



Lichfield Science & Engineering Society

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Dear Member,

I have to begin another newsletter with sad tidings. We have lost two very long standing and dedicated Members since last I wrote to you.

Richard Tetley died in December. Richard was President for 2007 - 2009 after working as General Secretary, Visits Secretary and Membership Secretary. He also helped organise 10 of the Erasmus Darwin Memorial Lectures.

Cliff Ricketts died at the end of March. Cliff was Treasurer for more than one term keeping our books rigorously and meticulously in order.

Both came to lectures right to the end and we shall miss their cheery presence and their constant interest. We are indebted to them for their hard work and the determination which ensured that this Society flourished.

Monthly lectures

The January lecture was given by Professor Ian Ashcroft from the Faculty of Engineering at Nottingham. His fascinating lecture entitled '3-D Printing – unlocking the Potential' was given to a full studio of 155 Members, 3 students and 9 visitors. Professor Ashcroft's lecture explored the techniques and media that are used in this quickly growing area of engineering. Images of parts used by Virgin and undisclosed motor racing companies floated across his screen. We saw the simulations change before our eyes as stresses and strains were altered on the objects being designed. He came with a box full of models such as composite structures with freely rotating impellers and 'chain mail' which seemed to be made from innumerable Mobius strips.

Dr Peter March delivered the February lecture to 147 Members and 7 Visitors. The lecture was called 'Lights, Camera, Action' and was as exciting as it sounds. Peter showed us how the insides of living cells can be mapped and viewed, particularly by labelling cell proteins with luminescent chemicals. Watching the microtubules of the cell moving was fantastic.

March took us once again to the cutting edge of national developments as Mr Eric Vaughan, Well Services Director of Cuadrilla Resources Ltd encouraged us to look intelligently and constructively at the advantages and disadvantages of Hydraulic Fracturing or Fracking. After his superb presentation the questions flowed relentlessly from a capacity audience of 165 Members. Eric realised that his lecture had been oversubscribed and kindly agreed to repeat it in April. This took place at Erasmus Darwin House and we were able to allow another 40 Members to appreciate his expertise.

Professor Hugh Pritchard came to us in April from The Royal Botanic Gardens, Kew and Wakehurst Place Garden. During his lecture, 'Seeds as Natural Capital', he explained the concept of seeds forming the basis of \$10 billion of annual trade and therefore the necessity of ensuring their protection. 80% of food comes from just 12 domesticated species [8 cereals and 4 tubers], but 30,000 species globally are edible. The target is to conserve 45,000 plant seeds and Hugh explained how this was being accomplished, especially for the gymnosperms and tropical rain forest plants which are the most endangered. There were 120 Members and 5 Visitors present.

Schools lecture

We have provided a lecture specifically for school students since we had to stop organized student groups participating in our lectures. It has become increasingly difficult for school staff to get their



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students released from school during the working day so this year we tried a different approach. We invited students and their staff to join us in the evening of February 4th in the studio of The Garrick. This they did and I am pleased to report that we were able to share the expertise of Dr Richard Bryan with 142 students and staff from five local secondary schools. There were 9 of us to 'supervise' the occasion. Rik is Chief Investigator, Bladder Cancer Prognosis Programme and Senior Research Fellow at the School of Cancer Sciences at Birmingham. He delivered a humorous, easily accessible and illuminating lecture on cancer. He looked at its causes and its cures and what the future holds with regards to its treatment. The students left enthused. On a show of hands there seemed a good number who hoped to go to medical school. I can assure you that the education fund was used wisely and reached a lot of worthy students.

Education Fund

As well as funding the schools lecture we have made four further donations from the Education Fund. Chase Terrace Technology College requested help for the Robot Challenge that they were competing in, Greysbrooke School in Shenstone wanted specialist help during British Science Week and Lichfield Library requested help with the costs of their activities for Science Week. Erasmus Darwin House was the fourth recipient. Here the donation was used to purchase resources for a new magnetism activity and for their Saturday Science Day which saw 180 people enjoying fun science. We must thank LSES Members who helped out here.

