists of the species of birds captured and killed. Estimates of population decline since the early sixties are also included.

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"Whatever birds escape this massacre return the next year. Instinct characterizing these small birds is stronger than the need to protect themselves from the traps awaiting them along their journey. This instinct is inherent in Nature, while the dangers and catastrophes brought upon by mankind should be considered outside Nature. Only man understands them, since he is the only creature who violates Nature" (1)

3.0 THE TREE WHICH WOUNDS: IXODENDRON

Birds are trapped by a sticky coating on sticks placed on trees along their migratory route. The sticky coating is formed from a mucous substance derived from the fruit of a tree called the *ixodendron*.

The tree, called *oxo* or *oxoudia* in Chios dialect, is also described in these early travelogues.

"The tree species that produces *ixos* has a fruit the size of a large caper. In southeast Chios there are several trees bearing *ixos*. The leaves have a deep green color and have a wide, almost circular shape. The tree bears a small round fruit, the size of a small green olive from which the substance *ixos* is produced." (1)

In 1794, the use of *ixos* is described by G. A. Olivier:

"In all the gardens one finds the tree which produces this substance, whose round fruit is slightly smaller than a typical olive and contains excellent *ixos*, that is used in all the East for the capture of birds." (1)

This tree, described by the travelogues, does not exist in the countries of these travel-writers. It is not of the European species *Viscum album*, known commonly as mistletoe which is a parasite of oak and also produces *ixos*. Rather, the species on Chios comes from the species *Cordia myxa* which grows in warmer climates. *Cordia myxa* is not endemic to the flora of Chios. It is hypothesized that it has been imported by the Genoese who also imported the magnificent fruit trees of Chios (Genoese occupation of Chios: 1346 - 1566). Although it is a perennial, it loses a large part of its leaves in winter, and can completely die out in cold weather or by lack of water. It is usually found in gardens or enclosed fields.

The first written report on the *ixos* of Chios dates to 1425 when the Italian Ciriaco de Ancona describes that:

"Noblemen from Genoa captured birds with guile by coating trees with *ixos*." (1)

This tree has no other known use besides the production of *ixos*. The fruit ripen from July to September, a period that coincides

with the migration of birds. They contain an odorless mucous-like substance which forms the base for the ixos mixture. This is then used to coat wooden sticks (ixoverges). Ixos must have been in great demand. H. Pernot states that in 1897-98 Chios imported 4,176 kilos and exported 50 kilos (2). Even today the open-air food and vegetable markets of Chios sell the ixos fruit at approximately 200 GRD per kilo. It is also said that ixos and the wooden sticks or (ixoverges) are sent to other parts of Greece such as the Peloponnese and Crete.

3.1 The Preparation of Ixos

The harvest of ixos begins in late July and signals the beginning of the ceremony of the ixoverges. A reference to ixos also occurs in the literature of Ancient Greece, which states that it is made "by mixing the fruit of the the ixos with honey and coating it on small sticks to catch small birds." (3)

The mucous-like substance of the fruit is mixed with human saliva, honey and warm water in specific proportions until it acquires a white frothy consistency which is repeatedly coated onto sticks of various sizes. It is a lengthy and tiresome procedure but in fact it does not seem to tire the participants, who turn the making of ixoverges into a sort of party.

The production of the lime does not only require proper weather conditions but also considerable expertise to prevent the mixture from spoiling and to become a truly effective and long-lasting lime.

Another contemporary author, I. N. Giourgalis refers to the following:

"The ixoverges are sticks coated with the sticky substance, ixos, which are placed in the fall on the sticks of the turpentine trees or other fruit trees which ripen in the fall. Birds such as greenfinches, goldfinches, wheatears, warblers and chaffinches sit on the sticks and get stuck, and since they are unable to get free, they hang from the sticks upside-down. The weather must not be rainy and the tree should not have a lot of dry sticks to attract the birds." (4)

Captured birds cannot free themselves and so flutter about in agony, causing their tail and feathers to also get stuck. They often hang for hours until someone unsticks them and finishes them off by twisting or biting their necks.

The only antidote to free the bird from the ixos, is to wash it off with plenty of water.

4.0 TRAPS AND OTHER METHODS OF CAPTURE

There are several common methods used today on Chios to capture birds:

4.1. Xeropostes (= Dryposts)

These are wooden constructions made from thick branches that are stuck into the ground and used as a support for the limesticks. These constructions are permanently placed in the southeastern part of Chios along the coast, on small hills and promontories which are arrival points for migratory birds. The following species are usually caught in the early morning hours from August to October:

Phylloscopus trochillus (willow warbler)

Phylloscopus collybita (chiffchaff)

Lanius senator (woodchat shrike)

Muscicapa striata (spotted flycatcher)

Saxicola rubetra (whitchat)

Turdus viscivorus (mistle thrush)

Ph. phoenicuros (redstart)

Turdus iliacus (redwing)

Similar construction are placed in the southernmost tip of the island named Dotia on the promontory of Oura, used by *Phyl. trochillus* and *Phyll. collybita* as a collection point before setting off on their migrations. There the *ixoverges* are placed from 2 pm to 8 pm and collect tens of thousands of birds. A major advantage for all these dryposts is their position at the point of arrival and departure of many birds.

