

UVIC

Junior
UNIVERSITY

PRE-UNIVERSITY
SUMMER SCHOOL
IN ENGLISH

Vic, 1 - 12 July 2013

(09.00 - 14.00, Monday - Friday)



Vic Urban Fossil Geocaching

8-9 July

This Dossier contains:

- A) Contents**
- B) Geological ages of the world**
- C) Animal phylogeny or family tree**
- D) Building material used in Vic**
- E) Urban geocaching handouts**
- F) Vic city map**

A) Contents:

1) 1st day session

- **GPS and geocaching explanation**
- **Fossils and building materials introduction**
- **Get into teams with 1 x GPS and camera**
- **Mode of action**
 - Enter GPS coordinates and find the geocaching
 - Take photo of fossil and surroundings
 - Fill-in the handout for each fossil
 - Repeat the previous steps for each geocaching
 - Mark a cross on the map for each fossil found
- **Geocaching session around Vic**

2) 2nd day session

- **Ppt session with all Vic's geocaching dossier. At every geocaching people have to say if they found the fossil**
- **Make a ranking of teams**
- **Each team must prepare a paper about the geocaching session:**
 - **What is the most beautiful fossil for you?**
 - **Did you have discovered any new place in Vic?**
 - **Which place in Vic did you like the best?, Why?**
- **... and explain it in the classroom**

