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INTERPOLAR ART 24 September 2008 – 12 October 2008

with Marko Peljhan and Annick Bureau, Bureau d'études,
Ewen Chardronnet, Andrea Polli, Catherine Rannou.

The extreme in the centre

by Annick Bureau

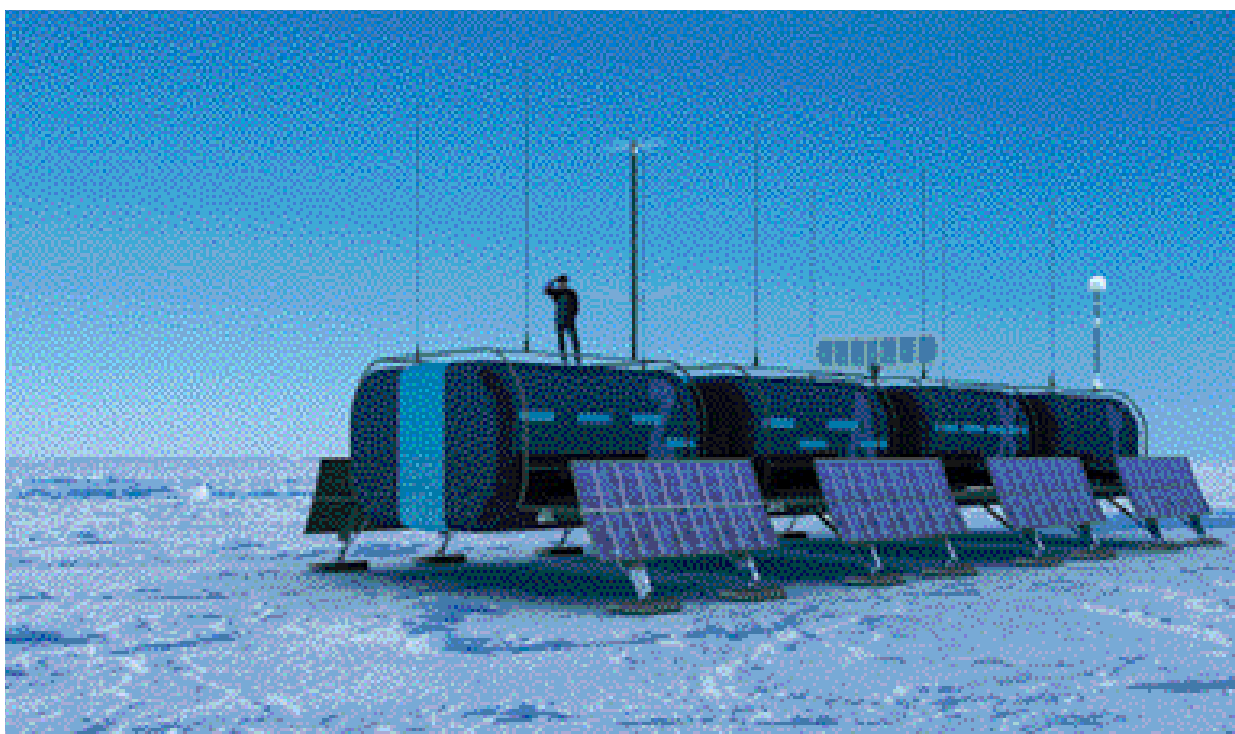
From the very first polar expeditions, artists have contributed to the imaginary surrounding the Earth's "extremities" and their work has fed a sense of the sublime and of romanticism.

Such a romantic vision endures, fuelled by adventurers of the extreme, who set out crossing, alone, the antarctic continent, the touching (and anthropomorphic) image of penguins, the deadly beauty of the environment conveyed by thousands of images of "icy white", and by the fact that Antarctica is now threatened by global warming and our pollution, that this last huge, supposedly virgin, territory is in danger.

To create in or about Antarctica today is as much a political as an artistic act, just as it was in the 19th or early 20th century. Except today the continent faces quite a different reality and our approaches are probably more varied, more contradictory, more complex; burdened with numerous clichés all the more enduring for being mostly true.

