CANS OF JAM²

UNIVERSITY OF APPLIED SCIENCES

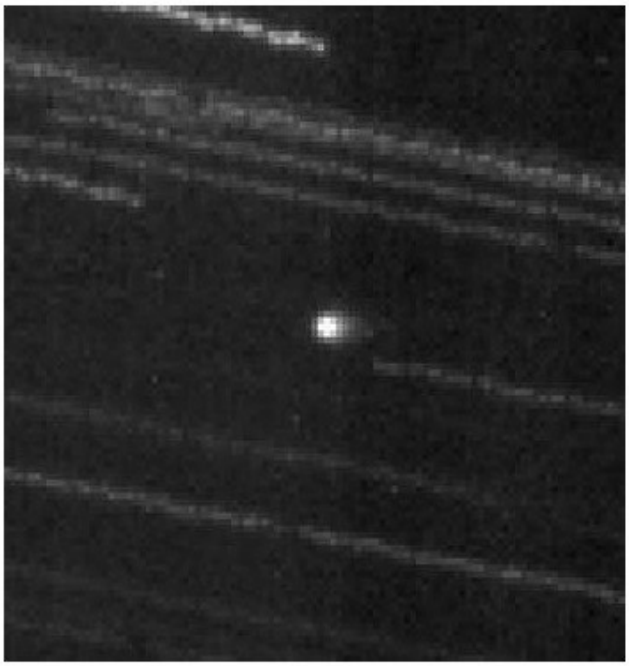
From the editors

This issue is the last of the school year, and it was again very long in the making; but we are happy to present you with (long-expected) accounts of our visit to HZ University in the Netherlands (early in February!), and some other articles. We hope that you will enjoy everything, and that we will meet again next year, in September or October.
We would like to thank the pupils from Félix Faure High School for their input, and their teachers for their support, and of course Florence at HZ University for making it all possible.
Enjoy your summer holidays!

2013, the year of the comet(s)

by Julien D.

The arrival of three comets which can be visible to the naked eye is planned this year. In the beginning of March, the comet 2011L4 (also named Panstarrs) passed but it wasn't very visible because of its course which was next to our horizon in the northern hemisphere. Panstarrs (left) was discovered in June 2012 by the Hawaii observatory.
At the end of March, we saw another comet named Lemmon (bottom, left), which was discovered in March 2012; it was not very beautiful, unlike the comet planned in November which will be the most beautiful comet of the year and possibly the greatest of the decade, Ison (bottom, right). Do not trust the photo : its comma can reach more than 90° in the sky and can be visible in the day sky for several weeks. This show is expected and looked forward to by all the scientists and the amateurs of astronomy!!!



Chemistry at HZ University

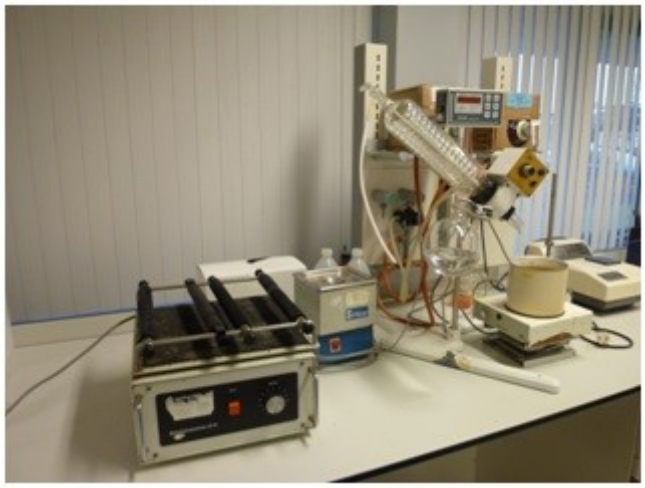
by Margot A, Johanna A, Angélique B,
Claire B, Mélanie C, Thomas L,
all from Félix Faure High School

We made a trip to HZ University, in Holland, from the 1st of February, 2013 to the 2nd of February, 2013.
During our first day at HZ University, we went to the chemistry group and we made an experiment in order to discover how much fat there is in a chocolate bar. We had a presentation which explained how to distinguish the different kinds of fat: healthy fat and unhealthy fat.
Here is a table summing up the different results.

Name of the product	Mass of product (in grams)	Mass (flask + pearls, in grams)	Mass (flask + pearls + fat, in grams)	Percentage of fat	Percentage of fat written on package
Chocolate bar	1.9g	141.7 g	142.8 g	57.89%	24,00%

Chemistry at HZ University (*continued*)

We worked in a chemistry laboratory with a lot of equipment (see the cover!) such as an extractor (below, left), a petroleumether extractor (bottom), or a rotation vaporizer (below, right).



