Bulletin Issue 1

November 2008

Editorial

After a break of just over a year, this first edition of the "Bulletin" replaces the "Newsletter" so ably edited by Bunny Lees-Smith. The aim of the Bulletin is to provide members with information, details and issues concerning the Society that would not necessarily be appropriate on the public website. It can also provide members with information about external science/technology related events. As such the editor would welcome advance notification of any such events and a brief report from anyone who subsequently attended.

The Chairman's report gives an overview of the past year. The committee is currently looking at a number of possible visits based on suggestions received. It is also considering the possibility of hosting a members' forum page together with page for posting members "occasional papers" on the society's website. There will need to be clearly defined etiquette guidelines/rules but ultimately the success/need for such pages will depend on members' interest and participation.
The Committee has agreed to make available to members a shortened version of the Society's membership list for their personal use. This list contains only members' names, the town or village where they live, their subject area interests and their telephone numbers. The list will be provided on the understanding that it is neither passed on to any third party nor used for commercial purposes. Ask the Membership Secretary, Joan Cooper, if you want a copy. Her telephone number is on the programme card.

Members

The following members (with their background/interests) have joined the Society since the start of 2008.
Mike Barnes (Air Commodore - Aeronautics), Roger Miller (Physics, Maths, Genetics), Robert Hall, Christopher Bailey (Biology), Ann Stevenson , John Taylor, Sharron Pearson (Gen. Science, Engineering - Science Director at

Kingshill School), Robin Andrews, Ian Swallow (Engineering, Cosmology), Dr Bernie Major (Biology Teacher), Philip Twentyman, Paul Dearmer (Farming ,History), Dr Eugene Lambert, Mrs L Lambert and Dr Peter King (Medicine, Biology).

It is with regret that we note that Stephen Robertson died in January.

Forthcoming Events

10 December – AGM and "The Science of Cooking" by Dr Peter Barham at the Cirencester Parish Centre
3 – 7 June 2009 - Cheltenham Science Festival.

Chair's annual report for 2008

Thanks to our Programme Secretary, we had an excellent series of lectures during the year, covering a wide range of subjects. Although it is invidious to highlight a particular lecture, three stood out. The first was in January when we had a superb lecture from Professor Bryan Sykes about our ancestors entitled "The Blood of the Isles", which attracted a record number of 38 non-members in addition to 68 members. This was followed by a superbly-presented lecture on Fusion Power by Dr David Ward, a last minute stand-in for the advertised speaker, and which 80 members attended. In October, we had an outstanding Public Lecture from Professor Sir John Meurig Thomas on "Unpredictability and Chance in Scientific and Technological Progress". The length of the applause at the end of the lecture was testimony to the legendary reputation of a master communicator. We also had an additional meeting last session, organised by our Vice-chairman, John James, at which 3 of our members gave presentations concerned with adaptations to climate change. I had the fortuitous privilege of giving the 100th lecture to the Society in November 2007.

Three visits were organised during the year. The first was a return over-subscribed visit to the BMW Mini Assembly Plant at Cowley. Smaller parties visited the Severn Bridge Second Crossing and the Royal Society Summer Exhibition in London.

The membership continues to grow, and it is encouraging that more practicing scientists and engineers are joining the Society. A record 22 new members enrolled during 2007, and 16 in the first 9 months of 2008. Over 65% of the current membership has joined in the past 5-6 years.

A lot of work goes on behind scenes to make the Society work seamlessly. For much of the year, for example, your hard-working committee spent a fair amount of time on the revision of the Constitution, the application to the HMRC for recognition of the Society as a tax-exempt charity, and agreeing procedures for dealing with such issues as fire and illness emergencies during a lecture. The revised Constitution was adopted by the membership at the AGM on 12 December 2007. The Society became recognised as a charity with effect from 14 December 2007. The membership also agreed an increase

in the annual subscription to £15, the first increase since the Society was founded 10 years previously. The increased revenue will enable the Society to undertake additional activities in the future, such as the informal discussion seminars planned for 2009.

