



# Science for Peace

# The Bulletin

October 2010

## Message from the President

*Judith Deutsch*

A task for Science for Peace, a small organization of hard-working and vocal people, is to pick and choose how to best channel our talents and concerns. The more I learn about the urgent time frame posed by climate change, the more convinced I am that the innumerable severe problems we face need to be understood and acted upon in the context of climate change.

James Hansen's book, *Storms of My Grandchildren: The Truth about the Coming Climate Catastrophe and our Last Chance to Save Humanity*, covers the most recent research findings from satellite observations, paleoclimate and ocean core research, and climate modelling. There is now not only certainty about anthropogenic causes of climate change, but there are also clear correlations between atmospheric CO<sub>2</sub>, ice sheet melting, sea levels, and mass extinctions. An important uncertainty is the rate of change, estimating the nearness of irreversible tipping points, since the ever-increasing rate of current emissions, plus the fact that huge emissions are sustained over many decades (vs. one-time volcanic explosion), is unprecedented.

So far there is a very wide divide in North America and in Europe over addressing environmental vs. socio-economic-human rights problems. Hansen, Yale University environment dean James Gustave Speth (author of *The Bridge at the Edge of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability*), and the 35,000 people meeting in Cochabamba for the World People's Conference on Climate Change and the

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The Bulletin is published by Science for Peace. The articles in The Bulletin are the opinion of the writers and may not represent the views of all our members or the editor. Like Science for Peace in general, The Bulletin encourages a vibrant dialogue on important topics.

This issue of The Bulletin was edited by **Shirley Farlinger**.

*The Bulletin has been printed on 100 % recycled paper.*

Rights of Mother Earth (Bolivia April 2010) – all speak to the absolute inadequacy of response by governments (with their corporate sponsors) and ENGOs. For the most part, the North American and European response is in the direction of incremental technological change that pales in comparison with investment in non-renewables and business as usual. Social justice movements in Europe and North America appear to be oblivious to the requirements posed by climate change.<sup>1</sup>

Hypocritically, the United States and Canada prepare full-well for climate change, all on the wrong side of it. The perception of starving hordes vying for food and water and “our way of life” is an excuse for beefing up the military with ever more lethal weapons, a proliferation of military bases and surveillance, closed borders, the omnipresent “security” state. Here we have the utter debasement of the “other”.

Impressionistically, what often comes to my mind is the description of the waning of an era by historian J. Huizinga (1924. *The Waning of the Middle Ages*). He writes of the preoccupation with death and “the violent tenor of life”, the Manichaeic perceptions of the world – often identified by colours (greens, reds, orange, purple of

today), the distancing from reality with a resort to symbolism, the emptying of forms that were originally functional and an often grotesque exaggeration of their stylistic attributes.

I think now we need to size up the waning of the nation state. In the 20<sup>th</sup> century, fascism, communism and capitalistic democracies destroyed innumerable socio-ecosystems and in various ways caused hundreds of millions of premature deaths, generally for greedy and narcissistic ends. International human rights expert Richard Falk writes of the Westphalian period of law in which sovereignty passed from religious authority to the state in 1648. He asks whether the end of the current era can possibly lead to workable global good governance.

With such huge threats it is necessary to realistically size up everything. Copenhagen 2009 represents the failure of the nation state system, while Cochabamba 2010 represents a collaborative form of decision-making to realistically address climate and economic reality. Leadership at the nation-state level characteristically fails. There is an incapacity to collaborate, to comprehend ecological reality, and to assume personal responsibility. From a psychological standpoint, it is now acceptable in the seemingly developed world to expect less from leaders and followers than from kindergarten-age children. It is certainly the time to work very hard. And all university students and faculty need to read Hansen’s book

<sup>1</sup> See graphs on atmospheric CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, ozone depletion, loss of tropical rain forest and woodland, amount of domesticated land, global biodiversity, floods, fully exploited fisheries Speth’s book p. XX-XXI, or <http://www.newscientist.com/articleimages/dn14950/1-special-report-the-facts-about-overconsumption.html>

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## Can the U of T Be an Agent for Social Change?

*Sara Suliman*

Universities are often publicly perceived to be spaces for objective research and critical thinking to challenge the existing status quo and promote progressive social change in the society. Yet in practice campus campaigns which initiate progressive policies are more likely to be led not by higher administrators, but by organized student

activism, with some participation by faculty and community allies.

A relatively recent example at the University of Toronto was the successful non-violent civil disobedience in “The Gate-Crash Debate” in 1967, where a group of four women, inspired by the mass mobilizations against racial discrimina-

tion in the States, held a sit-in at a men-only event to inspire the end to the men-only policy at Hart House. More recently, in the 1980's, the "Divestment Committee" grew out of the African and Caribbean Students' Associations to spread awareness and opposition to trade with the racist South African Apartheid regime, a campaign which eventually won U of T's divestment from South Africa. These were quite impressive examples of action at a university promoting social change. But does the University's bureaucratic structure embrace that role, or does it rather have primary allegiance to the neo-liberal agenda, and merely accept for PR purposes some scattered examples of modest progressive victories?