4.2 Charakia

This method consists of shearing the tops of turpentine trees (*Pistacia terebinthus*), a relative of the Pistaccio tree called *tsikoudia* in Greek, olive trees, or carob trees. This creates a platform to place the limesticks. People build wooden scaffolds within the trees to climb up and collect the captured birds. Such constructions are found inland in cultivated and fallow fields. The species which are captured from October to December are usually the following:

Coccothraustes coccothraustes (hawfinch)

Turdus viscivorus (mistle thrush)

Turdus iliacus (redwing)

Turdus pilaris (fieldfar)

Emberiza calandra (corn bunting)

Phylloscopus trochillus (willow warbler)

Phylloscopus collybita (chiffchaff)

Sylvia communis (whitethroat)

Sylvia curruca (lesser whitethroat)

Sylvia borin (garden warbler)

Sylvia atricapilla (blackcap)
Phoenicurus phoenicurus (redstart)

This construction takes advantage of the fact that birds approach fruit trees for food and shelter.

4.3 Mytaries

The limesticks can also be attached at the end of branches. This method usually captures the following species:

Lanius collurio (red-backed shrike)
Lanius senator (woodchat shrike)
Saxicola rubetra (whinchat)
Muscicapa striata (spotted flycatcher)
Passer hispaniolensis (spanish sparrow)
Oenanthe oenanthe (wheatear)

This method takes advantage of the customary behavior of birds to survey the territory while perched on exposed outposts.

4.4 Perastaries

This method places limesticks within the leaves and branches of mastic trees (*Pistacia lentiscus chia*, the well known bush producing the famous masticha gum of Chios), of turpentine trees, olive trees, laurel trees and Kermes oaks (*Quercus coccifera*). Limesticks are placed from November to December and sometimes all through the winter. The following species are usually caught:

Erithacus rubecula (robin)
Turdus merula (blackbird)
Sylvia communis (white throat)
Sylvia atricapilla (blackcap)
Sylvia borin (garden warbler)
Luscinia megarynchos (nightingale)
Luscinia luscinia (thrush nightingale)
Phoenicurus phoenicurus (redstart)
Troglodytes troglodytes (wren)
Pegulus regulus (goldcrest)
Sturnus vulgaris (starling)
Turdus philomelos (song thrush)
Turdus merula (blackbird)

This method takes advantage of the birds' tendency to take refuge in the leafy parts of trees and bushes.

4.5 Glastrakia

Limesticks can also be placed near the ground on or surrounding shallow water bowls (the glastrakia). Also a mirror can be placed instead of water. These are usually placed in springtime and typically capture the following species:

Carduelis carduelis (goldfinch)
Erithacus rebecula (robin)
Turdus merula (blackbird)
Serinus serinus (serin)
Carduelis cannabina (linnet)
Carduelis spinus (siskin)

4.6 Other Constructions

Several other ingenious ways to capture birds are used of which only a few more will be mentioned here: limesticks are placed on dried sunflowers to capture goldfinches which like to perch there, or in low-lying forked branches which capture woodlark (*Lullula arborea*), a species that prefers to move close to the ground. Limesticks are also placed near water fountains or on the walls of wells, especially during the summer months in northern Chios. The following species are mainly caught in this way:

Monticola solitarius (blue rock thrush)
Oenanthe oenanthe (wheatear)
Carduelis carduelis (goldfinch)
Turdus merula (blackbird)
Streptopelia turtur (turtledove)
Carduelis chloris (greenfinch)
Fringila coelebs (chaffinch)
Serinus serinus (serin)

Raptors are also caught by these limesticks, attracted by the small birds that have already been trapped. Many times they can escape with a few vigorous flaps of their wings, but if their wings or tail get stuck, they are condemned. These usually end up being stuffed. Species commonly trapped in this manner usually include:

Accipiter nissus (sparrowhawk)

and more rarely:

Buteo buteo (buzzard)
Asio otus (long-eared owl)
Bubo bubo (eagle owl)
Strix aluco (tawny owl)
Athena noctua (little owl)
Tyto alba (barn owl)

4.7 Pyrofani

When it is very windy on cold, moonless winter nights, birds gather to roost in the low branches of bushes and fruit trees. These are then surprised by bright flashlights and killed by a nailed-hammer or an air-gun. In the old days, oil lamps or torches were used. This method is used in the open areas of Southeast Chios and usually brings forth sacks full of birds.

4.8 Ara (= Net)

The **ara** is a double net appropriately folded so that it can be pulled from a distance and lifted from four posts, trapping the birds in the center. The net is directed from a hide (**fridja**) made of branches, which is placed approximately ten meters away. Caged songbirds are placed around the nets. A bird, known as **batadouros**, is tied by the legs so that it can move when the strings are pulled. Also, seeds are placed around a small bowl full of water. As soon as a group of birds settle around the water and seeds, the net is pulled to trap them.

These devices are found near the sea at specially modified sites in order to trap large numbers of travelling birds such as greenfinches and goldfinches. The period of the **ara**-nets is October.

The **krachtis** or cryer is a trained bird such as a goldfinch, greenfinch, or chaffinch. In July these birds are subjected to an ordeal (**mourti**) and because of some hormonal change they can sing throughout the fall months, acting as decoys to attract passing birds. Such trained birds are in high demand and cost as much as 10,000 GRD each on the market.