I wish to place on record my appreciation for the hard work and patience of all the members of the Committee, and also to Dr Alan Lees, Dr Tony Moody, Mrs Jo Newbould and Dr Geoff Richards for their lecture reports during the year. Finally, I would like to say a special thank you to the following members of the Committee who are standing down at the AGM next month, particularly for the personal advice and support they have given to me in my first term of office: Mr Tony Gordon, our Treasurer, Mr John James, the Vice-Chair, Dr Geoff Richards, the previous Chairman of the Society, and Dr Andrea Tales, a committee member for many years. *Peter J Stoward*

Taking grandchildren to the Royal Society Summer Exhibition.

It was with some trepidation that I took my 10 and 11 year-old grandsons to the RS Summer Science Exhibition. I had been before and thought I knew what to expect. I envisaged that they may possibly be interested in five or six stands and would then be anxious to be off, so that I would have missed seeing the rest of the Exhibition. The older boy is interested in Science, but the younger was coming along for a day out in London.

I was worrying unnecessarily. Almost every stand we visited had an activity that grabbed and kept their interest, leaving me time to talk to a member of the stand team about their research and try to understand some of the Science involved. More often than not, I was waiting for my grandsons to finish at the stand!

I was impressed that the activities aimed at children were both entertaining and informative. The science was demonstrated in the activity in a manner, which was not in anyway condescending or over-simplistic. The research staff manning the stands, were as eager to receive and inform children as they were adults.

Of course, the kids understood how to construct and use graphical passwords much quicker than me. They each came away from the laser stroboscope stand with a short video of a water-filled balloon bursting in their hands and both they and I were fascinated to see the rubber ‘peeling away’ from a still largely spherical unsupported mass of water. Both kids had their eye movements recorded as they read a page, and the younger was delighted when the researcher viewed the results and told him that the pattern of his movements indicated that he was the older brother with a more mature reading process!!

We came away after four hours and headed for the ice-cream kiosk in St James Park. On a warm and sunny afternoon we wandered through the park, checked out the Life Guards in Whitehall – how can they guard anything equipped just with swords, they asked – and then outside Buckingham Palace, where they were relieved to see the Guards and the Police had decent guns!

All three of us had an interesting and enjoyable day and, on the train journey back to Kemble, continued to discuss the things we had seen. I would thoroughly recommend such an outing to the other Grandfathers and Grandmothers in our Society. *Tony Gordon*

The BMW Mini Assembly Plant in Oxford. 22 May 2008.

A nearly full minibus load of members arrived at the BMW Mini site to be greeted by our guide and 'decked out' in black coats, safety specs and one earplug. The other ear was left free for an efficient audio system through which our guide was able to talk to us in the middle of a noisy factory.

Our tour started in the Body Shop where an army of 250 robots performed almost as gracefully as ballet dancers as they picked up a body component, twirled rapidly round to place it in position to an accuracy of a millimetre or so, and then spot welded the component onto the car body. The few humans in the building were mainly there to keep the robots supplied with stacks of components and to change their welding tips as required – a manicure for the ballet dancers!!

Health and Safety considerations denied us access to the Paint Shop, so we moved directly to the Assembly Line. Here there were plenty of humans, but each well served with components and tools in the right place at the right time. At the beginning of the Line, the car bodies were supported on cradles which could rotate the car and present the underbody at exactly the right height for the worker. Later in the process the car was on a moving wooden conveyor and at each station a crew of men and women moved onto the conveyor to fit another component or sub-assembly – with practised ease and not too much rush. At the end of the line someone turns the key and drives the car off to the waiting transporters. No fuss. No stock.