B) Geological ages of the world

PHANEROZOIC and PRECAMBRIAN CHRONOSTRATIGRAPHY

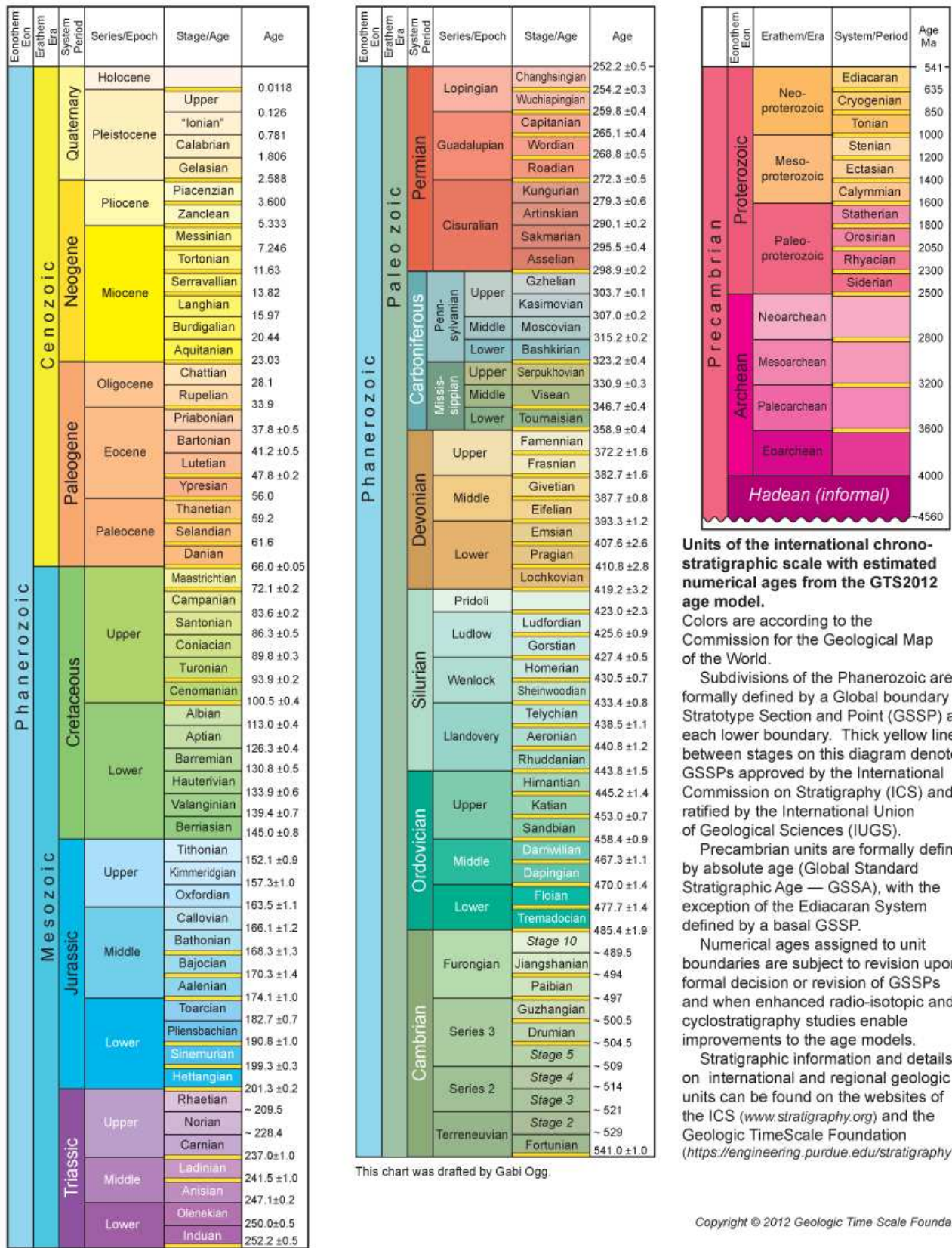


Figure 1. Geological ages of the world