Current artistic practices are diverse in terms of content as well as medium, but all show commitment: creating in Antarctica makes one a player rather than a mere witness. The four artists, or groups of artists, in this conference series entitled "Art in Antarctica" are exemplary in the variety of their approaches and by the issues they raise, each one echoing the others: climate changes and more broadly relationship to the ecosystem, data processing and data "perception-understanding", national organization of bases on a continent where state possession is banned, habitat issues, Antarctica as a life-size laboratory and what is at stake there from a geostrategic perspective, the vision of a global world emerging from the heart of isolation. Artists today work towards "putting the poles in the centre".

Annick Bureau, lives and works in Paris. New media art critic and theoretician, director of Leonardo/Olats (www.olats.org).



I-TASC - The Arctic Perspective

by Marko Peljhan &
Matthew Biederman

"Inuit are more likely to have an immediate, which is to say unmediated perception of the surrounding environment and living things within it. We to the south are all but wholly insulated from the local landscape, and from what we are doing to both domesticated animals and wildlife. Our perceptions of "the environment" are heavily mediated by the mass media, which report about global warming in particular. Nevertheless, the array of climate opinion and the various uses it's put to are broadly the same in North and South. We to the south may therefore learn something about ourselves from an understanding of how Inuit process climate-related information." (Franklyn Griffiths, Camels in the Arctic?, Climate change as Inuit see it: "from the inside out"; Walrus, November 2007)

The project we have been working on since 2007 directs attention to the global cultural and ecological significance of the polar regions, with a special focus on

the Arctic and the added value of that an open infrastructure of new communications and information technology can provide.

The Arctic is one of the zones of crucial contemporary geopolitical controversy and simultaneously a space with an opportunity for transnational, circumpolar, and intercultural cooperation and collaboration. In view of the effects of climate change, the indiscriminate economic exploitation of untapped reservoirs of energy and natural resources in the polar regions is increasingly feasible and inevitable. Unfortunately, because of vested geopolitical and economic interest, all of this is happening without taking into account that there is a determined culture inhabiting the whole of the circumpolar continental territories. Through the spectacular placement of a titanium Russian flag on the seabed at the North Pole in 2007, the Arctic was symbolically once again catapulted into global public awareness. Russia's recent activities, which have been going on since 2001, together with Canada's delayed political responses and specifically the delayed implementation of previously signed native agreements (i.e. the Kelowna Accord), ...[Followed page 2](#)





MAKROLAB markI, Lutterberg, DE, 1997



EPTAP, 1999

are indicators of the shifting geopolitical significance of the Arctic and of the shifting relationship between the North and the South. Land and epi-continental claims seem to bypass and ignore the impact on Northern Native Cultures almost completely. The radical ecological and resulting cultural changes taking place in the North are in our opinion central to a critical understanding of planet Earth as a complex system.

In light of this, the Interpolar Transnational Art Science Constellation (I-TASC) in conjunction with the Consortium Transnational Art Science Circumpolaire (C-TASC), has proposed and is working towards establishing the framework conditions for collaborative projects between aboriginal cultures, artists, hunters, scientists, tactical media workers and engineers in the Arctic within three broad topical fields: migration, climate and telecommunications. These three fields, understood both in scientific and poetic terms, share complex mathematics, a changing and dynamic matrix and global reach. For the purposes of this interpretation, we see these fields wider, with migrations including the migration of flora, fauna, people, ideas and capital flows, with both climate and telecommunications are understood also very widely for the purpose of striving to establish a common projection of the complex links between these diverse territories and their connected impact. The activities of the two organizations are based on the development, installation and deployment of mobile, sustainable, zero-impact modular research units, open-source ICT (Information and Communications Technology) literacy workshops, and presentation activities within the circumpolar regions and globally.

The first implementation of the project involves the deployment of the high tech media centric mobile unit – the BALOK, the setup of an open communications infrastructure and the logistical support systems in the Arctic from 2008-2010, allowing for the continuation of sustainable operations beyond 2017. The module will be tested in the Igloodik area and the Sirajuk peninsula, Baffin Island, together with field communications, media aggregation and sensor components through a collaborative effort with the Inuit hunters, youth and media workers that will operate it and provide training to future operators.

