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Science in the Service of Humanity: The OPCW and Global Chemical Disarmament

Keynote Speech at the Aula Magna, Havana University

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H.E. The Minister of Science,

The Rector of the University of Havana, Dr.Gustavo Suárez,

Excellencies,

Distinguished Guests,

Ladies and Gentlemen,

Dear Students,

It gives me great pleasure to be able to address you today in the beautiful surroundings of the University of Havana.

Not only is your university an architectural masterpiece and one of the oldest educational institutions in the Americas, it is also the alma mater of many greats of Cuban culture, literature and science.

It is, in my opinion, very fitting that the remains of Carlos J. Finlay, a renowned Cuban scientist and pioneer in the research of yellow fever, rest in this very lecture hall.

The achievements of Dr Finlay are a reminder of Cuba's high standards in public health and scientific medical research, standards that have been recognised both regionally and globally.

Standards that Cuba also has a long record of sharing with the rest of the world – most recently in deploying more than two hundred medical staff to West Africa to help contain the Ebola virus.

This generous contribution has been praised by the international community – for good reason – as setting a standard for collective action.

It resonates strongly with the legacy of Dr Finlay's achievements and, together, they serve as a timely reminder of how much science can achieve when it is applied in the service of humanity.

This is true of Dr Finlay's career, as it is of our organisation, the Organisation for the Prohibition of Chemical Weapons, or OPCW.

With this in mind, I would like to use this lecture to chart the long journey we have travelled to establish a regime that has allowed us to record the achievements honoured last year by the Nobel Peace Prize Committee.

I will also describe our mission to use science in the service of humanity in the context of the challenges we face, both current and emerging.

The OPCW acts as the guardian of the Chemical Weapons Convention, a comprehensive regime geared towards not only overseeing the destruction of chemical weapons, but also preventing their re-emergence and fostering peaceful uses of chemistry.

From the outset of negotiations in the 1970s, scientists played a seminal role in laying the foundations of what was to become the Chemical Weapons Convention, or CWC.

At the most fundamental level, scientists helped us create a baseline for distinguishing between malevolent and benevolent use of chemistry and related technologies.

Their work determined the definition of chemical weapons and established the elements of a credible verification regime.

To this day, the Convention remains the only international disarmament treaty to ban an entire class of weapons of mass destruction under international verification.

In the seventeen years since the Convention entered into force, the OPCW has verified the destruction of 85% of the world’s declared chemical weapons, and the two major possessor states, Russia and the United States of America, are well on track to achieving their destruction targets.

It is this impressive track record which earned us the Nobel Peace Prize, just over a year ago.

The award came, I admit, as a big but at the same time pleasant surprise to us.

We didn't even know until the night before that we were being considered as one of the nominees.

This is partly because for most of our seventeen-year history, the OPCW has hardly been a household name.

We had always worked behind the scenes with quiet determination in overseeing the destruction of the world's chemical arsenals.

This changed dramatically last year with our mission to eliminate Syria's chemical weapon programme.

The OPCW was presented with a unique opportunity to rid the world of a major remaining chemical arsenal.

There were many people who doubted that this could be done.

It was, after all, an unprecedented challenge.

Never before had a major WMD arsenal of any sort been removed from a country at war and destroyed in such compressed timeframes.

But, a little more than one year on, we can proudly say that we seized that unique opportunity with both hands.

In total, some 98% of Syria's declared weapons have so far been destroyed.

This is a remarkable achievement, by any measure – let alone in the context of such a rare and testing opportunity.

This mission stretched us to new limits.

It demanded flexibility and innovation on the part of our Member States in expediting removal and destruction operations.

It also demanded a great deal of professional commitment and personal courage on the part of personnel deployed to Syria.

Take, for example, the OPCW inspectors on the ground in Syria, who for the first time in their careers had to wear bulletproof vests on top of their hazmat suits while accessing sites in blistering 40-degree heat.

There still remains important work to be done in finalising arrangements for the destruction of declared chemical weapon production facilities, and clarifying certain aspects of the Syrian Declaration. We are also continuing to follow-up allegations of chlorine gas attacks in Syria through the work of the Fact-Finding Mission which I established in April.

Despite this, if we are to respond to future opportunities in the right way and with the right resources, it is important that we draw lessons from our work in Syria.

There are two lessons in particular that I would like to highlight right now.