C) Animal phylogeny or family tree

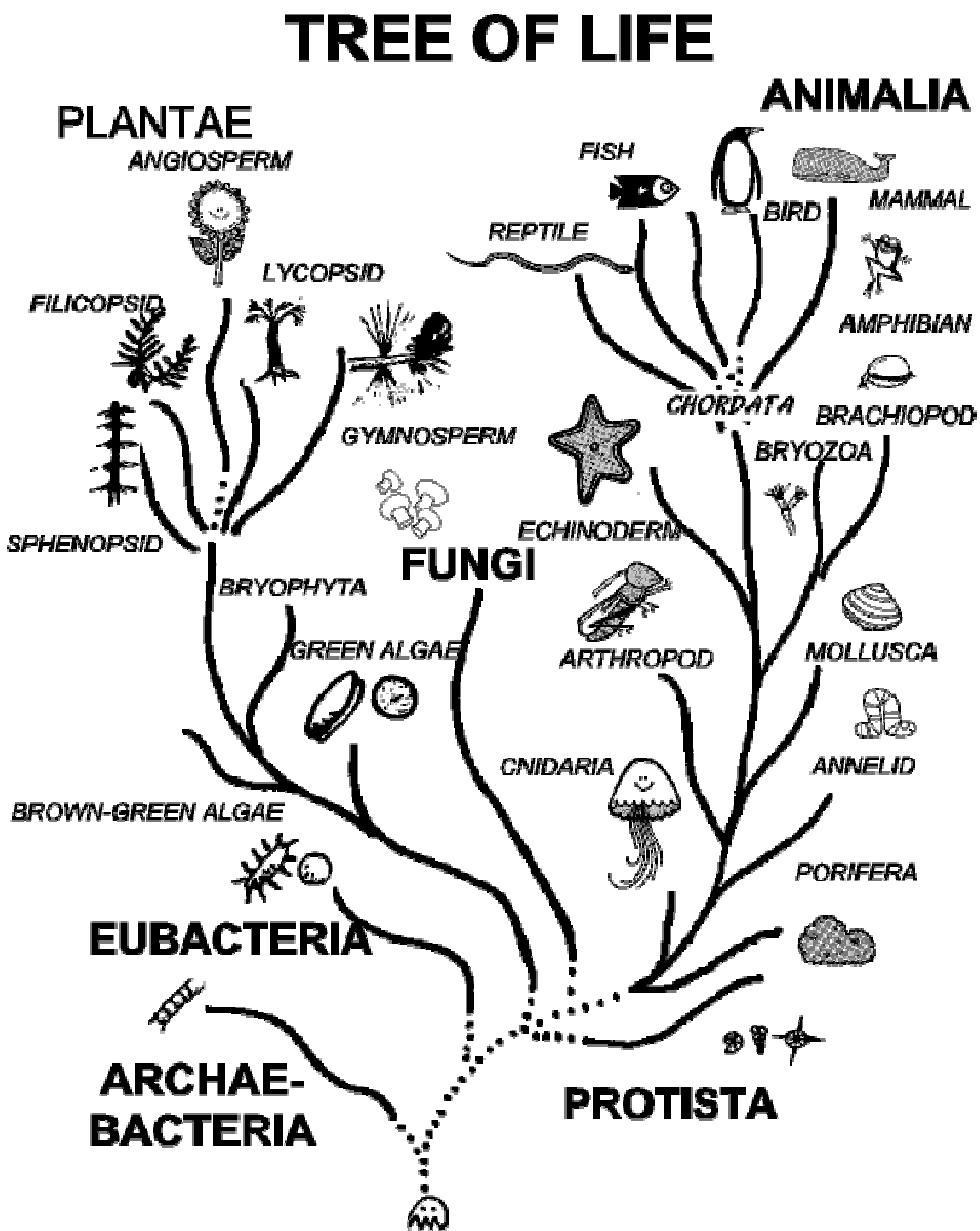


Figure 2. Animal phylogeny or family tree, diagramming the relationships among phyla of living animals.

