

Pugwash

NEWSLETTER

*issued by the Council of the Pugwash
Conferences on Science and World Affairs
Nobel Peace Prize 1995*



Nuclear Impasse?

Volume 37 ■ Number 1 ■ June 2000

To the Pugwash Community

New Directions for Pugwash

The beginning of the year 2000 witnessed a number of developments that set in train a wide-ranging review of where and how Pugwash should be devoting its efforts regarding major threats to global peace and security.

In the realm of nuclear weapons, Secretary General George Rathjens convened two high-level consultations to help him and the Pugwash Executive Committee think through just where Pugwash can marshal its resources to help the international community reverse a number of serious recent setbacks to the control and elimination of nuclear weapons. His report on these consultations, held in La Jolla in January and in London in March, can be found on the pages following, and members of the Pugwash community are invited and urged to respond with their thoughts and suggestions (via the *Pugwash Online Forum* on the Pugwash website, at www.pugwash.org).

Also in London in March, the Pugwash Executive Committee met and decided to create a five-member Pugwash Review Committee that will review the structure and operations of Pugwash and report their recommendations to the Pugwash Council prior to the holding of the 50th Pugwash Conference in Cambridge, UK from 3-8 August 2000.

Members of the review committee include the four officers of Pugwash - George Rathjens, Michael Atiyah, Francesco Calogero, and Ana María Cetto - and Joseph Rotblat, President Emeritus. Here again, members of Pugwash have had the opportunity to inject their sentiments and suggestions into the review process via the website. Having been posted on the web since December 1999, the Pugwash Survey has elicited dozens of responses, most of which can be read (and responded to) on the *Pugwash Online Forum*.

Pugwash Study Group on Intervention and Sovereignty

This newly created study group met for the first time in Venice, Italy in December 1999 to discuss ways of building greater international support on the issue of when and where the international community should intervene in the internal affairs of a nation state. Papers from the Venice workshop were published in a new publication series, the *Pugwash Occasional Papers* (also available on the web) and a report on the workshop can be found on page 24. With the recent experiences of Kosovo and East Timor freshly in mind, and with the global community facing new challenges in Sierra Leone, the Democratic Republic of the Congo, and elsewhere, the Pugwash study group will work over the next several years to devise consultation and implementation strategies by which the international community can respond in more timely fashion to avert and reverse humanitarian disasters. Future meetings are planned for Como, Italy in September 2000 and in Castellón de la Plana, Spain in the spring of 2001.

Pugwash Newsletter on the Web

More and more material published in the *Pugwash Newsletter* is posted on the Pugwash website, usually months in advance of appearing in print. We urge all members of Pugwash who are content to read the *Newsletter* via the web to let us know (pugwash@amacad.org) so that we can reduce the size of our mailings and save greatly on printing and postage costs.

For their support of Pugwash in general and the *Pugwash Newsletter* in particular, we would like to thank the Italian National Research Council (Consiglio Nazionale delle Ricerche - CNR), the John D. and Catherine T. MacArthur Foundation, and the Cyrus Eaton Foundation.

The Editors

Nuclear Weapons and the Pugwash Agenda: A Commentary

Commentary

by Jan Prawitz

Having read with great interest the Secretary General's recent report on "Nuclear Weapons Issues and the Pugwash Agenda", I feel compelled to respond to the invitation to comment. The report addresses primarily the weapons and doctrines of nuclear-weapon powers, of Russia and the USA in the first place. There are good reasons to do so, both because the fundamental problems originate there and because those states are the ones which can contribute more than others to reach the ultimate goal: a nuclear-weapon-free world. But I think that the many non-nuclear-weapon states can also have both interests and a role, by requesting arms control important to them through negotiations with the nuclear-weapon powers and more important by undertaking themselves restrictive measures within their capacity. Because so many non-nuclear-weapon states would be involved, Pugwash would be a most appropriate forum for professional discussion of such issues.

I have touched upon these issues before in my chapter in the Pugwash monograph *Nuclear Weapons: The Road to Zero*, and in my paper *Towards a NWFV: Small Nation Roles and Priorities* presented to the 28th Pugwash Workshop on Nuclear Forces in Como, Italy, 9-10 July

1999. I am aware that I write this memo before the outcome of the NPT Review Conference 2000 is known.

The universality of the most basic of all nuclear arms control treaties, the NPT, is now almost established. Only six states of the world are non-parties (as of May 1, 2000), but three of them belong to the family as parts of nuclear-weapon-free zones. The remaining three are the well-known threshold states of India, Israel, and Pakistan, the adherence of whom to the NPT would not be a matter of routine. With the important exception of five recognized nuclear-weapon states with a treaty right to possess nuclear weapons, non-possession of nuclear weapons is becoming a customary norm.

