

# Advanced English for Plant Biologists

Miloš Barták

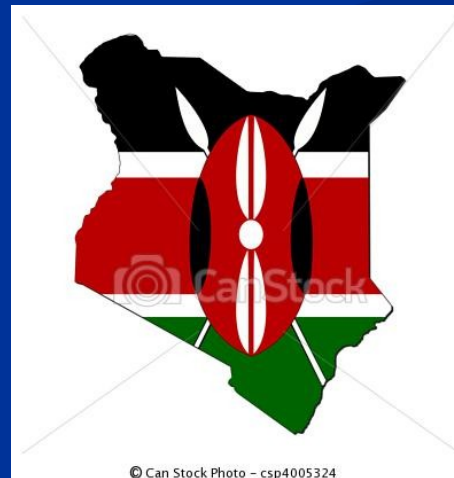
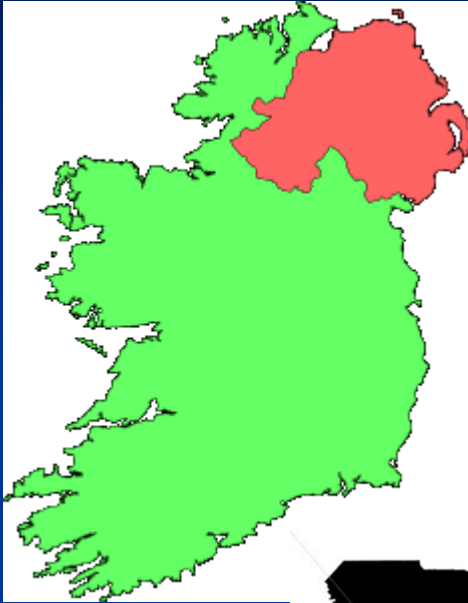
Spring 2013

# What is the plant name ?



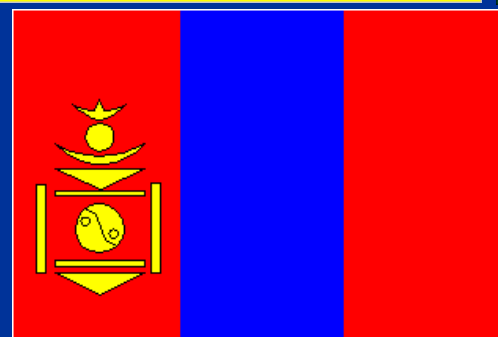
- <http://www.sunset.com/garden/earth-friendly/best-living-christmas-trees-00400000058922/page3.html>, <http://quotes-stories.blogspot.com/2010/09/lotus-beautiful-flower-with-message-11.html>, [http://vegangeneration.com/?page\\_id=340](http://vegangeneration.com/?page_id=340), <http://asminhasimbambas.blogspot.com/2008/04/namibe-desert-and-welvitichia-mirabilis.html>, <http://www.flickr.com/photos/tags/mirabilis/?page=2>

# What is the country ?



- <http://www.elker.com/clipart-9209.html>, [http://www.123rf.com/photo\\_6110493\\_map-of-norway-isolated-on-white-background.html](http://www.123rf.com/photo_6110493_map-of-norway-isolated-on-white-background.html), <http://www.elker.com/clipart-map-of-venezuela.html>, <http://www.shutterstock.com/pic-54445213/stock-vector-map-in-colors-of-venezuela.html>, <http://www.shutterstock.com/pic-7548577/stock-photo-detailed-map-of-kenya-black-and-white-mercator-projection.html>, <http://www.canstockphoto.com/kenya-map-flag-4005324.html>

# What is the country ?



- [www.mapsofworld.com](http://www.mapsofworld.com) , <http://www.britannica.com/EBchecked/topic/1355562/Ukraine-flag-of>, [www.readux.net](http://www.readux.net), [http://www.33ff.com/flags/worldflags/Ireland\\_flag.html](http://www.33ff.com/flags/worldflags/Ireland_flag.html),  
<http://belizephonecard.com/Belize/belizeflag.htm>, <http://www.tundria.com/WebDirs/museums-nat.shtml>

# Plant Biologist in Italy

Where should I go to see the following plants ?



What you are looking at ?

What is the tree species ?

Is there any special name for the particular „forest“ ?

Where should you go to see the short-rotation forest of *Poplar sp.* ?

