



BERN 2013 International Biology Olympiad

Welcome to Switzerland

Greetings from Mathias Wenger, Chairman



Albert Einstein: "I have no special talent. I am only passionately curious."

Thanks to our natural curiosity, we ask questions, learn new things and acquire knowledge. Our passion for biology and our willingness to acquire knowledge bring the participants of the International Biology-Olympiad (IBO) together. The IBO encourages exchanges between like-minded youngsters from all over the world. On behalf of the IBO 2013 organizers, I would like to welcome you to this exchange in Switzerland.

More than a hundred years ago, Albert Einstein submitted his paper "On the electro-dynamics of moving bodies" to the Annalen der Physik journal. He wrote this paper – in Bern's Old Town where he used to live – driven by his passionate curiosity and the knowledge acquired in his studies. This paper became the base of his special theory of relativity and went down in history. And this – if we believe his own words – without any special talent! Curiosity and passion are trademarks of the International Biology Olympiad. It is also important, even after the end of IBO 2013, to stay curious!

Mathias Wenger, MD, Chairman IBO Organizing Committee



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Messenger

This daily newsletter is called mIBO, like the mRNA molecule.

You'll find information here about Switzerland, as well as about the IBO 2013. But most importantly, you'll find pictures and texts about the students' and jury's activities of the previous day. Have fun reading it!



Swiss Glossary

Here is a list of a few handy phrases you might need during this week in Switzerland. Switzerland has four official national languages (French, German, Italian and Rumantsch), but Rumantsch is spoken by very few people and only in the far East of Switzerland, so you won't need to know any.

Swiss-Germans speak High German (the German of Germany and Austria), but also Swiss German, which varies from canton to canton (and sometimes from town to town!). To make it easier, we have only included High German words.

English	German	French	Italian
Hello!	Hallo!	Hello! Salut!	Ciao!
How are you?	Wie geht's?	Comment ça va?	Come stai?
Please	Bitte	S'il vous plaît	Per favore
Thank you!	Danke!	Merci!	Grazie!
My name is...	Ich heisse...	Je m'appelle...	Mi chiamo...
Where is the...	Wo finde ich...	Où se trouve le/la...	Dov'è il/la...
I would like eight kilos of cheese.	Acht Kilo Käse, bitte.	Je voudrais huit kilos de fromage.	Vorrei otto kilo formaggio.
Where are the marmots?	Wo sind die Murmeltiere?	Où sont les marmottes?	Dovo sono le marmotte?
I have lost my Swatch.	Ich habe meine Swatch verloren.	J'ai perdu ma Swatch.	Ho perduto il mio Swatch.
These toilets are very clean!	Diese WCs sind sehr sauber!	Ces toilettes sont très propres!	Questi gabinetti sono pulitissimi!
What a beautiful country!	Was für ein schönes Land!	Quel beau pays!	Com'è bello questo paese!



Volunteers get ready for the IBO: Packing gifts, First Aid Training and theoretical information. They also receive their distinctive t-shirts.



View of Bern - Photo (CC) edwin.11

Bern

Bern (French : *Berne*, Swiss German : *Bärn*) is the federal city of Switzerland, with a population of 125.000. This city houses the Swiss Parliament (the *Bundeshuus*), as well as many pieces of Swiss history. Bern is a very old city, in existence since Celtic times, and is recognized as a UNESCO World Heritage Site. The river that flows through the city is called the Aar, and the city lies near a section of the Alps called the Bernese Alps. Bern houses the *Bärengraben* (literally “bear pit”) where the city’s traditional animals have lived since the Middle Ages; in its old town there are many medieval buildings, such as the *Münster* (cathedral), and in the town centre you can see the *Zytglogge*, a large clock with moving puppets. In more modern times, Bern is known for being the home of Albert Einstein when he wrote his papers on quanta.



Federal Palace - Photo (CC) Floofy

Albert Einstein (1879 – 1955)

The most famous physicist of all was born in Germany. He became a Swiss citizen in 1901, in the same year as he qualified as a teacher in physics and mathematics at the Swiss Federal Polytechnic School in Zurich. Soon after, he became a technical assistant in the Swiss Patent Office in Bern. He was appointed lecturer at the University of Bern and became a visiting professor at Zurich. In 1921 he was awarded the Nobel Prize for Physics.

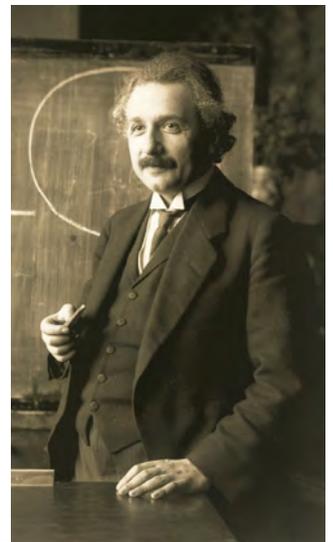




Photo (cc) Andreas Skielboe

Brown bear

Size :	150-280 cm
Weight :	140-320 kg (m), 100-200 kg (f)
Diet:	Omnivore
Young:	1-3 per litter
Gestation:	2 months
Range:	Asia, Europe, North America
Life expectancy:	20-25 years
Population:	around 200 000

In Switzerland: The first brown bear returned to Switzerland in 2005, and more have come across the border since. This is not good news for all Swiss people, since some bears have ventured into residential areas, and have also hunted sheep. A bear termed "M13" was shot in February 2013; it was a "risk bear", a danger to people. This shooting was contested since the brown bear is a protected species.



Caricature: Charlotte Germann

"Bioclichés"

A lot of Swiss people think that biologists wear glasses, beards, wool jumpers, sandals and spend all their free time reading books about plants and animals. We will be including several funny pictures showing different Swiss "bioclichés". Do similar clichés exist in your country too?

Happy Birthday!

Anna Sozanska, United Kingdom, Student.
Shashikant Acharya, India, Jury.
Meri Hovsepyan, Armenia, Jury.



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Today



26°C

Your first day in Switzerland is nice: The sun will be shining for the most part. In the morning, there might be some high fog and a light breeze. The temperature will be warm.

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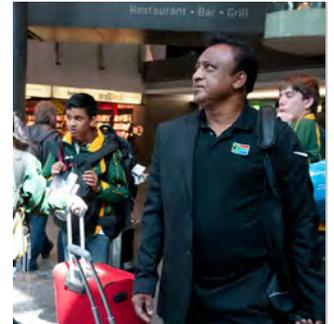
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BERN 2013 International Biology Olympiad

July 15th 2013



Arrivals and Registration

From early morning on yesterday, volunteers waited in Zurich Airport and Bern train station to welcome delegations from countries as far away as Uzbekistan, Slovakia and Thailand and as close as the Netherlands. At the station, Eva, one of the Netherlands' Jury members, says: "This is my 12th and last IBO. We travelled here all the way on our bikes, we left on the 3rd of July and arrived Saturday! The best thing about the IBO for me is meeting people from different backgrounds and hearing about the people's side of different countries."

