WORKSHOP REPORT

Eric Albone, Clifton Scientific Trust

with students and teachers from
Colchester County High School for Girls, County Upper School, Bury St Edmunds,
Hinchley Wood School Esher, St Benedict’s School Bury St Edmunds,
Ritsumeikan Moriyama High School Shiga, Kyoto Prefectural Rokuhoku High School, &
Kyoto University of Education attached Senior High School

The 2009 UK-Japan Young Scientist Workshop was hosted at, and with the generous support of, the Kyoto University of Education in partnership with Clifton Scientific Trust. The event was provided free of charge to participants from schools in England with the generous support of the Department of Children, Schools and Families through the Joint International Unit, of the Great Britain Sasakawa Foundation, of Mrs Mary-Grace Browning and of funds raised by the students themselves and also provided by the participating schools. We also thank the Japan Science and Technology Agency, Kyoto Prefectural Board of Education and Kyoto Municipal Board of Education, and particularly colleagues at the Kyoto University of Education attached Senior High School who worked so hard to make the Workshop a success.
The 2009 UK-Japan Young Scientist Workshop was hosted at the Kyoto University of Education during the week of 16 - 22 August. The British team arrived earlier in Japan on the evening of Thursday 13 August on account of the limited availability of flights, giving an invaluable opportunity for the British team to explore Kyoto informally ahead of the Workshop proper. In planning this we were greatly assisted by Mr Tetsuro Takada, the principal facilitator of the Workshop on the Japanese side and a teacher of English at the Kyoto University of Education attached Senior High School. Following the Workshop, Dr Albone and Dr Okano stayed on in Tokyo 24 - 28 August discussing with key organizations on behalf of Clifton Scientific Trust possibilities for the future development of the Workshops.

The 2009 UK-Japan Young Scientist Workshop in Kyoto in Action with sincere thanks to all who supported, contributed or took part.
By living together for a week and working in small UK-Japanese teams with professional scientists and engineers on projects which challenged the students to think for themselves and put classroom knowledge and skills to use, the post-16 school students from both countries encountered science and its application in motivating real life contexts which could radically change attitudes and broaden horizons both with regard to science in general and to their own future careers in particular. By working together in the Workshop, science became a potent cultural bridge through which the students learned about each other and formed lasting friendship and global understanding. A major driver in this was the challenge the students faced in producing team presentations of their achievements at the end of the week. The Powerpoint presentations they prepared are available.

The 2009 Workshop built on the achievements of earlier Workshops organized in Britain and Japan by Clifton Scientific Trust and the group of Super Science High Schools in Kyoto, led by the Kyoto University of Education and the Kyoto University of Education attached Senior High School. A copy of a paper “Reflections on the Valued Partnership with the Kyoto Super Science High Schools 2004-2009” prepared for the Kyoto organizing team for inclusion in their Report to the Japan Science and Technology Agency is available. This Report, which includes reflections contributed by every student attending the 2009 Workshop on returning home, will be sent to participants as soon as it is received from Japan. The value of these and previous Workshops has been recognised in the Japan Society Award for 2007.

Attendance: The Workshop was attended by 26 post-16 school students, twelve (7 girls, 5 boys) from four maintained schools in England, and fourteen (10 girls, 4 boys) from three Super Science High Schools in Japan. The students were selected by the schools. The British party also included three teachers from the British schools together with Dr Eric Albone (Clifton Scientific Trust) and Dr Toru Okano (Rikkyo School in England, working on behalf of Clifton Scientific Trust). The Workshop was offered to the students free of charge, although the schools were asked to make a contribution.

A Financial Statement is attached to this Report (Appendix 1).

Science Programme: The Science Projects were led by Japanese scientists and engineers in their own laboratories, usually with graduate student support. In consultation with Clifton Scientific Trust, the scientists produced project briefs which were sent to the participants in advance of the Workshop. The school students were assigned in small UK-Japanese teams to one of the following projects on the basis of their preferences, and gave public team presentations/demonstrations of their achievements at the end of the Workshop, answering questions from the audience.

- Immunology Team; “Exploring the immune system in mice” led by Dr Tomohide Hosokawa, Kyoto University of Education
- Plasma Physics Team; “Exploring the Plasma World” led by Dr Kazunari Taniguchi, Kyoto University of Education
- Stirling Engine Team; “Learning Science Technology through the Production of the Stirling engine” led by Professor Fumitaro Sekine, Kyoto University of Education
- Alloy Team; “At what temperature do alloys melt?”; zinc-tin phase diagrams and metal recycling led by Dr Masakatsu Hasegawa, Kyoto University
- Laser Team; “Optics, Lasers, and Quantum Eraser” led by Dr Hiroyoshi Hiejima, Kataoka Corporation

A visit was also arranged for the whole Workshop to the Kyoto University Disaster Prevention Research Unit which included a presentation and discussion with Professor Hajime Mase on the current work of the unit.

Teacher Programme Teacher involvement was a very important part of the Workshop, both in providing pastoral support and also in taking ultimate responsibility for
their students. They also had an important role in taking the Workshop experience back into their schools. A Teachers’ Forum afternoon led by Dr Tadayuki Murakami, Kyoto University of Education, was also organized in which issues of common interest to British and Japanese teachers were discussed. In addition to teachers from the schools participating in the Workshop, teachers from Osaka University of Education attached High School and Kitauiji Junior High School were also present. The Teachers’ Forum included presentations from Professor Murakami, Mr Jonathan Taylor, Head of Sixth Form, Hinchley Wood School, and Dr Hideji Tanaka, Kyoto Prefectural Rakuhoku High School.

