

Thursday 7th August 2014

## The third day: developments in science and technology

The Meeting of Experts (MX) continued on Wednesday with the day's formal proceedings discussing issues under the topic of 'Review of developments in the field of science and technology related to the Convention', with a particular focus on 'advances in the understanding of pathogenicity, virulence, toxicology, immunology and related issues'.

Before the start of the day's scheduled proceedings, a briefing on the ongoing Ebola situation in West Africa was given by Pierre Formenty from the World Health Organization in the plenary meeting room.

Mauritania, a non-Signatory State attending a BWC meeting for the first time, addressed the MX and noted that as the current holder of the Presidency of the African Union it is particularly concerned about the Ebola situation. The Chair, Ambassador Urs Schmid (Switzerland), expressed the hope that Mauritania might become a party to the BWC soon.

### Statements

Following the completion of the WHO briefing on Ebola, statements/presentations were given by the ISU, Iran (for the non-aligned), Sweden, Germany, Russia, UK, Mauritania, Switzerland, Netherlands, USA, Australia, India, Pakistan and Iran (national). The sub-topics highlighted to guide discussion in this session were: S&T developments with potential for uses contrary to the BWC; S&T developments with potential benefits; and strengthening national biological risk management.

The afternoon session started with presentations from 'Guests of the Meeting' and international bodies then delegations. Statements/presentations were given by Kenneth Oye of MIT, the World Organization for Animal Health (OIE), the Organization for the Prohibition of Chemical Weapons (OPCW), Canada, USA, India, UK and Cuba. The nominal sub-topics for the afternoon were: codes of conduct; education and awareness-raising; S&T-related developments relevant to the activities of multilateral organizations.

### Themes

There was widespread recognition of significant potential benefits as well as significant potential risks from advances in S&T. Many statements highlighted advances such as synthetic biology, but there were a range of other advances also identified as relevant such as CRISPR techniques and gene drives. The ISU, UK and USA introduced their background/working papers on S&T developments.

A number of statements highlighted a need for a more systematic review of S&T issues. Pakistan said that the S&T review should be driven by the States Parties. References were made to possible enhancements to review processes such as creation of an open-ended working group or an advisory board constituted in some form. Switzerland made an explicit call for new arrangements. Iran/NAM suggested there might be some form of S&T review

mechanism. Others noted that S&T review shouldn't simply be at an international level as States Parties need to maintain awareness of developments in S&T in order to ensure national arrangements, such as biosecurity standards, are kept up to date. Iran/NAM noted that there was no internationally agreed definition of biosafety and biosecurity and suggested it should be for States Parties to define levels required taking into account the relevant local context. Others noted that biosecurity enhancement was relevant for all countries, with concerns raised about recent lapses in laboratory practices such as the recent discovery of uncatalogued variola virus [smallpox] samples.

National research regulation efforts were highlighted. The USA introduced their working paper on control of dual-use research of concern (DURC) conducted with federal government funding. India emphasised a need to focus on dual-use research that is of relevance to the Convention and that work would need to be done to make identification of such relevant research easier in order to assist practical policy implementation. Particular types of experiments were highlighted by others as of significant, such as those for 'gain of function' which potentially carried greater risks. The Netherlands spoke of the lessons learned from experience of H5N1 influenza research there and aimed to give a presentation at the Meeting of States Parties in December on the new arrangements being introduced.

Convergence in S&T developments between the biological and chemical fields and the particular threat of toxins – poisonous chemical substances produced by living things – were highlighted. The OPCW presented the recently published report from its Scientific Advisory Board entitled 'Convergence of Chemistry and Biology'.

Education and awareness and the formulation of codes of conduct continued to be considered significant.

### **Particular points**

Sweden highlighted issues raised regarding botulinum toxin which has a spectrum of uses from biological weapons to medical treatments to cosmetic procedures. Germany spoke about the Establishment of Quality Assurance for the Detection of Biological Toxins of Potential Bioterrorism Risk (EQuATox) programme. The OIE spoke of the ongoing process of reducing global stocks of the virus that causes Rinderpest now that the disease has been eliminated in the wild. Canada spoke about the International Genetically Engineered Machine (iGEM) competition.

### **Side events**

There were two side events on Wednesday. A breakfast event entitled 'Can We Learn from History? The Past and Future Implications of Scientific Developments for the BWC' was convened by a group of academics. Presentations were given by Brian Balmer (UCL), Malcolm Dando (University of Bradford), Sam Evans (University of California, Berkeley), Chandre Gould (Institute for Security Studies, South Africa), and Brian Rappert (University of Exeter). The event was chaired by Kathryn Nixdorff (University of Darmstadt).

At lunchtime, a side event on 'Developments in Science & Technology Relevant to the BWC'. Presentations were given by Frances Sharples (US National Academy of Sciences), John D Clements (Tulane University) and Alemka Markotic (Croatian Academy of Sciences and Art) on 'Science Needs for Microbial Forensics: Developing Initial International Research Priorities'; Nancy D Connell (New Jersey Medical School) on 'Understanding Pathogenicity'; and 'Synthetic Biology and Biosecurity: How Scared Should We Be?' by Claire Marris (King's College London). The event was moderated by Jo Husbands (Inter-Academy Panel).

*This is the fourth report from the Meeting of Experts for the Biological and Toxin Weapons Convention which is being held from 4 to 8 August 2014 in Geneva. The reports are prepared by Richard Guthrie on behalf of the BioWeapons Prevention Project (BWPP). Copies of the reports are available via the BWPP website at <<http://www.bwpp.org>>.*

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