



Committe Against
Bird Slaughter - CABS

Komitee gegen den Vogelmord e.V.

The Use of Limesticks for Recreational Hunting A Harmful and Non Selective Method



CONTENTS

1	LIME: A PROHIBITED HUNTING METHOD STILL IN USE IN EUROPE	2
2	DIFFERENT SORTS OF LIME AND HUNTING PRACTICES.....	3
3	LIME AND THREATS FOR BIRDS	5
3.1	Damage caused by the toxicity of the glue and/or of the solvent	6
3.2	Damage caused by the glue to the structure and microstructure of the plumage.....	7
3.3	Damage through feather loss.....	9
3.4	Damage through overstretching of muscles and dislocations or break of bones	11
3.5	Damage through falling down, self-release or starvation.....	12
4	CONCLUSIONS	12

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1 LIME: A PROHIBITED HUNTING METHOD STILL IN USE IN EUROPE

The Bird Directive states on Article 8. that all “Member States shall prohibit the use of all means, arrangements or methods used for the large-scale or non-selective capture or killing of birds or capable of causing the local disappearance of a species, in particular the use of those listed in Annex IV, point (a).”

In this point, “limes” are expressly mentioned as a prohibited means.

It is indeed well known that the practice of hunting small birds with limes or limesticks was and is still widespread in Europe. Artificial sticks covered with glue are set by trappers in bushes or fake trees and serve as prominent perches or observing points for birds which, landing on them are instantly stuck by legs, body or wings to the twig thereby getting caught.

Everywhere in Europe, where bird hunting and trapping is practiced, limesticks are illegally and randomly used. The catching rate of limesticks is high, glues are easy to purchase in shops (special glues for bird trapping or the common one used against rodents) and this technique does not require special skills. Therefore it is considered by bird trappers an easy and rewarding trapping method.

Trapping with limesticks has been often reported in Northern Italy, in Lombardy and Venice (CABS and LAC), in Germany, North-Rhine (CABS), in Belgium (LRBPO), in Greek islands like Lesbos and Santorini (HOS), but it is massively practiced in the whole island of Cyprus, and in Spain, mainly Valencia and Andalucía, and in France, in Provence. Outside Europe it is widespread all around the Mediterranean (from Morocco through Egypt to Turkey).



Figure 1:
The sticky synthetic substance in
a limestick in Provence

The reason why the Bird Directive instated the ban of limesticks as hunting method is both ecological and ethical. On the one hand, limesticks have an extremely high catching rate. On the other, they cannot discriminate between species and usually cause irreparable damage to birds.

Nevertheless, hunting associations have claimed limesticks to be selective under precise circumstances and successfully obtained exceptional permits. We believe that this claim is fundamentally unjustified. In this brief dossier we will show with the aid of evidence collected on the field, and through direct testimonies from hunters, the actual dangers that lime poses to birds.

2 DIFFERENT SORTS OF LIME AND HUNTING PRACTICES

In Europe and in North Africa there are two different kinds of lime.

- 1) Natural glue extracted from the Syrian plum tree (*Prunus domestica ssp. syriaca*) and processed with honey and water. This glue is used mainly in Cyprus and Greece.
- 2) Synthetic glue, used in central Europe and in western Mediterranean countries. This glue was traditionally made boiling mistletoe (*Viscum album*) and linseed oil (*Linum usitatissimum*). In the last decades it has turned into an industrial product made basically of vegetable oil, resin (colophony) and toluene, a chemical product produced by petroleum refineries. In France the commonest product is the “Glu, pey de gallin” (recently a more natural product has been manufactured, called “Glu Bi”). In Spain the glue used for trapping is the C-96, commonly called “El Tordo”, with some variations in the chemical composition.



Figure 2:
Traditional limesticks and
birds killed in a “parany”
in Valencia. On the left
the glue “el tordo”.