There is, however, a substantial issue remaining to be solved before total universality would be achieved. When the NPT was up for ratification hearings in the US Senate in July 1968, Secretary of State Dean Rusk explained in his prepared statement that there would be no contradiction between the provisions of Article I and US "arrangements for deployment of nuclear weapons within Allied territory, as these do not involve any transfer of nuclear weapons or control over them unless and until a decision were made to go to war, at which time the treaty would no longer be controlling" (Documents on Disarmament 1968, ACDA, pp. 478-495). This language

had been agreed among the NATO allies. The first part of the statement was an expected result of the NPT negotiations while the last part is disturbing: that the NPT would lapse in wartime. Sweden gave up its nuclear option for a variety of reasons, but one was that our European neighbours would do the same. If that were so only in peacetime but not in wartime when it would be most needed, the Swedish rationale would lose value.

Almost unnoticed, however, the third NPT Review Conference in 1985 agreed in its Final Declaration "that the strict observance of the terms of Articles I and II remains central to achieving the shared objectives of preventing UNDER ANY CIRCUMSTANCES (emphasis added) the further proliferation of nuclear weapons ..." (Document NPT/CONF. III/64/I, Annex I). This language is politically rather than legally binding upon the NPT Parties and should be reinforced and codified.

Obviously Mr Rusk's statement in 1968 referred to the East-West conflict dominating at the time. But the end of the Cold War and the prospects for local wars in the future now makes the more restrictive 1985 interpretation the only reasonable one. In 1991, the UN Security Council did indeed confirm the 1985 approach in its resolution on Iraq. The opposite interpretation would be beyond reason — that Iraq's involvement first in a war with Iran and later in the Gulf War would have entitled

her to acquire nuclear weapons, or that India and Pakistan could accede to the NPT as non-nuclear-weapon states but continue their weapons programmes claiming that there is a war going on in Kashmir.

With the NPT membership almost complete, the more restrictive measure of nuclear-weapon-free zones have become the dynamic element of the non-proliferation regime. The five nuclear-weapon-free zones (NWFZ) established so far cover more than half of the world's land-mass (70 % of all land outside the nuclear-weapon states), including 99% of the Southern Hemisphere land areas. They encompass 112 states (out of a total of some 195) and 18 other territories with 1.8 billion inhabitants. Two more NWFZs are currently being developed, i.e., the Central Asian NWFZ of five former Soviet republics, and the single state zone of Mongolia. When a new NWFZ is established, the territory available for nuclear weapon deployment is correspondingly reduced.

It thus seems reasonable to suggest that the NWFZ concept should be emphasized in the future. Two zones on the agenda for decades, the Middle East and South Asia, should now be further emphasized and aggressively pursued. If established, the threshold state problem would be solved. When the NPT was negotiated in the 1960s, all efforts focused on Europe, disregarding other regions in the world. Some other regions were dissatisfied with the NPT and solved their nuclear security problem regionally, i.e., by establishing their own nuclear-weapon-free zones with the accumulated result

referred to above. Non-nuclear-weapon states can continue this development unilaterally, but should urge the nuclear-weapon states to be more forthcoming in supporting and extending guarantees to new zones. So far some of the nuclear-weapon states have been oversensitive to details, for instance when refusing to sign the Bangkok Treaty Protocol and forcefully discouraging the establishment of NWFZs in Europe.

Furthermore, it should be

.....

For the many small and medium sized states in the world, the most important nuclear reduction measures agreed so far are the 1991 unilateral declarations by the USA and the USSR that led to the withdrawal of most sub-strategic nuclear weapons from theatres of deployment and from general purpose naval ships.

.....

observed that for the many small and medium sized states in the world, the most important nuclear reduction measures agreed so far are the 1991 unilateral declarations by the USA and the USSR that led to the withdrawal of most sub-strategic nuclear weapons from theatres of deployment and from general purpose naval ships. Many of those weapons are now being dismantled, particularly in the USA, others will be kept in centrally located storages.

France and the UK later undertook similar measures. These most important measures have more or less emptied Europe and its adjacent sea areas as well as many other areas of the world of deployed theatre nuclear weapons. They did in fact remove from operational status precisely those nuclear weapons that could be targeted on the smaller states and thus also removed the immediate threat against them of direct nuclear attack. These measures are, however, based on unilateral declarations and are thus not legally binding nor do they have a permanent duration in force. Codification of these declarations, as modified to meet precise criteria of security and verification, has been proposed a few times. But most of the political energy devoted to nuclear arms control is today directed towards the strategic systems and the START agreements. A separately negotiated treaty, possibly involving all nuclear weapon powers and prescribing the elimination of all sub-strategic nuclear weapons would be a measure of prime interest to the many small and medium-sized non-nuclear-weapon states. In addition, such an elimination would be a most effective step towards a nuclear-weapon-free world and could in one step achieve a major part of what the many proposed nuclear-weapon-free zones would accomplish.

It would also remove nuclear threats projected from the sea. Small states, generally speaking, have two kinds of interests in the maritime domain. One is a need for a reasonable "seaboard security" not to be threatened from the sea. The other is the interest of unimpeded use of the

Pugwash Meeting #253

freedom of the seas that all states of the world are entitled to.