Lomabardy, of course

Sorce of photo: [http://www.sicemsaga.com/eng/raw\\_material.php](http://www.sicemsaga.com/eng/raw_material.php)



# Plant Biologist in Italy

Is this a deciduous species ?

What is the shape of the canopy ?

Does the canopy provide deep shade ?

Where to go to see the tree species in Italy ?

Any coastal environment



# Plant Biologist in Italy

What is your first impression ?

Could it be an area with limited precipitation ?

Should the area be located close to Milano ?

Where should you go to see such dry land vegetation ?



To Calabria, of course.

- Source of photo: <http://eatslow.wordpress.com/tag/culture/&docid>





How could you characterise the vegetation ?

Are the trees that you can see tall?

Is that shrubby vegetation cover ?

Do you know international expression for the evergreen forests ?

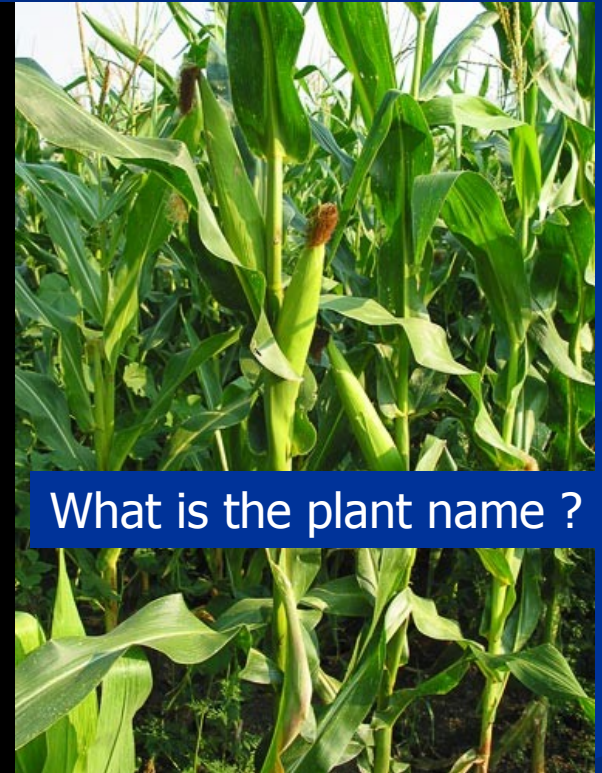


It is macchia, of course .

Where should you go to see it ?

- <http://www.montelinas.it/florasarda/img/412-macchia-costiera-5.jpg>
- © Madau

# Repetition of vocabulary from the last lesson



- Source of photo: [http://www.agroatlas.ru/en/content/cultural/Zea\\_mays\\_K/](http://www.agroatlas.ru/en/content/cultural/Zea_mays_K/)
- <http://www.root.cz/clanky/algorithmus-nahodne-prochazky-rva-a-deterministicky-algorithmus-dia/>
- <http://www.sciencephoto.com/media/219309/view>

What is your first impression ?





Is it bamboo ?

## plant species ?

fastest growing plants in the world, growing 100 cm (39 in) or more per year in a semi-dependent system. However, growth is dependent on local soil and climatic conditions.

has great economic and cultural significance in Southeast Asia and East Asia, being used for construction, paper, and as a versatile raw material.

# Life Processes

- Movement- the ability to move from one place to another
- Respiration – a chemical process that takes place in every living cell
- Sensitivity – the ability to respond to your environment
- Nutrition – turning food into energy
- Excretion – getting rid of waste products
- Reproduction – producing offspring
- Growth- becoming larger in size

# Features of Cells

- There are 3 main parts that are common to both plants and Animal Cells. Organise these into the headings: Plant and Animal Cells and plant cells only.

Plant Cells

Plant and Animal Cells

Has a Nucleus

Has a Cell Wall

Has a Cell Membrane

Has a Cytoplasm

Has Choloroplasts

Has a Vacule

RE-ARRANGE SO THEY ARE IN THE CORRECT

# What are the functions of the Cell?

- Cell Wall is made of cellulose – it strengthens and supports the cell
- Chloroplasts, which contain Chlorophyll, absorb light energy to make food through Photosynthesis.
- A Vacuole is filled with cell sap [a sugar and water solution] and it provides rigid support.