One can argue that in order for the University to remain a site of critical and free expression, it must preserve its autonomy from the private sector and partisan politics. Certainly the escalating number of industry-academia partnerships constitutes a clear threat of private interest contaminating the objectivity of research; such conflict of interest is especially serious in medical and pharmaceutical research where it poses a direct threat to the public. The 2005 historical case of Apotex's pressure on Dr. Nancy Olivieri was one of the few incidents of such pressure becoming public; most researchers keep their complaints quiet, out of fear of reprisal and the lack of adequate whistle-blower protection policies at the institution.

Additionally, research ought to serve the public rather than any private sponsor, if the University is to uphold its historical institutional purpose: *"The University of Toronto is dedicated to fostering an academic community in which the learning and scholarship of every member may flourish, with vigilant protection for individual human rights, and a resolute commitment to the principles of equal opportunity, equity and justice"*<sup>1</sup>. The recent treatment of dissent and free expression is in clear contrast with this articulated ideal, and seems more designed to protect the material and ideological interests of elites. When the G20

met in downtown Toronto last June, the University Vice-President and Provost, Cheryl Misak, far from welcoming the many critical voices in academe and the surrounding society, closed the campus, putting the maximum chill on dialogue. When autonomous student unions carried out the moral responsibility of raising awareness and organizing peaceful actions during the week, they were attacked by riot police violently invading the Graduate Students' Union (GSU) office on the Sunday morning and arresting upwards of 200 peaceful demonstrators – this without seeking University permission. It is not known that Dr. Misak made any objection to this arrogant invasion of campus.

Similar stifling of dissent occurred in earlier months when students organizing against Israeli Apartheid through the Ontario Public Interest Research Group (OPIRG) were banned from booking rooms on the University campus for events and discussions during Israeli Apartheid week<sup>2</sup>, and when custodial staff members were ordered by the University administration to remove posters exposing the human rights atrocities carried by Barrick Gold<sup>3</sup>.

The current proposal for academic "restructuring" of the Faculty of Arts & Science was a unilateral decision from the Dean's office; strong faculty protests have forced a general debate which in a democratic institution would have come first. It is unfortunate for an institution claiming to be a "community in which the learning and scholarship of every member may flourish" to disregard the input of the top scholars and top students on which it prides itself. Some blame U of T's "unilateral" governance structure, which dispenses with an intermediary academic senate giving binding power to faculty and students. Using the pretext of fiscal responsibility to justify program cuts<sup>4</sup>, Dean Meric Gertler blatantly declares that *"in the course of the past two annual budget planning cy-*

1 Statement on Institutional Purpose: [http://www.governingcouncil.utoronto.ca/policies/mission.htm#\\_Toc190598501](http://www.governingcouncil.utoronto.ca/policies/mission.htm#_Toc190598501)

2 <http://www.socialistproject.ca/bullet/bullet188.html>

3 <http://thevarsity.ca/articles/2015>

4 Arts and Science Academic Planning Document: <http://www.artsci.utoronto.ca/faculty-staff/academic-planning>

*cles, we began the transition from uniform, across-the-board budget reductions for all units to a more strategic and selective approach.*” Many students’ fears that the cuts selected will deprive them of the quality of education they expected, and even the programs they chose, were articulated by Adam Awad, president of the University of Toronto Students’ Union. The proposal, among other things, includes the disestablishment of ethno-cultural clusters such as East Asian Studies and Near and Middle Eastern Civilization (NMC), and establishes instead a comprehensive School of Languages, thus stripping these languages from their cultural and historical contexts. Isn’t this an expression of narrow Eurocentric norms and ideologies behind the systemic discrimination against aboriginals and immigrants? Is this really the way for U of T to serve as an agent of progressive social change?

The future of the institution and its responsibility to society are in dire need of critical re-examination. If it is irremediably committed to serving a destructive neo-liberal agenda, perhaps we will have to think not about how to reform it, but instead about creating novel and independent learning spaces for alternative ideologies that can freely challenge the status quo.

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## Climate Change and Industrial Agriculture

*Edwin E. Daniel*

Our society depends on industrial agriculture for cheap foods. Yet ongoing climate change already has led to extreme weather, including droughts, floods, and heat waves, all so severe as to damage or destroy crops. We need to consider what humanity will face as these manifestations of rising world average temperature proceed – all humanity, not just the affluent West.

Industrial agriculture is the large scale, high output, low cost agricultural methods adopted in the United States, Canada, and Australia, and be-

ing imposed increasingly on the rest of the world. It is the agriculture that raises millions of chickens crowded together, each in caged living space less than their wing spread. One recent result was the recall of over 500 million eggs produced by chickens infected with salmonella. These eggs were cheaper by about half than eggs from “Free Range” chickens. The excrement from these farms infects chickens and anything it contacts.

Industrial agriculture also involves large scale, crowded, industrial facilities for raising cattle and pigs. These animals are crowded to prevent them moving, except to eat. They are fed antibiotics to promote growth and overcome the filth in which they live. Indeed, these animals in North America consume more antibiotics than the humans in the rest of the world. As the antibiotics are not fed in relation to any infection or in therapeutic dosages, bacteria rapidly become resistant to them. The result is antibiotic resistant bacteria on meat products from these farms. The meat from these animals is much cheaper than meat from range fed cattle and pigs.