First, the success of the Syria mission owes much to an extraordinary international collective effort.

The willingness of more than 30 of our States Parties to provide both in-kind and financial assistance was crucial, as was our partnership with the United Nations in

dealing with logistical and security challenges. The mission reminded us that there can be pathways for cooperation, where there is a will.

By working together we were able to overcome obstacles by using innovative technological solutions.

These included facilitating sea-based destruction through the installation of two Field Deployable Hydrolysis Systems on board the Cape Ray, an American navy vessel, and the use of GPS-mounted cameras for remote verification at sites in Syria to which our inspectors were unable to gain physical access.
Second, the Syria mission proved the resilience of the Chemical Weapons Convention.

The Convention provided a ready-made, tried-and-tested vehicle for ridding the world of a major chemical arsenal, with full verification.

This was due to the unique provisions of the CWC.

The CWC is comprehensive, prohibiting not only the use of chemical weapons, but also their development, production, stockpiling, transfer and retention.

It is non-discriminatory, committing all of its Member States, without exception, to its prohibitions and obligations.

All those possessing chemical weapons must destroy their stockpiles, and all Member States must ensure, on an ongoing basis, that chemistry is used only for peaceful purposes within their jurisdictions.

And, most importantly in contributing to the Convention's unique success, its provisions are backed by strict international verification.

In addition to inspections verifying destruction of chemical weapons and the peaceful purposes of commercial industrial facilities, the Convention includes a challenge inspection mechanism.

Any member can call for investigation of another member on the basis of well-founded concerns over compliance.

Further afield, the Convention also provides a collaborative regime for securing assistance and protection for its Member States in response to chemical attacks.

I am happy to say that this is a special area of expertise for Cuba, as demonstrated by the medical assistance course for victims of chemical weapons, organised by the Cuban authorities that started earlier today.

Guided by the Convention, the OPCW also works closely with scientists and industry around the world to promote peaceful uses of chemistry.

Under the auspices of a range of programmes, we hold exchanges designed to enhance capacity and the quality of laboratory work.

We also support internships for young scientists and engineers, as well as provide opportunities for academics and practitioners to attend conferences and workshops.

Let me also add that the overwhelming focus of this work is on countries with developing economies and economies in transition.

The principle that informs this work is twofold.

First, that durable security must be based on equitable access to scientific knowledge and technical know-how, and secondly that all States Parties must have at least a basic capacity to implement the Convention from a scientific and technical perspective.

Ladies and gentlemen,

Considering that achieving a world free of chemical weapons is now within our reach, it is easy to forget that the Convention was a long time in the making, the result of efforts spanning almost a century.

It was almost one hundred years ago, in April 1915 near Ieper in Belgium, that chemical weapons were first used on a large scale.

By the time the First World War ended, more than 50,000 tonnes of chemical agent had been deployed by both sides of the conflict. This resulted in almost 1.3 million casualties, including some 85,000 fatalities.

No-one could have foreseen this sort of carnage at the time the first attempt was made to ban the use of chemical weapons by the Hague Convention of 1899.

Accordingly, the devastating impact of these weapons prompted a push to devise a more binding norm, resulting in the 1925 Geneva Protocol.

But, while it prohibited use of chemical and biological weapons, it did not ban their possession and production.

By the end of the Cold War some six and a half decades later, tens of thousands of chemical weapons had been amassed, including highly lethal nerve agents.

Most tragically, the Geneva Protocol did not prevent chemical weapons from being used with brutal regularity across the world – including against civilian populations.

The impunity with which such attacks were perpetrated and their indiscriminate nature, especially in the Iran-Iraq War, finally rallied the international community to take decisive action.

It was against this backdrop – almost one hundred years after the Hague Convention – that a comprehensive global ban against chemical weapons came into being.

Following long and arduous negotiations in Geneva, the Chemical Weapons Convention was concluded in 1992, entering into force in 1997.

Less than twenty years later, we have achieved near universal membership.

But we cannot rest until all chemical weapons have been destroyed and all countries of the world are party to the Convention, in letter and spirit.

That is why one of our most immediate challenges – one that flows directly from Syria's accession to the Chemical Weapons Convention – is to persuade the six

countries that still remain outside the Convention to join it, without delay and without conditions.

These countries are Angola, Egypt, Israel, Myanmar, North Korea and South Sudan.