Discussion Lunch

The 17th Discussion lunch was held on Wednesday February 5th and was led by our own member Dr Anthony Wilson. Anthony spoke quietly and movingly to the title 'They also Serve who Stand and Object'. 22 Members joined in and we had a very interesting and thought provoking time. The discussion ranged across history and across continents.

Visits

Coventry Airport Air Traffic Control has been besieged by the Society; two parties in January and one in March with a total of nearly thirty Members. Coventry has very few night-time aircraft movements so the staff had plenty of time to explain their operations. Many Members were pleased to see that, although the equipment is technically advanced, ATC still relies on paper slips in order to know what's going on. For those who were disappointed this time we hope to go again in the Autumn.

Your Chairman, displaying an hitherto unsuspected ghoulish streak, wanted to go to the Met's Black Museum. This was found to be the wrong side of next to impossible but the West Midlands Police Museum was an excellent fall-back choice. Ex-PC Dave Cross and Sergeant Steve Rice hosted 28 members at the old Magistrates Court in Sparkhill which holds a large collection of Police memorabilia and Dave gave an amusing and instructive talk on the history of policing in Birmingham. As with many similar establishments they have serious funding problems but, only a week after LSES gave its seal of approval to the museum, Professor Carl Chinn agreed to be its Patron and it is hoped that he will raise its profile and secure its future.

Mitutoyo's welcome to twenty Members at their Coventry offices was outstanding; a splendid buffet, staff brought specially from their Andover headquarters, even "goody bags" of books on modern metrology. Most impressive of all were the demonstrations of the latest automatic machines capable of measuring to half a micron. For them to work properly the laboratories need to be temperature controlled to within half a degree Centigrade. But it was good to find that they still make large numbers of "proper" micrometers as well as the digital ones.



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The 2015 Erasmus Darwin Memorial Lecture

The 26th Erasmus Darwin Memorial Lecture - The Evolution of the World Wide Web - will be given by Dame Wendy Hall DBE FRS FREng, Director of the Web Science Institute at Southampton University, on Tuesday, 17th November. We are expecting it to be a very popular lecture so I should advise you to buy your tickets early to avoid disappointment. They will go on sale at LichfieldGarrick on Friday 1st May. LSES members will have one week priority booking which will commence on Saturday, 25th April. The cost of tickets remains at £10 for LSES members and £12 for non-members.

Membership

There are 357 Members of our Society. This number has remained very similar year on year with numbers of Members leaving and numbers of Members enrolling more or less cancelling each other out. However it is clear to all concerned that despite this, the number of Members arriving at meetings has suddenly and inexplicably risen with rather frightening speed.

At the AGM of 2010 numerous measures were considered including:-

- giving members precedence over visitors until 7.50pm
- not admitting school groups, although still welcoming individual students
- suspending new membership of the Society and instituting a waiting list for prospective members.

We have instituted all these and also:-

- not admitted visitors to the Cuadrilla lecture
- negotiated more seats than we are contracted for when this has been possible.

None of these measures has been sufficient. You have my assurance that we shall explore all avenues and I shall keep you informed. In the meantime the committee propose three more changes:-

- the cut-off date for the renewal of subscriptions will move forwards from 'after the December lecture' to 1st November
- all subscriptions will be at the full rate - ie the reduced rate for joining part way through the year will be abolished. **Please note, this will cause an amendment to paragraph 29 of the Constitution.**
- we shall consider a system of pre-booking tickets.

I hear some members suggesting hiring the main theatre but the cost is prohibitive - £1700 compared with £350 in the Studio. Sometimes the Garrick allows us to use the Main Theatre for the cost of the Studio when it fits in with their other commitments and we are most grateful. In these circumstances we try to fill the slot with a lecture that we anticipate will be popular.

We have become victims of our own success – maybe the answer is a more boring programme!

Lastly

You will receive your AGM papers with this mailing. I do not plan to break with precedent and we shall complete the administration details of the Society swiftly so that we can be enlightened by Professor Timothy Peters as he considers George III and the most recent diagnosis of his illness. I am mindful of and thankful for all the work committee members put in. They beaver away quietly and come up with the solutions to our problems and I should like to thank them all very much. You and I are greatly indebted to them.

Carol Hannam
Chairman