Industrial agriculture also means large scale, mono-culture cropping of plants like corn, soy, wheat, barley, and cereals in general. Often these plants have been genetically engineered (GE) to be resistant to the broad spectrum herbicide glyphosate (Roundup Ready), or to produce toxins from *Bacillus Thuringiensis* (BT), a soil bacteria used especially in corn cropping. Farmers who raise these GE plants also buy the herbicide, as well as the seeds, from Monsanto, a monopoly company. The practice of farmers with these GE crops is to raise them on a large scale and apply heavy doses of herbicide, using machinery both to plant and harvest. The farmers must also use heavy doses of commercial fertilizer containing nitrogen and phosphorus to replenish the soil depleted by monoculture. The result is food that is cheaper than food raised organically or on a small scale, using crop rotation, composting, or no-till methods.

The requirements for large-scale farming include heavy machinery and fossil fuel to operate them. Fossil fuel must also be used to transport

crops or meat or eggs to market. At a store in Victoria, I often find apples from New Zealand cheaper than apples from British Columbia. I find grapefruit from Texas and Mexico, even Florida, and many fruits and vegetables come from California or Mexico. These foods are available throughout the year, not just during the local growing seasons. Fossil fuels are utilized to transport food over very long distances and to keep products of industrial agriculture available and cheap. Fossil fuels are also used in the manufacture and transport of fertilizers.

How will climate change affect our dependence on industrial agriculture for cheap foods from around the world? What about the ongoing availability of cheap fossil fuel?

It is already clear that severe weather from global warming will cause serious crop failures. This year wheat crops failed in Russia and Asia because of extreme heat and drought. There were problems with getting wheat crops planted in Canada owing to a wet, cool spring. Floods and winds have destroyed much of this year's crops in Pakistan and elsewhere. As developing nations are forced by import of cheap food from industrial farming to give up small scale and family farming, any failure throughout the world will have impacts nearly everywhere.

Genetic engineering has not succeeded in producing crops resistant to drought, excess moisture, or heat, or capable of germination under extreme conditions of wet or dry springs. GE and industrial farming have also resulted in loss of genetic diversity of plants and animals. Seed saving by farmers has been replaced by yearly seed purchase from GE companies like Monsanto by those engaged in industrial agriculture.

Global warming will also impact industrial farming of animals who cannot survive extremes of heat and cold. The availability of water for plants and animals will be reduced. Already, especially in the USA, industrial agriculture is using up "fossil water," water not replaced yearly and in limited supply.

The price of fossil fuels is currently high, but much lower than its past peak. Though there is

still argument about when or if there is peak oil, clearly, oil will have to come from places accessible only by complex technology, such as deep in the oceans, even the Arctic oceans, or from tar sands. The dangers to the environment are manifest from recent events in the Gulf of Mexico and the contamination of the Athabasca River. Oil from tar sands contributes gross quantities of CO<sub>2</sub> and other pollutants that increase global warming. Natural gas is being derived from shales by methods requiring the breakup of shale and rock formations and consequent contamination of ground water.

Fossil fuel supply and hence its current lower price are both also subject to the danger of imperialist war in the Middle East and local resistance to exploitation and environmental damage in places like Nigeria and Ecuador.

Is there a solution? If so, I am not sure what it will be. Urban gardening for food and organic farming are spreading and offer hope. Resistance to GE crops is alive, especially in Europe. The movement for food sovereignty, manifest in La Via Campesina, is growing. Cuba and Venezuela are working toward local sustainable food security. However, their examples are unlikely to appeal to the leaders of the "Developed World".

Moreover, world population continues to increase and the availability of food grown by sustainable methods does not keep pace. The powers of industrial agriculture and those who profit from it to influence the moral, economic, and political decisions that must be made are such that needed rational and revolutionary proposals may not be adopted in time.

As members of Science for Peace, we have the obligation, in my opinion, to educate, to agitate, and to act in all possible ways to bring sustainable agriculture to Canada as an example to the world.

## Biochar-Enhanced Sequestration of Atmospheric Carbon Dioxide

*Derek Paul*

Biochar has recently received very positive press and is being promoted by several non-governmental groups. One hears from time to time the claim that “biochar sequesters carbon dioxide,” and this claim requires explanation to the uninitiated, though it is well understood by those who have researched this field<sup>1</sup>. Woolf et al.<sup>2</sup> have in fact shown how the sequestration can increase steeply and eventually level off as the benefits saturate in the long term. This paper deals with the sequestration at early times in the process of application of biochar to agriculture. A simple model of the inputs and outputs of carbon dioxide into and from the atmosphere is outlined.

The processes by which biochar gives rise to net sequestration of CO<sub>2</sub> are the following: 1) The biochar itself is produced by pyrolysis of waste organic matter of almost any kind; 2) the resulting charcoal (biochar) is then put into the ground, preferably with mulch or compost etc., to improve the fertility of the soil; 3) the additional plant growth resulting from the enrichment of the soil gives rise to additional sequestration through photosynthesis, and in general this means better plants and crops as well. There is an annual cycle at work here, at least, in temperate climates so, instead of using differential equations, we can do the arithmetic in one-year steps.

