2011 UK-JAPAN YOUNG SCIENTIST WORKSHOP
24th to 30th July 2011 hosted at the University of Cambridge
Patron The Rt Hon the Lord Jenkin of Roding

A REPORT
Eric Albone, Clifton Scientific Trust

with
Special Guest Students and Teachers
from Communities afflicted by
The Great East Japan Earthquake and Tsunami

Fukushima-kenritsu Fukushima High School; Fukushima-kenritsu Soma High School;
Ibaraki-kenritsu Hitachi Daiichi High School; Miyagiken Sendai Daini High School;
Miyagiken Miyagi Daiichi High School; Miyagiken Sendai Nika High School

also with Students and Teachers in Japan from

Rikkyo Ikebukuro Senior High School; Rikkyo Niiza Senior High School;
Kaetsu Ariake Senior High School

also with Students and Teachers in England from

Camborne Science & Community College, Cornwall; City and Islington Sixth Form College;
Colchester County High School for Girls; County Upper School Bury St Edmunds;
St Benedict’s School Bury St Edmunds; Hinchley Wood School Esher;
The Rikkyo School in England; Wellington College

Clifton Scientific Trust
is registered as a charity in England and Wales 1084933
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Member of STEMNET; Member of the Parliamentary & Scientific Committee
We acknowledge the generous support of grants, charitable donations and support in kind from Rolls-Royce plc, Barclays Capital, The Daiwa Anglo-Japanese Foundation, The Japan Foundation in association with the Chemical Society of Japan, The Royal Society of Chemistry, The Great Britain Sasakawa Foundation, Mitsubihi Electric Europe, The Rikkyo School in England, its students and staff, The Hitachi Cambridge Laboratory, The Kaetsu Centre and The Babraham Institute as well as by staff and students across the University of Cambridge. This has made it possible to host 21 students and their teachers from the six schools in Japan in areas afflicted by the March 2011 Great East Japan Earthquake and Tsunami, covering all their costs in England and of their flights from Japan.

Building on the success of this Workshop we are committed to working to continue to support schools in the Tohoku area in future years as they and their communities recover from the devastation of the greatest earthquake and its aftermath in Japanese history.

The 2011 Cambridge UK-Japan Young Scientist Workshop was the latest of a series of UK-Japan Young Scientist Workshops devised and run by Clifton Scientific Trust since 2001 with partners in Japan and in England, and the second to be held with the University of Cambridge. This year a total of 47 post-16 students and 17 teachers from 17 schools, equally split between Japan and England, took part in the Cambridge Workshop. Of these 15 students and 6 teachers were from 6 Senior High Schools in Hitachi, Fukushima, Miyagi, Soma and Sendai, communities afflicted by the Great East Japan Earthquake and Tsunami.

The Workshop was based as before at Murray Edwards College and the Kaetsu Centre, with activities taking place across the University and at the Babraham Institute, and with the final Celebratory Dinner hosted at Corpus Christi College. The students worked in small UK-Japanese teams with scientists and engineers in 9 research areas and at the end of the week gave concise team presentations of their achievements before an invited audience.

In organizing this Workshop with the Japanese schools, Clifton Scientific Trust was greatly supported by Dr Toru Okano, Deputy Headteacher, The Rikkyo School in England and by Professor Shin-ichi Ohnuma, Professor of Experimental Ophthalmology, UCL, and Group Leader, Dept Oncology, University of Cambridge, who has close personal and professional links with Fukushima and Tohoku University, by Ms Charlotte Anderson, a Cambridge undergraduate reading Natural Sciences at Trinity Hall, and in earlier years as a student at Colchester County High School for Girls a participant in these Workshops and by Yasuo Adam Roberts-Taira, son of the Director of the Kaetsu Centre and a sixth form student in Cambridge, both of whom made invaluable contributions as part of the organizing team.
I ASSOCIATED WORKSHOP PROGRAMMES

1.1 2011 Pre-Workshop Programme for Japanese students, 21st–24th July

As in previous years, the welcome provided by the Pre-Workshop Programme was a very important part of the experience for Japanese students. Organized by the Rikkyo School in England in association with the Trust, the Japanese students resided at the Rikkyo School, a Japanese boarding school located just south of Guildford. The Programme included specially organized visits to the Royal Society, the Royal Institution, University College London, the Natural History Museum, the Science Museum and the British Museum, as well as providing time to be tourists in the capital. For this Clifton Scientific Trust owes a special debt of gratitude to Mr Roger Munecikia, Headmaster of the Rikkyo School in England and his staff.