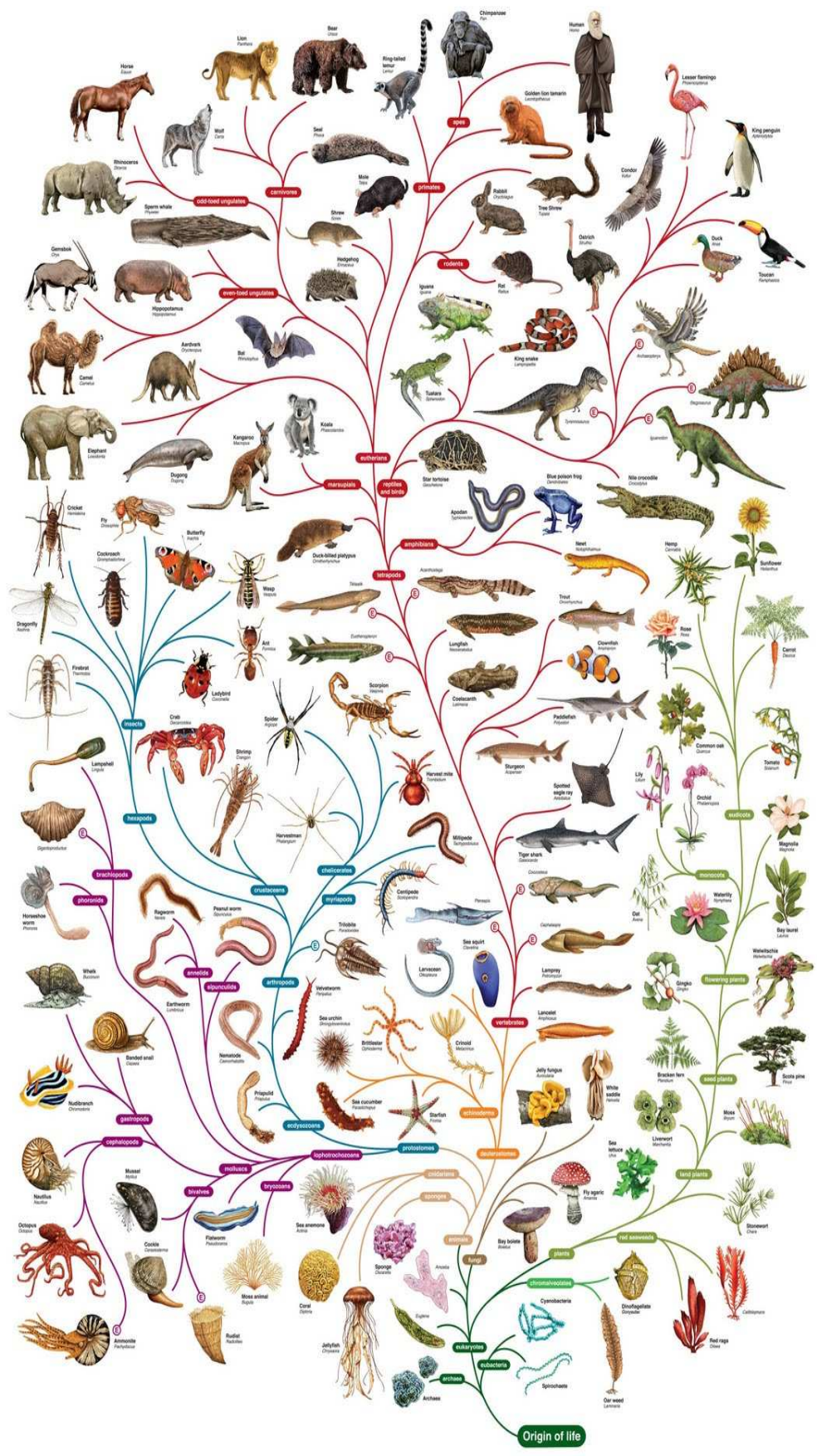


Figure 3. Animal phylogeny or family tree, diagramming the relationships among phyla of living and death animals.

D) Building fossil material used in Vic

1) Sant Vicenç de Castellet Stone

This limestone material is formed of calcium carbonate, with quartz, silica and magnesium carbonate. The Sant Vicenç stone is a packstone of nummulites, discocyclina, rhodophyceae red algae, echinoderm remains and other wildlife formed in the carbonated interior sea of the **Eocene** Ebre basin. Its color is dark grey and the fossils are white color.

Sant Vicenç de Castellet (Barcelona) has special geological conditions that has allowed limestone extraction over a long time.

2) Ulldecona stone

Ulldecona stone is **aptian** rudist limestone and its common name is “pedra de la Cènia”. Rudists are an extinct group of marine heterodont bivalves that arose during the **Jurassic** and became so diverse during the **Cretaceous** that they were major reef-building organisms in the Tethys Ocean. Its color is yellow to brown

There are four extraction and stone preparation businesses around Ulldecona (Tarragona). The total stone extraction is 2500 cubic meters a month with 150 people working on it.

3) Rojo Ereño or Rojo Bilbao

People have exploited **cretacic** limestones from Ereño (Urdaibai, Vizcaya) since Roman times. Rojo Ereño is famous for its high fossil content especially rudists with white and grey colours included in a characteristic red matrix.

Calcite is the most abundant mineral (87%) followed from quartz (8%), potassium feldspars (3%) and 1% of hematite (iron oxide) responsible for the red colour.

4) Girona stone

Sedimentary limestone with a lot of fossils like nummulites. Nummulites are the only fossils in this stone, depending of the section nummulites are spherical or elliptical. Its color is light grey.

Calcium carbonate is the most important component, quartz (made up of a continuous framework of SiO_4), and feldspars (a group of silicates) are also in the Girona stone composition.

A lot of buildings are made with nummulitic limestone: Girona cathedral, some parts of Palau de la Generalitat and Pedralbes monastery in Barcelona and Keops Pyramid in Egypt.

Tavertet stone is a variety of **Eocene** nummulitic limestone from Tavertet (Osona) with which Vic's cathedral was built.

E) Urban geocaching handouts

Geocaching identifier: G4

Coordinates/Location: 41°55'53.05"N; 2°14'44.01"E. On a wall



a)



b)

Animal phylogeny/name for a) for b)	
Extinct or not?	
Age (in million years) for a) for b)	
Building material for a) for b)	
Other fossils in the same place?	