### Single enrichment with biochar

The simplest example is the following. A single batch of biochar is made from a mass of solid organic waste, resulting in approximately  $T$  tonnes of biochar and about  $T$  tonnes of carbon put back into the atmosphere. [The initial mass of

organic waste is greater than  $2T$  tonnes, because the organic waste contains other elements than carbon.] The process of pyrolysis is exothermic, so that the heat generated can be used industrially or domestically. Nevertheless, about  $T$  tonnes of carbon are put back into the atmosphere, which is to be recovered through additional photosynthesis in the next years. Suppose now that the  $T$  tonnes of biochar are distributed in the top 20 cm of soil at 1 kg/m<sup>2</sup>, it would enrich  $T/10$  hectares of land. The precise area of land is not important in this analysis; what will turn out to be important is the length of time that is required to sequester the tonnage of carbon equal to the tonnage returned to the atmosphere through pyrolysis. We now assume that the biochar (plus mulch, as appropriate) will increase the photosynthesis on that area by  $T/x$  tonnes of growth in the first year. We have thus returned  $T$  tonnes of carbon to the atmosphere and reabsorbed  $T/x$  additional tonnes by photosynthesis through soil improvement. Provided the soil is kept as fertile from year to year as it was the first year, possibly by adding some more mulch, the same growth (approximately) will be possible in subsequent years as occurred the first year, given adequate rainfall, etc. as is always necessary when we are considering plant growth. This means that in  $x$  years, all the initial carbon put back into the atmosphere through pyrolysis has been recovered through photosynthesis. Further enhanced growth in the next few years on that land results in net sequestration (see the numbers in the line for year 1 in Table 1).

This picture is of course highly simplified, and smoothes over the real results for good and bad growing seasons. It also assumes that the effectiveness of the biochar is constant, whereas that property needs to be measured. Does biochar deteriorate with time?

### Multiple enrichments with biochar

To produce those first  $T$  tonnes of biochar required a pyrolytic oven, and it would be sensible to use this oven to its capacity every year. The second year's biochar would be spread similarly

<sup>1</sup> Dominic Woolf, James Amonette, Alayne Street-Perrot, Joseph Lehmann and Stephen Joseph, “Sustainable Biochar to Mitigate Global Climate Change,” *Nature Communications* 1 article 56 2010

<sup>2</sup> *Ibid.*

on a different acreage, not necessarily adjacent to the first. The soil quality might be different, the crop(s) might be different, and the value of x might be different. Here, however, we shall somewhat oversimplify the picture by adopting an average x-value as being broadly applicable and constant for many years. Table 1 illustrates the result of the first few years of making T tonnes of biochar and spreading it each year throughout an appropriate area. The last line in the table sums the previous lines, to yield the total sequestration over 12 years. Negative values imply that we have put more carbon into the atmosphere than has been sequestered.

We see from the sums, last line in Table 1, that a break-even point is only arrived at in year eight, eight being twice the value of x, and net sequestration begins in year nine. A general formula for the net sequestration, S, as a function of x is

$$S = A + B (y - x + 0.5)^2$$

where y is the year, counting from 0, and

$$A = - (2x + 1)2/8x \text{ and}$$

$$B = 1/2x$$

The coefficient B is most important, as it determines the parabolic rise in net sequestration in the long term. The larger B is, the sooner net accumulated sequestration is achieved and the greater that sequestration becomes. For x = 4, as

in table 1, at the end of year 12, 12T tonnes of charcoal have been put in the ground, and a net benefit of 6.5T tonnes sequestration has already been achieved. If the planting of charcoal goes on constantly, the total net sequestration follows a parabolic relation, increasing once it has passed the minimum point.

For large values of x, however, the cross-over (or break-even) point at 2x years is so far into the future that it could be irrelevant to addressing climate change in the present, urgent situation. But biochar could still have great benefits for agriculture at high x-values, especially in soils that do not retain water well. There is a remedy for the initial period in which the net sequestration is negative, namely, recovering the effluent gases from pyrolysis. The high carbon dioxide content of the effluent makes it suitable for algae production under controlled conditions, and a great deal is known about useful types of algae that can be produced from carbon dioxide through photosynthesis in water tanks. Recently, there has been mention of “liquid smoke” as a byproduct of emission-free pyrolysis of coconut residues<sup>3</sup>, though there appears to be little demand yet for liquid smoke.