4.9 The Custom in the Recent Past and in the Present

All forms of capture were rather limited in the past, particularly from the post-war period to the decade of the sixties. During the sixties the custom changed into a mass phenomenon, chiefly for the following reasons related to the profound changes that occurred in Greek society:

- a) The road network became extended and the use of automobiles increased. Thus the approach to out-of-the way points such as the promontory at Dotia became accessible for placing limesticks and nets. Until then, these were placed only in gardens in the Cambos or near villages of southern Chios.
- b) Leisure time increased and the custom spread by imitation. Before the sixties only farmers used to place limesticks next to their fields as they were farming.
- c) More people acquired freezers which allowed for birds to be preserved and traded in commerce.

5.0 HUNTING PRESSURE

Hunting is a popular passtime in Chios, as in most of Greece during the fall and spring months. During the hunting season (20 August - 10 March) local hunters are supplemented by seamen or Chiotas from Athens or even from abroad who return to the island

specifically to hunt. Some local hunters claim that these visiting hunters are the most flagrant violators of the hunting regulations. Instead of single cartridge rifles, today semi-automatic five-cartridge carabines are used. Any hunter worth his salt boasts at least 3 or 4 of these guns. There are 20,228 registered guns on Chios, but the Forestry service estimates the actual number to be closer to 17,000 if one subtracts the guns that are in disuse. The number of hunters' licenses in March 1990 (the end of the hunting season) were 4,541.

Hunting Licences in Chios

	GREECE	CHIOS
Population	10,000,000	55,000
Hunter licences	350,000 (3.5%)	4,541 (8.25%)
Licensed guns	?	17,000
Area	132,000 km ²	918 km ²
Hunters/km ²	2.65/km ²	4.9/km ²

The number of unlicensed guns must be substantial, as well as the number of unlicensed hunters, especially in villages. Estimates range from 1000 to 2000 such hunters. In Chios it is noteworthy that many children under the age of 18 hunt as well, using air-guns.

The hunting pressure on permissible game species as well as on those that are off-limits to hunters is very high. Shooting is often heard inside the towns and villages, replacing the sound of roosters crowing. Shots are also directed within enclosed gardens and terraces, or from balconies before the hunters set off in the morning. Shells are often found bouncing off the windows of settlements found in all towns, particularly within the Marmaro wetland, near the village Kardamyla of Northern Chios. Illegal hunting occurs in the wildlife reserves. As H. Pernot observed in 1897, all species of birds are shot at, even birds of prey and herons which are protected today by Greek law and EEC Directives.

Some hunted protected species include:

Upupa epops (hoopoe)

Caprimulgus europaeus (nightjar)

Lanius excubitor (great grey shrike)

Lanius minor (lesser grey shrike)

Cuculus canorus (cuckoo)

Oenanthe oenanthe (wheatear)

Merops apiaster (bee eater)

Oriolus oriolus (golden oriole)
Jynx torquilla (wry neck)
Lanius senator (woodchat shrike)
Lanius collurio (red-backed shrike)
Coracias garrullus (roller)
Monticola solitarius (blue rock thrush)
Crex crex (corncrake)

Accipiter nissus (sparrowhawk) is shot by hunters because it is considered a competitor for small birds. *Egretta garzetta* (little egret) and *Ardea purpurea* (purple heron) are shot in the area of the Cambos of Chios because some claim that they eat the goldfish in the open cisterns. A few years ago a couple of storks who had nested on the chimney outside the village of Pyrgi were shot. Six flamingos who stopped in the bay of Lithi were also shot. Two of these were stuffed and now decorate a seaside restaurant. *Tyto alba* (barn owl) is shot because its cries scare some of the villagers. A group of 40 *Larus minutus* (little gulls) were shot on the pier of Chios in 1989, (5). H. Pernot in 1987 writes that he was surprised to be served a meal of owls for dinner, (2). Today birds of prey are not typically eaten, but there are reports of the capture of the young of *Falco eleonora* (Eleonora's falcon) from their nests.

During the 1989-90 hunting seasons, Chios sent 2 buzzards 1 kestrel, 2 Eleonora's falcons, 1 long-legged buzzard, 1 herring gull, 2 little bittern, 1 dalmatian pelican, 1 short-toed eagle and 1 barn owl to the Wildlife Hospital of Aegina.

It is interesting to note that fights occur between hunters and ixovergades (those who place the limesticks) although some belong to both groups. Hunters accuse the latter of destroying birds, while the latter prevent hunters from approaching their territory because the shots scare off the small passerines and they don't perch on the limesticks. Farmers complain of the hunting which takes place in both cultivated fields and in fenced areas. For the hunters not only destroy their cultivated land, but also steal their olives. Unfortunately, hunting is also allowed in important biotopes of endangered species such as:

1. The gorge of Cambia in Northern Chios, habitat of the *Hieraetus fasciatus* (Bonnelli's eagle).
2. Delfini-Givari wetland of North Eastern Chios, habitat of the otter (*Lutra lutra*), whose area has already been prohibited to hunting. Hunters state that considerable poaching occurs by soldiers stationed near the area.
3. Parpanta wetland, east of Kardamyla in Northern Chios, a migratory station of all species of herons, rollers, cuckoos and others.

Hunting pressure becomes extremely high at Dotia, the southernmost tip of Chios, where there exists a colony of *Falco*

eleonorae and which is a passage way for turtledoves and quail.