We can recognise in Europe two main trapping techniques with limesticks, the first one uses solid twigs of 0.4-0.6 cm diameter which are solidly set on branches of trees and bushes. When the bird gets caught, the twig does not fall to the ground (unless the bird is of the size of a turtle dove or sparrowhawk), the bird remaining stuck upside down on the stick. The second trapping technique adopts much smaller limesticks of 0.1 cm diameter. When the bird sits on them or brushes them, they stick to the plumage and hinder its movements. The bird collapses to the ground with the stick hindering flight. Both techniques have been developed into massive trapping installations: the “cabane” in France and the “parany”/“barraca” in Spain.

LIMESTICKING IN CYPRUS (ILLEGAL)

Size	Large limesticks: 60-70 cm long, 0.5 cm diameter
Glue	Natural, made with syrian plum tree and honey
Numbers	Installations of 6 to 400 sticks
Place	Set horizontally in scrub, maquis, orchards and fruit trees
Estimated trapping rate	Up to 5 birds per lime stick. Average estimation 0.5 birds per day per limestick

LIMESTICKING IN FRANCE (LEGAL)

Size	Large limesticks: 70-80 cm long, 0.7 cm diameter
Glue	Basically synthetic glue (vegetable oil, resin and petroleum derivatives)
Numbers	No limits, in some departments the prefect sets a limit of 10 to 30 limesticks per installation
Place	Set horizontally in scrub. Around the hunting hides (“cabane”), they can be set on the top of fake dead branches. Some hunting hides are built as a labyrinth of vegetation where hunters set limesticks in windows created in oppositely pruned trees
Estimated trapping rate	Very variable and according to the technique: direct observation suggests a minimum of 2-3 birds per installation. Trappers declare that up to 10-15 are likely to be caught in good migration mornings
Note	These same limesticks are in use illegally in many countries of Europe, but are declared legal in 5 departments of Provence

LIMESTICKING IN SPAIN AS SILVESTRISMO/ARBOLILLO (FORMERLY LEGAL, NOW ILLEGAL)

Size	Small limesticks: 40-50 cm long, 0.2 cm diameter
Glue	Synthetic glue (vegetable oil, resin and toluene)
Numbers	5-10 on each fake tree
Place	A fake small tree is settled on a open ground. The small limesticks imitate a dead branch which invites the birds to perch
Estimated trapping rate	No information available. From videos in YouTube an average of 2-10 birds per day

LIMESTICKING IN SPAIN IN PARANYS/BARRACAS (LEGAL UNTIL 2003, NOW ILLEGAL)	
Size	Small limesticks: 20 cm long, 0.1 cm diameter
Glue	Synthetic glue (vegetable oil, resin and toluene)
Numbers	Between 500 and 2,000 sticks in each parany/barraca
Place	Paranys/barracas are fenced small gardens, where trees are pruned to create room for dozens of horizontal perches, on which limesticks are set.
Estimated trapping rate	Between 10 and 200 per day/night per parany (sizes of paranys are varied)

3 LIME AND THREATS FOR BIRDS

All these trapping methods present specific traits and some hunting groups have tried to increase the selectivity and decrease the damage caused to birds by the lime and the solvent. Nevertheless, the observation on the field, the studies provided here and the declarations and visual material published in Facebook and YouTube by trappers themselves prove that, despite all efforts, limesticks do remain an unselective, massive method, which cause permanent damage to the caught birds. The damage can be divided into five categories:

- a) Damage caused by the toxicity of the glue and/or of the solvent
- b) Damage caused by the glue to the structure and microstructure of the plumage
- c) Damage through feather loss
- d) Damage through overstretching of muscles and dislocations or fracture of bones
- e) Damage through falling down, self-release or starvation

Not all these dangers occur jointly in all the above mentioned trapping techniques, where some have achieved the goal of decreasing some of the mentioned damaging factors, but none has ever achieved the final goal of transforming limesticking into a safe trapping method.

