doi:10.2533/chimia.2007.594 CHIMIA **2007**, *61*, No. 9

Chimia 61 (2007) 594

ISSN 0009–4293

Two Bronze Medals for Switzerland at the 39th International Chemistry Olympiad 2007 in Moscow

Maurice Cosandey*

Abstract: Delegations from 68 countries took part to the 39th International Chemistry Olympiad in Moscow, 15–24 July, 2007. Lucia Meier, from Frick AG, and Max Häfliger from Luzern both won two bronze medals for Switzerland.

Keywords: International Chemistry Olympiad · Swiss students

The International Chemistry Olympiad is an annual competition for pupils at gymnasium level. Participating countries send their four best pupils to this ten-day long competition. One day is devoted to theoretical problems and another one to practical work in the lab. After correction and grading, the best students are awarded gold, silver and bronze medals like in the real Olympic Games. The best results were obtained by two Chinese students, before a Russian. The four members of the Swiss delegation were:

The Swiss team, from left to right: Florian Gubler (cultural attaché of the Swiss embassy), Thomas Engeloch (mentor), Lucia Meier (bronze medal), Frédéric Cottier, Max Haefliger (bronze medal), Andreas Frutiger, and Maurice Cosandey (mentor)

- Frédéric Cottier, b. 1989, Lausanne (VD)
- Andreas Frutiger, b. 1989, Hilterfingen (BE)
- Max Haefliger, b. 1989, Buchrain (LU), bronze medal
- Lucia Meier, b. 1988, Gipf-Oberfrick (AG), bronze medal

Each delegation is accompanied by two mentors, who must first create the problems in English, then translate them into their native languages, and mark the papers of their national candidates. The two Swiss mentors were Thomas Engeloch, from Aesch (BL), and Maurice Cosandey, from St-Prex (VD).

Our Embassy in Moscow sent us its cultural attaché, Florian Gubler, who took part to the closing ceremony and agreed to be photographed with the Swiss team.

The mentors were located in a brand new four-star hotel built in 2006 with marble everywhere, luxurious buffet, smiling English-speaking staff. The students were located in Hotel Olympiets – far away in the north of Moscow – which unfortunately could not quite keep up with the quality of the mentors' accommodation.

The non-scientific program was perfect: visits, games and fun. The students could paint their own matriochka and brought them back home, or even play paintball with military equipment. Usually most of the participating delegations distribute small gifts around them. The Swiss chocolate was an absolute success.

To give an idea of the 'Olympic' level, here are some of the simplest problems, taken from the series of eight theoretical problems.

1. Give the structure of two isomers of propanedial which can exist in equilibrium. Propanedial is a weak acid, similar to acetic acid. Which H atom is labile?
   Answer: Isomers are *E*- and *Z*-enols, and the labile H is attached to the central C atom.
2. Find the structure of three different compounds A, B and C which have the same NMR spectrum: one singlet, one triplet and one quadruplet with their integrated signals respectively 1, 3, 2. Furthermore, all these compounds produce ethanol and acetic acid, sometimes by producing CO_2, although none of them is ethyl acetate.
   Answer: Triethyl orthoacetate, ethyl malonate, methoxy-ethyne.
3. Find the charge of the ions $Si_3O_9^{n-}$ and $Si_4O_{10}^{m-}$, draw their structures. Then draw the structures of an anion having 16 Si in the center of SiO_4 tetrahedra, if ten tetrahedra have two apexes in common with neighbours, and if six tetrahedra have three apexes in common with their neighbours.
4. Write the equation of the reaction between SO_2, I_2 and H_2O in pyridine solution.
   Answer: HI and H_2SO_4 are produced, then PyH^+ ions.
   Write the equation of the reaction between SO_2, I_2, CH_3OH and $Fe_2(SO_4)_3 \cdot 9\,H_2O$.
   Answer: $Fe_2(SO_4)_3 \cdot 9\,H_2O + 8\,I_2 + 9\,SO_2 + 9\,CH_3OH \rightarrow 2\,Fe_SO_4 + 9\,CH_3OHSO_3 + H_2SO_4 + 16\,HI$

The next Olympiads will take place in Budapest, then Cambridge, UK in 2009, and Tokyo in 2010 and Istanbul in 2011.

Received: July 29, 2007

*Correspondence: Dr. M. Cosandey
Ch. Etourneaux 1
1162 St-Prex