Australia's delegation travelled up from Lausanne, where they spent 4 days after 30 hours of travel. "I'm very lucky to come to

Switzerland for my first IBO" says Mendel. "I'm ready for the social and fun aspects of the IBO!"

From the airport and train station, people went to the Curling Hall at Guisanplatz where they registered. People had to fill out forms, received gifts and the students handed in their electronic devices. 17-year-old Khadicha from Uzbekistan translated the information for the whole delegation. She is looking forward to the week in Switzerland. "We arrived here two days ago and have seen a bit of Geneva and Berne. It's very nice to walk outside", she says. "And I'm not afraid of the exams."

After the registration, sisters Katja and Mojca from Slovenia needed a rest in the hotel. They are both Jury members. "I am looking forward to the trip to the mountains", Katja says. The sisters' family are all biologists. "We have five molecular biologists in the family", they say, laughing.

To all delegations: Welcome and enjoy your stay in Switzerland!





Below (left to right): Yodel, Maya Graf and Mathias Wenger giving their speeches, and the Jury Oath.



Opening ceremony

What a glorious start to this year's IBO! It all began with a parade of the 62 delegations: sunglasses, stuffed animals, choreographies, sombreros and sunhats, ties and national dress, flower, sweet and hat-throwing; an impressive show from all the participants. After a performance by an Alphorn quartet and flag-throwers, Maya Graf, the President of the National Council, took to the stage to welcome all the participants to Switzerland, which is "proud to be the host of the 2013 IBO". She underlined the importance of biology for Switzerland and to the whole world. She also reminded the students that "participation is already winning". Other speeches were made by the city Chancellor Jürg Wichtermann, who "welcomes your bright minds"; the vice-rector of Bern University, Walter Perrig; the chairman of IBO coordinators, Poonpipope Kasemsap, who welcomed newcomers Costa Rica as well as observers Malaysia and Portugal, and who noted that this week will be a "bigger challenge than finding your way around the stage". Mathias Wenger then gave a short speech, saying that the IBO 2013 is "the realisation of a dream Switzerland has had since 1999". It is also the first IBO "organised by former participants for current participants" and also the IBO organised by the youngest committee ever (average age 27). All that remained was to declare the 2013 IBO... open!



The Delegations of Nigeria, Costa Rica, New Zealand, Bulgaria (l. to r.)...

... and the four women from Sri Lanka. More pictures: www.ibo2013.org.

Geneva



Geneva (French: *Genève*, German: *Genf*) is the second largest city in Switzerland (pop. 195 000). It is a French-speaking city on the border of France, on the shores of Lac Léman (Lake Geneva). The Rhône also flows through the city. A distinctive mark of Geneva is its “jet d’eau” (waterspout, or fountain) by the shores of the lake; it’s 140 metres high!

Geneva is a very important city for the international community. Many large international organisations have their headquarters in Geneva: the CICR (Red Cross), UN (United Nations), WTO (World Trade Organisation), WHO (World Health Organisation), and many more. CERN’s (European Organization for Nuclear Research) headquarters are also in Geneva.

Geneva has a rich history, especially the 16th century, when Calvin brought Martin Luther’s revolutionary Protestant ideas to the city and converted its people. It is called the “Protestant Rome” by some historians, because it was so important for Protestantism. Geneva is one of the two Swiss cities (with La Chaux-de-Fonds further north) best known for its watch industry.



Photo (cc) Neil G. Hamilton

Milestones in Swiss History

Swiss people are not united by a single language, culture or religion. Switzerland is therefore called a “nation of will” or “nation by choice”. The people have one common goal: the freedom of every individual. It all started in **1291**, when the representatives of Uri, Schwyz and Unterwalden made a vow to support and protect each other. This vow is known as the “Rütlichschwur”. Other regions joined them, and together they defended themselves for about 200 years against today’s Austria and Germany.



The “Rütlichschwur” by Johann Heinrich Füssli (1780).

In **1525**, the Reformation took place in Zurich, and reached Geneva in **1541**. This divided the country between Catholics and Protestants, and led to conflicts. In **1798**, the French army conquered Switzerland. The country received a centralistic Constitution, although this was repealed ten years later, and individual cantons regained more power. At the same time, conflicts between liberal (e.g. Bern) and conservative (e.g. Lucerne) cantons developed. These conflicts culminated in the so called “Sonderbund”-War in **1847**, which only lasted about 20 days. And, very importantly, it led to the modern constitution, which was adopted in **1848**. This was the beginning of Switzerland as a federal State. Individual cantons were no longer responsible for issues like the army, the postal service and currency; they became the responsibility of the state. In **1874** and **1891** the people acquired important political rights: the rights to referenda and initiatives.

Important also: Switzerland is neutral, which means that the country does not interfere in wars. So, it also stayed out of World War I and II.

In **1971**, women received the right to vote, and the first woman was elected to Parliament in **1984**. In **1992**, the Swiss voted against becoming members of the European Union, but in **2002** the country became a member of the United Nations.





Photo (cc) Pieter Schepens

Edelweiss (*Leontopodium alpinum* Cass.)

Family

Asteraceae

Flowering season

July to September

Location and distribution in Switzerland

Rocky fields, cliffs, limestone; (sub)alpine

General distribution

Central and southern Europe

Description

3-20 cm high, non-branching. The whole plant is covered in white cobwebby hairs. The leaves are distributed equally along the length of the stem. The leaves are narrow and lance-shaped, narrowed anti-clockwise, up to 5cm long and 8mm wide. Buds are around 5-7mm long and wide, umbellate from February to October. Blooms are golden and tubular, clustered spikelet-florets (5-6). Fully in bloom, the blooms are surrounded by between 5 and 15 bracts in a star shape. Fruits are around 1mm long.



Cora: a helping hand for the IBO

Cora Olpe was a participant at the 2010 IBO in South Korea. She had a lot of fun and met people from all over the world; it's even where she met her boyfriend. Cora is reading Natural Sciences at Cambridge. According to her, her participation in the IBO was one of the reasons she was accepted to Cambridge.

"When I heard that the IBO was taking place in Switzerland, I absolutely wanted to help, to give something back", says the 21-year-old from Basel.

Cora is working as an "all-rounder". That means that



she helps wherever support is needed. "I'm a bit nervous" she says, at the beginning of the week. "The work will be full of surprises".

She hopes to get in touch with a lot of the participants. This won't be difficult for her: she speaks German, English, Polish, French, Italian, and a little Portuguese.