The arguments backing up our claim and which are proven true by the pictures and videos which we will expose in this document - are that, on one hand, the body structure of birds is extremely fragile: the bones are hollow, the feathers cannot tolerate any tension, the microstructure of the feathers must be perfect to guarantee the thermo isolation and a waterproof cover to the bird. The extreme care that birds devote to their plumage is well known and shows how important this part of their body is for the survival of the animal. On the other hand, the lime traps in an unpredictable manner the birds, which, in the normal attempt to escape, damage the plumage and/or hurt themselves. There is no way to anticipate how a bird will stick to the twig and fall upside down. This simple and empiric principle makes the use of limesticks intrinsically harmful for any bird, no matter the trapping technique used.



Figure 3: Song Thrush on the ground of a parany in the night: three limesticks full of body feathers still hinder its movements

3.1 DAMAGE CAUSED BY THE TOXICITY OF THE GLUE AND/OR OF THE SOLVENT

The glue used in Italy, France and Spain is synthetic, partially made out of petroleum derivatives, like toluene, and colophony. The solvent more frequently used in Spain, the so called “anti-liga” is a n-decane (C₁₀H₂₂), i.e. an aliphatic hydrocarbon produced through petroleum refining. In France the solvent used is the similar “essence F”, composed of paraffinic hydrocarbons (65-85%), alicyclic hydrocarbons (20-25%) and benzene hydrocarbons like toluene, xylene and ethylbenzene (<14%).

All these chemical petroleum components are known for their toxicity and harmfulness. According to their toxicology, petroleum derivatives can be incorporated through inhalation, ingestion or transdermal absorption and are transported in the blood to the central nervous system, where they can provoke narcotic effects, like impaired psychomotor coordination and prostration. In addition, they cause pulmonary damage and renal failure.



Figure 4:
Glue, alcohol and solvents in a French *cabane* in Provence

In relation to middle and small sized birds, an independent study was published in 2005 by the “Instituto de Investigación en Recursos Cinéuticos” of Ciudad Real, which conducted a scientific investigation on the effects to birds of the common glue and solvent used in Spain in the Parany. This study was sponsored by the trappers’ association APAVAL, which had already promoted an own study carried on by Mr. Ricci, scientific director of the Institut Méditerranéen du Patrimoine Cynégétique et Faunistique, whose approach had been proved flawed by serious methodological and scientific flaws.

Seven scientists investigated the effects of glue and solvents, testing these products on a stock of different sized cage birds (mainly thrushes, finches and zebra finches) for a period over 30 days. Their conclusions show that glue and solvent have negative physiologic, pathologic and ethologic effects on birds. Particularly:

- All birds treated with glue and solvent spent more time sleeping. In thrushes this effect was apparent in the first two days after treatment. In smaller birds (zebra finches) the treatment caused a behavioural reaction similar to drunkenness: lack of balance, falling asleep on the bottom of the cage (pag. 23, 31 and 35)
- No medium size bird died, but four zebra finches passed away after treatment with glue and/or solvent (pag. 35)
- A sample of birds were sacrificed 30 days after the treatment for histopathologic analysis in order to detect possible internal injuries: the result was the presence of a functional renal damage and of a lung disease, the pneumoconiosis, caused by the inhalation of toxic substances.

The study concludes that the inhalation of glue and solvents – mainly toluene – causes a behavioural change in birds, at least in the first two days after the treatment. Birds are sleepier and therefore more subject to predation in their natural environment. In addition the inhalation causes a lung disease in the middle term, which reduces the functionality of lungs, thus affecting flying capacity and inducing neoplastic processes and allergic pneumonitis (pag. 54).

3.2 DAMAGE CAUSED BY THE GLUE TO THE STRUCTURE AND MICROSTRUCTURE OF THE PLUMAGE



Figure 5:
Flight feathers of a
Song Thrush after being
released from
limesticks in Spain: the
rachis is broken and
barbules are destroyed

Both kinds of glue, synthetic and natural, cause damage to birds' plumage. Birds spend a lot of time each day to clean and comb their plumage: bathing is an important activity and the uropygial gland secretes a "preen oil", which birds transfer to its body during preening by rubbing their beak and head against the gland opening, thereafter rubbing the accumulated oil on the feathers of the body and wings. The preen oil is believed to help maintaining the integrity of the feather structure.