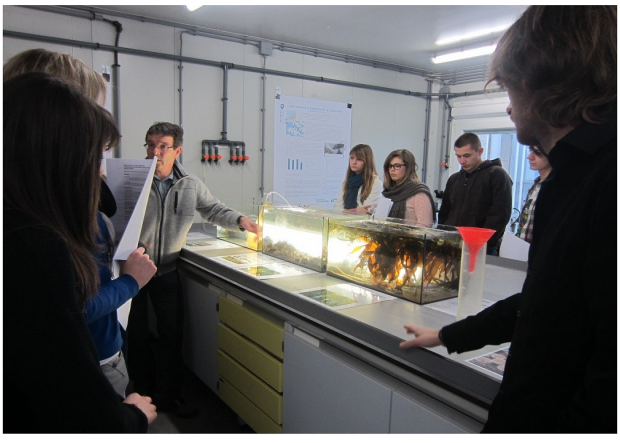
We also attended a conference, presenting HZ University.
During the first year of chemistry, the students are separated, depending on their language. In fact, there are two groups, the Dutch and the foreigners.
During the second year, all the students are together and the lessons are in English. However, the tests at the end of the year are in English and in Dutch in order to allow a majority of students to succeed.
During the third year and their last year of chemistry in HZ University, all the lessons and the tests are in English.

Chemistry at HZ University (*continued*)

So, we interviewed a chemistry student, Raphael W., who is in his third year of studies in HZ University:
Why did you choose this University?
I started other studies but my best subject was chemistry so I decided to stop my studies and start chemistry studies at HZ University.
How did you join this University?
In fact, I am a Dutch student so I just asked to enter but it was easier to enter than for a foreign student.
Are your studies difficult?
It isn't the easiest studies but it is doable if you work and if you are interested and enjoy what you are doing.
How long do you have to continue your studies before having a diploma?
I have to stay one year and a half and then I'll have a master diploma.
What do you want to do after having you diploma?
I don't really have a precise idea but I'd like to work in research.

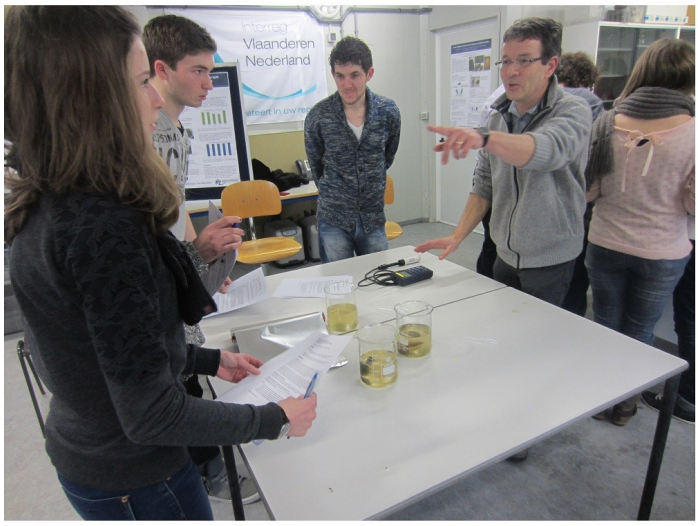
Biology at HZ University

Last February, we visited the University of Applied Sciences in Vlissingen.
After several conferences, we were appointed to four different practical labs which showed us the different fields of the University.
Ours was the 'Sea lab'. We were with one teacher and three students who helped explaining things to us.



Biology at HZ University (*continued*)

The experiment consisted in comparing the rate of oxygen and plankton ratio in beakers in which we placed different molluscs. The purpose of the experiment is to know which mollusc is the best filter between mussels and oysters (maybe with the project to use them to depollute water in an ecological manner).