In case you were wondering...

Yesterday's mIBO contained a fact sheet on the Brown Bear (*Ursus arctus*). Several readers wondered if the time of gestation was really only two months... Well, it's quite complicated. Brown bears reproduce by "delayed implantation": The female's fertilized egg divides and floats freely inside the uterus for six months. During hibernation the foetus starts to develop. The cubs are born eight weeks later.

If the mother does not gain enough weight to survive the winter, the embryo does not implant and is reabsorbed into the body.

At birth, the cubs are blind, toothless, hairless, and weigh less than 450 grams. They feed on their mother's milk until spring or even early summer, depending on climate conditions.



Small country, small team (FL).



You'll get them back on Thursday!



Intense preparations.

Today



27 °C

Nice summer weather today: it is warm with a light breeze. During the day, some clouds might appear over the mountains, but rain is very unlikely.

Tomorrow: warm and sunny

Provided by: www.meteotest.ch



BERN 2013 International Biology Olympiad

July 16th 2013



Difficult but interesting questions

Today, it's the students' job to take the practical exams that the Jury members worked on intensely yesterday. Their morning was spent translating the exams and making their first comments. After lunch break they discussed those comments and made a few changes. At the end, the answer key was the last item they discussed. "The translation is really hard to do and takes a long time", said Yoshimi Ojima, Jury member from Japan. Eight Japanese Jury members worked on the translation. "I hope we finish before midnight", said Yoshimi, laughing.

The Jury needed lots of energy to get through the day; coffee cups, water bottles and sweets abounded on their desks. In the afternoon they took their second break; relaxation exercises were offered (mostly women took part). Mathias Wenger, Chairman of the IBO, was happy with the day. "We only had to make a few changes; we take that as a compliment for our preparatory work." Now it's the students' turn! "The questions are difficult, but interesting", said Yoshimi Ojima.

Dancing bears in Bern

Well protected from the burning sun by their red caps, the students assembled at the "Kindlifresserbrunnen" for yesterday's guided city tour. The sub-groups went different ways to see the most important sights in Bern. The tour started at the "Zytglogge" (Clock Tower), the medieval astronomical clock in the centre of Bern. Students were impressed by the complexity of the clockwork: At 3 o'clock the ringing of the bells accompanied dancing figures of roosters, bear cubs and lions. "Ladies and gentlemen, we are in Switzerland, everything has to be correct", the guide smiled.

Listening to historical information about Bern in the heat of the afternoon was exhausting. But not everybody disliked that: "Well, you know, this is cool weather for us," one student from South Africa laughed. Still, when the students went to see the old city wall hidden in an underground car park, some would have liked to stay longer because it was nice and cool.

During the tour, a lot of pictures were taken: group pictures with a statue of a bear, panoramic views from the "Bundeshaus"



(Parliament) of the "Münster" (Cathedral) and finally of the Rose Garden, where the tour ended. "I really liked the view from the Rose Garden, it was amazing," mentioned a student from Spain, and Brazilian students liked Bern because "it is very different from what we know in our country".



Lab reviews: new tools

Every student passed through the lab review room yesterday, making themselves familiar with all the equipment they'll be using this week. Guides gave short introductions to the different pieces of equipment before demonstrating how they are used, and letting the students practice. Laid out on the tables were pipettes, callipers, rulers and timers; standard calculators; microscopes... and tablets?

Yes, since this year's exams are the first to be taken on tablets, it was very important for the students to see how they work, and what the exam format is going to be. The idea of a "tablet exam" is new to the students: "I've never used a tablet to take an exam" says Bence from Hungary. He noted that it's not yet possible to go back and check/correct answers. Many students see the tablets as a step forward, though: "It's a better solution than paper exams because it's ecological and easier to use", says Xing Liang Zhao (Singapore). Although it might be "a little unusual" (Georg, Sweden) and "challenging" (Princewill and Ivan, Nigeria), students agreed that a paperless exam has more advantages than disadvantages. Good luck to all the students for today's exams!



Swiss Politics

Do you know who the president of Switzerland is? No need to worry if you don't: There's more than one "president". Switzerland has seven ministers who make up the Federal Council, the national executive authority. The Swiss legislative authority is a classical two-chamber parliament (elected directly by the people). But Swiss citizens can express their political preferences in another way, differently to citizens of other countries. Around four times a year, every citizen over 18 is asked to give their opinion on certain political questions (concerning legal rules or changes to the Constitution). Swiss citizens can even compel the government to call a vote, by popular initiative. A referendum will be held automatically if a group of citizens collects more than 100'000 signatures in a certain amount of time, and if the demand complies with certain rules (e.g. mandatory international law).



The Swiss Federal Council - Photo: Federal Chancellery



Photo (cc) Falk Lademann

Zurich

Zurich is the largest city in Switzerland, with 372'000 inhabitants, in the German-speaking part of Switzerland; it lies in the north-east, quite close to the border with Germany.

Although Bern is the capital city of Switzerland, Zurich is Switzerland's economic centre; the standard of living in Zurich is very high (the second-best city to live in the whole world according to some!). Zurich is on the shores of Lake Zurich, where the river Limmat joins the lake, and is surrounded by two small hills and forests.

Zurich is a beautiful (and expensive!) city; many foreigners come to live and work there, so although its official written language is German, not only will you hear a lot of Zürichdeutsch (Zurich Deutsch, the local German dialect) but also Italian, French, and a lot of English.

Zürich is home to the ETHZ, the Swiss Institute of Technology, where Einstein was a visiting professor.



Students' icebreakers





Photo (CC) Noel Reynolds

Ibex

Capra Ibex

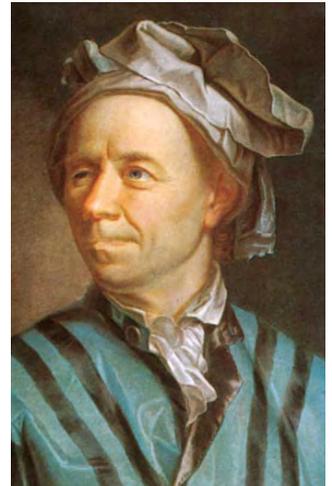
Size:	115-179 cm
Weight:	30-100 kg
Diet:	Herbivore
Young:	1 kid
Gestation:	180 days
Range:	Europe, Asia, Africa
Life expectancy:	20 years

In Switzerland: The ibex is protected by federal law. In the early 20th century, ibex were extinct in Switzerland, but were reintroduced around 100 years ago. Today about 16'300 ibex live in the Alps – there have never been so many living in Switzerland since they were first introduced. Although protected by federal law, hunting ibex is still legal.