The feather is composed by a central shaft (calamus and rachis) and barbs. Extending from the barbs are a series of short branchlets called barbules. Tiny hooklets tie the barbules, and ultimately the barbs, together. This complex arrangement creates the solid but light structure of the feather. The interlocking barbules, when in good condition, form a barrier that helps repel water and in thermoregulation. It appears that the waterproofing effect is not primarily achieved by means of the uropygial oil – although it is hydrophobic – but rather by applying an electrostatic charge to the oiled feather through the mechanical action of preening. Feather and body integrity is therefore crucial for wild birds that have to survive exposed to weather events.

As shown in the experiments conducted by the "Instituto de Investigación en Recursos Cinéuticos", glue destroys this complex structure by "altering the microstructure of feathers or because the solvent does not manage to completely remove the glue stuck to the plumage. The cleaning process itself could damage the feathers. This change in the microstructure plumage, if sufficiently large, could adversely affect the plumage waterproofing ability or the flight capacity, once the bird is released [...] (pag. 9). During the investigations tracks of glue and dirty remains were more frequently observed in the primaries, rectrices and middle coverts of birds treated with glue and solvent" (pag. 10). The study carries on stating: "Cohesion between the barbules after treatment with glue/solvent was observed only in the rectrices of thrushes. However, the cleaning process with solvents affects the cohesion of rectrices, primaries and tail coverts. This loss of cohesion after treatment with solvents has been more important in the covert feathers (pag. 10-

11). Barbules glued together were also detectable in primaries, rectrices and tail coverts (pag. 11) [...]. We observed clear effects of the treatment with glue and solvent (or only solvent) on the level of dirtiness, cohesion and sticking of feathers' barbules. These effects may explain the marked reduction in impermeability of the plumage detected in the sample birds (pag. 16). Briefly, birds treated with glue/solvent tended to spend more time cleaning the plumage. Finally, these experimental birds also tended to spend more time in the sun, especially during the early hours of the morning (pag. 23).

The conclusion of this study is striking: firstly, "birds treated with glue/solvent suffered a clear decrease of the impermeability of their plumage for at least one week" (pag. 39) and, secondly, "birds that might be freed from the limesticks with lower waterproof plumage, and the according changes in behavior could certainly be exposed to an increased risk of mortality through predation or problems associated with a worse thermoregulation" (pag. 37)

These same conclusions can be reached through a more empiric way by observing birds trapped with limesticks. CABS has conducted Bird Protection Camps in the main European trapping hotspots, among others in Cyprus since 2001 and in Spain since 2011. Some 2,600 birds have been found and released from limesticks during these anti-trapping operations. No systematic data have been collected so far: it is not possible to analyze how many birds suffered permanent damage from limesticks, what kind of damage and what percentage could be successfully released into the wild. Nevertheless a huge amount of photo and video material could be gathered and can be used here to show the effect of glue on feathers. Regarding the integrity of feathers after the exposition to glue and solvent, the following conclusions can be drawn according to our empirical experience:



Figure 6:
Blackcap during the process
of cleaning after being
rescued from a parany.
Rectrices are lost and despite
the use of alcohol, flight
feathers are seriously
damaged



- Birds caught in limesticks have often twisted feathers, with barbs sticking together and broken rachis.
- When glue sticks to the flight plumage, it is extremely difficult to clean properly and completely the plumage. Traces of glue can be found after 2-3 cleaning sessions. If the glue sticks to the body plumage there is no way to clean it up, except by ripping off the glued body feathers.
- The cleaning process itself, consisting in dragging repeatedly on the feathers a tuft of cotton wool impregnated with hydrocarbons, soap or alcohol, alters the texture of the feathers. All birds cannot properly fly for some hours after cleansing. The use of alcohol and ashes, which is used by many Bird Rescue Centers and practiced by some French trappers, requires a convalescence period of about one week, to achieve the objective to release the bird back to the wild.

