

London International Youth Science Forum

■ Geoff Auty

Just nine years after returning from being a 'Five for Sydney' escort, I found myself partly reliving that wonderful experience in the Lecture Theatre at the Royal Geographical Society, representing ASE at the 2010 London International Youth Science Forum (LIYSF). This was after I had relived a much earlier experience when, on emerging into the daylight at South Kensington Underground Station, totally disorientated and needing to work out my next move, I was reminded of my very first ASE conference at Imperial College and the first time I had to rely on my own senses to get me around London. The warm summer day provided a sharp contrast with the occasion of my first awareness of LIYSF. ASE Annual Conferences are often cold affairs, but those who attended at Nottingham in January 2010 will recall it was particularly cold, with snow on the ground throughout. With further snow forecast on the final day, it was agreed to close the exhibitions early. Over lunchtime, I came across Richard Myhill, a lone figure with his display still intact. I discovered that he was Conference Director for LIYSF and I felt that ASE

should be involved in making this event more widely known.

Unlike the Harry Messel event in Sydney, which takes place every two years, LIYSF is an annual event. Before moving to Imperial College London, LIYSF was held at the Institute of Electrical Engineers and was originally called 'The Youth Science Fortnight'. It is an odd twist that, when I requested time off to go to Sydney, I explained to my College Principal that the event was held every two years. *And I suppose that, in the alternate year, the Australian kids come here,* he replied. I was not aware of such an event in Britain – until now.

On 29th July 2010, I reached my destination next to the Royal Albert Hall and it was back to the present.

The Forum 2010

I was ushered to a seat in a reserved row close to the front and, at exactly 11 am, a fanfare of music got the event under way. Entering from the back, down the side aisles, came lines of young people, each carrying a flag representing the countries taking part. My quick estimate was about 40 by the time they had all lined up across the front of the stage. This was a display of national identity that emphasised international co-operation in spectacular colour. The name of each of the flag bearers and the country represented was announced as they individually walked down the centre aisle.

Four speakers had already taken their places on the platform. Opening the event was Professor Richard O'Kennedy, President of LIYSF and Professor of Biological Sciences at Dublin City University. In addition to his general welcome, he described some of his work on combatting disease and understanding the immune system.

Professor Julia Buckingham welcomed the participants on behalf of the host university, Imperial College. Lord Browne described his career in BP as the background to explaining the great strides in exploitation of available energy

sources on which modern life is so dependent, if not without its dark side. This was at the time when the controversy surrounding the damaged deep well in the Gulf of Mexico was at its height, and it was still uncertain whether attempts to stem the flow of oil into the sea were likely to be successful. Naturally, this was included in his account of the present use of world energy resources and the need to evolve more sustainable sources of energy to maintain our economic prosperity.

This provided a natural introduction to the final speaker, Professor Nigel Brandon. Working on a number of energy programmes, he is a leading expert in the development of sustainable energy sources. He provided many facts and figures to illustrate the rapid use of existing fuels and how the need to develop sustainable energy sources requires rapid progress. *'Why should we use the same energy source to go to the local supermarket as to go to the seaside?'*

Looking at the programme, it was clear from the synopses of lectures and practical activities that these brief talks had introduced the principal topics that would occupy the participating students over the next two weeks. The ceremony was closed by Mike Clark, Director of LIYSF.

Leaving the lecture theatre, I met Dr. Cyril Isenberg. Those who attend the ASE Annual Conference will be aware that Cyril has been a regular contributor to the Members' Exhibition. I was also a regular contributor from the late seventies to the mid nineties, but found that I could not spend sufficient time demonstrating an exhibit when the Conference had so much else I needed to see. For that reason, and because teacher innovation has been stifled in recent years, the Members' Exhibition has effectively faded away. Faithful to the cause, Dr. Isenberg continues to put on what is sometimes a one-man show. His contribution to LIYSF was to be a demonstration lecture on 'The magic of

soap bubbles'. This has been seen at many ASE conferences, and is one of the examples of how fun and the important 'wow' factor can be brought into science education.

