

## 1999 CHEMISTRY OLYMPIAD – THE NEW ZEALAND EXPERIENCE

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This has been a tough year for the Chemistry Olympiad organisation. The principal cause has been the withdrawal of MORST funding and a drying up of corporate support. Yet we persevered, and at the last moment – the day before the team left for Thailand, we learnt of a grant of \$25,000 from the Minister's Discretionary Fund from the Lottery Board, which we will share with the Mathematics and Physics Olympiad organisations. The Chemistry Olympiad's share will be \$6,500. A grant of \$3,000 was also received from the New Zealand Institute of Chemistry.

A record number of 120 students sat the training group selection examination in October, 1998. Offers were made to 32 students to join the training group. During the first term of 1999, the group received training material, fortnightly assignments and sat two tests. The lack of funding meant that a residential training/selection camp could not be held. Our compromise was to hold a split camp – half in Auckland and half in Christchurch, with out-of-town students being billeted with a local student. Sheila Woodgate and Robert Maclagan swapped locations in the middle of the week so that each group received the same input. Twenty one students participated in the training camp. The training camp had the usual format of two lectures, two problem sessions and a laboratory session each day. In Christchurch keen students from local schools were invited to participate in the laboratory sessions and about 20 students joined the Olympiad training group students. At the end of the week a selection examination was sat. This exam did not clearly distinguish four potential students, so a group of six students was chosen to receive some more training material and sit another examination two weeks later. About six other members of the training group were hard on their heels. The second examination allowed the choice of Desmond Chun Fung Chik (Auckland Grammar School), Tim King (Wellington College), Richard Kramer (Westlake Boys' High School, Auckland) and Stephen McCracken (Avondale College, Auckland) as the 1999 New Zealand Chemistry Olympiad team. The non-travelling reserves were James Keenan (Wanganui Collegiate) and Ben Ting Chiang Yi (Glenfield College, Auckland).

During the second term the team received weekly training material and assignments. The team gathered in Auckland on 1 July for a day in the laboratory at Auckland University before flying out to Bangkok on 2 July. A number of European delegates were surprised to find that we actually took longer to reach Bangkok than they did. We had a day to recover from travel and do some last minute training. That afternoon we met our team guide, Maytawee (Mae) Kaewwichai. That evening, Mae took us to a shopping mall, introducing some of us to the photo sticker machines, beloved by young Thais. The next day, Mae took us to a mall solely devoted to computer software and hardware. For our return journey Mae had a friend who drove an ambulance van to take us back to the hotel. The return journey, using tollways, took 20 minutes whereas the journey in took an hour! That evening, a Welcome Dinner was held. It was also Stephen's 18th birthday. 300 people sang 'Happy Birthday' to him and a cake, with candles, organised by Mae, was presented to him.

The Opening Ceremony, held at Kasetsart University, was presided over by Professor Dr H.R.H. Princess Chulabhorn, a natural products organic chemist, and youngest daughter of King Bhumibol Adulyadej and Queen Sirikit. The Olympiad was part of the celebration of the 72nd birthday – the 6th cycle anniversary, of the King. Each team, with its guide, marched across the stage and bowed to the Princess, while slides illustrating the country were displayed on screens.

After the ceremony and lunch, the students and mentors were separated, with the mentors first inspecting the laboratory set up. The laboratory examination was held in an impressive new laboratory building at Kasetsart University. The mentors then travelled to King Mongkut's Institute of Technology, Ladkrabang for the first Jury session. The two laboratory exercises were the kinetics of the acid catalysed iodine-acetone reaction which involved a iodine-thiosulphate titration, and a steam distillation of a natural product followed by qualitative organic analysis tests and NMR structure determination. The distillation used microscale apparatus. The use of microscale apparatus in an examination taken by high school students is likely to be the subject of debate at future Olympiads.

Then came the "translation". The English-speaking mentors aimed to produce a common examination script. This year the translation from the "official" English version took until about 4:30 a.m., not helped by not saving the original version with a different name and having the file overwritten just when it was nearly ready to print. Then we had a 45 minute bus trip back to our hotel. I had just got into bed and turned the light out when the phone rang with a wake-up call! Some mentors went straight to breakfast and on to a tour that included the Grand Palace, and the Golden Teakwood Palace. Others joined them later in the day.

The next day was devoted to the preparation of the theoretical examination. The eight English speaking countries, who were joined this year by India for the first time, were better organised and caught the first bus back to the hotel. The examination included questions on thermochemistry, freezing point depression, acid-base equilibria, Beer Lambert law, radioactive decay, coordination chemistry, structure determination of a natural product, and peptide chemistry. Topics outside the normal high school syllabus had been covered in Preparatory Problems.

On the day of the theoretical exam, the Olympiad paper, the Catalyser, interviewed the New Zealand team. While the students tackled these problems, the mentors visited the old capital of Ayutthaya. On different days the students visited the Grand Palace, Ayutthaya, Safari World, and a Sea Turtle Conservatory. On the penultimate day the mentors engaged in the arbitration process, sometimes gaining more marks, while at other times having marks taken away. At the final Jury session, Sheila Woodgate was elected to the Steering Committee of the Olympiad as the representative of the Pacific Rim countries. The medal cuts were decided in less than a minute.

On the last day the closing ceremony was presided over by Professor Dr H.R.H. Princess Chulabhorn. Teams do not know what medals have been won until they are announced. To our delight we won three bronze medals, a result equalling the Netherlands and Slovakia. The team member who missed out, Stephen McCracken was suffering from an upset stomach during the theoretical exam, yet managed to be 5th non-medallist. The New Zealand team, on the basis of marks, was 25th out of 51 countries competing, just ahead of Italy and just behind Ireland. The result is outstanding for a small country. The majority of countries ahead of New Zealand receive large government grants for their Olympiad organisations allowing more training of their teams.

We wish to acknowledge support from the Minister of Internal Affairs, the N.Z.I.C., Thermoplastic Engineering, and the families and schools of the students. We also wish to acknowledge the continued support of the departments of Chemistry of the University of Auckland and the University of Canterbury.



1999 New Zealand Chemistry Olympiad Team