Birds released after cleaning are observed sitting on branches and cleaning their plumage frantically. If traces of solvents are still on the feathers, bird preening would result in the ingestion of toxic substances (see previous chapter for toxicity).

3.3 DAMAGE THROUGH FEATHER LOSS

One of the most frequent damage to plumage, which can be observed in glued bird, is the loss of flight and body feathers. Almost all birds found on limesticks lose feathers and cannot fly properly anymore (and certainly not continue migration). The number of lost feathers increases proportionally to the time spent on the limestick, but a significant number of feathers can be lost as soon as the bird is stuck. The shock of the capture itself usually causes

feather loss, the so called “schockmauser”. This is a natural protection reflex of the bird’s body. In life-threatening situations - when caught by a predator or when got stuck somewhere – within just a second the bird’s tail and steering feathers can drop out. Also a part of the small plumage can be affected. Due to this painless loss of feathers often the bird is able to escape and the predator just keeps the old feathers in the claws. Nevertheless this feather loss will hinder for 2-3 weeks the bird’s capacity to steer in flight, to migrate on medium and long distances and to efficiently thermoregulate.

Even if a bird does not undergo any “schockmauser”, it will still stick to the lime twig in an unpredictable way. This unpredictability means there is no way to determine in advance whether the bird will be completely blocked in its movements and will not suffer any significant damage or if, on the contrary, it will be only partially hindered, where fluttering its wing will cause any further damage to itself.



Figure 8:
Song Thrush rescued from a
parany in Valencia. Body
feathers, tertiaries and
secondaries are lost

A bird which sticks with both legs, both wings and rectrices (or tail coverts), is almost completely blocked and can hang for one hour causing irreversible damage. All the other positions in which a bird is blocked by the glue will most probably cause serious damage to its body integrity as soon as it tries to release itself. Body feathers are lost if they touch the twig and as an immediate response to stress, whereas secondary and tertial flight feathers are lost if the bird sticks with only one wing with the body weight pulling down. Very seldom, primaries are lost, too, since their calami insert more strongly into follicles.

The following pictures show the different ways birds are found stuck in limesticks. Note that even the numerous pictures provided by trappers show birds that have lost their feathers. Rectrices, body feathers, tertiaries and secondaries are lost in this order, as well by birds caught in limesticks in parany, while falling, when impacting on the ground, or soon thereafter while struggling on the ground to get rid of the tiny glued sticks.

3.4 DAMAGE THROUGH OVERSTRETCHING OF MUSCLES AND DISLOCATIONS OR BREAK OF BONES



Figure 9:
Two juvenile House Sparrows in a limestick in Cyprus. Caught by legs and the top of the wings, both have legs severely overstretched

As soon as the bird sticks to the twig, it starts wriggling, shaking, twisting its body and fluttering its wings if still free to move.

If the bird is caught only by one wing, the chances that it will suffer a fracture or dislocation of the bone is extremely high. The fracture usually happens at the carpus-metacarpus joint, whereas the dislocation by the humerus. Fractures also occur if the bird is trapped in an unnatural position.

A Thrush Nightingale (*Luscinia luscinia*) was once observed falling on a limestick and getting stuck with one wing, giving a powerful wing beat, thus fracturing its carpus-metacarpus joint. The bird had to be euthanized.

Dislocations occur more often, if the bird is not completely blocked. A bird hanging with one wing and one or two legs stuck will suffer after a few minutes of fluttering from a dislocation of the humerus.

A turtle dove (*Streptopelia turtur*) was found on a limestick after at least 6 hours hanging on one wing. There was no broken wing, but muscles and tendons were so compromised that the bird could not fly even after a three week convalescence.

Very often birds released from limesticks have overstretched leg or wing muscles. Again, also in this case, the longer the bird hangs, the more serious the damage is. Nevertheless we have observed birds freshly trapped by both legs, who fluttered continuously both wings to exhaustion, and which suffered of overstretched muscles for 24-36 hours. Birds with overstretched legs lie on the ground without being able to stand, walk nor fly.