Geocaching identifier: 7M

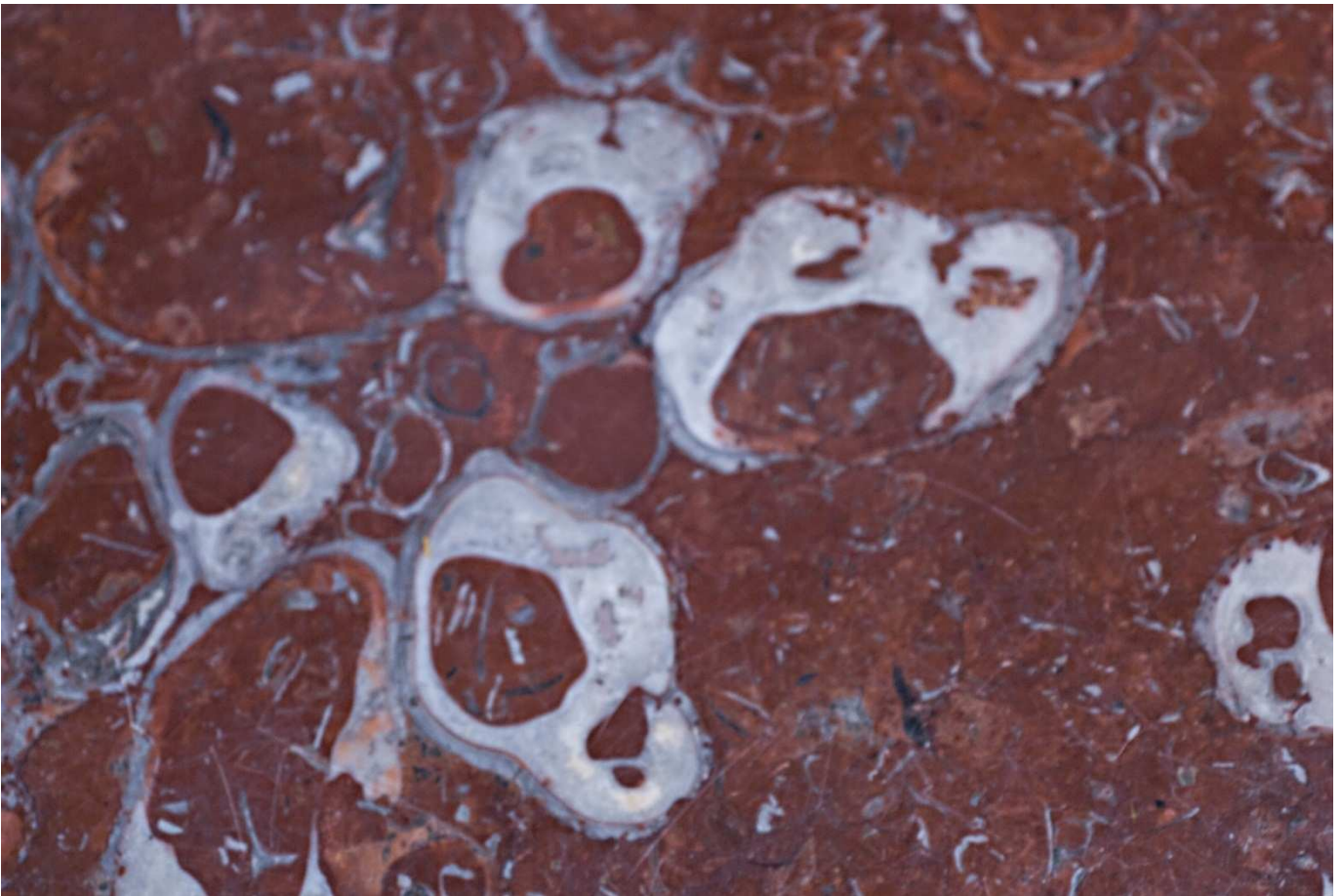
Coordinates/Location: 41°55'52.61"N; 2°14'58.23"E. On the steps of a building



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: BB

Coordinates/Location: 41°55'55.22"N; 2°15'5.62"E. In the entrance hall of a building