<sup>3</sup> Oikocredit Info 2010 No.1, p.6

Year	0	1	2	3	4	5	6	7	8	9	10	11	12
Implant													
1	-1	-0.75	-0.5	-0.25	0	0.25	0.5	0.75	1.0	1.25	1.5	1.75	2.0
2		-1	-0.75	-0.5	-0.25	0	0.25	0.5	0.75	1.0	1.25	1.5	1.75
3			-1	-0.75	-0.5	-0.25	0	0.25	0.5	0.75	1.0	1.25	1.5
4				-1	-0.75	-0.5	-0.25	0	0.25	0.5	0.75	1.0	1.25
5					-1	-0.75	-0.5	-0.25	0	0.25	0.5	0.75	1.0
6						-1	-0.75	-0.5	-0.25	0	0.25	0.5	0.75
7							-1	-0.75	-0.5	-0.25	0	0.25	0.5
8								-1	-0.75	-0.5	-0.25	0	0.25
9									-1	-0.75	-0.5	-0.25	0
10										-1	-0.75	-0.5	-0.25
11											-1	0.75	-0.5
12												-1	0.75
13													-1
Sum	-1	-1.75	-2.25	-2.5	-2.5	-2.25	-1.75	-1	0	1.25	2.75	4.5	6.5

**Table 1**

*Sequestration through biochar for x = 4 and successive annual implantation of biochar. All numbers in the table are to be multiplied by T, the tonnage of biochar placed annually in soil. The numbers in each line are those of the line above, shifted one year to the right.*

## Forests

The simplified model above may not apply in the identical arithmetic way to tree growth, but one can safely assume that the maximum increase in photosynthesis will be achieved when the least fertile ground is converted to the most fertile. Afforestation is one of the most important activities that should be embarked upon wherever it makes sense to do it, with or without biochar. But biochar could play a most important role where water retention in the soil is critical.

## Offsets

The arithmetic given here applies, but perhaps only very approximately, to offsets claimed by airlines, such as Air Canada, when they tell passengers that their carbon emissions resulting from flights are offset by tree planting. Since the flights take place daily, and from year to year, no net sequestration fully compensating the emissions, takes place for the first  $2x$  years, where  $x$  is the number of years of the per-passenger tree growth required to offset completely one person's share in the emissions for one flight.

## Conclusions

It is shown here, in a simple model applied to annual crops, that sequestration following the implantation of biochar in soils rises linearly for a one-shot implantation, but quadratically if the implantation is continued annually. Annual biochar implantation doubles the time of onset of net overall sequestration, as compared with the one-shot implantation.

It is important in the context of climate change to apply such biochar where the supplementary sequestration through photosynthesis is maximized, so that the break-even time in sequestration  $2x$  years is as short as possible. Such cases also provide the most sequestration. However, this needs to be done with due regard to biodiversity, and likely requires the avoidance of monocultures. Use of charcoal (biochar) to enhance growth with long break-even times can be useful, but should

be accompanied by processing the effluent from pyrolysis to capture the carbon. Such capture of carbon effluent may raise the cost of pyrolysis, but can yield other useful products, and would eliminate the period in which the net sequestration is negative, that is, in which the pyrolysis has caused a net increase in atmospheric CO<sub>2</sub>.

## 65 Years: It's Time to Retire the Bomb!

*Phyllis Creighton*

Some 200 of us gathered at the Peace Garden facing Toronto's City Hall on August 6<sup>th</sup> to remember Hiroshima ... the blue-white atomic flash unleashing fiery hell on earth, with people vapourized into a mushroom cloud – burned like charred logs ... or, in agony, fleeing the destroyed city. That day 65 years ago changed the world.

As MC of the event, organized annually by the Hiroshima Day Coalition,<sup>1</sup> I noted that people in Toronto and in Canada's cities are still at risk. With some 22,300 nuclear weapons, most in the arsenals of the US and Russia,<sup>2</sup> 2,000 in Russian and American hands are on launch-on-warning, ready to be dispatched in four to eight minutes and to reach their targets in half an hour. Citizens are the targets, pawns in the nuclear exercise, according to Romeo Dallaire, who had 30 years' experience as a NATO Cold Warrior.<sup>3</sup> Furthermore, scientists assert that even a small-scale nuclear exchange of 100 Hiroshima-size bombs, say between India and Pakistan, would cause severe climatic consequences, cooling and darkening for a decade or more, slashed food production, and starvation of possibly a billion people across the

<sup>1</sup> See [www.hiroshimadaycoalition.ca](http://www.hiroshimadaycoalition.ca)

<sup>2</sup> Steven Starr, figure updated 6 April 2010, at <http://www.nucleardarkness.org/globalnucleararsenal/statusofworld-nuclearforces>

<sup>3</sup> "A dialogue about nuclear disarmament on the occasion of the 50th anniversary of the Pugwash Conferences on Science and World Affairs," at Thinkers Lodge, Pugwash, N.S., 7 July 2007, in Sergei Plekhanov, email 3 Aug. 2010

globe.<sup>4</sup> More countries with nuclear energy – 30 or 40 – could acquire nuclear weapons, as might non-state actors. Yet nuclear weapons cannot protect us from enemies – they are the enemy. Their abolition is critical for the human future, as the *hibakusha* – the bomb survivors – warn!