During their visit to UCL organized by Prof Shinichi Ohnuma, the Japanese students and teachers were welcomed to England by Prof Kozo Hiramatsu, Director, JSPS London Office and by Mr Takashi Ishida, Director General, the Japan Foundation. UCL has a special bond with Japan as it is there that the first Japanese students came to England to study “the customs and technology of the west”. This was at the time of the Meiji Restoration. The first five students arrived in 1863, all of whom went on “to lay the foundations of modern Japan”, one to become the first Prime Minister. A further 14 arrived at UCL in 1865.

1.2 Post-Workshop Programme for Tohoku students and teachers. July 30th – August 4th

This was organized by Mrs Mary-Grace Browning MBE in association with Clifton Scientific Trust. Mrs Browning teaches at County Upper School, Bury St Edmunds, and has been a strong supporter of the Trust’s Workshops for many years and took part with her students in the Cambridge Workshop. She herself has a very distinguished 25 year track record in building exchange programmes between schools in Japan and Britain and is a former recipient of the Japan Society Award for this work. She is also a chemist and has a special interest in reconciliation between families in both countries who still bear the scars of the Second World War. The special Post-Workshop Programme she organized for Tohoku students and teachers aimed to give a broader sense of British scientific and cultural heritage away from the pressures of the Cambridge week. They visited a localities in the West Midlands staying in Youth Hostels and focusing on locations in the Peak District and in Shropshire.

1.3 The 2011 Kyoto UK-Japan Young Scientist Workshop, 5th-12th August, including Kyoto Pre-Workshop.

The Workshop with Kyoto University followed a similar pattern to the Cambridge Workshop and was organized by colleagues at Kyoto University and the Kyoto University of Education and its attached Senior High School in association with the Trust. This was funded separately, principally by the Japan Science and Technology Agency through its Super Science High School budget.

The Kyoto Workshop is not reported further here other than to record that it provided an opportunity for Dr Albone and Dr Okano to spend some days in Tokyo discussing future opportunities for the Workshop programme with the Chemical Society of Japan, Mitsubishi Electric, Rolls-Royce Tokyo office, the Japan Science and Technology Agency and the Ministry of Education (Monbusho). In particular they were also able to spend an invaluable day visiting Fukushima and Soma, a guest of Mr Yasuhiro Takamura, the teacher from Soma High School who had attended the Cambridge Workshop. As a result they saw for themselves the destruction caused by the tsunami, visited the Minamisoma Municipal General Hospital close to the Fukushima power plants and spoke with Dr Tomoyoshi Oikawa, the hospital’s Assistant Director. This underlined clearly the important contribution the UK-Japan Young Scientist Workshops can make to the schools and communities of the area (see #2.2, below).

2 CAMBRIDGE WORKSHOP OBJECTIVES

2.1 The aim of the Workshop was to provide post-16 school students in Britain and Japan with experiences of real-life science and its application which can transform their understanding not only of science but also of themselves and of their futures as global citizens. The Trust’s experience is that science can act as a potent cultural bridge between cultures for young people, and in addition that the experience of working between cultures in this way can be a great motivator for engagement with science. This is an area that merits detailed educational research. The feedback from this and earlier Workshops is compelling.

2.2 A special objective of the 2011 Cambridge Workshop was to engage students and their teachers from areas afflicted by the Great East Japan Earthquake and Tsunami of 11 March 2011, giving them and through them their schools and communities an added sense of hope and purpose for the future. The importance of this is underlined by the letter, among others, of 29 June from Mr Takashi Sekiguchi, Principal, Ibaraki-kenritsu Hitachi Daiichi High School.
In summary, the objectives of the Workshop are to give post-16 school students from both countries an experience of science and its application in a real-life intercultural context...