Cantons are required to obtain a permit from the Federal Office for the Environment (BAFU) for each ibex shot.

Leonhard Euler (1707-1783)

Euler was a mathematician and physicist, born in Switzerland. He is well known for his work in diverse mathematical fields. He popularized many written mathematical conventions, two of the most famous ones being the letter “e” for the base of the natural logarithm and the function notation $f(x)$. His name is also used in countless mathematical and physical topics. Euler spent most of his life in Germany and Russia. He is buried in St. Petersburg.



Portrait by Emanuel Handmann



Caricature: Charlotte Germann

“Bioclichés”

Swiss people like taking holidays: They travel around or stay at home on their balconies, eating sausages and sunbathing. Some think that biologists never take holidays and spend all their time studying. They’re completely wrong, of course! Biologists also like to travel and use their time abroad to discover new species.



Happy Birthday!

Chun Hian John Yap
Singapore, Student.
Alexander Rubstov
Russia, Jury.



Today



28 °C

Another perfect day: It will be very sunny and warm, but the mountains might see some stormy weather.

Tomorrow: warm and sunny



Practicals!

In today's exams, the students had the chance to show off their practical skills in four ninety minute sessions (Comparative and Functional Biosystematics, Molecular Cell Biology, Plant Ecology and Physiology and Evolutionary Ethology). Divided into groups, the students went from one exam room to another, stopping for lunch at Bern University's student cafeterias. Apart from a few little problems (lost badges, faulty calculators), the exams went very smoothly, and the students showed how professional they already are: not a single false manipulation! Many students all agreed that the exam questions were difficult, but very interesting; "not impossibly hard", said Kristine (Estonia). As can only be expected, some came out very pleased with their answers, and some less so; many said that they didn't manage to finish all the questions for lack of time. None of the students were particularly nervous, and some even said that they were looking forward to their next exam. At the end of the day, the students came out of the exam rooms after a round of applause: half the exams are already over! "I'm tired, but at the end of the day I'm relieved" said Ahmet Bahadir (Turkey). "I wasn't surprised by any of the exam content but I found it all very interesting."

Well done to all, and good luck for the theoretical exams on Thursday!



Water...

Switzerland is also called “Europe’s watercastle“. 1500 lakes, rivers and many glaciers are proof of the abundance of water in the country. The sources of many important European rivers – the Rhine, Rhone, Inn (Danube), Ticino (Po) and Adige – are in Switzerland.

The Rhine Falls, located in the canton of Schaffhausen, is the largest plain waterfall in Europe, and Lake Geneva is Europe’s biggest reservoir of fresh water. The Grande Dixence Dam in the canton Wallis is one of the tallest retaining walls on Earth. Hydropower accounts for 56 per cent of Swiss electric production.

Environmental organisations, however, are concerned about the state of Swiss water. Hydroelectric power stations have a negative influence on nature: They are a barrier for fish and microorganisms. They also cause rivers to flow slower than usual, so water temperature rises and oxygen concentration drops. One of the consequences is that fish endemic to the region die out.

In the 19th century many rivers in Switzerland were shored and regulated, causing a loss of biodiversity. Two years ago, a law was passed in order to restore rivers as well as lakes. A big project that should be accepted this autumn is the restoration of the river Aare between Bern and Thun. Environmental organisations still say that it takes too much time to realize those projects.



Due to climatic change, glaciers are melting. This might lead to Swiss rivers drying out in summer.

On the other hand, new lakes will develop where the glaciers now are. How this will affect Swiss nature is an issue studied by many researchers.



...do your part!



Yummy! Swiss tap water is very clean and fresh. Don’t hesitate to drink it nearly everywhere in our country. Switzerland is also very keen on reducing the amount of waste produced daily and does a lot of recycling.

You can help us in that endeavour: Fill up your Sigg-Bottle in the morning and refill it during the day, so that we don’t waste plastic bottles or cups.

Thank you!



Relaxing after the first exams.



Electronic help

The voices from outside the big room on the top floor of Kursaal yesterday sounded like the buzzing of bees. The Jury delegations discussed their translations of the theoretical exams in whispers. At the beginning of the afternoon, Daniel Wegmann, Scientific Project Manager, invited the Jury to give their comments and to discuss them together. They worked through every item, and the Jury will continue their discussions today.

The Jury members were happy to have the exams in a centralised electronic form, which is a novelty. "It makes things much easier", says Sulev Ingerpuu (Estonia). "Especially for corrections and translations", adds Khalid Bin Dawood (United Arab Emirates). Nevertheless, the corrections are hard work: As Khalid Bin Dawood explained, translating a single task can take over an hour.

The students will take their exams in electronic form; they'll be using tablets, just like the Jury. "We have to keep up with the times, we'll see after the exams if it's worked", comments Sulev Ingerpuu. Rasmus Buchanan from Denmark (where the IBO 2015 will take place) thinks that the tablets are "a brilliant idea". According to him, marking the exams will be much easier with tablets. "It's a brave and important move by Switzerland. It's always hard to be the first. If it works well, we'll be using tablets too."

After yesterday's translations and discussions the Jury members enjoyed a nice, well deserved tour and dinner at Bern's Natural History Museum.



Lausanne



Lausanne is the capital of Vaud, a French-speaking canton on the shores of the Lac Léman (Lake Geneva); it is the fourth biggest city in Switzerland (pop. 135 000). It is a French-speaking city which houses the International Olympic Committee, as well as the Federal Institute of Technology Lausanne (EPFL) and Lausanne University.

Lausanne has existed since the 4th millennium B.C., colonized by Romans in the first century B.C. It was a crossroads for many people (going from German-speaking Switzerland to the South of France for example), and a cathedral town from the 10th century. It is full of medieval buildings; in fact, one of Lausanne's high schools uses a renovated medieval hospital as its classrooms. Lausanne is the birthplace of many famous Swiss writers, painters and musicians, but also of sportspeople; the famous tennis player Stanislas Wawrinka was born here in 1985!



Lausanne (cc) Antonio Delgado





Alpine Rose. Photo (cc) Bernard Dupont

Alpine Rose (*Rhododendron ferrugineum*)

Family:

Ericaceae

Flowering season:

June to August

Location and distribution in Switzerland:

Forests, meadows, avoids limestone; mountainous and (sub)alpine regions; “Alpine rose belt” on forest borders

General distribution:

Central and southern Europe

Description:

Shrub up to 1m high. The leaves are coarse and evergreen, oval or lance-shaped, between 1.5 and 4 cm long, with underturned edges ; their top sides are a shiny green and undersides covered in rust-brown spots, hairless. 6-12 terminal blooms grow in clusters. The crown is bright red and around 1.5 cm long. The calyx is three-cornered and fringed. The fruit is a rigid 5-locular capsule.