H. Pernot states that urban dwellers city people do not hunt except during the month of September. They camp out in tents at Dotia and eat part of their catch, sending the rest into town.(2)

Today at Dotia the hunters are not only urban dwellers; nor do they need to camp out since the asphalt road takes them close to the promontory and is less than one hour's drive from the city. Illegal houses have been built there. Since it has become an urban area, hunting should be forbidden. Approximately 1,000 hunters are found in this rather limited space. They create a concentration of gunfire which brings down a large number of birds. Many hunting dogs and even hunters are wounded in the intense cross-fire.

Illegal hunting is also intense in Psara and Antipsara, two islets off Chios, where locals complain of the hunters from the main island who camp out there. Psara is a passage for turtledoves, quail, bee eaters, golden orioles and other migratory birds. There is no forestry service however, and no control of hunting occurs.

In other words the hunting law stipulations are wholly violated all over the island.

Indicative of this whole climate is a local anecdote referring to a hunter's curse to a bird that got away: "May you pass by Chios."

6.0 THE COMMERCE OF BIRDS

Many houses of Chios have limesticks in their gardens. These limesticks capture birds used for meals within the homes. The limesticks placed along the coast, however, are collecting thousands of birds daily which fill many sacks during the peak migratory season. Since single families cannot consume so many birds, they are distributed to friends, frozen, packaged to be sent to friends and relatives abroad, or simply discarded. The market place fills with birds which are sold alive or dead. Live birds are males which are sold as songbirds and shipped to Piraeus or other ports. Typical prices for birds are as follows:

Live birds:

Greenfinches	300-2000	Greek drachmae (GRD)
Goldfinches	200-1500	"
Siskins	up to 200	"
Hawfinches	500-1500	"
Song Thrushes	1000-1500	"
Black birds	1000-1500	"
Chaffinches	500-2000	"

Dead birds:

Goldfinch size	20	GRD
Song Thrush size	80	"

About 2% of the total of captured birds are sold alive. There are also restaurants which serve cooked birds and several people on the island live from the commerce of wild birds.

Stuffed animals are common in Chios. There is at least one shop that continues to stuff animals which are found displayed in restaurants, public buildings, schools and shops. Typical species found stuffed are:

Tyto alba (barn owl)
Circaetus gallicus (short-toed eagle)
Accipiter nissus (sparrowhawk)
Asio otus (long-eared owl)
Buteo buteo (buzzard)
Buteo rufinus (long-legged buzzard) (market price: 7,000 GRD)
Egretta alba (great white egret)
Phalacrocorax aristotelis (shag)
Phoenicopterus ruber (greater flamingo)
Ciconia ciconia (white stork)
Vanellus vanellus (lapwing)
Egretta garzetta (little egret)
Ardea purpurea (purple heron)
Ardea cinerea (grey heron)
Athene noctua (little owl)
Otus scops (scops owl) (market price: 1,700 GRD)
Hieraetus fasciatus (Bonnelli's Eagle)
Garrulus glandarius (jay)
Coracias garrulus (roller)

7.0 PROPOSALS AND RECOMMENDATIONS

1. Immediate action by the authorities to control illegal hunting, stuffing, and commerce of wild birds as well as the destruction of illegal traps.
2. Support for environmental education programs in schools and other community fora throughout the island. Certain activities along these lines have been initiated in 1989 by the Hellenic Ornithological Society and the Ecology and Environment Society of Chios.
3. Increase in the number of wildlife refuges by the addition of the otter habitat at Delfini and Givari, Bonnelli's eagle in the gorge of Cambia, the wetland Parpanta which is frequented by many herons, and Psara - Antipsara.

4. Strict control of hunting at Dotia as well as strict enforcement of upper limits of catches per hunter.
5. Restrictions on the building of new rural roads which are essentially used only by poachers.
6. Prohibition of hunting on the islets of Psara and Antipsara which are the passage-ways for many protected migratory species such as the golden oriole and bee eater and where hunting is difficult to control. A colony of Eleonora's falcon also exists in these small islands. Permanent residents of Psara number 200, chiefly elderly people. Local hunters are minimal.

8.0 EPILOGUE

One needs to live in Chios to feel the hunting fever that takes over the island during the fall months. The discussions regarding the passage of birds are constant. Hunters circulate carrying their hunting gear in the town, or on motorcycles in the rural areas. Fathers are proud of their kids who hunt or place limesticks. There is not a single Chioti who has not had the experience at some time in his life of making or using limesticks, of hunting, or of eating wild birds.

The killing of millions of wild birds, particularly with this torturous method carries the same ethical weight in Chios as the collection of wild greens or mushrooms. At one time, the custom served the purpose of a nutritional supplement. It must be noted that the relationship of the people of Chios with birds is a deeply ingrained part of the local culture and traditions of the island. The Chiotes have a great deal of knowledge about birds, their habits, their diets, their calls, and their passages. There is a rich and lively local terminology relating to birds that includes at least 70 species. The agonizing killing of these birds has, for centuries, been the only relationship that these people have had with the winged visitors who flood the island with their presence each fall.

The people of Chios must be given the opportunity to become conscious of another way of relating to these birds, a way that will respect the rights of creatures who have been using the island as a station on their long migratory journey for thousands of years.

EDITOR'S NOTE

Following an invitation from the Ecology and Environment Society of Chios and three other local environmental societies, the Director of Wildlife at the Ministry of Agriculture, Mr. Petamides, and a member of his staff, Mr. George Handrinos, arrived on Chios island on September 18 and 19, 1990 and held a public meeting explaining the legal ramifications of this custom. The demolition of some 200 constructions with limesticks was ordered as well as restrictions on the commerce of locally caught wild birds in the stores of the market-place.