- as a team challenge where school work is given meaning and context, answers are not known, questioning and debate are encouraged, and student achievements are valued
- as a cultural bridge where by working together the students learn to value each other and see their own futures in a global perspective
- as a science-based context for debate, discussion, questioning and collaboration where students enhance their interpersonal skills and grow in confidence and international awareness
- as an opportunity to foster continuing international friendship, dialogue and collaboration between the students, the teachers and their schools subsequently.

In these objectives the Workshop not only educates “the scientist” but also “the person” and aligns closely with, for example, the holistic “Eight Aptitudes” educational objectives being promoted by Wellington College.

Throughout the term “science” is used loosely to include areas such as engineering, medicine, mathematics and any field which depends on or relates to a grounding in science in school.
3 THE SCIENTIFIC PROGRAMME

3.1 Project Teams; Students were assigned to the project teams on the basis of their preferences. Each project team was led by a senior scientist or engineer and supported by a volunteer “Facilitator”, a Japanese graduate or postdoctoral student from the host institution although not necessarily from the project discipline in question. Their key role was to work with the scientists/engineers to help the project team gel, to support the Japanese students and to ensure that they understand and are understood, and are fully integrated into the team. Teachers were invited to observe projects in progress but did not participate.

Some Projects in Progress
1. Radiation in the Environment
2. Chemistry
3. Bioscience at Babraham
4. Hitachi Project
5. Plant Science
6 & 7. PrIME
8. Radiation in the Environment
9. Chemistry

- **Chemistry** “Synthesis and Manipulation of Gold & Silver Nanoparticles” Dr Oran Sherman, Mr Sam Jones (facilitator Mr Takehiro Kojima)
  - James Chapman Wellington College
  - Paddy Nurse Camborne Science & Community College
  - Misaki Takahashi Sendai Nika Senior High School
  - Mizuki Hayasaka Sendai Daini Senior High School

- **Biosciences** “Team Bioscience; a) Flourescent Imaging  b) Social Responsiveness” Dr Martin Bootman, Professor Keith Kendrick The Babraham Institute (facilitator Mr Ray Shimura)
  - Heather Derbyshire Colchester County High School for Girls
  - Claudia Sadler St Benedict’s School, Bury St Edmunds
  - Momoko Nakasato Sendai Nika Senior High School
  - Tomohiro Soejima Rikkyo Ikebukuro Senior High School
• **Earth Science** “The Earth’s Noisy Elasticity & Earthquake Patterns” Prof Simon Redfern, Dr Zhenwei Peng (facilitator Dr Raku Shirasawa)
  - Andres Jaramillo  City & Islington College
  - Jennifer Bawden  Camborne Science & Community College
  - Yudai Sato  Fukushima Senior High School
  - Misaki Shimada  Kaetsu Ariake Senior High School
  - Akio Oishi  The Rikkyo School in England

• **Plant Sciences** “Meet the Algae” with Prof Howard Griffiths and Prof Alison Smith (facilitator Ms Keiko Morimoto)
  - Fathema Tahera  City & Islington College
  - Deanna Smith  County Upper School, Bury St Edmunds
  - Akiko Komiyama  Hitachi Daiichi Senior High School
  - Masumi Sano  Miyagi Daiichi Senior High School
  - Hiroaki Arima  Rikkyo Ikebukuro Senior High School

• **Astronomy** “Exploring the Institute of Astronomy” Dr Carolin Crawford, Ms Stephanie Hunt, (facilitator Ms Mina Ghosh)
  - Hugo Tilmouth  Wellington College
  - Holly Tann  Colchester County High School for Girls
  - Shota Abe  Fukushima Senior High School
  - Yuto Suzuki  Rikkyo Niiza Senior High School

• **Physics** “Welcome to Soft Physics” Dr Erika Eiser and Mr Taiki Yanagishima in the Cavendish Physics in Medicine Laboratory
  - Tom Chadwick  County Upper School, Bury St Edmunds
  - Mike Dennison  Wellington College
  - Ryo Sakamoto  Rikkyo Niiza Senior High School
  - Minami Tachibana  Kaetsu Ariake Senior High School
  - Shimpei Tokuda  Sendai Daini Senior High School