In addition to the physical and technological systems, a key component of the project is the development of an open structure for the dissemination of content, research and design results, and a set of open data policy and participation guidelines. These guidelines can be

extended for use by future use by a variety of organizations, and individuals for use within native, scientific, cultural and academic projects and activities. In this way, the mobile, on-land media centric unit, with the establishment of an open communications infrastructure, will serve as a model for an empowered mediated mobility for the Inuit, which is one of the primary long term aims of the project.

With a focus on the creation of an inclusive working model, the collaboration among northern and southern experts will produce a true spirit of knowledge sharing and exchange, preserving native expertise while augmenting it through an open technological infrastructure. The content produced through the initiative will be open-source, co-managed by I-TASC, C-TASC and local community members in the north and south, and made available worldwide. Through this model of information sharing and exchange, a valuable history will be written and preserved and will result in the establishment of an open communications infrastructure, presentation and learning websites and workshops, videos, real-time audio-video streaming events, the publication of a series of 'cahiers', as well as public events and exhibitions in the North, and a variety of international venues, including Greenland, Iceland, Europe, Africa, the Americas, Asia and Australasia.

In our eyes, the distinction between artistic and scientific creativity is minimal. In the past 10 years, the Makrolab project set one of the precedents for an art derived, set of art/science based activities and technological developments with many tangential results. The technological innovations developed and tested in real-world conditions during the Makrolab operations include: renewable energy systems, sensor networks and remote sensing systems, unmanned vehicle systems, new open-source software and operating systems, the development of sustainable architecture and long distance communications infrastructures. The whole C-TASC / I-TASC system as we have started it in 2006 is now placed into the International Polar Year activities. This project is the only IPY endorsed art/science, technological, media/art, media "saturation" based project with indigenous Arctic culture collaboration and participation. Within the IPY, we can undoubtedly achieve the goal of establishing a solid and clear base leading to land mobility, media creation independence, and empowerment through technology, combined with the potential of being a strong intercultural dialogue enabler.

One of the inspirations for the project is provided by more than ten years of activity of the mobile, autonomous and sustainable research station Makrolab. Sited at the intersection of art, technology and science, Makrolab was created by a large interdisciplinary arts/engineering team in Slovenia. It has been operating from 1997 to 2007 and

has been set up in remote locations in Germany, Slovenia, Australia, Scotland, Italy and the United States. The final vision of Makrolab operations, has always been establishment of a permanent, collaborative, art/science infrastructure in the Arctic and Antarctic beyond 2007. In addition to providing a means for technological innovation, the project served as a platform for interdisciplinary and transdisciplinary exchange, providing creative conditions for joint teams of artists and scientists to work on the wide and global topics. While I-TASC and C-TASC on the one hand conclude the ten-year Makrolab process, their foundation opens up new areas of geographical and conceptual action.

The project is centered around the Method of Artistic Research, which is currently playing a major role in the field of conveying and appropriating innovative experience of the world. Heid and John (2003) wrote the following on contemporary artistic strategies:

"Artists are expanding their space of action by means of diverse interventionist strategies. They no longer feel bound to an object-centered art market but instead find and invent operative, process-based forms in their cooperation with partners in all areas of society. Alongside these options for strategic action, an important role is assigned to investigating and reflecting upon systemic conditions. In this way, artistic research can crucially contribute to imparting and appropriating innovative experience of the world. Artistic research is not "bound to conventional paradigms of science, and can be conducted without the obligation to adhere to dogmatic methods (although both forms share the basic motif of skepticism-as-a-method). Artistic research is able to promote knowledge acquisition in very different areas of life without heeding the defining might of specialists, and in the process can choose aesthetic criteria as the foundation for constructed realities" – to name just a few of the most important factors. In this way, artistic research potentially promotes the emergence of a third culture that might form a bridge between the two cultures described in 1959 by C. P. Snow – namely, the irreconcilably juxtaposed humanities and the natural and technological sciences. Snow lamented the gap that had grown up since the 19th century between the humanities and the natural sciences, which he said had led to the impoverishment of both fields. In a subsequent study 'The Two Cultures: A Second Look' (1963), Snow optimistically prophesied the growing up of a "third culture"; a new generation of scientists that would close the communication gap between the two traditional cultures.