A Mini is not made until an order has been received. Each car is made to a particular specification including all the optional components chosen by the customer. Our guide told us that there are over 15,000 different specifications. Amazingly the cars come down the Assembly line in a random order – a red 4-door saloon followed by a white cabriolet, followed by a Mini Cooper with a Union Jack painted on the roof. The components and sub-assemblies for each car must be presented in precisely the same sequence as the cars flow down the line. The engine assemblies are made in Birmingham. They are loaded into the lorry in correct sequence; the lorries drive down the M40 in the correct sequence, and are unloaded in the correct sequence. It is an amazing masterpiece of logistics, which would not be

possible without robust computer controls and barcode checking of everything just before it is fitted to a car body. *Tony Gordon*

What do we mean by "Pathology"? or **Egg on my Face.**

"Sedes invenire et causas morborum"

The arrangement of "Visits" to places of scientific interest, usually arranged by committee members with particular backgrounds, does not always go according to initial expectations.

The medically oriented subject "Pathology" encompasses a multitude of sub-disciplines from Spilsburian forensics, through histopathology, microbiology, haematology and clinical chemistry to immunology, genetics, toxicology and transfusion medicine. Most laymen probably have a view of these medical sciences that is restricted to their own personal experiences of the collection of blood or urine for laboratory analysis, TV productions such as "Silent Witness" or purely laboratory or post-mortem room activities.

In an attempt to dispel these notions and to indicate to the general public just what pathologists are and do in laboratory, ward and clinic, the Royal College of Pathologists organized "National Pathology Week" during the period 3rd to 9th November 2008 at two hundred venues around the UK. This seemed a good opportunity to arrange a "Visit" for our own members and, hopefully, for local school students along the lines of the earlier successful visit, in 2006, to the Department of Medical Imaging at the Gloucestershire Royal Hospital (GRH).

Accordingly, and after an introduction by our Dr Brian Witcombe to Neil Shepherd, Professor of Pathology at the GRH, the omens seemed good; and visions of relevant laboratory visits seemed in prospect. However, along with our wish not to interfere with arrangements already planned by the specialists at Gloucester and Cheltenham for their own populations, and because of impending rearrangements of pathology services in the area, we had to trim our expectations.

As many of you know, and late in the day, we were invited to lunch and a lecture on "Emerging Infections" by Dr Alan Lees, Consultant Microbiologist, in Cheltenham on 6th November, this to be followed, next year, by a lecture here by Professor Shepherd himself. Several members kindly communicated their apologies for absence from Dr Lees's lecture and those few who were able to attend commented very positively.

As the committee organiser of this visit I have to apologise to members that notice was so short and, partly because of this, that I failed to notify, by post, those of our members who could not be contacted by e-mail. I am also especially grateful to Jo Newbould, John James, Brian Witcombe and our chairman, Peter Stoward, for support in the task. I am quite sure that the

lecture in 2009 by Professor Shepherd will be both stimulating and revealing (he lectured at the Royal College of Pathologists on 6th November) and I hope we may be able to encourage local senior school students to join us for the occasion. *Roy Postlethwaite.*

Tailpiece

Governmentium

Research in South Africa has led to the discovery of the heaviest element known to science. The new element, Governmentium (Gv), has one neutron, 25 assistant neutrons, 88 deputy neutrons and 198 assistant deputy neutrons, giving it an atomic mass of 312. These 312 particles are held together by forces called morons, which are surrounded by vast quantities of lepton-like particles called peons. Since Governmentium has no electrons, it is inert: however it can be detected because it impedes every reaction with which it comes into contact. A minute amount of Governmentium can cause a reaction that would normally take less than a second, to take from four days to four years to complete.
Governmentium has a normal half-life of five years: it does not decay but instead undergoes a reorganisation in which a portion of the assistant neutrons and deputy neutrons exchange places. In fact Governmentium's mass will actually increase over time since each reorganisation will cause more morns to become protons, forming isodopes.

The characteristic of moron promotion leads some scientists to believe that Governmentium is formed whenever morons reach a critical level of concentration. This hypothetical quantity is referred to as "critical morass".