On October 18, 1990, on the regularly televised program of the Ministry of Agriculture giving information to farmers, the Director of Wildlife at the Ministry, Mr. Petamides, discussed this issue again and repeated the illegal aspects of trapping and killing wild migratory passerines. Greek TV (ERT 1) is preparing a documentary film on the issue.

The killing is not likely to stop with these actions. Formal complaints to the Greek government from international bodies must be made, as well as a concerted effort to improve the level of public awareness on Chios and throughout Greece.

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Figure 1

Chios - Location of Bird Traps

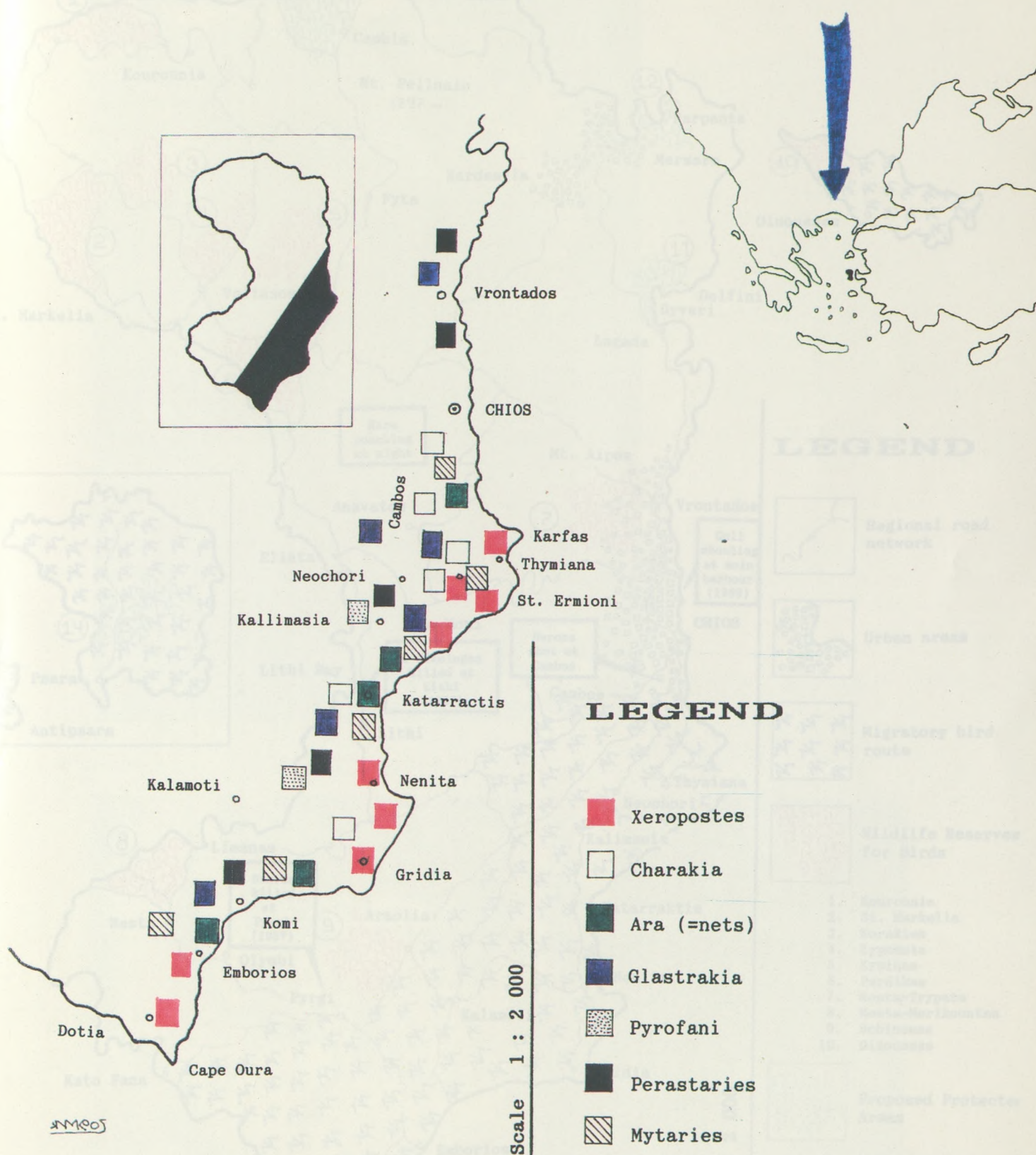


Figure 2

Chios - Migratory Bird Routes, Wildlife Reserves and Proposed Protected Areas

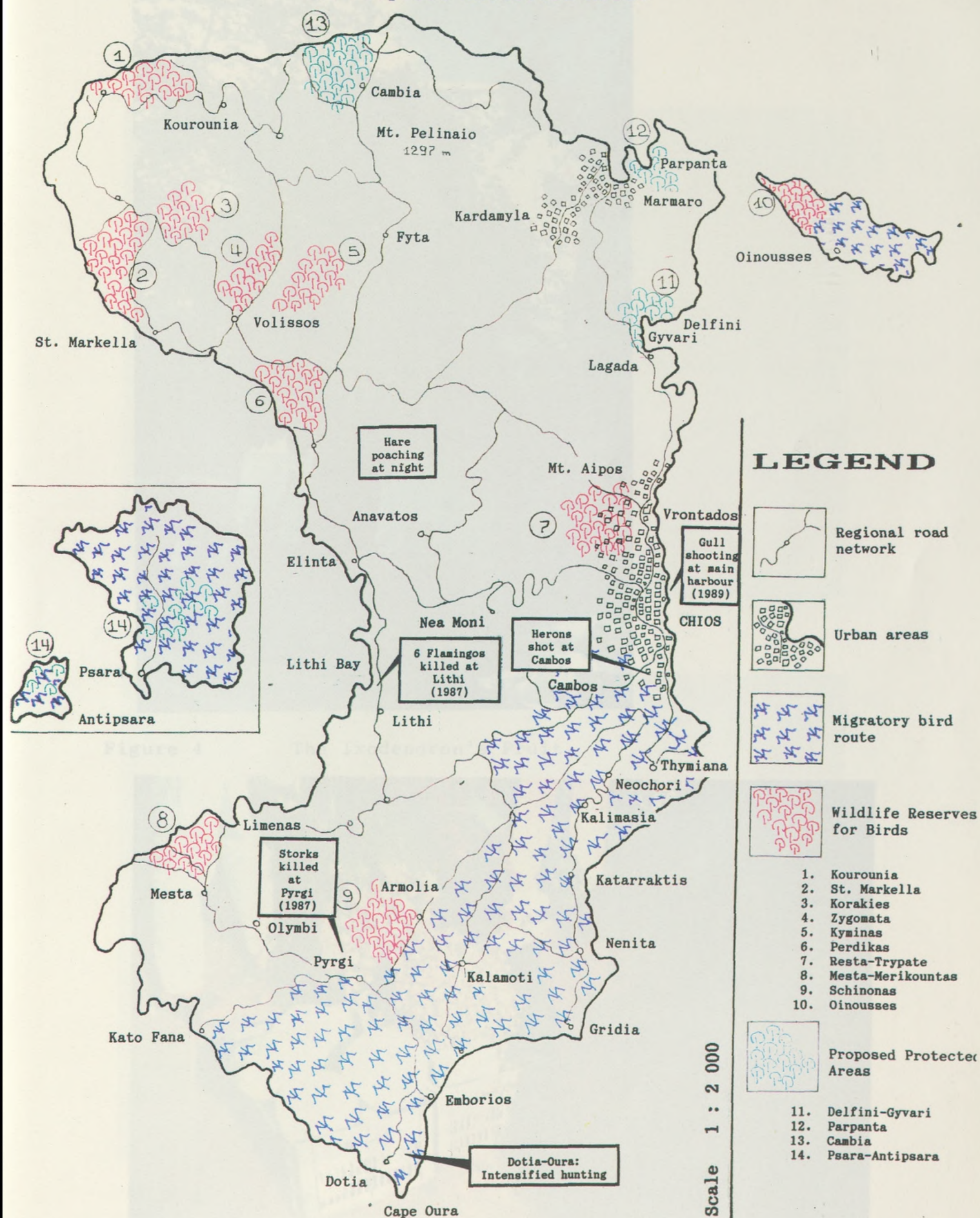


Figure 3

The Ixodendron



Figure 4

The Ixodendron's Fruit



Figure 5 Preparation of Ixos