Rather than giving a voice to popular science, the present project intends to strengthen the territory of artistic research, that for the purposes of this text, includes indigenous culture and traditional knowledge. Both cultures, that of art as we describe it and that of science, hold in common human curiosity, creativity and the desire to understand and represent the unknown. The initiators of this project believe that precisely the differing epistemology and forms of knowledge production can be used productively in the proposed collaborative matrix, by primarily taking into account also the geopolitical setting and the sociopolitical conditions that are to be encountered in the polar regions of the world and beyond.



Geo-engineering :
from the Atom Bomb to rising water level

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Dommsday Seed Vault in the Arctic
Bill Gates, Rockefeller and the GMO giants know
something we don't

p11



The Laboratory Planet

n°3, October 2008 - 63rd year

"You can spend all your life measuring the dimensions of your prison"

16 pages - 2 €

Laboratory-Planet or the terminal phase of nihilism

by Michel Tibon-Cornillot,
writer

1. Unique planet, obscene planet

The image of the "planet Earth" reproduced and distributed *ad nauseam* (1) represents a kind of "nihilist icon" (2): It imposes on all the proof of an image-reality whose truth is the subject of progressively corrosive doubts about the "real" to which it refers, that is, the unification of all eyes converging towards the image of a planet visible to all men, a relatively spherical planet, blue in colour. This astronomic picture, which has become an icon, was shown by all television channels working closely with the NASA communication services during the Apollo lunar missions.

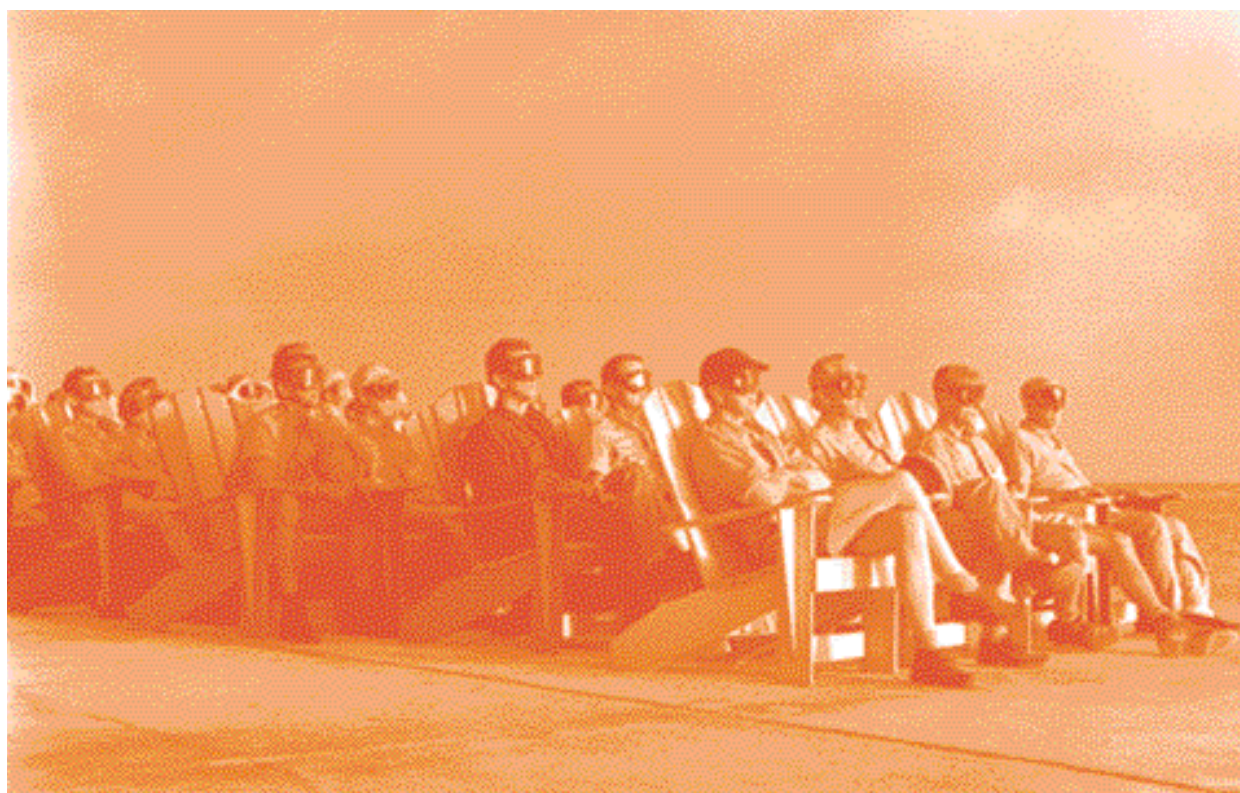
Each of us is called upon to unite around this unified image of a single planet, on the surface of which all mankind are bustling about, whether they know it or not – a sacramental icon, as it were, like the unifying Christ towards whom humanity is making its way. This vision can only satisfy small-time thinkers blending the most commonplace scientism with crypto-Christian humanism (3).