• **Hitachi Cambridge Laboratory** “Nanotechnology for Future Electronics” Dr Elisa de Ranieri and Dr Alessandro Rossi (facilitator Mr Yukiya Oyachi)
  - Vicky Butt  Colchester County High School for Girls
  - Tom Williams  City & Islington College
  - Hiroto Kaneko  Miyagi Daiichi Senior High School
  - Momoka Kawakami  Hitachi Daiichi Senior High School

• **PrIME Research Group, Biological Anthropology** “Identifying primates using genetic and observational methods”, with Dr Leslie Knapp, Graham Banes, Kate Aukland and colleagues, Biological Anthropology, Primate Immunogenetics and Moleculare Ecology Group (facilitators Ms Nao Fujita, Mr Tom Plant)
  - Adam Tarring  Hinchley Wood school, Esher
  - Natalie Weller  Colchester County High School for Girls
  - Oliver Duke  Hinchley Wood school, Esher
  - Chihiro Suketomo  Hitachi Daiichi Senior High School
  - Misaki Miura  Sendai Nika Senior High School
  - Yuma Hayasaka  Miyagi Daiichi Senior High School
  - Yuki Ito  The Rikkyo School in England

• **“Radiation in the Environment”** hosted in the Education Faculty at Homerton College “Exploring Radiation and the Tsunami” with Prof Wade Allison (Emeritus Prof of Physics, Oxford University) supported by Prof Shinichi Ohnuma, UCL and Cambridge Univ (facilitator Dr Ryoko Yamazawa)
  - Sanya Zoha  City & Islington College
  - Bethan Crossley  St Benedict’s School, Bury St Edmunds
  - Katherine Dudman  Colchester County High School for Girls
  - Ali Al-Sakban  City & Islington College
  - Tomosato Hioki  Sendai Daini Senior High School
  - Hayahide Nagase  Rikkyo Ikebukuro Senior High School
  - Shoichiro Miyakawa  Fukushima Senior High School
  - Ryohei Nishino  Rikkyo Niiza Senior High School
  - Takafumi Sakai  The Rikkyo School in England

The team was also able to consider the results of the research programme Fukushima High School had itself undertaken on the radiation levels in its own school. These were further discussed in Dr Kiyonari Hashidzume’s presentation at the Teachers’ Forum.
3.2 Students received briefs of the projects before they arrived in Cambridge. This was especially important for the Japanese students.

3.3 The time allocated to projects was limited to two and a half full days (see programme #5.2), yet perhaps because of these time constraints students worked to make sure the outcomes were impressive. The morning of the final day was allocated to the teams’ preparing their presentations and the afternoon to the presentations themselves.

3.4 Following the team presentations, Mr Aaron Pascovitch, Rolls-Royce plc, Mr Takashi Ishida, Director-General, The Japan Foundation, and Prof Shinichi Ohnuma, UCL, gave commentaries. Students Yudai Sato, Fukushima Senior High School and Tom Chadwick, County Upper School, Bury St Edmunds, and Teachers Mr Naoshi Watanabe, Sendai Daini Senior High School, Mr Bill Alexander, City and Islington College, and Dr Eric Albone gave closing remarks. The audience included guests Mr Tomo Saito, Deputy Director, JSPS London Office, Mr Satonabu Matsunaga, Counsellor (Education) Embassy of Japan, Dr Neville Reed, MD Science, Education and Industry, Royal Society of Chemistry and Rev Dr David Gosling, formerly Principal Edwardes College Peshawar & Research Fellow, Clare Hall, as well as many of the scientists and facilitators who had led and supported the projects.
3.5 In the evening, students, teachers, scientists and guests were invited to a Reception followed by an outstanding Celebratory Dinner both hosted by Corpus Christi College. Speakers at Dinner included Mr Paul Warren, College Bursar, who welcomed the Workshop to Corpus Christi, Sir David Wright, Vice-Chairman, Barclays and former British Ambassador to Japan, students Ali Al-Sakban, City and Islington College, and Tomohiro Soejima, Rikkyo Ikebukuro Senior High School Tokyo (also Gold Medallist of the 2011 International Chemistry Olympiad) and teachers Mr Yoshihiro Yamada, Sendai Nika Senior High School and Mr Daniel Townley, Wellington College. Dr Neville Reed, Royal Society of Chemistry, distributed commemorative certificates to the students.