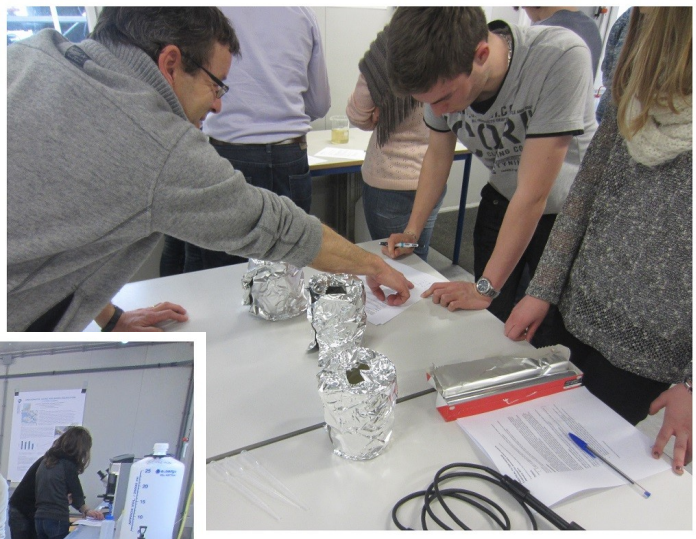
We had three beakers, one was filled with sea water only; it was our witness beaker. The second one was also filled with sea water but we put a mussel in it and in the third one we placed an oyster.

First, in the witness beaker, we measured the oxygen rate with an oxymeter and the plankton density with a sample examined with a microscope.

Afterwards, we wrapped all the beakers with aluminium paper to prevent daylight from corrupting the experiment.

Biology at HZ University (*continued*)

We left the experiment for 10 minutes and then unwrapped the beakers to measure the oxygen rate and plankton density for each of them again.



We observed that the oyster and mussel beakers had a superior oxygen rate and a lesser plankton density than the witness beaker.

Moreover, we noticed the oyster beaker had a lower plankton density and a higher oxygen rate.

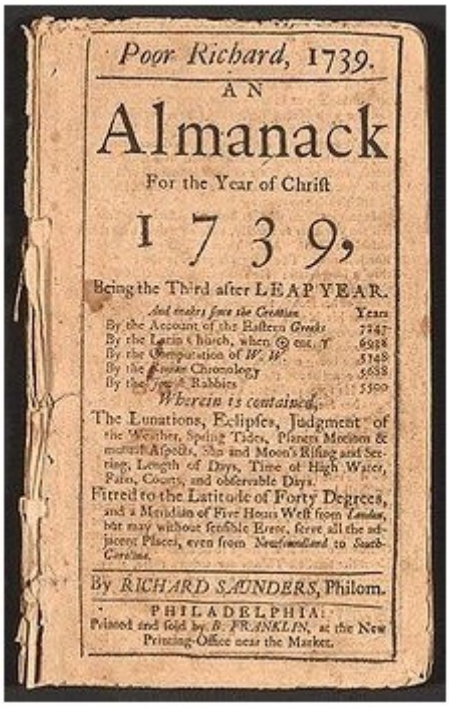
The conclusion we drew was that oysters are better filters and water purificators than mussels.

We wish to thank the teacher and students who helped us through this amazing experiment.

A scientist who counted : 6- Benjamin Franklin

by Thomas D.

Benjamin Franklin was born on January 17th, 1706 in Boston and he died on April 17th, 1790 in Philadelphia. He was the latest of a family of seventeen children. He was the son of an English immigrant. He is one of the most illustrious figures of American history, he was a writer, a physicist and a diplomat.
He was at first a printer in Philadelphia, and then he became known by the success of his almanacks.


Poor Richard, 1739.
AN
Almanack
For the Year of Christ
1739,
Being the Third after LEAP YEAR.
And makes from the Creation Years
By the Account of the Eastern Greeks 7247
By the Latin Church, when ⊙ ent. ♈ 6928
By the Computation of W. W. 5748
By the Roman Chronology 5688
By the Jews Rabbies 5500
Wherein is contained,
The Lunations, Eclipses, Judgment of the Weather, Spring Tides, Planets Motion & mutual Aspects, Sun and Moon's Rising and Setting, Length of Days, Time of High Water, Fairs, Courts, and observable Days.
Fitted to the Latitude of Forty Degrees, and a Meridian of Five Hours West from London, but may without sensible Error, serve all the adjacent Places, even from Newfoundland to South-Carolina.
By RICHARD SAUNDERS, Philom.
PHILADELPHIA:
Printed and sold by B. FRANKLIN, at the New Printing-Office near the Market.

Attached to freedom, he was the complete man of the *lumières*, the freemason of the British tradition, and an inventor; he demonstrated the electric nature of lightning.
A philantropist director, he was elected representative of Philadelphia, and he represented, in London, the colonists of Pennsylvania.
Named Master of the Posts of the colonies, he was in charge of protesting against the British taxes in the name of the colonists. Co-redactor and signatory of the Declaration of Independence of the United States of America in 1776, he is one of the 'founding fathers of the United States', of whom he became the first ambassador in France.

You will learn more about his scientific achievements later...