A great mind dedicated to the IBO

Yesterday the students passed their practicals. They're very relieved that the exams are over, and so is Adeline Colussi! As a member of the Scientific Committee, she was responsible for one of the practical exams and some of the theoretical questions – a big responsibility!

She discussed tasks with the international jury, made sure that the practicals ran smoothly and that the corrections are fair. She started preparing around a year ago. The last ten days spent in Bern have been especially intense: “I'm quite tired now.”

Adeline is almost 24 years old (her birthday is on Sunday!) and she's completing her Masters in Biophysics and



Structural Biology at the ETH Zurich. She participated in the Swiss Biology Olympiad (SBO) for the first time in 2006 and qualified for the 2007 and 2008 IBOs. She's been an SBO volunteer ever since. “The IBO was just the next logical step. It's great to see friends again from the International Jury I met last year in Singapore, as well as to meet new people”.

Better late than never...

Even if it isn't actually biologically possible yet, we've travelled in time! But we turned the clock too far forward (yes, even Swiss people have problems with their watches sometimes) and instead of Tuesday, we ended up at Friday. But because we had so much fun time-travelling, we're turning the clock back again and wish all the best to the two people who had their birthday yesterday. Congratulations and sorry for the delay!

Bence Hajnal, Hungary, Student
Ong Sy Ing, Malaysia, Observer



Today



28 °C

Perfect weather for excursions: it will be sunny and warm today again. There's a chance that the weather will turn stormy in the evening though.

Tomorrow: warm and sunny

Provided by: www.meteotest.ch



Caves, Cheese and liquid Smarties

When asked what they liked most about yesterday's excursion "The mountains and the view" was the answer of most of the students. And the view wasn't even all that good because unfortunately it was quite foggy. The most famous Bernese mountains (the Eiger, Mönch und Jungfrau) were never clearly visible.

The day started with a visit to the St. Beatus caves at Lake Thun. The students were interested in knowing more about the caves' origins and about the plants growing inside. "These plants can only grow because of the lights that were installed 100 years ago, and some narrow chinks where fresh air can enter" explained the guide. The coolness inside the cave also woke up the students who had been sleeping during the bus ride to Beatenberg.

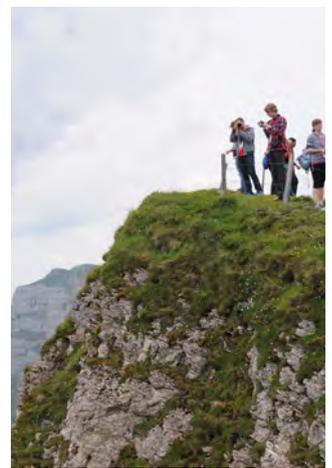
The trip continued to the Niederhorn. At the top, the students not only enjoyed the view but also discovered plants and insects unknown to them. "I like it very much up here", said one student from Turkmenistan. "The landscape is so different to my country; 85 per cent of it is desert." The students chatted and laughed together during the walk.

The last part of the trip was to a cheese dairy in Affoltern, where the students learned how Emmental and other sorts of cheese are made. "I can't believe it takes so long to ripen", one said, after having learned that the cheeses stay in the cave for up to 18 months.

The students not only learned about cheese, they also tasted it. "We like it a lot", many of them said. Some also tasted the Swiss drink Rivella, which contains whey (a by-product of cheese production). "It tastes like liquid Smarties", commented one student.



From the Beatus caves to Mount Niederhorn.



Food, Fun and Friendships



Swiss Mentalities

Image (cc) Ana Gabriela



How about this: Swiss people are very tidy, strictly organized, polite and they never give their opinion on anything (famous Swiss neutrality!)? Their favourite food is chocolate or cheese and when they aren't working at the bank or at the watch-factory, they yodel as much as they can?

Swiss stereotypes aren't actually completely wrong (apart from the yodelling and favourite foods: Swiss people hardly ever yodel except if they're part of a yodel group, and most of Swiss cheese and chocolate is exported). Swiss people usually are on time, and can get annoyed if trains are as little as 5 minutes late!

The Swiss prefer things to be well organized and clean, and they can be a bit reserved. There are said to be some differences between the German- and the French-/Italian-speaking parts of Switzerland (namely, that the "Latin" areas are more relaxed and the "Germanic" areas more hardworking), but they're tiny differences. So in general, it's a good idea to be on time, to be as polite as possible and not to ask someone's political opinion when you've just met them. Then you will find out that Swiss people are much more lively and less strict than you'd ever have thought!

Another long day for the Jury



Basel



Basel (French: Bâle) is Switzerland's third-largest city, with almost 170'000 inhabitants, built along the Rhine in the far north-west of Switzerland. Basel is right on the border between Switzerland, France and Germany, and people often come into Basel from outside Switzerland to work. Not far away, near Schaffhausen, are the Rhine Falls, some of the largest waterfalls in Europe. Basel is known for its Carnival (Fastnacht) in February that lasts for nearly a week and starts at 4 in the morning! It is also known for being a centre of Humanism, where many great thinkers of the 15th and 16th centuries (Like Paracelsus or Erasmus) came to write and print their books. In modern times, it is a centre for the pharmaceutical industry, and biotechnology is a developing sector. Many major Swiss companies have their headquarters here (whereas the international companies and organisations tend to be more around Lake Geneva).



Basel @ Basel Tourismus





Bearded vulture. Photo (cc) Noel Reynolds

Bearded vulture

(*Gypaetus barbatus*)

- Size: 110 cm
- Wingspan: 300 cm
- Weight: 5-7 kg
- Diet: Carrion (bones)
- Eggs: 2 per clutch
- Incubation time: 52-58 days
- Migration pattern: Sedentary
- Range: Pyrenees, Alps, Himalayas
- Life expectancy: 30-40 years

In Switzerland: The bearded vulture's original habitat extended through all of the southern mountains (continental). In the last two hundred years, it was (wrongly) called "Lämmerdieb" (robber bird) and exterminated by poisoned bait and shot in most regions.

Small communities survived only in the Pyrenees, in Corsica, in the South Balkans and Crete. The vulture reappeared in the Alps in 1986, and has been present in Switzerland since the late 1990s.

"Bioclichés"

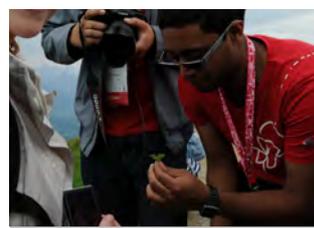
When biologists make new discoveries, it can feel as good as when Columbus first set foot in America. However, a lot of Swiss people think that their research is not important. They can't see the point of studying plants or of working with microbes. But of course, a biologist's research is very important – at least as important as discovering America!