After Councillor Janet Davis read Mayor David Miller's Declaration of Hiroshima Day, affirming citizens' commitment to abolition, the Peace Declaration of Hiroshima's Mayor Tadatoshi Akiba was read by Joe Otori, a *hibakusha*. Fifty thousand people – and, for the first time, the US ambassador to Japan and officials from France and the UK – had, I noted, heard it at Hiroshima's August 6th commemoration. Akiba asserted that the unanimous intent expressed at the May Nuclear Non-Proliferation Treaty Review Conference (NPT RevCon) to seek nuclear weapons abolition, and its highlighting of the need for a nuclear weapons convention or new legal framework, testify to the guiding influence of *hibakusha* (some 1600 of them had travelled to New York to be present). "Clearly, the urgency of nuclear weapons abolition is permeating our global conscience ... To seize this unprecedented opportunity and actually achieve a world without nuclear weapons, we need above all to communicate to every corner of our planet the intense yearning of the *hibakusha*," he urged. And he promised to work with like-minded nations, NGOs, and the UN to "generate an ever-larger tidal wave of demand for a world free of nuclear weapons by 2020."<sup>5</sup> This is the goal of Mayors for Peace, with 4,144 members (including our mayor) from 144 countries and regions.

We held a minute's silence of remembrance, and at the end of the evening we followed the haunting melodies of a flutist through the Peace Garden to the pool, where coloured lanterns with peace messages were released to drift across the waters in the dusk, as they do in Hiroshima, on

the river.

During the evening, we heard about hopeful initiatives. A York University student briefly told us about Global Zero, its petition and its efforts to educate and mobilize Canadians, especially students in this strand of the abolition movement (launched at a Paris conference in 2008). Grade 12 student Sophie Feltes, terming the atomic bombings *unspeakable*, urged: "Youth are the most important people to provide with knowledge about the danger of nuclear war because they have the audacity and strength to take on such a massive issue... "Help our youth realize that they are not alone, and that the more people come together, the more power we have."

Longtime peace activist Murray Thomson spoke about the project that he, former Senator Douglas Roche, and John Polanyi initiated 18 months ago to enlist members of the Order of Canada in calling the government of Canada, and those of other nations, to endorse negotiations for a nuclear weapons convention (NWC), as proposed by the UN Secretary-General Ban Ki-moon. Murray told us 518 members of the Order had endorsed the appeal for a NWC and a 35-minute meeting had been held with Prime Minister Stephen Harper in April. Then on June 2 the Canadian Senate unanimously endorsed the NWC and sent the motion to the House of Commons seeking adoption by the two houses of parliament.

As I noted, nuclear weapon-free zones (NWFZ) are already denuclearizing the world – eight of them include, in total, 119 states with 1.9 billion people. Adele Buckley, past chair of the Canadian Pugwash Group, spoke about the new Arctic NWFZ initiative being pursued by the Canadian Arctic Security project. With melting Arctic sea ice, the region's opening to a resource race, the government's interest in reinforcing Canada's sovereignty in the North, and the presence of two nuclear-armed nations, the US and Russia, among the eight Arctic states, this initiative is timely and promising.<sup>6</sup>

4 Malcolm Fraser, Gustav Nossal, Barry Jone, Peter Gratton, John Sanderson, and Tilman Ruff, "Imagine there's no bomb," *The Age*, 8 April 2009, accessed 31 Aug. 2009, at <http://www.theage.com.au/opinion/imagine-theres-no-bomb-20090407-9zj0.html>

5 Hiroshima Peace Declaration 2010 accessed 6 Aug. 2010 at <http://www.pcf.city.hiroshima.jp/declaration/English/2010/index.html>

6 For more on the Arctic NWFZ initiative, see [www.pugwashgroup.ca/](http://www.pugwashgroup.ca/)

Our keynote speaker, Liberal parliamentary foreign affairs critic Bob Rae, said “This game of nuclear proliferation is a game that humanity cannot win ... that itself creates an insecurity which is ever growing and ever increasing. And that is why there is a compelling and overwhelming logic to the need for a treaty in which the world comes together and agrees we are going to first reduce these weapons, then we are going to eliminate these weapons, and we are going to create the institutions which will give everyone the confidence that the weapons are gone: they are no longer being tested, they are no longer being developed; they are no longer been seen as potential for use. That is a need, a necessity, a requirement for a sensible world politics going forward over the next 20 years. This is a cause to which we must all become attached.”<sup>7</sup> Monitor Liberal policy in light of his bold claims!

The Harper government has said that the NPT RevCon contained seeds of hope. The conference pledged “to achieve the peace and security of a world without nuclear weapons” and made a commitment to address the Middle East – where Iran is suspected of seeking nuclear weapons and Israel is known to have them – by convening a conference of all Middle East states in 2010 on a Middle East Zone free of all weapons of mass destruction. It also put a NWC – a treaty setting out the specifics of how to achieve abolition – on the international political agenda.<sup>8</sup> International Physicians for the Prevention of Nuclear War says roughly two-thirds of the world’s governments are committed to begin negotiations on such a convention immediately, but Canada is lukewarm.<sup>9</sup> Speaking at the Hiroshima International Conference on July 28, Douglas Roche – who was made an honorary citizen of Hiroshima – declared: “The crucial point is to start preparatory work now before the present window of opportunity

7 See <http://www.youtube.com/watch?v=jCJJSJpCSg>, a clip on our Hiroshima Day event by New Canadian News, at the 5.30 minute mark

8 Douglas Roche and Ernie Regehr in *Embassy Magazine* (Ottawa), 2 June 2010, at <http://www.embassymag.ca>

9 *Towards nuclear abolition, a report by the International Campaign for the Abolition of Nuclear Weapons*, June 2010, p.6

closes.”<sup>10</sup> Monitor Canadian policy and press the government for action!

