

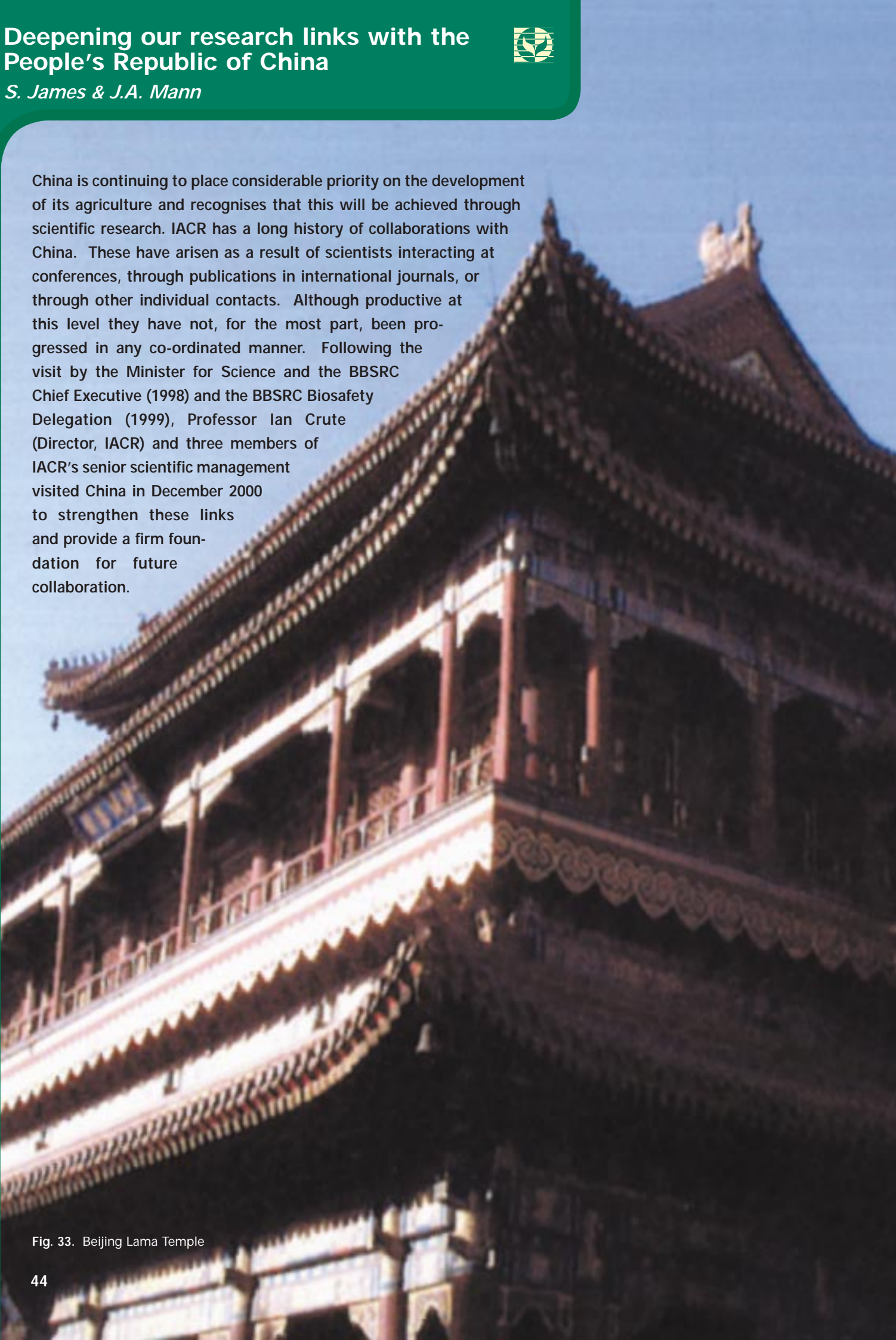
Deepening our research links with the People's Republic of China



S. James & J.A. Mann

China is continuing to place considerable priority on the development of its agriculture and recognises that this will be achieved through scientific research. IACR has a long history of collaborations with China. These have arisen as a result of scientists interacting at conferences, through publications in international journals, or through other individual contacts. Although productive at this level they have not, for the most part, been progressed in any co-ordinated manner. Following the visit by the Minister for Science and the BBSRC Chief Executive (1998) and the BBSRC Biosafety Delegation (1999), Professor Ian Crute (Director, IACR) and three members of IACR's senior scientific management visited China in December 2000 to strengthen these links and provide a firm foundation for future collaboration.