# What are the functions of the cell?

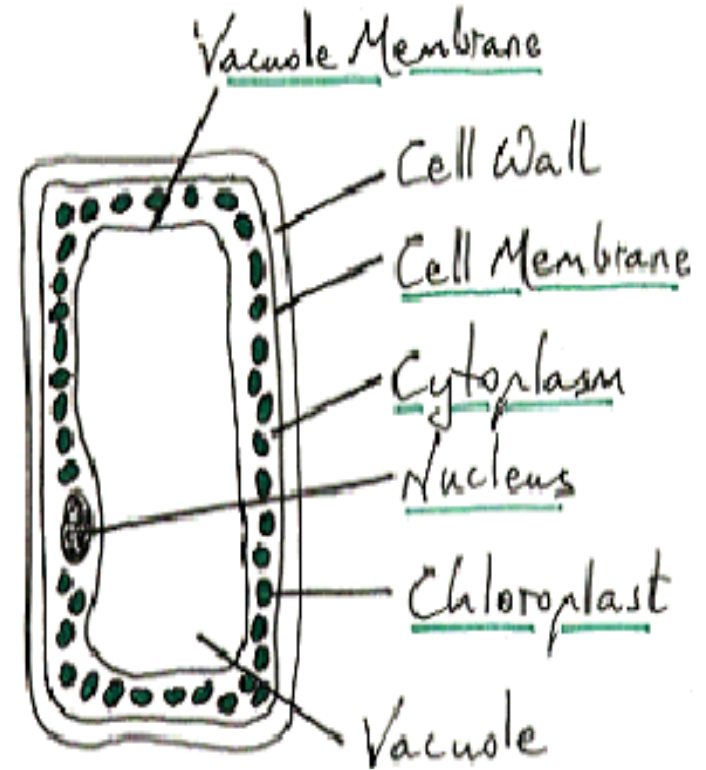
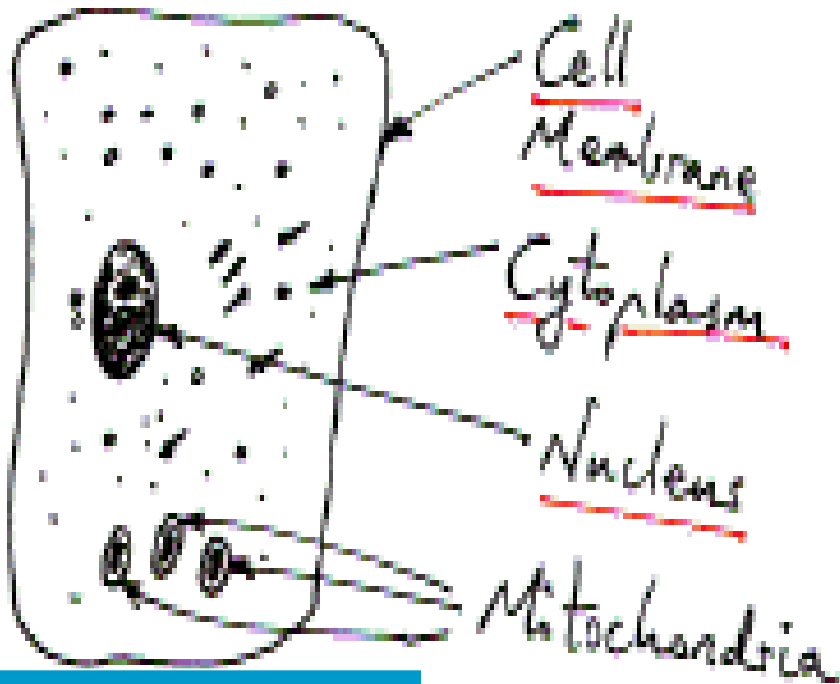
- Cell Membrane controls what goes in and out of the cell
- Cytoplasm is where all the reactions take place
- A Nucleus is like the “brain” of the cell and controls the activity of the cell.

THIS APPLIES TO BOTH PLANT AND ANIMAL CELLS

***This applies to BOTH types of Cell***



# What do they look like?



# Interactive exercise – written form

Give the function of these parts of a plant cell.

- Chloroplast
- Cell wall
- Vacuole



# Cells, Tissues and Organs

- A group of similar cells is called a ...
- A group of afferent tissues form a ...
- A group of organs working together form a ...



# Palisade Parenchyma Cells

- Palisade Cells are designed for Photosynthesis
- Tall shape means a lot of surface area exposed down the side for absorbing  $\text{CO}_2$
- Good chance of light hitting the chloroplast before it reaches the bottom of the cell.

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