3.6 Copies of the powerpoint presentations produced by the project teams are available and the entire Presentation Session was filmed.

4 TEACHERS’ ROLE & TEACHERS’ FORUM

4.1 Seven teachers from the British schools and 10 from the Japanese schools took part. They supported and took responsibility for their students and observed but did not take part in projects. They were able to take back the Workshop experience to their schools and also to provide a valuable educational critique of the Workshop to the Clifton Scientific Trust. Students involved in the Workshop commonly gave presentations to their whole schools on their return home.

4.2 Teachers’ Forum Objectives were

- to share grass roots experiences of teaching science in Britain and in Japan
- to compare practical ways in which science can be made to live and become real for students in each country
- to consider how future UK-Japan Young Scientist Workshops can make a greater contribution to this process

In this it provided a formal opportunity to develop the sharing of classroom experience and good practice which takes place naturally within a Workshop.

4.3 Teachers’ Forum Presentations

The Forum discussions commenced with two Japanese and two British teachers giving presentations of the opportunities and challenges in their own schools. Presentations were given by

- Dr Kiyonari Hashizume, Fukushima High School
- Mr Yasuhiro Takamura, Soma High School
- Mr Bill Alexander, City and Islington College
- Ms Claire Heaton, Camborne Science and Community College

Of particular interest to the British side was the way in which the Super Science High School programme enabled schools to engage their students in real-life scientific research and in Dr Hashizume’s talk, how this had led to a programme of investigating radiation levels in Fukushima High School.

As Dr Hashizume stated, “The situation tells us, ‘tough times bring new opportunities’.”
5 THE WIDER PROGRAMME AND CULTURAL EXCHANGE

5.1 Living and team-working together was a fundamental part of the learning experience of the Workshop. It was exciting and motivating, as well as challenging, especially for the Japanese students, which is why the role of Facilitator are so important. Only a minority of the British students had studied Japanese, but invariably they learn something of the language and used it in their Team Presentations. Students commonly form lasting friendships and keep in touch with each other for many months subsequently using email, Facebook, etc, and sometimes arrange to visit each other in subsequent years, and the Trust is sure this will be no exception.

5.2 Murray Edwards College and the Kaetsu Centre, which is on its campus, again provided an excellent base from which to operate. As a matter of policy, virtually all the students shared rooms, with one Japanese student sharing with one British student; teachers rooms were distributed among them.

SUMMARY WORKSHOP PROGRAMME

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<td>Murray Edwards</td>
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5.3 The evening sessions were especially important in fostering cultural exchange with activities organised in the main by the students themselves.

- **Monday evening** “Let’s communicate in Japanese” led by the Japanese students introduced the British students to some useful and amusing aspects of the Japanese language, this including some hands-on calligraphy, which was extremely well received. Following that, Dr Vicky Neale, Fellow and Director of Studies in Mathematics at Murray Edwards College ran an entertaining brain-teasing session on the ways in which the forms of curves relate to real-life situations. Dr Neale is involved with many outreach activities in mathematics and her expertise in gearing the activity to the audience was well in evidence.

- **Tuesday evening’s** Gift Exchange and Cultural Evening provided the opportunity for each school group to provide a short piece of entertainment derived from their own culture for the whole assembly.

- **Wednesday evening** was the chance for everyone, including a few teachers, to get involved in kicking a football around on Parker’s Piece, organised by Mr Samir Moezzi, teacher from Hinchley Wood School.

- **Thursday** was a day set aside for sight-seeing in Cambridge and Charlotte Anderson efficiently organised punting trips, group walking tours for students and teachers around the city and university as well as taking parties round her own college, Trinity Hall.
5.4 **The Monday Morning** welcome and introduction session was important. It was there that student teams were introduced to their scientists/facilitators following a welcome from Dr Albone and Mr Roberts-Taira, Director, the Kaetsu Centre, speeches from students and teachers from both countries (see #5.5) and two very interesting talks, one from Prof Shin-ichi Ohnuma giving something of the history of the scientific relationship between Britain and Japan, what is very special about Cambridge science and why the Workshop presents a very important opportunity for students in both countries. The other talk was from Ms Charlotte Anderson, a third year undergraduate at Trinity Hall reading physics, and one of the Workshop organising team, who gave a perspective of Cambridge and the opportunities it presents from a student viewpoint. This led into a student “ice-breaker” session which she led.

