CENTRO STUDI ETOLOGICI
C. S. E.

corbaiola notiziario

Year 4 - Issue n. 6 - February 2006

A collection of information and curiosities on the most varied nature subjects

The "perché,perché, perché" (why, why, why) section is eager to answer your most unusual questions. Read on to find out more about firefly and moving around.
Remember to address all your questions to:

The Editor, Corbaiola News,
Centro Studi Etologici, Convento dell'Osservanza 53030 Radicondoli (Si)
or email us at
notiziario@centrostudietologici.org
Don't forget to write your name, age and where you are writing from.

In this issue "The woodsman" will talk to us about the world of mushrooms. Whatches and compasses in our "Incredible!" section.

A warm greeting from all the Editorial Board.

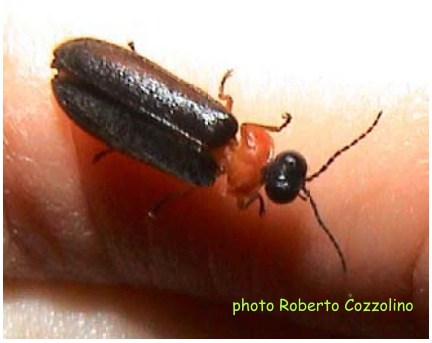
Photograph of a tortoise (*Testudo hermanni*)

perché, perché, perché?

readers ask the questions

What is a firefly?

Giulia (Radicondoli)



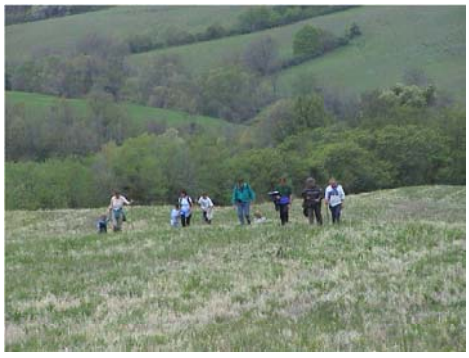
Firefly is the common name of the luminescent insects of the *Lampiridae* family (order Coleoptera). Female fireflies lay their eggs in soil; the eggs hatch into larvae about four weeks later. The larva undergoes a series of metamorphosis before turning into an adult firefly. Even in the larva state these insects can emit a blu-green light. The light organs of the firefly are found in the lower part of their abdomen. The light we see is produced through a chemical reaction called bioluminescence; the light organs consist of several layers of small reflector cells and a layer of light-producing cells. The substrate called luciferin is excited by the enzyme luciferase and, interacting with the oxygen, it emit light on decaying to its groung state. Firefly may control the emission of light by regulating the amount of oxygen supplied to the cells on the abdomen. Amongst the different species of fireflies present in Europe the most popular is the *Lampyris noctiluca*. The larvae do not have wings and they feed on snails, whereas in the adult stage they hardly eat at all. The female continues to have an aspect similar to a larva even during adulthood; in fact it does not grow wings. The adult male does have wings and is capable of flying. Both male and female are yellow to brown in colour. Another species we find frequently in Italy is the *Luciola italica*, very rarely seen in cities. The adult female in this case has wings but does not fly. Both male and female have a reddish body and dark brown wings. The male signals to the female by turning its photocells on and off, the female answers with intermittent light signals. "...Amongst the Lampirae a glowing light signals the presence of females to males. It is the torch of love, a natural light, an animated telegraph that shines in the dark and silent night". This is the translation of a sentence written in the XIX century by the French naturalist Louis Figuier (1819-1894).

Giulia's question has been answered by Roberto Cozzolino;
images show a male of *Luciola italica* (photo R.C.)

perché, perché, perché? our readers' question continued

Why do men and women move around?

Katya (9 year old, Radicondoli)



The first thing that comes to mind is that men and women move in order to meet each other. Let's look deeper into this affirmation to see what we mean. You may well have noticed that not only human beings are capable of moving; in fact a lot of animals move around, let s say that we rarely encounter animals that do not move during their life span. Examples of animals that do not move are very rare, but there are a variety of living creatures that do not move and therefore spend most of their existence in one spot, take for example the sea anemone and coral. During its life span an animal must be able to find food and water, rest, and, probably most important of all, encounter partners for mating. Like many other animals we too have to find food, to sleep and to socialize. There are a variety of ways in which we can observe "movement" as a developmental strategy in living beings. In the plant kingdom most of the species apparently do not move, even though in reality they are not static. Lets look at a tree for example, how does a tree get its food? how does it drink?, how does it reproduce? In the course of the years plants have developed extraordinary movement capacities even though they are planted in one spot. The roots of a tree grow avoiding obstacles in search of water and other nutrients; leaves bend towards sunlight, which is necessary for chlorophyll photosynthesis. The plant kingdom is full of extraordinary ways to sexually reproduce without meeting a partner, one of the most spectacular is the pollination; pollen grains (male) are transported by wind, water or by insects allowing plants to mate with other individuals of the same species.