Ban Ki-moon had told the 1,000 gathered at a public conference in New York just before the NPT RevCon: “Nuclear disarmament is not a distant goal, it is an urgent necessity. Real change will come only through consistent, strong public pressure – on a global scale, and from the grassroots... Continue to be the voice of conscience. We will rid the world of nuclear weapons.”<sup>11</sup> Nagasaki’s Mayor in his August 9<sup>th</sup> declaration urged: “For our children, we have a responsibility for creating a future without the fear of nuclear weapons. Even though on our own each of us might be small and weak, by joining together we can become a force to make governments act and to create a new history.”<sup>12</sup>

Ban Ki-moon at the August 6<sup>th</sup> ceremony in Hiroshima warned: “Nuclear disarmament is often dismissed as a dream, when the real fantasies are the claims that nuclear weapons guarantee security or increase a country’s status and prestige. The only guarantee of safety, and the only sure protection against the use of such weapons, is their elimination. Let us work toward the day when governments no longer have a choice but to respond to the will of the people for a nuclear free world.”

Observing that abolitionists are on the right side of history, Roche concluded his address with this plea: “We must constantly appeal to the conscience of humanity to take steps to ban the instrument that would destroy all life on the planet.”<sup>13</sup>

I urged the gathering – and, now, you: Pledge to mobilize others for abolition before the *hibakusha* and their witness are gone!

10 “A Nuclear Weapons Convention: the Time is Now,” p.4, accessed 6 Sept. 2010 at [http://www.gsinsitute.org/mpi/pubs/07\\_10\\_Roche\\_Hiroshima\\_speech.pdf](http://www.gsinsitute.org/mpi/pubs/07_10_Roche_Hiroshima_speech.pdf)

11 Nancy Covington, “News my husband didn’t hear,” *Turning Point* (Physicians for Global Survival), XVI, no.2, summer 2010, p.5.

12 Appeal accessed 6 Sept. 2010 at <http://www1.city.nagasaki.nagasaki.jp/peace/english/appeal/>

13 *Op.cit.* in note 9, p.11

## At the Edge

Phoebe, we would expect you  
every year with your mate nesting on the porch  
up under the eaves in the safe dark  
though the floor right below you was slantly sunlit:  
every spring you knew the spot and came back  
    or your son, or grandson, whichever,

and then one year not. And then not again.

We drew up blame sheets:  
it hadn't been enough that we quit sitting on the porch,  
we ought to have stayed off it altogether  
    until your little ones had flown  
to make sure you remembered it as a phoebe haven  
where you'd nested well, you  
    or your father, whichever.

When you had wintered well  
this would be a good forest for a phoebe to come north to,  
    our Hill here  
(or for a vireo, or a catbird—  
but you sang right past them, it's just the phoebes  
    you sang to and heard sing);  
the Hill had at least four phoebe nests every summer  
  
and then fewer. And maybe next summer none.

We drew up blame sheets again:  
our children make too much uproar in the woods,  
we ought to lock our dog in at night,  
we ought never to have let our guest bring her cat for a week,  
the Hill is not phoebe-friendly like this—

but now a deeper blame sheet hushes us:  
the Hill is phoebe-friendly  
but it is not enough of a forest to be a phoebe haven  
    (or vireo, or whippoorwill)  
and it never was: it was the edge  
    of a forest worth flying north to,  
and you came and made homes in that forest  
    right out to the edge  
    our porch

until now that the heart of the forest has fallen  
to grinding aliens with mandibles of steel  
not edible by rodent or worm  
not even lysed by clostridium and methanobacterium,  
now our Hill is left, but it is not enough forest  
with the heart gone.

You come to the Hill for these few last summers  
    though it is not enough,  
we glimpse you at forest's edge in time too as in space.

I need there to be some phoebe country to which you come,  
and though my habitat is not yours or the muskrat's  
I would wish when I have wintered well  
to come to your same forest  
    at the edge,  
I or my son,  
    or grandson, great-grandson, whichever.

—Chandler Davis

2008

**Editor's Book Nook**

Shirley Farlinger

***The Russian Quest for Peace and Democracy*** by Metta Spencer. Lexington books, 2010.

"In this book Metta Spencer tells the important but neglected story of the contacts between Western peace activists and Soviet intellectuals (both official and dissident) through the words of those who took part. In so doing she dispels the myths prevalent in Western policy-making circles that the West won the Cold War through its military strength – myths that still have a distorting effect on policy. Anyone who wants to know how the Cold War ended will find this book immensely useful." (Mary Kaldor, of the Centre for Global Governance).

