

CANS OF JAM²

Issue 1, March 2010

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From the Editor

Welcome to these pages, written (mostly) by the brave pupils who are studying physics and chemistry in English this year.

The aims of this new magazine are, first, to share what we learn and what we know ; second, to write about sciences in English, and to show everybody that it is not *that* difficult ; and third, to please you and to come back next month with issue nb 2.

We hope you will enjoy our first issue, and that you will tell us what you would like to see in the next one !

Oh, you are wondering about the title of the magazine ? Well, that is the third best-kept secret of the world after the Gospel according to Judas and the recipe of Coca-Cola. So, let's see if you can find where it comes from...

Dinosaurs in London

A report from our brave travellers.

From the 22nd to the 26th of February 2010, we stayed near London, and on the 24th, we visited the National History Museum. This really beautiful museum houses many dinosaurs' skeletons of different species.

One of the most impressive is the "Diplodocus" exposed in the central hall. It measured more than 25 meters in length and weighed 30 tonnes. The biggest specimens could weigh 80 tonnes! Its head at the end of its long neck (6 meters) is 1/100 000 times smaller than its body! So

we can suppose that this animal was very silly.

But it's the "Tyrannosaurus Rex" which really creates a sensation in this museum. Its real size representation is really terrifying! We could see its enormous jaw which served to tear its preys.

This museum is a destination which can't be ignored in London.



Waterworld not too far from us

A giant planet nearly entirely covered with water was spotted in the constellation of Ophiucus (which means 'Snake-Holder' in Greek, and 'Serpentaire' in French, and is pronounced [ɔ̃ ɸɛɾɥɔɪkɔ̃]).

The planet, which is three times as large as Earth, is made of a global ocean,

more than 15,000 km deep, and orbits around a red dwarf star only 40 light years away from us.

The star is only 0.5% as bright as our sun, so this planet may not be habitable, but its existence improves the chances that other, habitable planets may exist not too far from us.

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What are you doing in March ?

From the 8th to the 28th April 2010, companies throughout Picardy will welcome you during the 'Printemps de l'industrie' ('Industry Spring'). Get to know more on www.printemps-industrie.picardie.fr, or by phone : 0800 02 60 80.

For instance, you will be able to visit the famous chocolate- and sweet-makers **Paris Caramels** in Beauvais (only from the 8th to the 11th; hurry up !), or **Matrot équipements**, a company which makes agricultural machines and vehicles in Noyers-Saint-Martin, or again **Tereos**, France's biggest sugar producer, which also makes bio-fuel in Origny-Sainte-Benoîte (03 28 38 79 30).

What is more, we like the adverts for the 'Printemps de l'industrie', like this one, on the right ☞ .



The Darwin quizz

If you study sciences, you heard about Darwin last year, for the bicentenary of his birthday ; but how much do you remember ?

- 1- What is the name of the ship on which he did his famous trip in 1831 ?
- 2- Can you name one other natural philosopher who inspired Darwin's works ?
- 3- What work did he publish in 1859 ?
- 4- What was his Christian name ?

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No return to the moon?

1969: THE FIRST STEP ON THE MOON

On December the 24th, 1968, the members of the Apollo 8 crew were the first human beings to perceive the dark side of the moon. Neil Armstrong was the first to walk on the moon followed by his collaborators Buzz Aldrin and Michael Collins. It was the peak of the spatial race engaged between the United States and the USSR in the Cold War context when they were in competition in the space conquest.

Afterward, five other missions landed on other lunar sites and stayed there for three days. These expeditions permitted to bring back 382 kilograms of lunar rock and to set up several batteries of scientific instruments. The lunar missions allowed us to have a better knowledge of our natural satellite.

The Apollo program facilitated the diffusion of innovations in the field of the sciences of materials and contributed to the development of computing as well as the methods of project management and tests. The photos of the Earth, the multicolored world isolated in a hostile space, as well as those of the Moon, the grey and dead world, helped develop world awareness of the exceptional and fragile character of our planet.



Painted by Alan Bean, an Apollo's astronaut

2019: A SECOND TRAVEL ?