The LIYSF programme had many lectures based around the theme of sustainable energy sources. Perhaps the most significant-sounding title was *Sustaining and increasing productivity while minimising adverse events in the environment*. As governments, world industry and society in general become increasingly environmentally aware, that single phrase embodies the target towards which we must collectively work. It is easy to impose regulations and restrictions but, if that takes us back to more austere times, then a sense of dissatisfaction is bound to arise. Other lectures developed the specialist areas in which progress might be achieved. Mechanical engineering is important because movement requires energy. Greater efficiency in the design of machines and transport must be considered. Materials for batteries and fuel cells, and the development of hydrogen cells were considered; important topics if the electric car with the performance and range of petrol and diesel models is to become a reality. Even for the present rechargeable models, electrical energy obtained by plugging into the mains is largely derived from fossil fuels. Hence, other lectures focused on biomass and bioenergy, photovoltaics and energy from wind, waves and tides.

In parallel with the issue of energy, agriculture and food were on the agenda, together with the vital issue of water management. Use of materials and recycling were not forgotten, and the maintenance of biodiversity on land and in the oceans were the subjects of further talks, including one with the catchy title *Animals don't read the textbooks*. In addition, lifestyle needs the support of medicine from time to time, and this was the strand of further lectures.

Research in science continues to progress and further talks on new areas were delivered. Space research might tell us much or little to enhance our daily lifestyle, but we want to know. At the other end of the scale, the work at CERN was explained, and further input on telecommunication, nanotechnology and power from nuclear fusion was in the programme. These topics illustrate that, as we continue to investigate and manipulate at smaller and smaller levels,



London International Youth Science Forum opening ceremony 2010

the apparatus seems to get larger and more expensive. Back to the human scale, another group of lectures was devoted to vision, light and colour.

In addition to attempting to absorb so much information through watching and listening, practical challenges were set and the student groups reported their findings to the eminent guest speakers.

Additionally, this year for the first time students had the opportunity to extend the fortnight with a five-day visit led by Richard Myhill to the CERN laboratories in Geneva. Thirty-five students from 17 different countries took up this chance to meet the scientists and see the site.

And, a final twist to the idea of recycling is that several of the guest lecturers had themselves been students at LIYSF in the past.

The history of the Forum

The Forum started in London in 1959. A group of people led by Philip Green and Arthur McTaggart Short were inspired by the need to 'repair war-torn youth', initially with links in Denmark, Belgium and Portugal. They gained the support of HRH the Duke of Edinburgh, who is founding Patron (as well as patron of ASE). The guiding principle is that *'LIYSF aims to give a deeper insight into science and its applications for the benefit of all mankind; and to develop a greater understanding between young people of all nations.'* It started with students from the UK and Europe and grew from there, becoming a fully international event.

George McGowan ran the Forum for 40 years from 1963, assisted by John Needle. After George's death in 2004, John continued for a few years before handing the running of LIYSF to Educational Cultural Exchanges, an organisation that arranges travel programmes for students. For more details, go to www.ecetravel.com/about-us.

The Forum today

Students are, in theory, responsible for their fees; however, many attend as winners of national/international competitions, selected by science organisations and by the British Council.

Winners of the Big Bang Science Fair, European Contest for Young Scientists and National Youth Science Forum – Australia, to mention a few, are selected and funded to attend. Some schools offer bursaries that enable students to attend. The participation fee includes accommodation, meals throughout, lectures, full programme, visits, social programme and travel to programmed events.

There are no official limits but, to keep a balance, the aim is never to have more than 35 from one country. There is scope to increase numbers from many countries.

LIYSF has three basic requirements:

- Students must be aged between 17–21 at the time of the Forum;
- Students should have a good level of English to be able to understand lectures, etc.; and
- Students are studying, or are going on to study, science at a higher level – and have displayed a keen interest in the subject.

Stories from some past students can be found at www.liysf.org.uk/student-stories

I found later that I had not kept up with the count of flags. This year's event attracted 300 students representing 50 countries. I certainly wished that I could have stayed for the whole fortnight. Make this an opportunity for your students. How to do that? Look at www.liysf.org.uk – it's all there!

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