Therefore, nuclear weapon restrictions at sea would be instrumental both to promote the interests of smaller states and to pursue the final approach towards a nuclear-weapon-free world. After all, the seas and oceans of the world occupy about 70 % of the surface of the world. Establishing a restrictive regime applying to the seas and oceans could be both complicated and difficult, however. The difficulties may be less due to military con-

siderations and more linked to the contradiction of principle between arms control restrictions and the long time tradition of the freedom of the sea, and also to the fact that so many parties would be involved in negotiating measures of this kind. The latter fact is a good reason to promote maritime issues within Pugwash.

Pending a permanent removal of nuclear weapons from the seas and oceans, non-nuclear "seaboard security" for smaller coastal states could be achieved by means of confidence- and security-building measures

(CSBMs) regarding nuclear weapons.

A related measure that would meet the general security interests of smaller states with activities at sea, would be an upgrade of the current negative security assurances to include also a commitment not to use or threaten to use nuclear weapons against targets at sea. It is obvious that a nuclear explosion at a point at sea where vessels of all nations of the world would have the right to cruise would severely infringe upon the rights of the majority of states not parties to a conflict.

Report of the British Pugwash Group The Effects of Low Level Radiation

18 April 2000

.....
Chair: Sebastian Pease.
Rapporteur: Peter Nicholls
British Institute of Radiology,
London, UK
.....

Roger Clarke (Chair, International Commission on Radiological Protection) spoke first on “Low level radiation”. Less than a year after the discovery of X-rays by Roentgen (1895), guidelines to prevent dermal burns were developed by Fuchs. Serious international efforts had to await the end of WWI. In 1934 the accepted limit was set at 0.2 roentgens/day—about 25 times the level deemed acceptable today. In those days and for some time thereafter (the reporter has seen recent colour TV footage of people sitting in abandoned US uranium mines ‘for their health’) low levels of radiation and radioactivity were regarded as beneficial (radioactive underwear was the rage...).

After the bombs everything changed. By 1955 it was recognised that for at least two groups of exposed victims—radiologists themselves and the survivors of Hiroshima and Nagasaki—cancer (especially leukemia) risks were increased.

Now the ICRP guidelines are that “any risk must be kept much smaller than that from other

hazards” and “the probability of developing radiation-dependent diseases, characteristically cancers, is directly proportional to the dose received”. That is, there is no threshold. By the late 1970s the question had become one as to what is ‘reasonable’. Utilitarian cost-benefit analysis was in vogue. The key questions were seen as: How many lives will be saved? What will it cost? Protect society, it was thought, and the individual WILL be protected.

But by the time the 1990s arrived the emphasis had changed. A concern for individual risk was uppermost. An important question was that of inequity. It was not acceptable if a single individual was at high risk even if the population at large were relatively safe. Standards must therefore address the question of the individual risk.

Now that we are in the 2000s the focus has become one of looking at individual risks, sometimes from single sources. But the threshold effect is still debated. The French Academy (the reporter notes the dependence of French industry upon nuclear power and of French military prestige upon nuclear weapons) has produced a report that says such a threshold exists. In the US Senate, Sen. Pete Domenici has introduced a resolution demanding recognition of such a

threshold by bodies such as ICRP. Yet, says, ICRP, there is no threshold.

There are two ways of looking at the evidence:

- The epidemiological. For A-bomb survivors we have data down to 50-100 mGy (milligrays). It is argued that there are no excess cancer cases at these levels (some say below 200 mGy). We may note that the average “natural” background is 3 mGy for a lifetime exposure of about 200 mGy. For radium workers we have data at similar levels. No definable risk can be demonstrated at low doses although some have found that risks in utero increase for exposures as low as 10 mGy. As Joseph Rotblat pointed out in the discussion, the numbers of such cases (both populations and victims of disease) are too low for statistics to tell us anything reliably one way or the other.
- The molecular biological. DNA is the target. The cell can repair damaged DNA. But only single strand breaks in the double stranded material can reliably be repaired. Double breaks (common from radiation ‘hits’) can leave the molecule damaged or mutated. Under such conditions the probability of cancer seems to be increased for a single mutation. Hence, no threshold. The cell engages in adaptive responses to insult (“hormesis”). This, together with evidence for radiation-induced changes in apoptosis (controlled cell death) and immune

surveillance, has suggested that low levels of damage may actually be advantageous to the tissue or at least unthreatening (radioactive underwear makes a come-back??).