Fig. 33. Beijing Lama Temple



China constantly emphasises the principle that science and education are the basis for the country's quest for prosperity. In a new policy approach the Chinese Ministry of Science and Technology (MOST) has announced that there will be a major effort to enhance international S&T collaboration during the period of the Tenth Five-year Plan (2001-2005). Since agriculture also features very prominently in this Plan, we have the opportunity to build upon IACR's historic links with China and create a coherent strategy that will have institutional support both in the UK and in China. China is one of the few countries in the world in which sustainable agricultural productivity research is a leading national priority. The Chinese are also increasingly conscious of environmental issues that could affect this sustainability. They admire the contributions made by UK science in the past, but more importantly, recognise our current capabilities and value long-term partnerships. This is a significant window of opportunity that IACR is especially well-placed to exploit.

From 9th to 16th December 2000, Professor Ian Crute (IACR Director), Professor Peter Shewry (Director at Long Ashton), Professor David Powlson, Dr Ian Denholm and Dr Fangjie Zhao, assisted by Dr Guang He, visited research institutes, government departments and learned societies throughout China.

A visit to the Chinese Academy of Sciences (CAS) Institute of Genetics (IoG), Beijing, underlined important and productive on-going collaborations involving IACR scientists with



Fig. 34. IGMOU8 Celebrating the signing of the Memorandum of Understanding between Institute of Arable Crops Research and Institute of Genetics

Professor Li Zhengsheng and Dr Wang Daowen. This was taken forward by confirmation of a Rothamsted International Fellowship on cereal transformation expected to

start in June 2001 and initial plans for a workshop on cereals biotechnology to coincide with the International Biotechnology Fair and Conference in Beijing in August

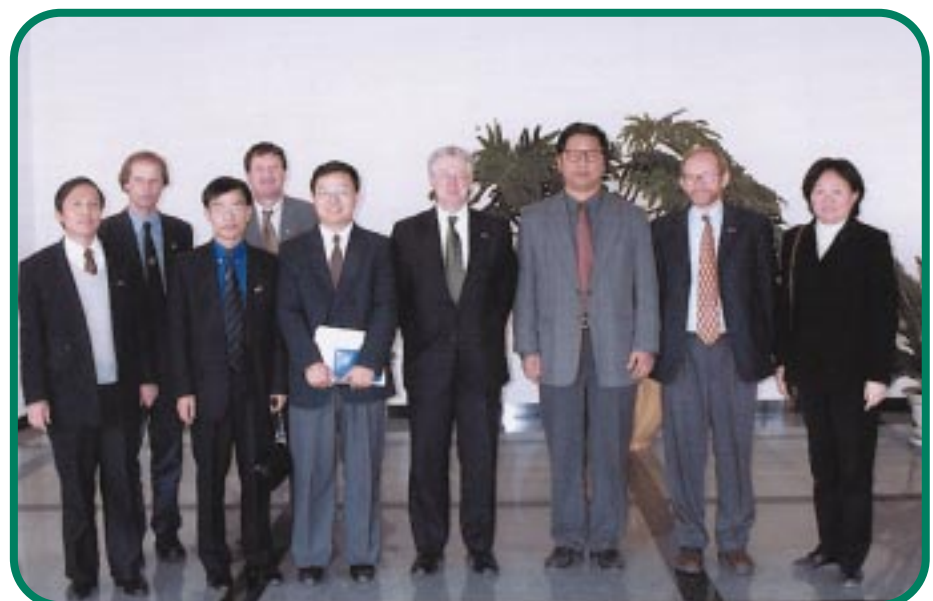


Fig. 35. IACR delegation at the NSFC



2001. This very constructive meeting was concluded with a visit to the growing plots and the signing of a MOU between the IACR Director and Professor Li Jiayang, Director of IoG (Fig. 34).