Figure 6 Coating of the Limesticks

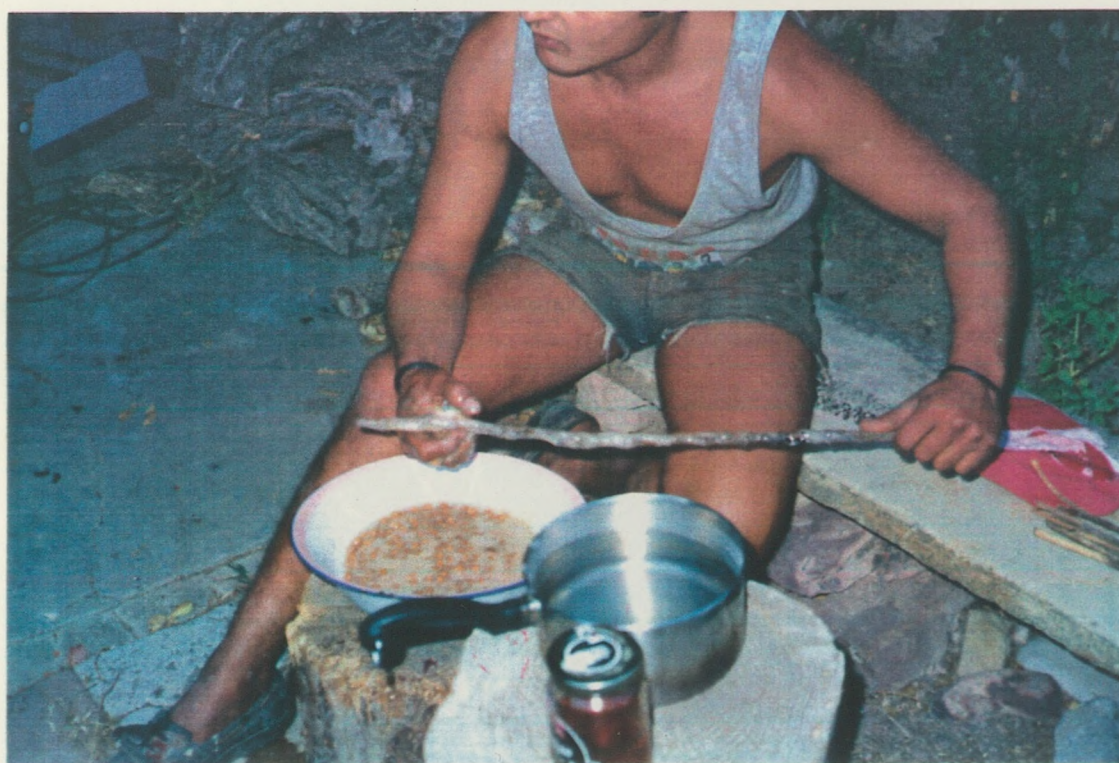


Figure 7

Xeropostes



Figure 8

Robin Caught in Perastaries



Figure 9

Trap with Scaffolds

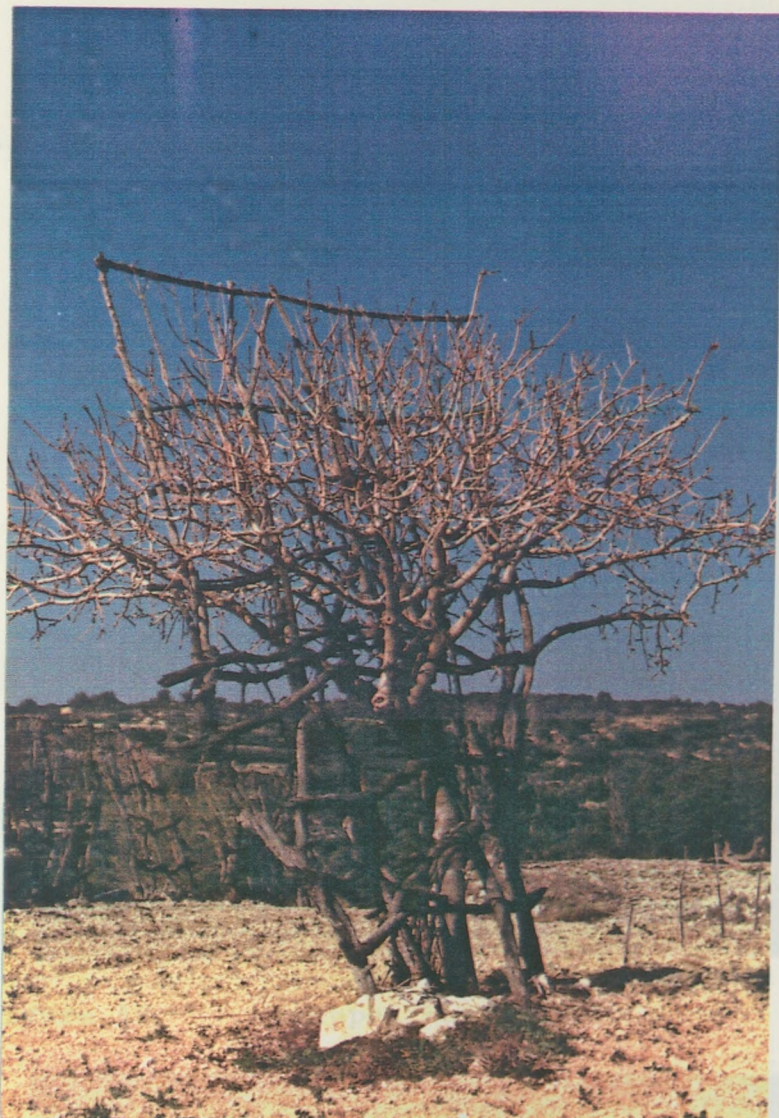


Figure 10

Redstart Caught in Mytaries



Figure 11 Ara (= Net)



Figure 12 Trapped Hawfinch



Figure 13

Charakia with Caged Decoys



Figure 14

Glastrakia



Figure 15

Market-Scene



Figure 16

A Single Serving of 50 Cooked Birds



TABLES OF CAPTURED MIGRATORY BIRDS

Table 1 Protected Species which are Captured Illegally Every Year

SPECIES	SEASON	METHOD see *	PERSONS	BIRDS /day	DAYS	TOTAL
<i>C.choris</i> <i>C.carduelis</i>	Oct	1	200	60 000	20	1200000
<i>C.spinus</i>	Oct-Nov	2	300	18 000	20	360000
<i>P.hispaniolensis</i>	Sep-Oct	2	50	5 000	15	75000
<i>C.cocothraustes</i>	Oct-Nov	2	100	2 000	20	40000
<i>F.coelebs</i>	Oct-Nov	2	300	6 000	30	180000
<i>E.calandra</i>	Oct	2	300	1 500	20	30000
<i>E.melanocephala</i>	Spring	2	100	3 000	20	60000