Nonetheless in Clarke's view no evidence at the cellular level is available seriously to challenge the ICRP position of 'no threshold'. In the new era of 'equity-based ethics' individuals have acquired 'rights' to certain levels of protection—how much, the 'stakeholders' themselves must decide, not the experts or the government. Protect the individual, we now say, and society will automatically be protected—a reversal of the older doctrine. The result? The maximum dosage is now set at 0.3 mSv (millisieverts), giving a possible cancer risk (assuming no threshold) of $1:10^5$ and amounting to 10% of the 3 mSv natural background exposure. But note that on Cornish granite the natural exposure goes to 10 mSv or even to 100 mSv in some pockets of radon accumulation. Those of us who take international flights may or may not wish to be reminded that that gives a substantial added 'natural' (?) exposure—possibly of greatest concern in the case of flight crews.

The rules require continuous dialogue. Assessment of risks as a percentage of natural background may be the most useful. This then also enables us to consider the question of environmental radiation protection policy—an area which current human-focused guidelines do not address. Because the environment is not one of individuals, such risks are direct and not statistical in nature. What will be the effect on oak trees?

Or shellfish? Note that some organisms are much less sensitive to radiation than are human beings (cockroaches are the famous example) but others more so (including some plants and perhaps trees).

But justifying acceptable levels of radiation involves invoking more than science; it is also a matter of policy into which technical radiological issues are but a minor input. At the moment all we can say technically is: (i) we must control doses to all those most exposed to risk; and, (ii) such doses must be ALARP (as low as reasonably practical).

In discussion this reporter was surprised to hear that there seem to be no firm guidelines as to acceptable levels of radionuclides in consumer products. Some, of course, are deliberately radioactive (e. g. smoke alarms), others by accident (newsprint a possible case). There is a voluntary code but no governmental instructions. The National Radiological Protection Board (of which Dr. Clarke is Director) does regularly monitor the air, food samples and public water samples for us. Whatever comfort that provides.

Douglas Holdstock (Secretary, Medact) then dealt with the specific question of "Depleted Uranium". Depleted uranium (DU), left over after weapons or reactor ^{235}U has been extracted, contains 99.8% ^{238}U ('natural' uranium is 99.3% ^{238}U , 0.7% ^{235}U and a small amount of ^{234}U). 300 tons of DU were released in the second Gulf War and about 7-10 tons in Kosovo. It is not a reactor product and contains no fission products. DU shells release up to 1kg of burning dust on impact,

giving possible rise to both chemical and radiological effects.

What are the chemotoxicity dangers? Uranium is a heavy metal like a number of others (lead, cadmium etc.) and 1mg is dangerous for kidney function. But to get 1mg U to the kidney 50mg would have to be inhaled, an amount not likely to be taken up by anyone other than an unfortunate crew member of a stricken tank. In any case the description of 'Gulf War Syndrome' illnesses does not include kidney-related complaints.

What are the radiological dangers? ^{238}U has a half life of 4.5 byr, and ^{235}U of 0.71 byr compared to 24 kyr for ^{239}Pu . This means that ^{238}U , and even ^{235}U are hardly radioactive (the weapons' explosive effect is due to nuclear fission, quite a different process). Still, what radioactivity there is involves alpha-emission, a possible inducer of 'genomic instability', as discussed by Dr. Clarke. But 100mg of U would be needed for a significant radiation dose and the descriptions of 'Gulf War Syndrome' suggest a pattern of multiple causes, to which the indiscriminate use of insecticides inside tents and the injection of anti-nerve gas cocktails including substances like prostigmine are the most likely major contributors. The reported symptoms reminded Dr. Holdstock of the recognized syndrome suffered by farmers exposed to extensive amounts of sheep dip chemicals.

Should then DU be banned from weapons? There is an inhumane weapons convention. The use of any weapon must pass the 'principle of justification'. The reporter notes that some military authorities or services

*Report of the Student Pugwash USA Conference***Peace, Science and Humanity:
Choices for the Next Generation**

Chicago, IL, 2 April 2000

have decided against using DU, perhaps because their own personnel are uncomfortable about it—but good can be done by stealth. It seems therefore not to be seen as militarily decisive. Although it may not be as poisonous as some think, it is, even just as a weapon, unpleasant or ‘unknightly’ (the occupants of an attacked tank have little opportunity of surrender). Its use blurs the distinctions between conventional, chemical and nuclear weapons. The absence of any preceding discussion of its development at civilian levels (our knowledge of its existence may have come courtesy of a sharp-eyed Gulf reporter and a talkative soldier) was another indication of failed civilian control of the military. A ban may therefore be a political as much as an ethical desirability. But doubtless the debate will continue.

References

Clarke, R. H., & Holdstock, D. (2000) Summaries (British Pugwash Group, 63A Gt. Russell St., London WC1B 3BJ, UK).

Fetter, S., & von Hippel, F. (1999) *Bulletin of the Atomic Scientists*, 55, #6, 42-45, and, for another set of viewpoints:

Laka Foundation (1999) Depleted Uranium: a post-war disaster for environment and health. (Laka Foundation, Ketelhuisplein 43, 1054 RD Amsterdam, Netherlands).