3.5 DAMAGE THROUGH FALLING DOWN, SELF-RELEASE OR STARVATION

This factor has not been investigated enough to reach a sufficient sample, but in paranyis it appears that birds, who get glued at 4-6 meters height and then fall to the ground dragging the tiny limesticks with themselves, suffer internal injuries because of the fall to the ground and die in a short time. This observation was reported by some paranyers.

More evidence is available from birds that get glued but manage to escape or get rid of the limestick and then die because of the glue still hindering the flight. In Cyprus and Spain birds without tail feathers or hopping with glued wings can be relatively often observed around trapping sites.



Figure 10: Sparrowhawk found on the ground amid a trapping installation in the maquis in Cyprus. Flight feathers show traces of lime, which made the bird unable to fly

4 CONCLUSIONS

Lime is intrinsically a non-selective trapping method. Associations advocating for the legitimization of traditional hunting methods claim that birds of protected species accidentally caught in limesticks can be safely released into the wild without any harm.

We believe that this claim is flawed by enough evidence showing exactly the opposite, i.e. that limesticks do constitute a major threat to birds and cause serious damage to their body integrity. All attempts made in France and Spain to create a safe limestick practice have failed: birds accidentally trapped risk suffering short-term death or a handicapped life, if lucky.

The fragility of birds' skeleton and the complex texture of their plumage make them extremely vulnerable to lime. Once a bird is glued, it probably will never recover to survive long enough in their environment: the toxicity of synthetic lime, the loss of impermeability in the plumage and of thermoregulation capacity, the loss of flight feathers and the serious risk of muscle overstretching and bone dislocation and fractures, are some of the major threats which lime pose to birds.

Therefore, all limestick practices in Europe should be completely banned and no further derogation granted, if the principles of ecology and of the Bird Directive are to be fulfilled.

5 PHOTO AND VIDEO ARCHIVE

Video material available at the following Youtube links:

Limesticks FRANCE: <https://www.youtube.com/watch?v=ymReTEUWuBY>

Limesticks SPAIN: <https://www.youtube.com/watch?v=wYbE-LyJOpM>

Limesticks in CYPRUS: <https://www.youtube.com/watch?v=7KvpoLNEeDg>

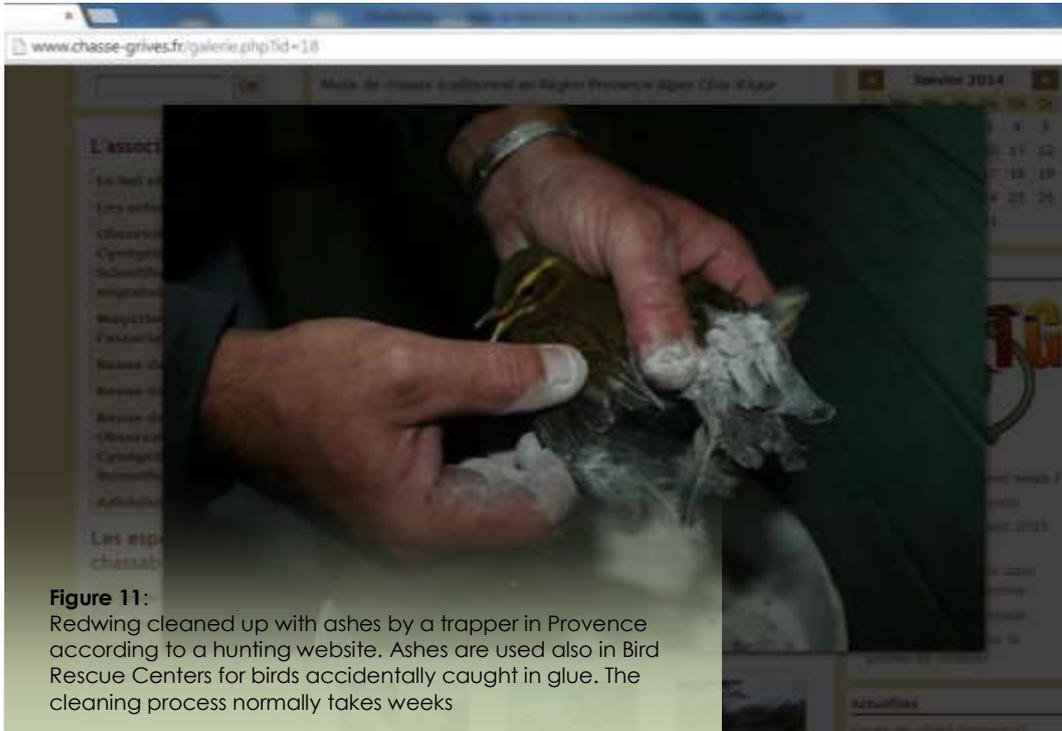


Figure 11:
Redwing cleaned up with ashes by a trapper in Provence according to a hunting website. Ashes are used also in Bird Rescue Centers for birds accidentally caught in glue. The cleaning process normally takes weeks



Figure 12:
Song Thrush rescued from a parany





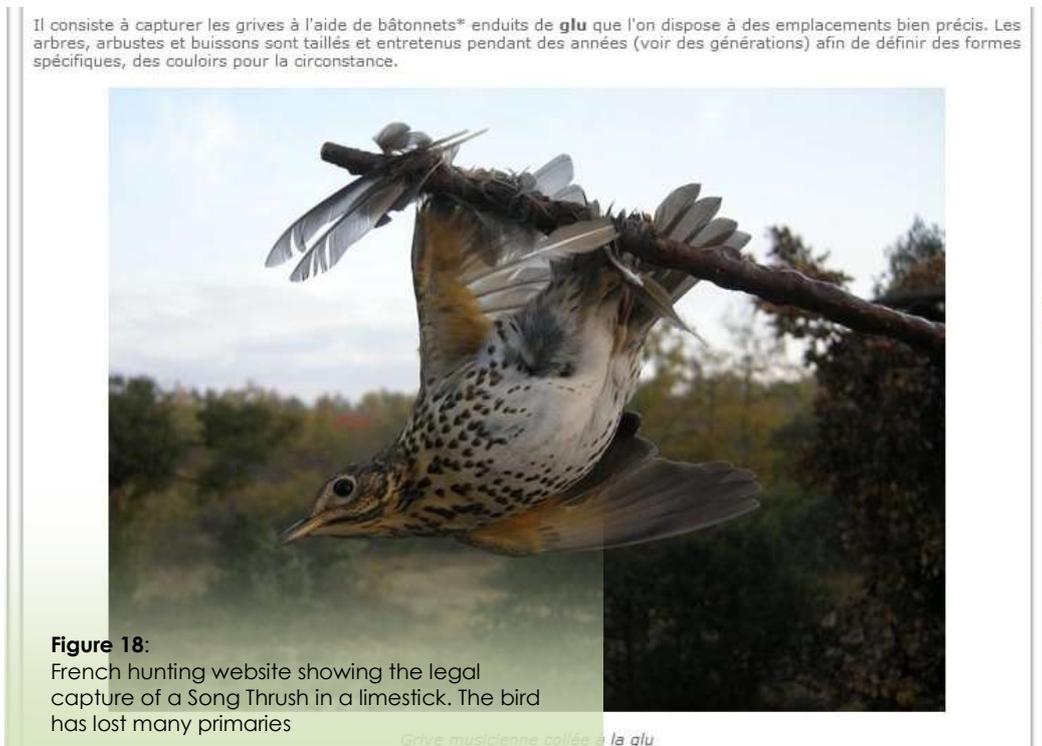
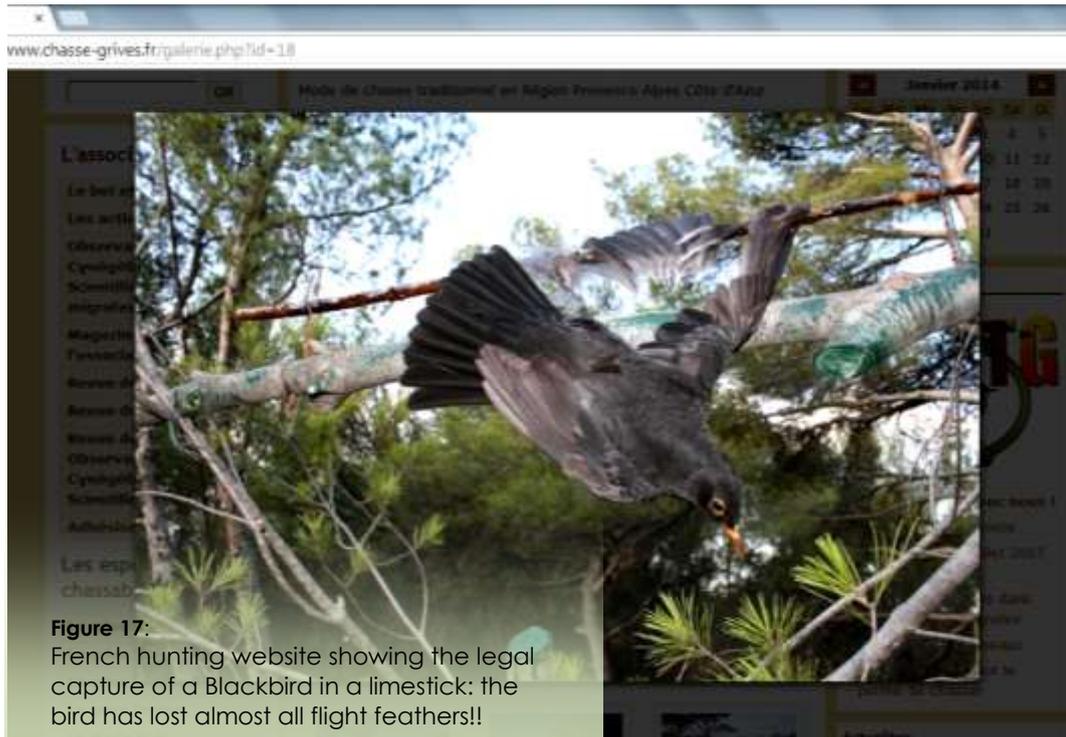