8 Former Students’ (“OB & OG”; Old Boys’ & Old Girls’) Afternoon
8.1 A very productive innovation in the 2009 Workshop was an afternoon in which Japanese students who had taken part in former Workshops and had left school were invited to return and give presentations of the importance they could now see that the Workshops had had in their lives. The texts of their presentations, from which the following are taken, are available.

[It] changed my career… I now study material engineering
I learned the attitude towards something unknown
Working together with people from a different country to solve a problem
Every person who took part should realize how precious this experience is

8.2 The former students who spoke, the year of their participation in a Young Scientist Workshop and their current university course are as follows.

- Mr Satoshi Terada 2004 Kyoto University, Engineering
- Mr Hiroyuki Tashiro 2006 Osaka University, Engineering
- Mr Yasuki Takeda 2006 Kyoto University, Law
- Miss China Yamada 2006 Kobe University, Engineering
- Miss Yoshiko Takada 2006 Osaka University, Foreign Languages
- Mr Ryo Hayayama 2006 Osaka Prefectural University Engineering

In addition seven Japanese students who took part in the 2008 Workshop and were still at school also contributed.

8.3 Following their presentations, the OBs and OGs went on to lead student discussion groups on the theme “How can we improve society?” focusing on the following issues: “Politics or Economy”, “Education”, “Ageing Society and Low Birth Rate”, “Discrimination” and “Environmental Issues”, the groups subsequently reporting back in a plenary.

9 Cultural Exchange:
9.1 The 2009 Workshop was widely regarded as being outstanding in the quality of interaction achieved between the British and Japanese students in a very short time. A major stimulus to this was sharing accommodation in the traditional Hatoya Zuihoukaku Hotel in downtown Kyoto, a short train journey from the university. Students from both countries shared rooms, sharing also Japanese-style breakfasts. Teachers similarly shared. This enhanced the interaction which working together and presenting in the science project teams engendered.

9.2 Specific programme items which fostered interaction were the Cultural Exchange evening in which, following an exchange of gifts, each school group put on a short entertainment, humourous or serious, for the workshop, and the “Let’s Learn Japanese” evening led by the Japanese students. The programme also incorporated visits in Kyoto to the Komano and Heian shrines and Budo Martial Arts Centre as well as practical sessions in the Kanpo Calligraphy Centre and the Kyoto Handicraft Centre, and also a viewing of the Daimonji festival bonfires. A number of students from each side gave short speeches at the Welcoming Ceremony and at the Final Workshop Dinner. On Sunday 23 August following the Workshop, the British team visited Nara before returning home the next day.
10 **Discussions in Tokyo:** Following the Workshop Dr Albone and Dr Okano spent 24-28 August in Tokyo exploring possibilities for the future development of the UK-Japan Young Scientist Workshop programme. This was kindly facilitated by Mr Huw Oliphant, Head of Science and Environment, British Council, Japan and included discussions with/presentations to Ambassador David Warren, Mr Jason James, Director, British Council Japan and senior staff at the Japan Science and Technology Agency, the Kanagawa Academy of Science and Technology, Yokohama Science Frontier High School, the Chemical Society of Japan, the National Institute for Educational Policy Research (this has subsequently led to a visit by one member of staff to Bristol), and Mitsubishi Electric Corporation Headquarters. Dr Albone and Dr Okano also visited Rikkyo University and Rikkyo Senior High School in Tokyo. The outcomes were extremely promising and subsequently Ambassador David Warren and Mr Justin James have very kindly written to various people in the UK highlighting the significance of our Workshops.

11 **Outcomes**

11.1 A photographic/video record of the Workshop was obtained and all students and teachers completed detailed evaluation forms at the end of the Workshop. In addition, every student was asked to send a page of their own reflections on the Workshop on returning home and these are now incorporated in the detailed Report produced by the organizing team in Kyoto a copy of which will be forwarded when it is available (# 3 above). The Powerpoint presentations produced by the student teams are also available.

11.2 The British students have also filmed and produced their 50 minute DVD record of the Workshop, seen from their perspective, copies of which are available. A shorter 4 minute trailer is also available. These have not been edited in anyway by teachers or the organizers and are entirely the students own work.

11.3 On returning home, also many students gave presentations in their own schools and contributed articles to their own school magazines. One from the Colchester County High School for Girls is attached to this Report, Appendix 2.

11.4 Journalist Dorothy Lepkowska, who had written previously about the UK-Japan Young Scientist Workshops approached Clifton Scientific Trust with a view to writing an article for SecEd, an independent weekly newspaper dedicated to secondary education and delivered free to every secondary school in the UK, also available online (www.sec-ed.com). The outcome was an article highlighting the experience in a number of Workshops of County Upper School, Bury St Edmunds, which appeared in the September 10 2009 issue, a copy of which is appended, Appendix 3. This included photographs taken by Clifton Scientific Trust at previous Workshops.

11.5 Following correspondence from Ambassador David Warren, Clifton Scientific Trust is very grateful to acknowledge the advice being given by Sir John Holman, National STEM Director in constructing a Business Plan to put these Workshops on a sustainable footing, raising their profile and engaging more schools and more students. For the immediate future Clifton Scientific Trust working towards the 2010 Workshop in Cambridge in the first week of August, hosted at the Kaetsu Educational and Cultural Centre and Murray Edwards College and involving scientists from across the university. The Trust hopes to establish a continuing link with the University of Cambridge.