Caricature: Charlotte Germann

Jacques Piccard (1922-2008)

Jacques Piccard was a Swiss oceanographer and engineer. He was among the first people to explore the deepest part of the world's ocean, and the deepest location on the surface of the Earth's crust: He reached the floor of the Mariana Trench located in the western North Pacific Ocean. His family follows his exploring tradition: Bertrand Piccard, Jacques' grandson, was the first human being to go around the world in a non-stop balloon flight in 1998.



Back in Touch!

It's Thursday! Thursday means two things: your last exams are today, and you'll be getting all your electronic devices back tonight! So don't forget to check out the IBO 2013 website with every edition of the newsletter so far, extra photos, video diaries, submissions for the Bio video competition, as well as the official IBO 2013 Facebook page.

IBO-Website:

www.ibo2013.org

Facebook:

<https://www.facebook.com/IBO2013>

Today



26 °C

It'll be hot again today, but a little overcast; storms are a possibility throughout the day.

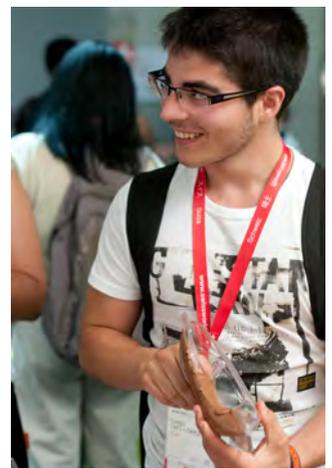
Tomorrow: warm and sunny

Provided by: www.meteotest.ch



What a night!

After the end of the theoretical exams, the students joined Jury members at Unitobler for a well-deserved evening of food and workshops. All the dishes were Swiss or Liechtenstein specialties. “It’s the first time I’ve ever eaten raclette (melted cheese with potatoes)” said Poonpipope Kasemsap, “but it was very nice.” Thomas, Jury member (Finland), tried vermicelles (chestnut purée): “It tasted a lot like Japanese bean paste.” After the meal, it was time to try out all the Swiss workshops. The Alphorn workshop was very popular, especially with some specialists: “I think it’s quite difficult at first but once you understand how it works it’s easy” said Christian (Team Guide). “I don’t think I’ll become a professional player though.” “It’s fun but I think I’ll stick to my didgeridoo” said Sebastian (Senior Guide). The Swiss-German workshop attracted a lot of people: “It’s super easy! We have the “ch” sound in Arabic too”, said a group of girls from the United Arab Emirates. Their “Chuchichäschtl” sounded perfect. Theofano, Despoina and Eirini (Greece) tried out the chocolate decorating, and are taking their creations home: “We made chocolate shoes with our mothers’ and sisters’ names on.” The crossbow was also a popular activity (particularly with the delegation from Sweden!), as well as the yodel (very complicated but lots of fun).





Students are finally done!

At 6.20 pm yesterday, the foyer of the University building, where the students passed their theoretical exams, was filled with laughter and excited chatter. The students were finally done! There was a tangible sense of relief: “It’s good it’s done. There was less pressure than in Singapore”, said Magdalena Holocová (CZ). “I’m on holiday now”, added her friend Jan Petřilík happily. “It wasn’t as difficult as I expected”, said Katherine Lister (UK). And Mar-ya Dunai (BY) even enjoyed the tasks. “They were interesting.” She also liked that the exams were on tablets. “If the translation wasn’t great we could simply switch to English.” Kazunori Shintaku (J) was exhausted: “It was very long, I’m very tired.” He certainly wasn’t the only one who felt that way. But when the students met up with the Jury members a couple of minutes later at Unitobler, everybody’s spirits lifted. There were hugs, handshakes and many stories to tell...



Swiss Companies



Due to its relative lack of natural resources, Switzerland’s economy relies on skilled workers in technology and other services (mostly tourism and banking), and many successful companies were founded, and still have their headquarters, in Switzerland.

For example, one of the first Swiss companies that come to mind is Swatch: based in Biel/Bienne (a bilingual city in the northwest), Swatch is a relatively young company (only founded in 1983). It makes watches with Swiss precision, but much more cheaply, and the designs are fun.

A very different company, but one that is very well known worldwide, is Nestlé. Its headquarters are in the south, near to Lausanne on the shores of Lake Geneva. Nestlé is the largest food company in the world measured by revenues! It was founded in 1905, and makes lots of different products, mostly food (its first product was baby formula).

Two pharmaceutical companies dominate the world market: Novartis and Roche, both founded in Switzerland and based in Basel. Novartis has gone through many changes but has existed for more or less 250 years; it manufactures lots of different types of drugs and owns its own generic manufacturer (Sandoz). Roche is slightly smaller, but does more or less the same thing as Novartis.



Swiss watch (cc) Jimmy Smith

Jury members discover Bern



Chur



Chur (French: *Coire*; Italian: *Coira*) is Switzerland's easternmost city, with a population of about 34'000. It is situated near the banks of the Rhine, in an Alpine valley.

The city used to be the capital of a whole Roman province, but shrank after its fall, and did not become the capital of the Grisons until the canton joined the Swiss Confederation.

Chur is the capital of the canton of Grisons, and it is the only trilingual canton with Rumantsch as one of its official languages, together with German and Italian (Rumantsch is part of a group of old languages like Latin which have mostly died out; only 30'000 people speak Rumantsch today). The Grisons are a very mountainous region and one of the "wildest", with high peaks like the Piz Bernina and many glaciers. The place where the World Economic Forum meets every year, Davos, is also in the Grisons.



Chur Panorama (cc) Marcel Cavelti





Trumpet Gentian. Photo (cc) Apollonio Totoli

Trumpet Gentian

(*Gentiana clusii*)

Family:
Gentianaceae

Flowering season:
May to August

Location and distribution in Switzerland:
Fields, cliffs, limestone; mountainous and (sub)alpine regions

General distribution:
Central and southeastern Europe

Description:
4-10 cm high, the leaves are evergreen in a basal rosette, wide and lance-shaped, slightly leathery, up to 5 cm long. The leaves along the stem are slightly shorter, in 0 to 3 pairs. Each stem has a single flower, 4-6 cm long. The crown is bell-shaped with five wide petals, dark blue with no olive-green stripes. The sepals are half as long again as the calyx, three-cornered and pointed, rough with small papillae.

“Bioclichés“

Swiss people love geraniums and mowing their lawns. Some also have a little vegetable garden, and that’s as far as most Swiss people go as far as botany is concerned. That’s why they can’t understand how fascinating it can be to grow rare or even carnivorous plants: something a lot of biologists do with pleasure. How about you?