5.5 The Workshop also requested representative students and teachers to give short speeches, at the beginning of the Workshop on their expectations, and at the end of what they had gained from the experience and expressing their appreciation.

- **Sunday Evening: Informal Welcome and Orientation**  
  Students Jennifer Bawden, Camborne Science & Community College; Yuto Suzuki, Ryohwi Nishino, Ryo Sakamoto, Rikkyo Niiza HS;  
  Teacher Mr Takahiko Rukutomi, Kaetsu Ariake HS

- **Monday Morning: Formal Welcome Ceremony and Introduction**  
  Students: Katherine Dudman, Colchester County HS for Girls; Hiroto Kaneko, Miyagi Daiichi HS  
  Teachers: Miss Mika Miyazawa, Hitachi Daiichi HS; Mrs Mary-Grace Browning, County Upper School, Bury St Edmunds

- **Friday Afternoon: Close of Team Presentations**  
  Students: Yudai Sato, Fukushima HS; Tom Chadwick, County Upper School, Bury St Edmunds  
  Teachers: Mr Naoshi Watanabe, Sendai Daini HS; Mr Bill Alexander, City and Islington College

- **Friday Evening: Celebratory Dinner**  
  Students: Tomohiro Soejima Rikkyo Ikebukuro HS; Ali Al-Sakban, City and Islington College  
  Teachers: Mr Yoshihiro Yamada, Sendai Nika HS; Mr Dan Townley, Wellington College

6 **OUTCOMES**

6.1 The Final Student Teams presentation was filmed and a copy of this film is available, as are also the Powerpoint presentations prepared by the student teams.

6.2 All teachers and students completed a detailed evaluation questionnaire at the end of the Workshop. A summary of the feedback received is available. The Japanese side also compiled “Reports for the UK-Japan Young Scientist Workshop and the Pre-Workshop, 21-31 July 2011” which comprises reflections from the students and teachers who attended from Japan. Also students gave a number of presentations in their own schools and information is on a number of school websites in Britain and Japan. An interesting insight into student response is contained in an invited article which is on the Embassy of Japan e-webmagazine for September 2011 at http://www.uk.emb-japan.go.jp/en/event/webmagazine/Sep11/Young_Scientist.html

This included the following student contributions, text reproduced in full.
Impressions of a participant from Tohoku

From 24 to 29 July I joined the UK-Japan Young Scientist Workshop 2011 at Cambridge. I was invited as a student from the Tohoku area which was damaged by the severe earthquake and tsunami. Let me first say something about the disaster I experienced.

After the earthquake my school in Sendai was closed for more than a month because it was almost impossible for many students to go to school. We were suffering from lack of food and water and the fear of radiation. Nonetheless, many friends of mine worked as volunteers to help those who were living at the elementary school which was being used as a shelter. I did so as well.

After the hard period, we had as fulfilling a school life as before the earthquake. It was partly because our school wasn’t near the sea front and avoided the direct damage from the tsunami. Now most of the students in our school don’t think of themselves as victims of the disaster. Actually our school council raised funds for survivors of the tsunami and many people in the prefecture are doing their best to help them. Through this experience, I think I should study science harder to protect people from disasters like this. I feel this is an important role for those who survived, and it encouraged me to apply for the workshop in Cambridge.

My programme in Cambridge was “Radiation and Tsunami” by Professor Wade Allison who argues against exaggerating the dangers of radiation. Since he put importance on discussion among the participants, I was able to exchange many opinions about the safety of radiation, the problems over “Fukushima” and so on. Through the lectures from Prof Allison and the discussions we had, I thought it was truly important to collect information and make our own decisions not emotionally but scientifically.

What impressed me most was the English students’ attitude in the discussions and lectures. They were always trying to ask questions and they listened carefully to us, the Japanese students, even though our English was not good. Thanks to them, I was able to join in the discussions and express my opinions in English. I was very happy and at the same time I thought I should learn how to take part in productive discussions like my English friends.

