

Visiting Fellows (Post-retirement)

There are five retired staff members from the RSC continuing independent research programs as Visiting Fellows by invitation of the School. They are Emeritus Professor Athel Beckwith (retired 1996), Emeritus Professor Martin Bennett (retired 2000), Dr John MacLeod, Emeritus Professor Rod Rickards (both of whom retired in 1999), and Emeritus Professor Alan Sargeson (retired 1996). Dr Des Brown (retired 1986), formerly of the JCSMR, and Professor John Williams (retired 1992), formerly of the Department of Biochemistry, The Faculties, are also Visiting Fellows by invitation.

Athel Beckwith has completed the manuscript for the Landoldt-Börnstein collection of ESR data. It will be published by Springer-Verlag. He is now carrying out further studies on the utility of ESR measurements for the prediction of radical structure and reactivity, and is also writing up earlier work that has now been completed.

Martin Bennett is continuing to prepare publications based on research carried out in his group before he retired and is also collaborating with Professor Suresh Bhargava (RMIT University) in research on cyclometalated complexes. Professor Bennett's last PhD student at RSC, Ms Joanne Adams (formerly Harper) will now submit her thesis in early 2003. She has succeeded in isolating and structurally characterising the first arene-ruthenium(III) complex, $[\text{RuCl}_2\{\eta^1\text{-Ph}_2\text{P}(\text{CH}_2)_3\text{C}_6\text{Me}_5\}]^+[\text{SbCl}_6]^-$. Her earlier work had established the existence of the cation in solution by electrochemical and ESR techniques. The hexamethylbenzene-ruthenium(III) complex $[\text{RuCl}_2(\eta^6\text{-C}_6\text{Me}_6)(\text{PPh}_3)]^+[\text{SbCl}_6]^-$ has also been isolated, though it is less stable than its tethered arene analogue. In both compounds the metal-based oxidation strengthens the Ru-Cl bonds while weakening the binding of the arene, a trend that is reproduced by DFT calculations on model systems carried out by Dr Madeleine Schultz. A novel charge-transfer adduct $[\text{RuCl}_2(\eta^6\text{-C}_6\text{Me}_6)(\text{PPh}_3)]\cdot\text{SbCl}_3$ has also been isolated and its structure determined by X-ray crystallography. (with A.C. Willis)

John MacLeod continues to be involved in writing papers resulting from work carried out by two of his former PhD students and from a collaborative project with Dr Murali Nayudu, Division of Botany and Zoology (BOZO), School of Life Sciences, ANU. His last PhD student, Steven Ramsay, submitted his thesis in mid-2002 and this has since been examined and accepted.

Rod Rickards continued his research collaboration with Dr Stephen Trowell in the CSIRO Division of Entomology, where he is a Visiting Scientist. The work, carried out largely by an ANU PhD student Mr Chunjiu Zhao, has reached an exciting stage with the discovery of potent new antibiotics isolated from novel sources such as termites and other terrestrial invertebrates. The success of the project has been marked by the receipt of the Chief of Division's Annual Science Award for 2001. CSIRO Entomology has now established a company, Entocosm Pty Ltd, dedicated to producing therapeutic drugs from Australia's unique insect biodiversity. The four million species of insects which exist on Earth constitute a virtually untapped

resource, in contrast to plants and microorganisms which have long been targets for drug discovery. Collaboration continued with ANU staff in the Division of Biochemistry and Molecular Biology (BaMBi), Faculty of Science, on biologically-active cyanobacterial metabolites, one of which is currently being assessed by an overseas pharmaceutical firm. Joint research also continued with the University of Queensland and the Australian company Bio-Care Technology Pty Ltd on the characterisation of complex cyclic peptide antibiotics produced by certain biocontrol bacteria.

Alan Sargeson is collaborating with colleagues at ANSTO, Biomedicine and Health, and with Professor B.T. Golding, University of Newcastle upon Tyne, UK, on the development of detecting and therapeutic agents for cancer. Currently, a commercial partner is being sought for development of a patented detection agent. He was elected to the Royal Physiographic Society in Lund, Sweden, an ancient academy (1772) sponsoring natural sciences, medicine and technology.

Publications arising from work conducted by these Fellows and their groups are listed in the **Publications Section**.