Caricature: Charlotte Germann

Robin Fallegger: How to talk to students

18-year-old Robin Fallegger, is one of the Team Guides. He’s here to accompany and help students for the whole IBO. “It’s been very interesting so far”, says Robin. “I’ve talked to a lot of the students.” He notes that some of them are very open and others were a little intimidated by Switzerland and by the exams too, of course. “Some of the students are too shy to ask questions, because they think their English isn’t good enough”, he says. “But in fact, all the students understand English quite well.” And if they don’t, Robin finds other ways to communicate: “Sometimes I use Google Translate on my phone.” What Robin Fallegger also finds interesting is to see “how



far away we live from each other”. On the tour through Berne one student asked him what kind of building the Münster is. “I realised that the student simply didn’t know what a Christian church is.” Robin decided to volunteer for the IBO after he participated in the SBO. “It was amazing and I made a lot of friends; the IBO is a good way to meet up with them again.”



Happy Birthday!

...again

Chun Hian John Yap, Singapore, Student

Alexander Rubtsov, Russia, Jury



Today



27 °C

Another hot day with a possibility of storms during the day.

Tomorrow: warm and stormy
Provided by: www.meteotest.ch



BERN 2013 International Biology Olympiad

July 20th 2013



Biology at the Bundesplatz

After their Bundeshaus visit, the students split up into their “flash mob” groups. Half an hour later, the Bundesplatz was flooded with white lab coats as the students came together for the main event: “Biology around the World: Meet our Guests”. “I think the flash mob was a great idea, it got people thinking about the IBO” says Khadicha (Uzbekistan).

Everyone was glad to take shelter from the burning sun under their personalised parasols, and set to drawing “their countries”. The delegation from China was hard at work: “Our panda looked like a dog at first!” laughs Shihong. The Slovenians were also drawing animals: “Our country has a special white horse called the Lipiza horse, they’re really good for competitions” explains Blaž. They hadn’t forgotten to include “Proteus anguinus” either: “We call it the human fish”, says Aleksander.

Not everyone was concentrating on zoology, though; flags, national monuments and plants were everywhere you looked. When the students had finished drawing, there was the fountain to play in and ice-cream to eat. Of course, their artwork had to be put away safely as the rain started to fall, but the weather didn’t stop anyone’s fun...quite the opposite.





An afternoon at Ballenberg



Swiss Education

Switzerland is known for its high quality education system. Since the country has no natural resources, well-educated people are very important. The education system has four main parts: Kindergarten, Primary School, Secondary School I and Secondary School II. The education system is slightly different in every canton.

Normally a child goes to school as follows: they attend two years of Kindergarten, then has six years of primary school and three years of secondary school I. These years are all part of obligatory schooling. At the end of secondary school I, youngsters are usually about 15 or 16 years old. After obligatory school, teenagers have two choices: they can either attend high school, or they can start an apprenticeship.

The apprenticeship system is one of the strengths of Swiss education: People work three or four days a week in a company, and the other days they go to school. In school, they learn specific theory concerning their work. There are about 250 different professions peo-

ple can learn, e.g. carpenter, bank clerk or hairdresser.

Apprenticeships last two to four years, depending on the profession. The advantage of this system is that people get practical and theoretical knowledge at the same time. Nowadays, after an apprenticeship, people are still able to continue their studies and get a bachelor's degree, for example.

If people go to high school, which lasts three or four years, they usually go on to University. There they can get a bachelor's after three years, and a master's after two more years.

Languages play an important part in Swiss schooling: a second (national) language is taught from year 5 (11-12 years old), or even year 4 in some cases; a second language (mostly English) is taught from year 7 (13-14 years old). It is also possible to move to another part of Switzerland during a high school year and attend school taught in another language (resulting in a bilingual high school diploma). This multilingual system is a particular trait of Swiss schooling that makes it stand out worldwide.

Politics in the “Haus”!

“You are newly elected members of the National Council... but only for the next ten minutes”, a guide told the students when they entered the chamber of the National Council in the Bundeshaus, the Federal Palace. Then the young National Council Christian Wasserfallen (Liberal Party), talked to the students. “You all have the gifts and the potential to be leaders”, Wasserfallen said, reminding the students that this also means a lot of responsibility. “You have to give other people perspective.” And he begged the students to take three words back to their country: “Democracy, education and science.”

Before the speech the students were guided through the Federal Palace, that they found “nice”, “cool” and “amazing”. If students want to check what they remember of the tour, here is a little quiz. Don’t worry; it’s much easier than the exams, and you can check your answers at the bottom of the page.



A) Which canton is not included in the coat of arms in the Hall of the Dome in the Federal Palace?

- 1) Bern 2) Jura 3) Zürich

T) Where were the first tourists to visit Switzerland from?

- 1) Germany 2) England 3) France

C) What percentage of seats in Parliament are held by women?

- 1) 50 % 2) 10 % 3) 25 %

G) Why do the National Council members have to press two buttons when they vote?

- 1) So they cannot cheat and press their neighbour’s button.
2) Because the electronic system is old-fashioned.
3) With one finger they press the answer button, the other confirms the identity of each Council Member.

T’) What happens when a Council Member’s speech is too long?

- 1) He/she has to pay a fee.
2) He/she is not allowed to give a speech in the next session.
3) The president of the council switches off the microphone.

A’) How long does the President of the National Council hold office for?

- 1) 2 years 2) 1 year 3) 4 years

G’) When was the Federal Palace built?

- 1) 1848 – 1894 2) 1894 – 1902 3) 1918 – 1932

C’) Who is the President of the National Council right now?

- 1) Christian Wasserfallen 2) Ruedi Lustenberger 3) Maya Graf

Sion



Sion (German: *Sitten*) is the largest town and capital of the canton of Valais, a very mountainous part of Switzerland in the south (it shares some of the Alps with Italy & France). It has around 30’000 inhabitants, and lies on the banks of the Rhône, which flows into Lake Geneva and then down through France. Sion’s distinctive marks are its two hills with its two castles, Valère and Tourbillon, and its old town, all medieval (11th century) and very beautiful! Sion has wanted to host the Winter Olympic Games for many years now, but has come second 3 times, although it is close to lots of slopes and places great for mountain climbing. It’s in one of the coldest places in Switzerland, though, with 94 days of frost per year.

French is mostly spoken in Sion, although there is a small minority of “Haut-Valaisan” (a very particular kind of Swiss-German) speakers in the villages.