But this iconic unification of the world reveals something obscene since it devalues all representations of the planet that do not emphasise a particular colour or an approximate sphericity. According to this vision, what becomes of the gaze of Australian aborigines as they look up at the skies? Should we simply throw out the existential and geocentric journeys of all those who spend their lives walking across the stretches of the "flat country"? What becomes of ancestors, myths and poets? In this enticing vision of the planet there is too much ethnocentric weight that often accords with the commercial and technological activities of industrial societies. The sphericity of the Earth has given rise to many technical objects that are based on its shape, such as satellite systems supplying GPS location and audiovisual transmissions, map-making of all kinds, the transport of thermo-nuclear weapons or the preparation of immense advertising signals projected from the stratospheric suburbs of the Earth. There is no need to recall that Google has already drawn up technical files for huge advertising hoardings visible in clear weather from the Earth, just as the firm has already bought land on the moon that was sold in an auction organised by an American estate agency that specialises in this kind of

(1) The *ad nauseam* argumentum or being right by default is a sophistry based on the repetition of an affirmation. This mechanism lies behind the effectiveness of rumours and, at an extreme level, repetitive brain-washing through propaganda (or advertising).

(2) F. Nietzsche (1844-1900), 'The European Nihilism' in *Will to Power*, Random House, 1968. One stage of nihilism is marked by this swing between representations, concepts and values that appear as intangible, then crack and give way to an increasingly radical doubt, whether in the field of ethics, concepts or of apparently clear perceptions.

(3) This remarkable convergence between Christian faith and commonplace scientism is embodied in individuals such as Michel Serres, member of the French Academy, friend of Hergé and avid reader of Tintin's *Explorers on the Moon*. Tintin comic books should not be neglected, since they were long the sources



VIP observers are lit up by the light of an atomic bomb, Operation Greenhouse, Enewetak Atoll, 1951.

idiocy.

The theme of the planet is too heavily laden with scientific ideology not to give rise to doubts. What is the reality of this planetary icon: have we really seen it correctly? With what eyes do we look at it? Are we interpreting the images correctly? There are so many different ways of looking at the world, the stars and the moon; in any case, this is what is clear from the history of Western painting, which is also the history of the modification and deconstruction of perceptions, of forms and colours, as was the case with the appearance of Impressionism and Cubism. It is hardly necessary to recall that these pictorial experiments were rejected and likened to symptoms of mental illness, until the moment they appeared as far deeper expressions of the "real". As for recording equipment, it cannot bring any certainty whatsoever. The possibilities of "doctoring", transforming and deforming pictures are incredibly powerful and mean we cannot locate solid areas of reference in the tide of photographs, films and documentaries. We have seen this in particular for our satellite planet, the moon, in the

of imaginative by-products for Western children.

