

Institute of Physics

LONDON AND SOUTH EASTERN BRANCH REMS SECTION

Visit to the Clarendon Laboratory and Science Museum Oxford Thursday 2nd Septemeber 2004

This visit has been organised by Dennis Shaw

The turning point in Oxford physics came in 1919 with the appointment of Lindemann (later Lord Cherwell) as head of the Clarendon Laboratory. He had a considerable reputation as a brilliant physicist before the First World War, and for his application of the scientific method to the war effort. Although he did little research of his own between 1919 and his resignation in 1956, he built up a physics department which was to rival any in the country; initially the main development was in the low-temperature field, with significant contributions in optical spectroscopy and atmospheric physics. Throughout the Second World War academic research was suspended, and the laboratory was engaged in two aspects of the war effort: the separation of uranium isotopes and the development of microwave devices for radar. Work in the latter field provided a source of microwave radiation, and a knowledge of the techniques for utilising it, which opened up the field of microwave spectroscopy. This, and the broad field of condensed matter physics, is supported by the low-temperature and high magnetic field facilities. The Clarendon Laboratory became associated with lasers from the early days of the subject, and has made significant contributions both to the development of lasers and to their application to a wide range of research fields.

Physics (<http://www.physics.ox.ac.uk/>) is now divided into six separate sub-departments, of which the Clarendon Laboratory houses two Atomic and Laser Physics, and Condensed Matter Physics. Nuclear Physics, which is concerned mainly with elementary particle physics, using the facilities at CERN and other centres. Atmospheric Physics, which in Oxford originated with work on the upper atmosphere and the ozone layer in the 1920s, now includes satellite instrumentation among its activities. All these sub-departments, which are concerned with experimental work, are supported by first-class workshop facilities. Townsend's professorship was converted to a chair of Theoretical Physics at the end of the war, and provides invaluable collaboration with the other departments. Astronomy, formerly a distinct department, has become the sixth of the physics departments.

Lunch will be in Keble College.

The History of Science Museum (<http://www.mhs.ox.ac.uk/>) is hosting an exhibition on "The most Noble Problem in Nature": the Transit of Venus in the 18th Century. To observe the planet Venus as a small black disc crossing the sun is a very rare event. It last took place in 1882, but will occur again in 2004. This exhibition presents the interest and excitement caused by the phenomenon in the eighteenth century and will include a full-scale reconstruction of Benjamin Martin's mechanical demonstration of 1769.

No visit to Oxford is complete without an opportunity to go punting on the Cherwell. Those wishing to partake can meet at the Cherwell Boat House (<http://www.cherwellboathouse.co.uk/>) after the main visit. Instruction on the art will be provided. There is also quite a good restaurant there to relax in afterwards.

The programme is:

- 11.00am Arrive at the Clarendon Laboratory - details to be announced
- 12.45pm Comfort stop in Keble College
- 1.00pm Lunch in Keble Dining Hall
- 1.45pm Visit to Keble College Chapel to view Holman Hunt's "The Light of the World"
- 2.30pm. Visit to the Museum of the History of Science to view the exhibit "The transit of Venus" with an introductory talk by the Director - Dr Jim Bennet
- 3.30 pm Disperse and possibly punting on the Cherwell
- 4.30pm For punting meet at the Cherwell Boat House

Numbers are limited to 30 and the cost for lunch at Keble College will be £15 pp.