***It Walks in Beauty*** by Chandler Davis. Aqueduct Press, 2010.

Now a mathematician of some renown, a civil liberties activist on a global scale, a published poet, and a leading figure of Science for Peace, Chandler Davis was in his youth a member of the 1940s science fiction community. His new book, *It Walks in Beauty*, collects four of his political essays, a speech on the legacy of the Red Scare in U.S. politics, two open letters from his career of human rights advocacy, and five of his thirteen science fiction stories.

See announcement of the book <http://www.aqueductpress.com/books/ItWalksInBeauty.html>, contact [info@aqueductpress.com](mailto:info@aqueductpress.com). The book can be ordered locally at Bakka Books <http://www.bakkaphoenixbooks.com/>.

***New Entrepreneurs: Building a Green Economy for the Future*** by Andrew Heinzman (co-founder of Investeco). Anansi Press, 2010.

***The Armageddon Factor: The Rise of Christian Nationalism in Canada*** by Marci McDonald. Random House Canada, 2010.

***Losing Confidence: Power, Politics and the Crisis in Canadian Democracy*** by Elizabeth May. McClelland & Stewart, 2010.

***Eaarth: Making a Life on a Tough New Planet*** by Bill McKibben. Alfred A. Knopf Canada, 2010.

***The Trouble with Billionaires*** by Linda McQuaig and Neil Brooks. Penguin Group Canada, 2010.

***Storms of My Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity*** by James Hansen. Bloomsbury, 2009.

***The Bridge at the Edge of the World: Capitalism, the Environment and Crossing from Crisis to Sustainability*** by James Gustave Speth. Yale University Press, 2008.

***Justice Not Greed*** ed. by Pamela Brubaker and Rogate Mshana. World Council of Churches, 2010.

***Obama's Wars*** by Bob Woodward. Simon & Schuster, 2010

***The Story of Stuff*** by Annie Leonard. Free Press, 2010

**FILMS**

***The End of the Line*** by Greenpeace on overfishing.

***Force of Nature: the David Suzuki Movie.***

## News and Events

### Teach-In – From Bolivia to Toronto: Building a World Movement for Climate Justice

Saturday, November 13, 10 a.m. – 5 p.m. at Sidney Smith Hall, Assembly room 2118 (100 St. George St.), Toronto

Keynote Speaker: **Erika Dueñas**, Chargé D'Affaires, Embassy of the Plurinational State of Bolivia, Washington, D.C.

Presentations and working groups on:

- Cochabamba Declaration
- Environmental (In)Justice in Our Communities
- Moving Toward Cancún: Building an Alternative

Initiated by **Toronto Bolivia Solidarity**, contact: [torontobolivialsolidarity@gmail.com](mailto:torontobolivialsolidarity@gmail.com)

Registration: 9 a.m. – Donation: \$10 (includes lunch)

### Eric Fawcett Dinner

Saturday, November 13, 6:00 p.m. for 6:30 p.m. at Armour Heights Officers' Mess, Toronto

*Transnational Security Challenges: Threats Without Enemies, Security Without Borders*

Keynote address by **Prof. Ramesh Thakur**, former Assistant Secretary-General of the United Nations

**RSVP.** Limited Seating. Cost including Dinner: \$20. Cash Bar.

### Eric Fawcett Forum

Sunday 14 November, Lunch at 12:30 p.m. Forum 1:30 – 4:00 p.m. at Armour Heights Officers' Mess, Toronto

**RSVP** for Lunch & Forum. Lunch \$15. (No charge for afternoon forums.)

For both events, to reserve your seat, please email: [dorn@rmc.ca](mailto:dorn@rmc.ca)

Organized by Pugwash Canada and Science for Peace

### Building Peace: Resisting War: 50th Anniversary Celebration and Conference of Canadian Voice of Women for Peace

November 12 – 14, at Hart House, 7 Hart House Circle, Toronto

Events include gala dinner, panels and presentations and a play *The 1325 Key to Peace* by Shirley Farlinger. More information at [www.vowpeace.org](http://www.vowpeace.org). Contact: 416-603-7915 or [info@vowpeace.org](mailto:info@vowpeace.org). Tickets from UofTtix Box Office: 416-978-8849 [www.uofttix.ca](http://www.uofttix.ca).

See updates and more information on events organized or cosponsored by Science for Peace at [www.scienceforpeace.ca](http://www.scienceforpeace.ca)



## Membership Dues 2010

Science for Peace does a great deal on very little funding. The funding comes from us, the members. We're proud of what we've been able to do in 2010 on such a small budget, but let's remember that though we have pretty well spent the budgeted amount, we haven't raised that amount yet. To balance the books we need to pick up a few thousand dollars more: membership dues from those who didn't get around to paying yet, and supplementary contributions from any of us. Both dues and other contributions are deductible for income tax and will be receipted for the purpose.

*Chandler Davis, Treasurer*

Membership fees and donations can be paid by sending a cheque to the Science for Peace office: 045 University College, 15 King's College Circle, Toronto, ON M5S 3H7, or by paying online through CanadaHelps at <http://www.canadahelps.org>.

**Rates:** Regular members: \$100, retired: \$40, students: \$20 and Pay What You Can (PWYC).