Peter Nicholls, Department of Biological Sciences, Central Campus, University of Essex, Wivenhoe Park, Colchester, CO4 3SQ, England.
e-mail: pnicholl@essex.ac.uk

.....
by Anna Moden
Associate Director,
Student Pugwash USA
.....

The benefits of the growing collaboration between Pugwash and Student Pugwash were clearly evident at an event sponsored by Student Pugwash USA entitled “Peace, Science and Humanity: Choices for the Next Generation.” Around 75 people participated in this exciting event which was held in Chicago on April 2, 2000.

Professor Joseph Rotblat, who spoke on the topic “Science and Civilization in the Coming Decades”

encouraged the audience including many students as well as senior Pugwashites to forget the differences between people and political persuasions and use science and technology for the benefit of humankind. Student Pugwash USA organized this day because we believe that the way to create a more secure world is to build bridges between current and future concerned leaders and scientists. The event was co-sponsored by *The Bulletin of the Atomic Scientists* and Physicians for Social Responsibility.

In his speech, Professor Rotblat provided an overview of the human condition in the 20th century, using



.....
From the left: Bob Musil, executive director, Physicians for Social Responsibility, Heather Stewart, Audrey Nash, Jo Rotblat, Chitra Kumar, Anna Moden
.....

the UN Human Development Index to make his point that developments in science and technology have provided better health, better food, safer industry, fewer day-to-day chores, more education, and many other benefits to humanity as a whole. Rotblat said that these indicators should serve as a reason for optimism.

However, he continued, we will be faced with tough decisions as we enter the 21st century. As science proceeds in fields such as biotechnology and communications technologies, young people must be prepared to make choices about how to use these new technologies. He prompted the audience to remember the historical relationship between science, technology, and society in the 20th century as we face the coming challenges. Victor Rabinowitch, senior vice president at the John D. and Catherine T. MacArthur Foundation and a Pugwashite, provided comments after Professor Rotblat's speech. Professor Rotblat attended the whole event and also took the opportunity to share his thoughts with students during lively lunch-time conversations. Ruth Adams, Pugwashite and a long-term supporter of Student Pugwash USA, also joined us for the day.

Another panel examined the topic "Scientists, Young People, and Nuclear Weapons." Stephen Schwartz, publisher of *The Bulletin of the Atomic Scientists*, Bob Musil, executive director of Physicians for Social Responsibility, Clayton Nall, a member of Student Pugwash USA's board of directors and a student at the University of Madison-Wisconsin, and Heather Stewart,

pledge coordinator at Student Pugwash USA, spoke about the importance of young people being involved in nuclear weapons issues, how to increase interest in these issues, and what it is like to be a student caring about nuclear weapons and arms control.

Hugo Estrella, coordinator of International Student/Young Pugwash spoke about exciting new plans for the establishment of an international Student/Young Pugwash secretariat and the importance of student movements around the world [see below]. Jeffrey Boutwell from the Pugwash

secretariat delivered greetings from the Pugwash Conferences and talked about recent and upcoming activities, and Anna Moden, Student Pugwash USA's associate director, emceed the event.

Student Pugwash USA holds several regional events in different parts of the United States each spring. Next on Student Pugwash USA's agenda was "Deciding on Disarmament: A Day at the UN's Non-Proliferation Treaty Review Conference," held in New York City on April 24 in conjunction with the opening of the NPT review conference.

The Hidden Power

Commentary

by Hugo Estrella
*International Student/Young
Pugwash Coordinator*

As teenagers, we live through a usually uncomfortable, questioning time: we question our parents, the world's unfairness, and many times feel every injustice translated into personal terms. When we arrive at university is when the big change in our lives happens. We are never going to be the same. We have earned the ability to question the world, but this time in a systematic, scientific way.

And science is a quest for answers, or, as Bertrand Russell said, "the ability to formulate the proper questions". In that way we change ourselves, we improve our knowledge, and the outcome of it all is the ability to modify reality.

Therefore, it challenges power, or at least people in power.

Myths

We can learn a lot from the traditions of ancient cultures, and these have several warnings for those seeking knowledge and for what we can do with the knowledge we acquire. Sometimes those warnings are intellectually challenging, some other times they are scaring: a manifestation of the other powers, trying to maintain knowledgeable people within their "proper" limits.

The message seems to be: "Be careful, you are too small and weak for making your own decisions. Let us guide you, and keep you safe and warm". I can recall two myths about this: the punishment for eating from *the tree of knowledge, and good and evil*, better known as the Fall. The other myth, my preferred one, is that

of Prometheus, who built some funny mud creatures, and felt sorry for them, suffering cold, unable to find a way to warm themselves. So he stole the fire of knowledge from the Olympic gods, and gave it to his creatures. The Gods were really mad at him, and meted out a horrible punishment for his action. In any event, throughout history humans acquired more and more knowledge and lost their fear, up to the point that we no longer believe in Zeus, once the thunderbolt thrower, and Olympus itself became a small, irrelevant mountain.