Professor Cheng Zhuomin is Director of the Institute of Crop Protection (IPP) which is part of the Chinese Academy of Agricultural Science (CAAS) based in Beijing. Mike Adams (IACR-Rothamsted) has ongoing collaborative links with IPP through an EU funded proposal on wheat improvement. During the visit to IPP, common ground was identified in the areas of epidemiology, GM risk assessment (weeds and invertebrates) and insecticide resistance. Science underpinning risk assessment will include weed science and invertebrate biology. IPP contains the National Key Laboratory for Plant Disease and Insect Control (Dr Li

Shifang). The participants agreed to consider a more focused workshop on GM crop risk assessment with the possible involvement of BBSRC and NSFC.

In recognition of the crucial role played by government departments and associated bodies, the IACR delegation was very pleased to have very constructive and wide ranging discussions with a number of such organisations whilst in Beijing. These included the Ministries of Education, Agriculture (MOA) and Science and Technology (MOST). IACR has two projects under the UK MAFF/MOA co-operation agreement, so contact with MOA will be maintained through this route. A number of MOST national programmes encourage international participation. The Natural Sciences Foundation of China has already signed an MOU

with the UK's BBSRC. The Chinese side (Professor Zhang Yinglan) is very anxious to take this forward and give the declarations some real meaning in terms of research collaboration and exchange. A number of opportunities for scientifically excellent proposals emerged and are likely to be important in this regard (Fig. 35). The meetings with CAS and CAAS were also important in developing and building links with their research institutes.

The CAS Institute of Soil Science (ISS), Nanjing is clearly a centre of considerable expertise not to mention enthusiasm. Their activities are highly relevant to IACR research in areas such as soil bioremediation (with excellent links already existing with Steve McGrath and Fangjie Zhao), optimised nutrient use (e.g. SUNDIAL model) and carbon cycling. Noting the very effective



Fig. 36. Professor Jianmin Zhou, Director of ISS and Professor Ian Crute (both seated) sign the MOU

collaborations that have been continuing with the ISS over a long period, including a recent highly successful joint workshop on soils remediation and wishing to further enhance this interchange, a Memorandum of Understanding was signed between Professor Jianmin Zhou, Director of ISS and Professor Ian Crute (Fig. 36).

The Dean of the College of Plant Protection at Nanjing Agricultural University (NAU) is Professor Han Zhaojun. Han is a former Rothamsted International Fellow in the Biological and Ecological Chemistry Department, and a close friend of many members of the Insecticide Resistance Group. He has since returned to a prestigious position at NAU and has assembled an impressive programme of research on resistance and entomological aspects of Bt cotton. IACR would seek to involve NAU in any Workshop in China covering GM biosafety and resistance issues that we might co-organise.

Professor Peter Shewry and Dr Guang He also visited Wuhan where IACR and Huazhong University of Science and Technology have agreed to collaborate in the establishment of a cereal biotechnology laboratory. A building has been identified for this very important initiative and a development plan has been drawn up. Professor Shewry is on the scientific advisory panel.

The emphasis of the Shanghai phase of the IACR mission was on initiating contacts rather than building on more established relationships. The visit to the Shanghai Institute of Plant Physiology and Ecology was hosted by the Director,

Professor Xu Zhengkai and Dr Luo Da (Deputy Director). This Institute is associated with the main thrust on rice genomics in China and is likely to develop quickly in association with a new laboratory building and further amalgamation of Institutes. Numerous opportunities for excellent collaboration were identified and these will be taken forward as a matter of urgency during 2001.

The visit to China concluded with meeting Professor Kexuan Tang at the State Key Laboratory of Genetic Engineering, Fudan University who was recently awarded a collaborative grant with IACR with the MOST/UK OST scheme. IACR's component (£15k over two years) will involve laboratory testing of GM

plants against insects and nematodes.

IACR gratefully acknowledges the support by the BBSRC and the British Embassy for this delegation. The visit was organised and coordinated by Dr Judy Mann through Rothamsted International.

*For further information contact
judy.mann@bbsrc.ac.uk*



Fig. 37. Shanghai, Nanjing Road