So you see both plants and animals, including human beings, have developed unique mobility characteristics so as to fulfil their primary needs.

Katia's question was answered by Caterina Magrini, Biologist expert on weasels and martens; photo from CSE archive

The woodsman

MUSHROOMS

Mycena alba

If you take a walk through the woods you will come across hundreds of types of mushrooms. The best period to go mushroom picking is late summer all through autumn. Mushroom pickers over the years have become more and more numerous thanks to ameliorated road conditions and to the delicious recipes that are prepared with this produce of the woods. Unfortunately this phenomenon has also created various problems in the natural habitat where mushrooms are found, even if there are existing laws and regulations. It might well be useful to have laws that regulate the access to woods and that regulate the picking of mushrooms, but it would probably be more useful to have clear information on the different species of mushrooms and have a clear view of the habitat in which each kind of mushroom lives; therefore learning to respect every kind of living organism. It is vital for those who go and pick mushrooms to have a good knowledge of the different species, to know which mushrooms are edible and those that are not; bearing in mind that the latter are also essential to the ecology of the woods.

The study of mushrooms is called mycology. For years mushrooms were considered living organisms, part of the plant kingdom, today they have been grouped into their own kingdom. Mushrooms come in many different sizes, but a true mushroom picker will only consider picking mushrooms that have reached a reasonable size.

Mushrooms are actually the fruit of living organisms that develop under different layers of soil, on wood, under leaves, under humus, etc., they are made up of white filaments called hyphae. These filaments interlace to form the mycelium, this is the fibrous underground network of the mushroom. The stem and cap of the mushrooms we see are called carpophores. Mushrooms are reproduced by spores. Spores are spread into the air by wind or rain, carried by man or by animal, when they land on fertile soil they give life to the ife. Mushrooms take their nourishment from living or dead organic material and the earth around it.

Some mushrooms are saprophytic, such as the edible black poplar mushroom

The woodsman (continued)

(*Agrocybe aegerita*). They receive nourishment by digesting dead tissues from plants and animals.
Instead, the parasitic mushrooms, as the edible honey mushroom (*Armillaria mellea*), live of the roots of certain trees. Then we have the symbiontic mushrooms that intermingle with the roots of certain trees exchanging nutrients essential for their well-being: the plant releases the sugar that mushrooms are unable to produce since they lack clorophill and the mushroom, in turn, helps the plant absorb water and other minerals necessary to its growth. Edible caesar's mushrooms (*Amanita caesarea*) or king bolete (*Boletus edulis*) are an example of symbiontic fungi.

Sarcoscypha coccinea

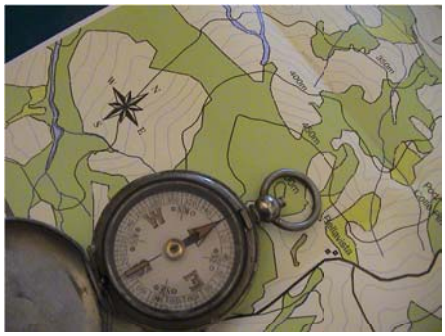
Xylaria hypoxylon

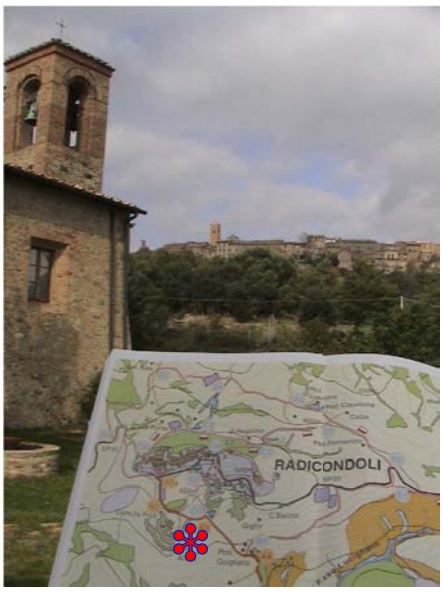
It is important, once the mushroom has picked, to gently brush off the excess soil in the woods thus allowing the spores to spread around.
Never dig through leaves when looking for mushrooms since you could damage the immature and mushrooms that have not yet completed their growth. Always remember that mushrooms have to carried home in open wicker baskets so as to allow the spores to fall on the ground.
Never put mushrooms into closed plastic bags ecause not only do they break, but they also develop a toxic substance. Remember that mushrooms that do not interest you deserve to live so leave them alone; they are important for the life of the woods.