This doesn't mean there was no price to pay for questioning authority. A few days ago we commemorated Giordano Bruno, burnt at the stake 400 years ago after six years of torture, for affirming that according to evidence, the Universe is infinite, and Earth is not its centre.

There have been other warnings, more challenging, more appealing to scientific minds. I would point out the ones that were expressed in artistic, literary terms as a result of those that were held inside the scientific community. These had much to do with the rare ability science and technology showed for shaping and rapidly changing the world as it was known in some stages of the modern Era.

I can think of some examples, like *Brave New World, 1984* or Fritz Lang's movie *Metropolis*. They raised an ethical concern for developments that were then considered almost impossible, like interactive media, human cloning or robotization. But, somehow, as soon as those developments became possible, probable and eventually real, ethical concerns were

less often present, and the fascination for technology and its ability to create wealth, seemed to act as a sort of anaesthesia.

Questioning in a scientific way

Universities inherited and improved that ability for challenging power. But something very interesting happened with those who entered them: they became part of a small community with a universal view. This com-

.....
***Somehow, as soon as
[technological] developments
became possible, probable and
eventually real, ethical concerns
were less often present, and the
fascination for technology and its
ability to create wealth, seemed to
act as a sort of anaesthesia.***
.....

munity has survived through the centuries, dating even prior to the existence of nation-states. My university for instance, Cordoba, was founded in 1613, before the colonial organisation of "Virreinato del Rio de la Plata" (1776), and centuries before Argentina itself (1816). And even in those founding times, universities were integrated into that long lasting tradition that made science possible: THE QUEST FOR TRUTH. It included the sense of belonging to a community, the high level of responsibility for the outcome of that relation with knowledge, a commitment to the rest of

society. Society knows that universities and scientists are able to look for the solution to their problems.

Therefore those people educated at a university level are citizens, citizens with an important role to play. For what they know, and for what the others know they know.

And that line of thinking led university people to be in the forefront of every single progressive movement in the world.

Protesting for freedom, for rationality in a world rarely led by Reason. At a time when Modernity and its ideals are challenged, we must remember the motto of the French revolution and how it led to a dream of a better world, which has somehow been achieved: Liberty, Equality and Fraternity. All three of them are needed for human-centred action. We need liberty for inquiry at the very basis of science; we need to move to a more equal situation specially achieved by spreading education; and *we need to behave fraternally to each other.*

There is no better way to feel safe than relying on our fellows. That is Fraternity. And that is a wonderful message and life example we get from people like Professor Rotblat and those who have acted in Pugwash: we cannot rely on just our national boundaries, on our wealth, on our governments, or even on a nuclear arsenal to survive.

You can only rely on others, on those with whom we share our characters as human beings, and especially on those who share our privilege of having been admitted into knowledge.

And I hope students from all over the world are able to learn and feel

this message. I believe it will happen, because there is something wonderful with universities and their students all over the world.

Wherever a dictatorship is questioned, the justification of a war is publicly discussed, or a movement for democracy or defending the environment is started, no doubt you will find that university students are in the forefront.

It happened in the 1960s in Cordoba, Mexico, Paris, Prague, Berkeley and London. It happened in the last ten years in Prague again, Belgrade, Tian-An-Men and Jakarta.

And even though the price we had to pay was very high, it was worth it: Indonesian dictator Suharto, who had been in power for more than 30 years, was pulled down mainly by the effect of students' protests. Milosevic's regime was more successfully challenged by the massive protests of Belgrade University students, than by the NATO bombings. And students did not destroy bridges, factories, or mistakenly attack civilian targets.

All this is just to say how much we have been able—and are able—to do with what we learn, with the knowledge we inherit, and the knowledge we create.

Pugwash is a wonderful movement that gives us the unique opportunity of thinking in new ways. We are allowed to interact with remarkable scholars and learn something that is unfortunately not very often taught in Academia. We can work with people who feel the same responsibility in distant and different places. We have been able to meet in many opportunities, to network, to

have over 20 national student/young groups all over the world. We know we can make a difference. We can recreate that spirit of responsibility as

.....
***Pugwash is a wonderful
movement that gives us the
unique opportunity of thinking
in new ways.***
.....

scientists, as citizens, as human beings. We can recall what has been our secret for generations: students may be in the forefront due to num-

bers and energy, but the best of our mentors, the wise men and women of our communities, are with us.

I would like to finish using another artistic example: Many of you may have seen the movie, *The Truman Show*. I think it's a good example of how many of us feel. We must abandon a wonderful "warm world" set up for us to feel comfortable and safe, but in which we are not really able to decide. Let's open the door to a real world, let's take the challenge of shaping our own life, relying on our personal capacities and the fraternal behaviour of our fellow humans.