<i>S.atricapilla</i>	Sep-Nov	2	500	15 000	50	750000
<i>S.atricapilla</i>	Sep-Nov	3	200	4 000	20	80000
<i>S.communis</i>	Sep-Oct	2	1 000	15 000	20	300000
<i>E.rebecula</i>	Oct-Nov	2	300	9 000	30	270000
<i>M.striata</i>	Sep	2,3	1 000	5 000	20	100000
<i>S.borin</i>	Sep-Oct	2	500	5 000	40	200000
<i>Ph.phoenicuros</i>	Sep-Oct	2	500	3 000	30	90000
<i>L.collurio</i>	Sep	3	2 000	20 000	20	400000
<i>U.epops</i>	Sep	3	2 000	-	-	6000
<i>Capr.europaeus</i>	Sep	3	2 000	-	-	4000
<i>O.oriolus</i>	Sep	3	2 000	-	-	8000
<i>Oe.oeanthe</i>	Sep	3	200	1 000	20	20000
<i>M.apiaster</i>	Sep	3	2 000	-	-	20000
<i>T.merula</i> <i>T.philomelos</i>	Oct-Nov	2	200	2 000	30	60000
<i>T.viscivorus</i>	Oct-Nov	2	200	4 000	15	60000
<i>Phylloscopus</i> <i>trochillus</i> <i>Phylloscopus</i> <i>collybita</i>	Sep-Oct	2	1 000	20 000	40	800000
Various other as per Table 3	Sep-Oct	4	60	4 800	30	144000
*Method: 1 nets 2 limesticks		3 rifle 4 air-gun	Total 1			5257000