(4) "Space: NASA has lost the sound and video tapes of the first steps of man on the Moon. Blushing with shame, the directors of NASA's Goddard Space Flight Center in Greenbelt, Maryland, confirmed on Tuesday 15 August that they had launched a search to find some 10,000 to 13,000 tapes containing the original data of the Apollo 11 mission. This magnetic material contains pictures of the first landing of a man on the Moon in the Sea of Tranquility. The data were picked up on the Moon and transmitted to the American space agency's ground stations in Goldstone, California, and Honeysuckle Creek and Observatory Parks in Australia. They were then sent to the Goddard Space Flight Center, from where they were transferred to the National Archives in late 1969. The NASA centre later asked for their return, but in vain. The incident is all the more serious since the video quality, for example, of

context of the NASA's audiovisual data for the lunar expeditions.

Many films and documentaries have raised sometimes embarrassing questions about the hundreds of photos held by the NASA communication services, whether they show footsteps on the moon or incomprehensible shadows. We will not take up the argument here, yet one must recall that just at the time when questions about the validity of lunar voyages were being reactivated, the following headline appeared on the teleprinters of the major news organisations: "NASA has lost the sound and video tapes of man's first steps on the Moon" (*Le Monde*, 18.08.2006) (4). Just as discussions about the artificial nature of the photos released by NASA do not allow us to decide whether there has been an immense bluff, so the destruction announced by NASA of all the archives relating to the lunar expeditions suggests that the question is important and that this disappearance is part of rather obscure projects.

Continuation of the article p.2...

these data is far higher than of those which, on July 21, 1969, dazzled hundreds of millions of TV viewers when Neil Armstrong, the commander of the Apollo 11 mission, set foot on the Moon. The American astronaut, with a falsely natural tone, then made his famous remark: 'It's one small step for a man and one giant leap for mankind.'

"Also missing, alongside the videos, are the tapes containing the precious technical and medical data from the mission carried out by Neil Armstrong, Edwin Aldrin and Michael Collins. In all, there are some 2,000 boxes full of magnetic tapes, which, it is hoped, have simply been mislaid and not recorded over by mistake or otherwise used to save money. NASA, which in recent years has experienced several setbacks, including the dramatic consequences of the explosion of the Columbia shuttle, had no need of such news at a time when it is trying to burnish its image." Christiane Galus Article published in the edition dated 18.08.06

...

2. Laboratory Planet

The unification and distribution of the image of the planet Earth within the heliocentric Copernican framework were present from the very beginning of modern science and point to the original vision that scientific and technical globalisation would adopt. This vision was not only the embodiment of modern speculative reason, but was also the working plan for the planetary laboratory that opened up before mankind in modern societies.

In the first issue of *Planète laboratoire*, I published an article, "The General Reconstruction of the World", in which the deepest commitments of Galileo were described. I would again like to look at his work here. Galileo was indeed the founder of laboratories, of spaces given over first to the construction and then the introduction of rationalised phenomena of experimentation into the sensuous, everyday world. It was in the reserved space of laboratories that experiments would be organised and that instruments would be used, each representing a concretised theory; where, in short, the world of multifaceted, confused, elusive experience would be replaced by a collection of objects and events reconstructed according to the principles of mathematic intelligibility.

The image of the planet issued from the speculations of Copernican astronomy opened up a new era, that of the modern age, but it did so in a representative and abstract manner. Yet it already heralds in a premonitory way the final assembly of all projects, of all the rational practices reconstructing step by step the "real" world, this radiant world towards which the progress of science and technique is tending. Here the luminous unity of the icon *Earth* that appeared at the beginning proclaims the transfigured Earth of the final rational phase of the process (6). It is in this sense that we suggest seeing in this vision of the planet the workshop in which the gnome Alberich, the master of the underground worlds of the Nibelungen, the brother of the Titans of Greece, forges the new world.

Several questions then arise:

- what moment of this vast modern project have we reached?