The Woodsman is Alessandro Ceppatelli.
Photographs of NOT edible mushrooms by Ivarno Dei

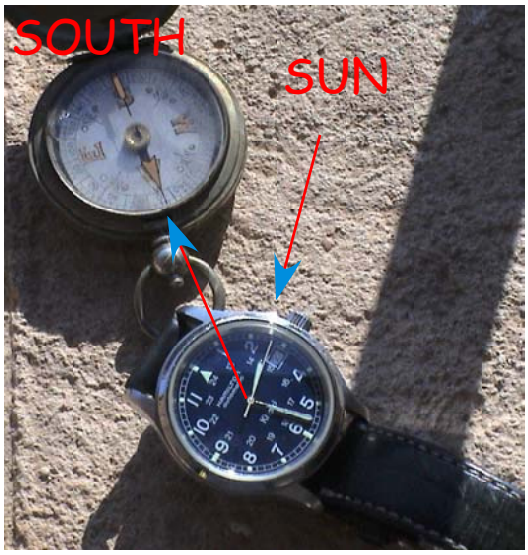
Incredible! But could it be true?

WATCHES AND COMPASSES





On a sunny november morning while taking a walk around the town of Radicondoli with a map on hand to find our way through roads and country roads we reach the bell-tower of a Convent ❀ ; is that village on top of the hill Radicondoli? Which is the shortest way up to the village? Should we take the path going uphill or is the downhill path that goes all the way round the right road to the village? Luckily we have a map, which is a very useful mean for understanding our wherabouts, but how do we orient the map with respect to where we are standing? If you look on a map you will find a drawing of a star-like figure rappresenting the four cardinal points: North, South. East and West. By holding a compass in your hand and looking in the same direction as the needle pointing to North on the compass all we have to do is rotate the map until the North point on the map coincides with the direction into which we are looking, i.e. North. Now what is rappresented on the map lies in the same direction as the view in front of us. Getting back to our walk, by following some indications we can in fact say that the village we have spotted is Radicondoli and the easiest way to get there is to go uphill. Then, guess what, there is a pathway to our left, and then according to the map there is a bend towards right. From there going straight up the hill we reach the village. This is a very simple explanation of how to use a compass. But what happens if we want to find the North and we do not have a compass?



Lets say we go for a walk in the woods and we get lost, if we have a compass then we would probably find our way out before nightfall, but what if we do not have a compass? We could examine lichenes and moss on tree trunks; they are more

developed on the side of the trunks facing North, but I would not feel too safe with this method. Another way of finding North is with the aid of an analog watch (the one with hour and minute hands). Place the watch on the ground so that the hour hand is pointing the sun. An imaginery line tracing the half way between the hour hand and the 12 o'clock will indicate South. At this point it is easy to find the four cardinal points: if the South corresponds to the 1 o'clock, North will be rappresented by the 7 o'clock, East will consequently be the 10 o'clock and West the 4 o'clock. For those who live in the austral hemisphere, eg., Cape City, Sidney or Buenos Aires the imaginary line we referred to earlier, which traced the half way between the hour hand and 12 o'clock will indicate North and not South. If your watch is set to summer time then the South (or North in the austral hemisphere) will be half way between the direction of the sun and 11 o'clock and not 12o'clock.
With a watch at hand it will be difficult to lose your bearings!
R.C.

---

corbaiola

Free electronic newsletter for children

contributors for this issue:
Alessandro Ceppatelli, Roberto Cozzolino, Ivarno Dei
Alexandra Gelpke, Caterina Magrini

English version: Isabella Colopi

Centro Studi Etologici cultural association
Convento dell'Osservanza
53030 Radicondoli (SI)
http://www.centrostudietologici.it