No human being should be exposed to the untold suffering caused by chemical weapons – weapons that cause agonising death, weapons that permanently scar and incapacitate their victims, weapons that can have no justification under any circumstances.
The international community's reaction to the recent chemical attacks in Syria has only served to reaffirm its unity on this principle.

At the same time, the scientific and commercial benefits of membership should not be understated. They serve to significantly broaden the foundations of trust and cooperation between states in the service of all humanity.

The attention that the Nobel Peace Prize has generated in relation to chemical disarmament will, I hope, compel states not yet party to the Convention to reconsider their position, or to speed up internal processes that they may have already initiated to accede to the treaty.

The OPCW stands ready to offer them every assistance in this regard.

Looking ahead changes in the strategic environment since the end of the Cold War mean that we must seize the opportunity not only to broaden adherence to the Convention – we must also guard against the re-emergence of chemical weapons.

This is becoming increasingly important as we draw closer to completing destruction of existing weapons and production facilities.

A complex set of non-proliferation problems relates to building capabilities to meet new and emerging challenges in the form of new types of chemicals and technologies, as well as other relevant scientific advances.

What we are often dealing with are materials and technologies that have multiple uses.

They can render great benefits for human and economic development, but they can also render great harm if misused.

We know, for example, that nerve agents work by inhibiting a key enzyme that allows our organs and muscles to relax. They effectively make the body go into overdrive, with high exposure leading to death through respiratory failure.

And yet some drugs for Alzheimer's Disease do the very same thing, using the same chemical compounds.

In therapeutically effective doses, they can keep a chemical used to send messages between nerve cells working for longer. This can improve signalling to the brain, temporarily reducing symptoms of the disease.

Dual-use examples such as this one go to the very core of what makes the Convention unique among international disarmament treaties.

Over 15,000 new chemicals are added to the chemical abstracts data base every day.

We cannot, of course, hope to control every new chemical – nor should we try to. But it is imperative that we stay true to the Convention's provisions for holding member states to their obligations through monitoring and verification activities.

And it is just as important that our work strikes as informed a balance as possible – between prevention and promotion in relation to applications that have malevolent and beneficial uses.

The OPCW has very strong fundamentals for taking stock of, and responding to these challenges. Foremost among these are partnerships we have forged with the scientific and research community.

The OPCW Scientific Advisory Board plays a key role in this respect.

The Board functions as a vital early-warning system for discoveries and new technologies that could be misused.

It allows us to recognise where new developments could have an impact on implementation of the Chemical Weapons Convention and is also a vehicle for ensuring verification methods are kept up to date.

The role of the Board is only set to increase in importance over coming years.

Scientists' interaction with non-scientists in policy-making circles in facilitating implementation of the Chemical Weapons Convention is helping scientists make

their advice more widely understood among all key stakeholders. These include foreign ministry officials, legal experts and customs officers who may have limited scientific knowledge.

This is vital for the simple reason that full confidence in disarmament and arms control measures can only be built on transparency and sound verification methodology closely informed by science.

Ladies and Gentlemen,
Dear Students,

One key lesson of the 20th century is that progress in law and ethics must keep pace with advancements in science.

Whilst as a global civilisation we have reached great heights of scientific accomplishment, we have also acquired the science to invent ever more destructive weapons and technologies.

The emergence of a globalised, inter-connected and inter-dependant world is therefore both an encouraging and sometimes daunting prospect.

But we must not lose sight of human progress in general, especially in science and technology.

Chemistry in particular has had a transforming and positive influence. It has contributed immensely to raising the quality of life and explaining the deep mysteries of our existence.

Its scope for bringing sustainable progress and prosperity remains unbounded.

Our future will depend on upholding universal values as opposed to purely national interests.

It will depend on our ability to harness science for the benefit of humanity, as Carlos J. Finlay did with his research.

We need to instil the highest ethical standards in our scientists at the very beginning of their careers, especially those with access to substances and facilities which could be misused.

As I have said on past occasions, our purpose is not only to nurture more ethical scientists, but also more capable, rounded and responsible ones.

It is especially important for young scientists to develop a world view from the very beginning of their careers.

However specialised their current and future work might be, it is important that they are able to contextualise its broader purpose and applications in order to serve it responsibly.

Our verification mechanisms alone, though, will not be sufficient to deal with these challenges.

Undeterred by setbacks we must, together, work towards the complete elimination of chemical weapons, once and for all.

Thank you.