Sion (C) www.fotopanorama.ch



Solutions: A2, T2, C3, G1, T3, A2, G2, C3



Marmot (cc) tzzimone

Alpine Marmot

(*Marmota marmota*)

Size: 30 - 60 cm

Weight: 1.5-7 kg

Diet: leaves, shoots, herbs, grasses, seeds

Young: 2-7 per litter

Gestation: 25-34 days

Range: Northern hemisphere

Habitat: prairies, steppes, scree fields, alpine and subalpine meadows, some subspecies are also found in forests

Maximum life expectancy: 15-18 years in captivity

Marmots live in social groups for the most part. If they sense danger, they whistle loudly (a typical trait shared by all marmot subspecies).



Dahu

(*Dahucapra rupidahu*)

The mysterious dahu lurks in the heights of the Valais Alps (in the southern part of Switzerland). It seems similar to an ibex until one looks at its legs: one side's legs are shorter than the other, which gives the dahu a great advantage when walking on mountain slopes. Catching a dahu requires great talent, and cannot be done alone. One person (good at making dahu noises) has to creep up behind the dahu, while a second stands lower down the slope with a sack. The person behind the dahu then imitates a dahu call, making the dahu turn around. It will then overbalance, roll down the hill and into the sack. For more information on this rare and awesome beast:

<http://www.youtube.com/watch?v=BDtvzCgPIEc>

Maximilian Bircher-Benner (1867 - 1939)

The Swiss physician and pioneer in nutritional research is the inventor of one of Switzerland's most famous export products: Müesli. After his studies in medicine in Vienna, Bircher-Benner went back to Zürich, where he opened a sanatorium. There, he developed his famous Bircher-Müesli – the mix of fresh fruit, milk and cereals – for the healing of his patients. His recipe soon went around the world.



Maximilian Bircher-Benner



What's going on here?!

Nobody panic, the students haven't gone mad; it's all the Team Guides' fault. They've spent this whole week thinking up pranks to play on their delegations, like "Let's make the Brits believe that the royal baby has been born", "Let's start an argument between Argentina and Spain about whose country is more beautiful", "Let's tell the Canadians that Céline Dion is really Swiss". Well done to the students who have all been good sports. The Korean delegation's KOREA-graphy was particularly memorable...

Happy Birthday!

Tsisia Batsashvili, Georgia, Student

Pascal Bürki, Switzerland, Film Crew



Today



28 °C

It'll be a lovely sunny day with only a few clouds here and there.

Tomorrow: warm and sunny

Provided by: www.Meteorotest.ch



BERN 2013 International Biology Olympiad

July 21st 2013



Congratulations!

“I studied a lot” explained Charles Gleason (USA) at yesterday’s closing ceremony, when asked how he won 1st place at the IBO 2013. A good reason for his being the best out of 241 students from 62 different countries. Lei Ding (USA) holds second place. “What’s the most impressive memory you’ll be taking home with you?” asked the MC. “The view from this stage”, answered a quick-witted Lei. Kwang Min Ryu (KOR) came in 3rd place, said that “I guess I was just lucky”. Congratulations are in order to those three, but also to all the medal-winners and all the students. In Christoph Neuhaus’ words (State Councillor of the canton of Bern): “Everyone’s a winner. I am deeply impressed by your performance.” “The IBO could mark the beginning of your career” said Poonpipope Kasemsap, Chairman of the IBO coordinators. He highlighted the importance of new friendships and connections with other biologists. National Council member Christian Wasserfallen added “This is an important experience for you as much on a personal as on a scientific level”.

Poonpipope Kasemsap praised Switzerland for organizing the IBO 2013 and for its innovations, as did Tomáš Soukup, IBO Coordinator. Referring to the new translation software and exam tablets, he said that “Switzerland is responsible for a real revolution”. With these words as well as the students’ good results in mind, Mathias Wenger, Chairman of the IBO, stated that “The IBO was a success”. See you next year in Bali, Indonesia!



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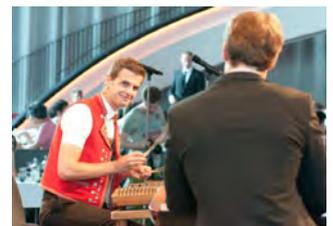
NOVARTIS

Metrohm





Emotions and Glamour



at Biology Olympiad



The successful Swiss team: two bronze medals, two silver medals and the award for the best video, together with the student from Liechtenstein.

Educational session

Some of the Jury members gathered in the Kursaal yesterday morning to discuss biology awareness and education in their countries, to compare teaching methods, curricula and to learn from one another as to what can be done by each country to improve the state of biology worldwide. Presentations were given by the Japanese, British, Spanish and American delegations, followed by a discussion time. One point that stood out was the need for biology awareness to be heightened worldwide by offering more chances to all students to learn biology, for example through weekend workshops or university visits. Ryoichi Matsuda, one of the organisers of the Educational Session, said that it was "a rare occasion to have so many teachers together to focus on normal students too".

Let's take a look back at the...



You can see many more pictures and videos from this past week on the IBO website www.ibo2013.org.





Lady's slipper (CC) Udo Schmidt

Lady's slipper

(*Cypripedium calceolus* L.)

Family:

Orchidaceae

Flowering season:

May and June (sometimes July)

Location and distribution in Switzerland:

Forests, copses; in hilly and subalpine regions

General distribution:

Eurasia

Description:

15-50cm high, with between 2 and 4 wide, elliptical, pointed, lightly haired leaves surrounding the stem, the lady's slipper has 1 or 2 blooms, 3 in rare cases. The 3 outer perianth petals are up to 5cm long, lance-shaped and widely spaced ; the two inner petals are connate and face down : all petals are a purple-brown. The labellum is very large, round-bodied and hollow, yellow, and 3-4cm long. The orchid has no spur.

Impressed by the Jury

Andreas Obrecht from Bern is celebrating his 32nd birthday today – congratulations! Andreas worked as a Jury guide during this IBO. “We always stayed close to the Jury and made sure that they were where they needed to be”, he explains. The guides accompanied the Jury on the excursions, as well as while the exams were being corrected and discussed.

“We also did a lot of background work”, adds Andreas Obrecht. The Jury guides were the ones who helped print out the practical exams and prepare the tablets, for example. “We needed a night shift for it– we worked until 6 o’clock in the morning”.

Andreas is a geographer. He came to volunteer for the IBO through his friend, Marco Gerber, the head secretary. “I usually spend my summer in Bern, so it wasn’t a problem for me to come and help. It was great to be part of this event.” What he enjoyed most were the discussions with the Jury. “The members were all very interested, interesting and broad-minded. They really impressed me.”



Happy Birthday!

Andreas Obrecht, Schweiz, Jury guide

Adeline Colussi, Schweiz, Scientific committee



Good bye!

Thanks to everybody who let us interview them, and thanks to you for reading us! Have a safe trip home. Your media team.



Today



30°C

Today will be very hot and sunny; keep your caps on and don't forget your sun cream!

Provided by: www.Meteotest.ch

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