STUDENT / YOUNG PUGWASH

Report of the Swiss Student Pugwash National Conference

**Thinking in New Ways: Youth,
Responsibility and Science**

CERN, Geneva, Switzerland, 7-9 April 2000

Swiss Student Pugwash held its first ever national conference, from 7-9 April, 2000 at CERN in Geneva. Eva Haden and Shahnaz Radjy, president and treasurer respectively of Swiss Student Pugwash, organized the event, which drew some participants.

The conference opened with remarks from Prof. Jean-Henri Stroot, President of the Board of the Geneva International Peace Research Institute, and Dr. Gert Harigel, senior professor emeritus at CERN.

In his talk, *Comment et Pourquoi Pugwash*, Prof. Stroot

focused on the social responsibility of scientists, tracing developments from the Manhattan Project of 1941-45 to the Russell-Einstein Manifesto of 1955 to the birth of Pugwash in Nova Scotia in 1957. Dr. Harigel recounted how the danger and threat of nuclear warfare evolved in the second half of the 20th century, and what international groups of scientists such as Pugwash have done to support arms control treaties and the ultimate abolition of nuclear weapons.

The conference had four separate Working Groups: (1) Weapons of

Mass Destruction, (2) The Environment, (3) Development, and (4) Ethics, Science and Technology. After meeting as working groups, each delivered a report to the conference plenary session.

During the conference, there was a panel discussion on the topic, "The Future of Swiss Student Pugwash," chaired by Alex Neil (International School of Geneva), while the closing plenary speech was given by Dr. Martin Kaplan, former Secretary-General of Pugwash.

A full report of the conference is available on the website of Swiss Student Pugwash, www.student-pugwash.org/swiss.



Participants at the Swiss Student Pugwash Conference in CERN.

NEWS FROM ISODARCO

21st Isodarco Summer Course **Nuclear Weapons in a Vulnerable World**

Rovereto, Italy, 9–18 August 2000

The 2000 Isodarco summer session in Rovereto, Italy will trace the development of the nuclear age, from the origins of the Manhattan Project and the use of nuclear weapons against Hiroshima and Nagasaki to the current challenges facing the control and eventual elimination of nuclear weapons. Organized by Ruth Adams of the University of California, San Diego, the Isodarco meeting will focus on a wide range of political, military, economic and social components of the nuclear weapons dilemma. Speakers include Martin Sherwin, David Holloway, Michael May, and Kennette Benedict (US), Sergei Kapitza and E. Bazhanov (Russia), Pervez Hoodbhoy (Pakistan), Avner Cohen (Israel), Gert Harigel (Switzerland), and David Carlton (UK).

FUTURE ISODARCO EVENTS

7th Isodarco Beijing Seminar on Arms Control
Xi'an, China
8–12 October 2000

14th Isodarco Winter Course
Andalo, Italy
21–28 January 2001

For more information contact
Prof. Carlo Schaerf
Dept. of Physics, University of Rome
Phone: 39-06-7259-4560; fax: 39-06-204-0309
Email: schaerf@roma2.infn.it

Brock Chisholm—Doctor to the World

by Allan Irving

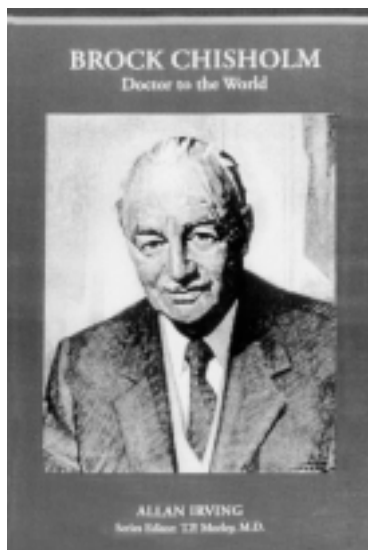
Review

by S. William Gunn

ISBN 1-55041-1846, Fitzhenry and Whiteside, Markham, Canada 1998, 149 pages

As a young surgeon practising in Nova Scotia, Pugwash was not unknown to me but the surprise was great when the news spread that this sleepy village was holding a high-level scientific meeting hosted by Cyrus Eaton. The little fishing community, however seemed less surprised as, for them, their local boy now a famous American tycoon, receiving scientists from around the world, “could do anything”. Indeed more than that, it became evident over the years that the 22 guests initially gathered there to discuss the Russell-Einstein Manifesto could also do great things, their brainstorming, enlightened advocacy and continuous action eventually being rewarded by the Nobel Peace Prize in 1995.

Among that first Pugwash group was a Canadian physician, Dr. George Brock Chisholm, well known and respected worldwide as one of the architects of the United Nations, first Director-General of the World Health Organization and a freethinking internationalist, less known or perhaps wrongly remembered in Canada as “the man who killed



Santa Claus”. His biography has recently been published by the Hannah Institute for the History of Medicine in Toronto.