50 years later, America intends to relaunch the space conquest, and seems to give itself the means of its ambitions. Michael Griffin, general director of NASA, revealed a true battle plan, the main lines of which seem plausible, even if details remain to refine. To sum it up : the USA want to send man on the Moon again. To send their crew to our satellite 384,000 km away, the NASA plans to use the engines of the space shuttle and its throwers of supplement, whose power have never been at fault. The astronauts will travel at first aboard a CEV (vehicular of exploration with crew) still in the study and which, in orbit ground time, will bind itself to an automated vessel positioned beforehand and containing the unit allowing a landing on the moon.

Later, this scenario looks like that of the 1969 and 1972 Apollo missions, with a budget of the Constellation program estimated at \$ 104 bn, which represents half of the effort invested during the Apollo program, according to Michael Griffin.

"NASA will have to find new resources. Programs will be stopped, like the shuttle, the abandonment of which is planned for 2010. It will perhaps also be the case of the telescope in orbit Hubble or the International Space Station (ISS)," asserted Francis Rocard, in charge of the program of exploration of the solar system in CNES (National Center of Spatial Studies), a few years ago.

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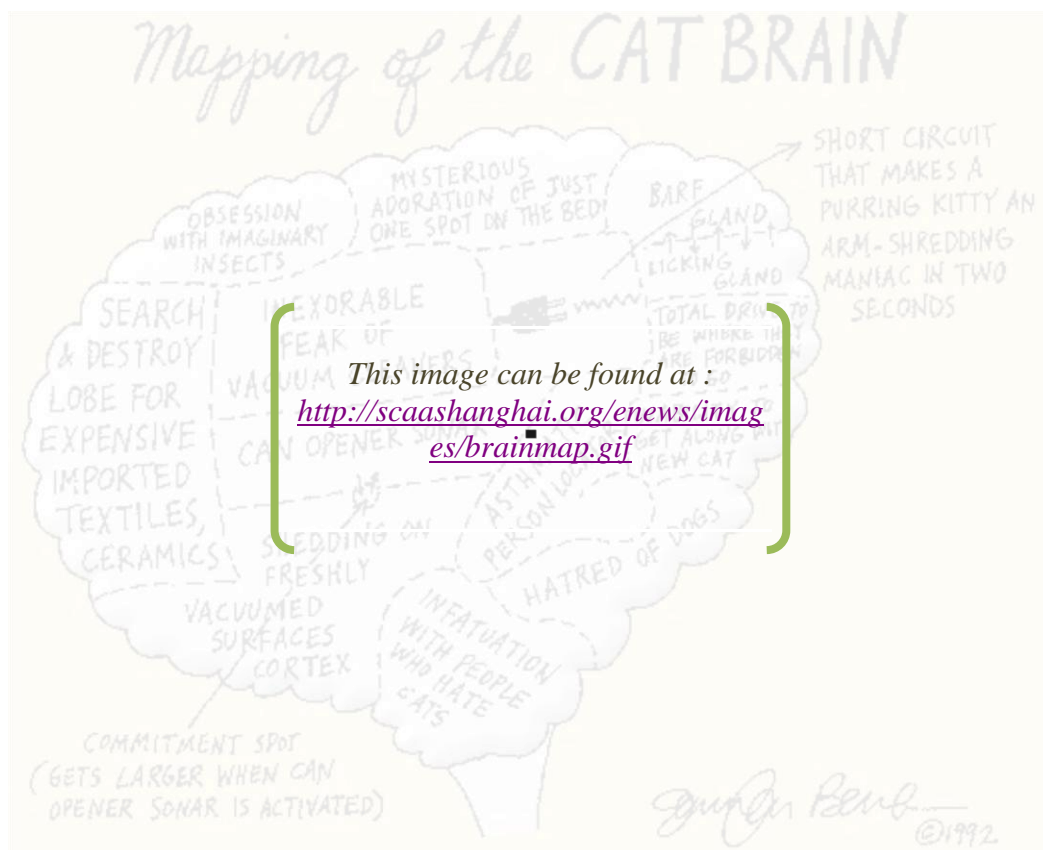
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Furthermore, according to him, the Moon is merely a stop on the way to Mars: "for NASA, it will be a laboratory of tests, to finalize vehicles and train the men for long-term flights".

He was then right to believe that the budget must be widened, because since the financial crisis, the project planned for 2018 was put off to 2019 or even to 2020. And recently, president Obama decided to abandon the Constellation program in order to privilege the private sector to ensure cheaper flights, and so to bail out the budget of the USA. Consequently, no return to the Moon, and no conquest of Mars is planned.