I think this kind of workshop will be good motivation for Japanese students to study and play an active role in science abroad. Actually, I would like to study in England some day. Finally I’d like to express my appreciation to everyone who supported this workshop and to all my English friends who made it more exciting. THANK YOU VERY MUCH!

Tomasato Hioki, Daini High School, Sendai

A British Perspective

From 24 to 30 July, high school students from across Japan, from the Fukushima area to Tokyo, stayed at the Kaetsu Centre at Murray Edwards College in Cambridge with students from all over England. The week-long summer workshop was organized by Clifton Scientific Trust, a charity whose aim is to motivate students and to use the global topic of science to overcome cultural barriers in order to create international links for the future.

Although science was the main focus of the Workshop, the aspect of cultural exchange proved very important, with students from both schools attempting to overcome any differences and learn about each other’s countries. We were thrown into Japanese culture straight away as we shared our rooms with our Japanese partners, giving us the opportunity to learn some Japanese and to help them improve their English as well as learning about their culture, from making origami birds to trying sushi!

On the second day the projects began! There was a wide choice covering all aspects of science – electronics, physics, biology and chemistry. Personally I was part of the biological anthropology group where we looked at identifying primates with PrIME, a research group run by Dr Leslie Knapp at Cambridge University. We looked at the genetic methods of birds to trying sushi!

The science projects gave us all a new outlook on the science we learnt in the classroom, showing us the practical applications and what it would be like to work in a real research group at Cambridge University, with many of us working on topics we had never encountered before. It allowed us to work for a week on the forefront of science as we helped the researchers to progress towards the answers to new questions in their field of science.

The evenings were culturally enlightening but also incredibly fun as we practised the art of calligraphy-learning how to write our names in Japanese and also about the strict stroke order that must be followed! A maths activity run by Dr Vicky Neale, a fellow from Murray Edwards College was useful in helping both nationalities to communicate through the universal language of mathematics — and we also learnt about how there is not always one right answer to maths problems. During another evening we had a gift exchange where typically English presents like Fudge, London-themed trinkets and chocolate were swapped with Japanese presents. Each school also made a presentation to display an aspect of their country’s
traditions. My school, Colchester County High School for Girls, taught the Japanese students the Hokey Cokey and we also participated in games of pass the parcel and musical chairs, and watched a performance of the famous balcony scene from Romeo and Juliet. In return the Japanese taught us how to make origami pigeons, showed us some impressive dancing and martial arts, and performed an amazing recital of Sakura Sakura, a traditional Japanese musical piece.

Overall the week was a perfect mix of scientific and cultural discoveries, inspiring many of us to consider visiting Japan in the future and also to research into new areas of science that we may not have been aware of before the week, for example primatology. On behalf of all the students that took part I’d like to thank Dr Albone, Dr Okano and the Clifton Scientific Trust for organizing such a fantastic week, which will be remembered for a long time to come through the new science learnt and the international and national friendships created. We’d also like to thank all the sponsors, the University of Cambridge and of course the research teams who gladly took us aboard for a week and showed us the real side of science!

Natalie Weller, Colchester County High School for Girls


6.4 The Trust is in discussion with the Royal Society of Chemistry with the view to publicizing the Workshop and its outcomes in Royal Society of Chemistry publications in the near future.

6.5 Plans in place for a further Workshop in Cambridge received a boost when Clifton Scientific Trust received a donation of £1,125 from the National Taiwan University Alumni UK Association from a collection made at the Republic of China 100 Concert (celebrating the 100th anniversary of the founding of the Republic) at Robert Steiner House, London on 3rd September. This sum was specifically to support the Trust’s work with schools in the Tohoku area.

6.6 The following Appendices are available on request.
1. Pre-Workshop Programme for Japanese students and teachers (see #1.1)
2. Post-Workshop Programme Summary for Tohoku students and teachers (see #1.2)
3. Team Presentation Powerpoints (see #3.6)
4. Film of Team Presentations (to be posted on web) (see #3.6)
5. Summary of Teacher and Student Feedback (see #6.2)
6. Compilation of Japanese Student Reflections following the Workshop (see #6.2)