Table 2 Game Species which are Taken by Hunting Guns Every Year

SPECIES	SEASON	METHOD	PERSONS	BIRDS	DAYS	TOTAL
<i>T. merula</i> <i>T. philomelos</i>	Oct-Feb	rifle	3 000	30 000	100	3 000 000
<i>Str. turtur</i>	Sep	rifle	1 000	2 000	10	20 000
<i>C. coturnix</i>	Sep-Oct	rifle	1 000	3 000	30	90 000
Total 2						3 110 000

- General Annual Total of Captured Migratory Birds
= Total 1 + Total 2
= 8 367 000
- The numbers quoted in Tables 1 and 2 vary by plus/minus 25%.
- The entries quoted in Tables 1 and 2 represent the average of the period 1985-90.

Table 3 Species Known to be Captured (Without Numerical Estimates)

L. excubitor
L. minor
Laius senator
Anthus trivialis
Anthus pratensis
Prunella modularis
Saxicola torqata
Saxicola rubetra
Monticola solitarius
Phoenicurus ochruros
Luscinia luscinia
Luscinia megarhynchos
Turdus pilaris
Turdus iliacus
Troglodytes troglodytes
Emberiza scia
Emberiza leucocephala
Emberiza citrinella
Emberiza cirrus
Emberiza hortulana
Emberiza caesia
Emberiza schoeniclus
Fringilla montifringilla
Acanthis cannabina
Serinus pusillus
Serinus serinus
Loxia curvirostra
Passer montanus
Sturnus roseus

REMARK The numbers quoted in Tables 1 to 3 were determined by calculating:

- the number of individuals associated with all hunting methods,
- the number of days during which each specific species passes over Chios,
- the number of days which, weather permitting, allow for the capture of the specific species.

Table 4 Estimated Drops in Population Levels since 1962

SPECIES	%REDUCTION 1962 to 1990	CAUSES OF POPULATION DROP		
		1 lime- sticks 2 nets	hunting	various other causes
<i>Crex crex</i>	50%		+	
<i>Burhinus oedicnemus</i>	90%		+	
<i>Streptopelia turtur</i>	40%		+	
<i>Cuculus canorus</i>	40%		+	
<i>Caprimulgus europaeus</i>	90%		+	
<i>Apus apus</i>	50%			+
<i>Merops apiaster</i>	60%		+	
<i>Coracias garrulus</i>	90%		+	
<i>Upupa epops</i>	60%		+	
<i>Jynx torquilla</i>	50%	1	+	
<i>Hirundo rustica</i>	80%			+
<i>Delichon urbica</i>	50%			+
<i>Lanius excubitor</i>	80%		+	
<i>Lanius minor</i>	80%		+	
<i>Lanius senator</i>	60%	1	+	
<i>Lanius collurio</i>	50%	1	+	
<i>Sylvia communis</i>	50%	1		
<i>Sylvia borin</i>	60%	1		
<i>Phylloscopus trochilus</i>	30%	1		
<i>Phylloscopus collybita</i>	30%	1		
<i>Muscicapa striata</i>	50%	1		
<i>Saxicola torquata</i>	80%	1		
<i>Saxicola rubetra</i>	60%	1	+	
<i>Oenanthe oenanthe</i>	50%		+	
<i>Phoenicurus phoenicurus</i>	60%	1		
<i>Erithacus rubecula</i>	30%	1		
<i>Luscinia megarhynchos</i>	50%	1		
<i>Luscinia luscinia</i>	50%	1		
<i>Emberiza calandra</i>	30%	1		
<i>Carduelis carduelis</i>	30%	1,2		
<i>Carduelis chloris</i>	20%	1,2		
<i>Coccythraustes</i>	30%	1		
<i>coccythraustes</i>				
<i>Acanthis cannabina</i>	50%	1		
<i>Serinus serinus</i>	50%	1		
<i>Passer hispaniolensis</i>	40%	1		
<i>Oriolus oriolus</i>	60%		+	
<i>Monticola solitarius</i>	50%	1	+	
<i>Sylvia curruca</i>	50%	1		

Notes:

Table 4 does not include birds of prey or aquatic birds. It only mentions species in which a population drop has been observed during their passing over Chios. These observations were recorded in the period 1962-1990. They may vary in the range of 10-15% from reality.

The numbers shown are based on observations of:

1. the density of each species during migration,
2. the numbers of each species which are captured by limesticks and nets,
3. the numbers of each species which are taken by hunters.