Just for laugh : natural sciences



The answers to Darwin's quiz :

1 : the HMS *Beagle*. 2 : Lamarck. 3 : *On the Origin of Species*. 4 : Charles

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Games' corner : the great chemistry game

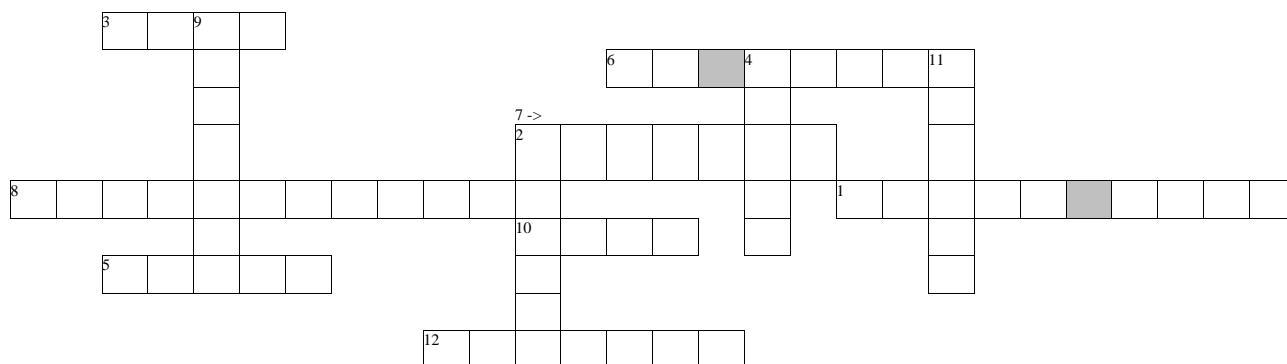
Could you come to our chemistry class? Check your knowledge.

Across

- 1- An item of clothes to run experiments.
- 2- A recipient to put the solutions in.
- 3- The element symbolized by "Fe".
- 5- The unit in the international system for a volume in chemistry.
- 6- What scales are for.
- 7- A precise instrument to measure a volume.
- 8- A purple liquid, which contains MnO_4^- .
- 10- It is an compound which takes a H^+ .
- 12- A liquid present in old thermometers.

Down

- 4- A molecule composed of two hydrogen atoms and one oxygen atom.
- 9- It is a compound which gains an electron.
- 11- The second element of the Periodic Table of Elements.



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Games' corner : the super word search

Find words in the grid! Words can be horizontal, vertical, diagonal and in right or reverse order. Finally, put the letters in colour in the right order to find the last word.

Periodic table. Nucleus. Neutrons. Half-life. Rays. Intensity.
Physemistrish. Beaker. Funnel. Radioactivity. Spectrum. Optically.
Waves. Amplitude. Period. Wavelength. Speed. Ultraviolet.
Microwaves. Burette. Whitecoat. Avogadro. Electron. Pitch. Alpha particle

A	E	R	T	B	V	U	M	I	C	R	O	W	A	V	E	S	I	J	M
T	E	L	O	I	V	A	R	T	L	U	L	B	E	A	K	E	R	O	
A	I	N	T	E	N	S	I	T	Y	O	P	T	I	C	A	L	L	Y	P
E	J	S	O	P	U	R	P	R	D	H	X	M	W	U	O	E	A	Z	H
P	E	R	I	O	D	I	C	T	A	B	L	E	L	E	N	N	U	F	T
S	H	T	W	O	E	W	A	P	J	Y	N	U	C	L	E	U	S	G	G
E	C	P	H	L	O	I	A	I	I	E	S	T	T	A	I	Q	W	T	N
H	S	E	I	D	S	R	N	V	E	B	U	R	E	T	T	E	R	Y	E
N	P	I	T	O	T	E	N	E	E	A	V	O	G	A	D	R	O	H	L
E	E	L	E	I	B	E	L	F	H	S	F	N	O	R	T	C	E	L	E
N	E	I	C	R	P	H	Y	S	E	M	I	S	T	R	I	S	H	Q	V
E	D	L	O	E	D	U	T	I	L	P	A	M	T	I	D	A	S	T	A
H	E	L	A	P	J	Y	T	I	V	I	T	C	A	O	I	D	A	R	W
E	I	U	T	H	A	L	F	L	I	F	E	S	P	E	C	T	R	U	M