Brock Chisholm—Doctor to the World traces quite chronologically the life of this Canadian, born in 1896 and died in 1971, after a full career of medical and social, military and pacific, national and international achievements. It describes his growth and maturation, his bravery in World War I, his medical studies, general practice and interest in psychiatry until World War II, his distinguished administrative career and military ascension to the rank of Major General, and thence to higher civil service as Deputy Minister of Health. These national contributions would be remarkable for any man, yet Chisholm enriched and expanded them with international service and it

is these overseas distinctions, initially at the United Nations and subsequently at the World Health Organization and in the world at large, that constitute his undoubted fame worldwide, and which earned him an invitation from Lord Russell to the initial historic meeting at Pugwash.

After having fully contributed to the growth of his country, the country that Chisholm was now working for was the entire world, with its strengths and weaknesses, its myths and realities, accords and rivalries and tensions, the international community and the promise of youth, the world population of the healthy and the sick, the rapprochement of the wealthy and the poor, the contribution of health as a bridge to peace, and the action of men and women for a more just society. And that for him was the World Health Organization. It still is, as his legacy. Here he firmly anchored his revolutionary concept of “health”, ably moulded a multinational esprit de corps, broke down imperialistic and nationalistic boundaries—at least as far as health was concerned, and affirmed the conviction that there can be no real peace unless mankind took its destiny in its own hands in an enlightened way. This was the message besides, of course, the technical aspects of world health for which WHO was primarily set up. There was no dichotomy

between pragmatic and idealistic action; as in the 50th Anniversary Brock Chisholm oration when Director-General Emeritus Halfdan Mahler qualified Chisholm's mission as being both "soaring and down to earth".

Present at the United Nations from its embryonic days (San Francisco Conference, 1945), through the Technical Preparatory Committee (1946) discussing post-war health reconstruction, the interim Commission (1946-48) and finally at the first World Health Assembly (1948) when he was elected Director-General, Chisholm toiled tirelessly to establish, ensure and strengthen the mission of the new Health Organization which even owes its name "World" to him. Once a military leader, now a health promoting and peacemaking chief, he undertook the task systematically, relentlessly, diplomatically yet firmly, putting mankind always in the middle of his preoccupations. Witness his speech at the first Pugwash gathering: one of two medical men among a predominantly physicists' galaxy, Chisholm began his contribution right away by saying "I want to talk about another kind of background, other than radiation", the background of human and social well-being. And throughout all his work and pronouncements, his dignity and humility are recounted by all who met him. I recall being impressed by this when, before joining WHO I paid him a courtesy call in his peaceful retirement home near Victoria, British Columbia. In our conversation on the mission of

WHO, his friends in Geneva, the UN, youth, weapons of mass destruction and peace, his legendary modesty gave no hint at all of his having received, that very day, the country's highest accolade, Companion of the Order of Canada, that I only learned of as I read the papers on the ferry back to Vancouver. Yet some people found him complex.

Irving devotes a little under half of the book to Chisholm's international life. The facts are recorded, but considering the special importance of this sector of the man's life and contributions, a more extensive and analytical study could have been expected. Chisholm was well versed in receiving from all parts of the world health reports and acting on them. But the devastating reports from Hiroshima and Nagasaki could not fit into a cold organigram pattern and an increasingly peace-promoting anti-nuclear stand had to be taken, which Chisholm did with growing conviction. He energetically promoted World Federalism (that is now in part being answered by the European

Union), became a director of the Canadian Peace Research Institute (with Nobel Prize associations through Lester Pearson as, later, with Pugwash), urged the creation of an international police force (as now being envisaged by Kofi Annan of the UN) and emphasized the necessity of international humanitarian action (as later established through the Department of UN Humanitarian Affairs and, more recently the foundation of the International Association for Humanitarian Medicine that bears his name). To borrow a term from another Canadian internationalist, he was truly a physician peacemonger. Pending a deeper study of this superior man, Irving's slim volume provides considerable information on this remarkable Pugwashite.

.....
S. William Gunn, a Canadian physician who joined WHO, is currently President of the International Association for Humanitarian Medicine Brock Chisholm, in Switzerland.
.....



Participants at the first Pugwash meeting in 1957. Brock Chisholm is 10th from left.

General Charles Georges Fricaud-Chagnaud

General Fricaud-Chagnaud passed away on 18 November 1999. He was a member and a friend of CIR-PES, and we are deeply saddened by this news. He became an orphan early in his life, and when only an adolescent, he was involved in the Resistance, which was the beginning of his military career (as Marine Troop Officer). His commitment to ensuring security in Europe (postings in Washington, negotiations of Arms Control and NATO) was the basis of new activities of the Studies of National Defense Foundation. He fought for a France that was proud, and that could, together with its former German

enemy, create a New Europe seeking Security and Peace. He was a member of Pugwash, who brought great military knowledge and conviction to interventions, conferences and articles, revealing his strong views: the need for a “Rapid Action Power,” and “concerted” deterrence.

He was a man of progress, a republican and a humanist, left-wing, tolerant and intellectually sincere, which forced him to speak his mind, and we will all remember him with affection.

—*Venance Journé*