Figure 21:
Blackcap in limestick in Cyprus: due to the unnatural position, the bird suffered a dislocation of the left humerus



Figure 22:
Song Thrush rescued in a parany: the twigs have ripped off body feathers and rectrices



Figure 23:
Usual scenario in Cyprus: a blackcap
caught in glue with loss of rectrices
and twisted flight feathers



Figure 24:
Thrush Nightingale in Cyprus: half of rectrices are
lost. Legs are overstretched





Figure 27:
Kestrel in a limestick: the unnatural position of the left wing will cause a dislocation of the humerus of this bird. Cyprus



Figure 28:
Spectacled Warbler in Cyprus: rectrices and flight feathers on the right wing are lost or badly damaged: the left wing and both legs are overstretched





Figure 31:
Redstart in Cyprus: note both overstretched legs



Figure 32:
Olivaceous Warbler stuck in an unnatural
position to the limestick. Cyprus







Figure 37:
Collared Flycatcher caught by both wings: muscles are overstretched. Cyprus



Figure 38:
Dead Collared Flycatcher: caught by one wing, The shoulder joint was broken. Cyprus



Figure 39:
Great Reed Warbler with overstretched legs.
Cyprus



Figure 40:
Limestick installation in Cyprus with 5 blackcaps: 3 have already lost the rectrices



Figure 41:
Song Thrush in a parany; the limestick is ripping off body feathers



Figure 44: Song Thrush found dead right outside a parany: many birds manage to release themselves from the limesticks, but the glue still make them unable to fly. Many die of starvation around the trapping site



Figure 45: Blackcap found dead outside a parany with evident traces of lime on its plumage