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: 9KK

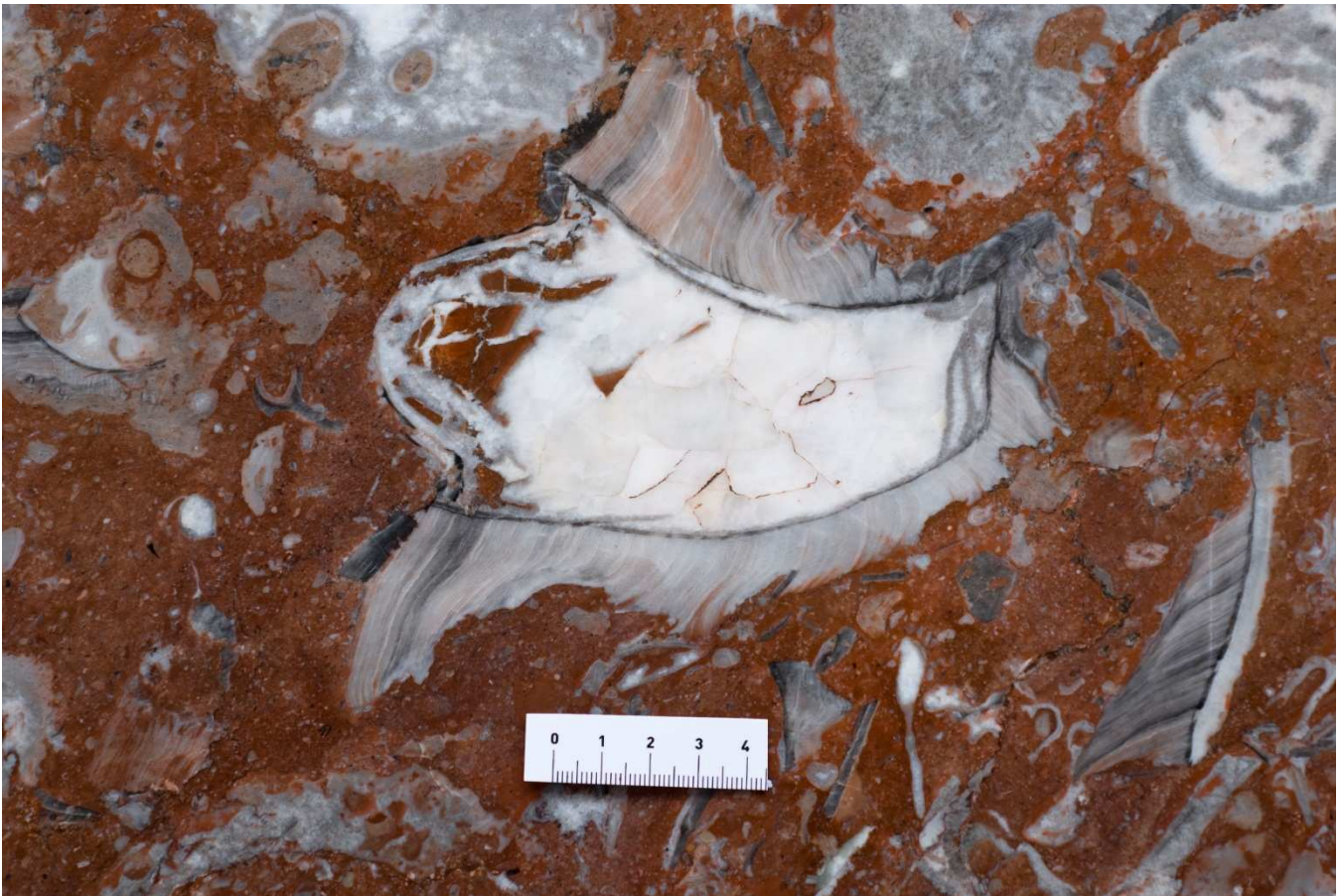
Coordinates/Location: 41°55'59.00"N; 2°15'20.87"E. On a wall of a school



Animal phylogeny/name	
Extinct or not?	
Age (in milion years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: H0

Coordinates/Location: 41°55'54.37"N; 2°15'19.20"E. On the wall of a store



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: 99

Coordinates/Location: 41°55'51.69"N; 2°15'20.64"E. In the entrance of a store



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: 6Y

Coordinates/Location: 41°55'50.75"N; 2°15'24.28"E. In the cobblestone



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: KW

Coordinates/Location: 41°55'47.14"N; 2°15'20.39"E. In the cobblestone



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: R9

Coordinates/Location: 41°55'46.60"N; 2°15'19.98"E. In the entrance of a building



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: MLC

Coordinates/Location: 41°55'42.57"N; 2°15'18.88"E. In the paving stone



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: 710

Coordinates/Location: 41°55'38.31"N; 2°15'22.11"E. On the wall of a building



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: JVF

Coordinates/Location: 41°55'41.47"N; 2°15'18.57"E. In the front of a big building



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: 564

Coordinates/Location: 41°55'48.98"N; 2°15'13.82"E. In the paving stone



a)

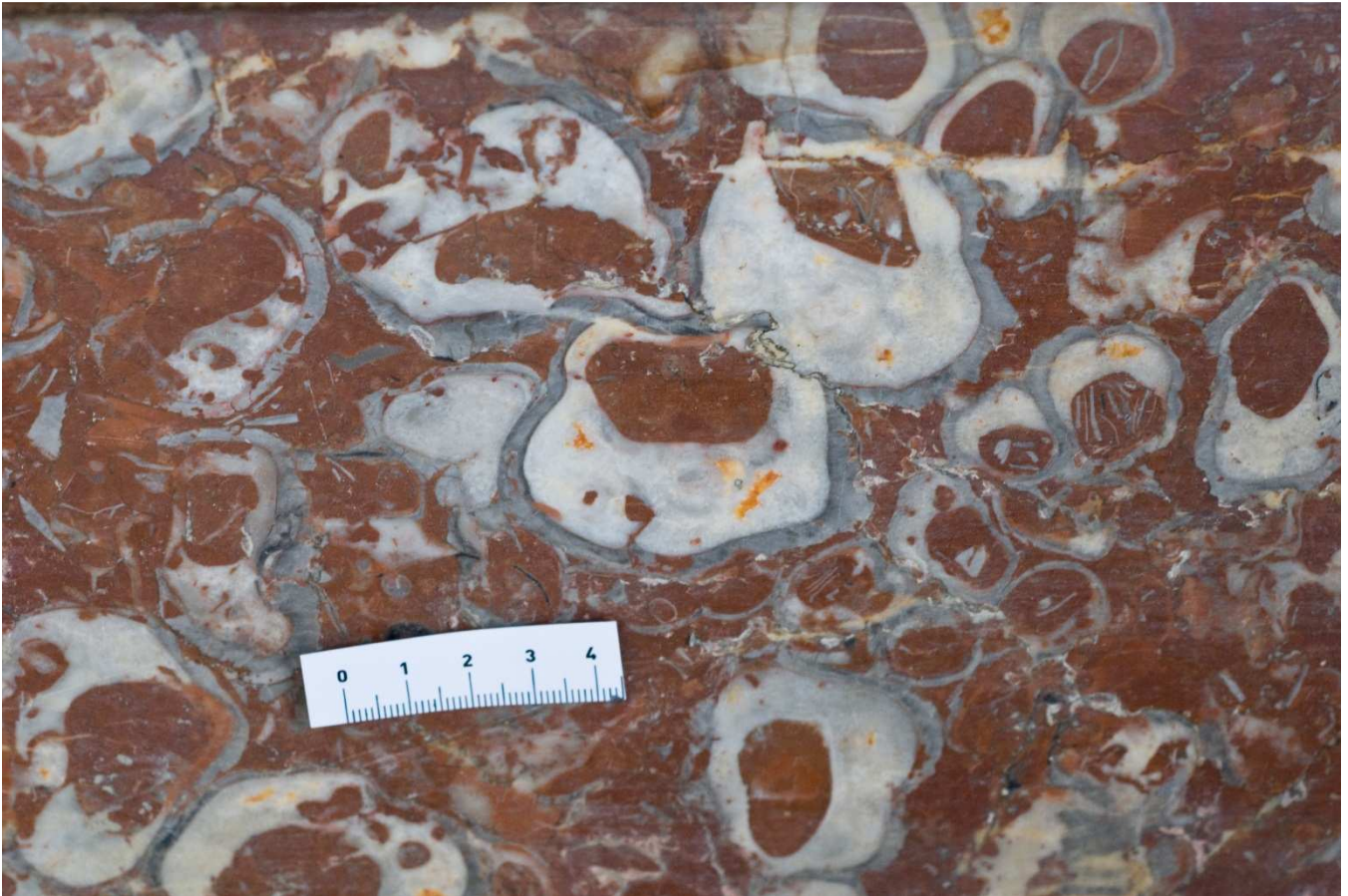


b)

Animal phylogeny/name for a) for b)	
Extinct or not?	
Age (in million years) for a) for b)	
Building material for a) for b)	
Other fossils in the same place?	

Geocaching identifier: U7

Coordinates/Location: 41°55'49.58"N; 2°15'13.69"E. In the front of a store



Animal phylogeny/name	
Extinct or not?	
Age (in million years)	
Building material	
Other fossils in the same place?	

Geocaching identifier: D9

Coordinates/Location: 41°55'49.3

0"N; 2°15'12.14"E. In the paving stone



Animal phylogeny/name	
Extinct or not?	
Age (in milion years)	
Building material	
Other fossils in the same place?	

by:

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