- have we arrived at the terminal phase of the process, that is, the quasi-mystic vision of a transfigured and radiant Earth?

- how can this terminal phase be interpreted? Is it part of a transfiguration or rather destruction and collapse?

Are we not in fact the victims of our credulity, interpreting the earliest harbingers, when in fact more commonplace events are taking place?

We still need the criteria to position ourselves on the temporal scale of modern societies.

3. The shipwreck of the modern age

Icon and trademark of the modern age (7), the image of the *planet Earth* brings together and announces in a single representation the ultimate project, that of a reconstructed planet. But this remodelling work that had only just begun five centuries ago constituted and still constitutes the central project of modern societies and forms the heart of their history. This is still a very general remark, but nonetheless gives us one of the keys helping us situate the contemporary period in the development of scientific, technical, industrial and financial performances of modern societies. The increasingly frequent appearance of phenomena with planetary dimensions and scope shows that the reconstruction of the planet according to the imaginary structures of the modern West is progressing and is embodying itself in parts of "reality" that are more and more devoted to the project.

Yet it so happens that the techno-scientific performances with a clearly established planetary dimension have appeared only over the past five decades, during and after the Second World War. These performances, with their explicit planetary scope, are mainly issued from sciences and techniques, and concern nuclear, chemical and biological weapons, whose power must be unlimited. But we can also see that the technical and scientific interactions and improvements connected to industry lead to other consequences on the planetary level, to deterioration in animal and plant environments, to global warming, etc. At this stage in the development of the grand project for the general reconstruction of the world, the present generations are witnessing the first appearance of planetary changes, implying a strong maturity of the remodelling work.

But this *planetarisation* of technical and scientific projects that deploy an effervescence of the *geo-engineering* type in the background also shows the stupefying dimension of

"Galileo introduced into a chaotic world a new series of intelligible phenomena and beings, presenting in the sensuous world the first creations that were transparent to mathematic intelligibilities. He inaugurated a new history where a new world was constituted and developed, rebuilt from the debris of the old. He thus opened up the immense building-site of Western man; small, carefully enclosed laboratories would give way to other rational spaces, to factories, for example, where, with rationalised labour and mechanical machines, natural materials would be reduced and transformed on a large scale, spreading technical objects all over the planet. And this circulation, in ever wider and tighter concentric circles, came to form in turn a new reconstructed, artificial and ever more rational nature. The first organised experiment, which created the reserved space of laboratories, set in motion a complex synergic movement in which scientific undertakings organised in laboratories were transferred to industry. Industry in turn spread the effects across the social life of man. Little by little this process gave rise to a new world, our own.

The formation of scientific reason includes both the speculative aspect already evoked, the creation of new approaches, the importance given to quantification, and

also a practical aspect, which is shown in experimentation and about which many misinterpretations regularly develop. *Experimentation is not above all verification but the institution, the construction of a new reality.* Through the eminent position held by experimentation and laboratories, from experiment to experiment, from laboratory to laboratory, this other aspect of modern reason is unveiled, its militant and activist aspect. Militant reason is the active face of reason, inextricably linked with its speculative aspect, creating for itself a world less and less opaque to its project of transparency...

In this context, modern observing reason can take part in the development of the endless building-site, where another world, full of meaning, is built, a world gradually embodying an autonomous order through scientific experimentation, through the networks of laboratories and factories. Let us take this to its conclusion: is there not here a replacement of the initially given world with another world, made permeable to the work of mathematisation? The rationality at work in modern sciences therefore has two aspects, a speculative aspect and an activist, militant aspect, aiming to rebuild nature and mankind so that they become diaphanous, transparent to the eye of speculative reason (5)."



Operation Cue - Line of manikins at 7,000 feet, part of thermal radiation test after the blast. May 5, 1955.

the "progress" of the sciences, techniques, industry and finance, that is, the nihilism of modern Western history in its entirety punctuated by the growing threats of planetary upheavals linked to the effectiveness of the required performances. The changes in scale of techno-scientific applications, the recognition of their impact on the planet, can all be read as traces of a baneful destiny. The "real" reconstruction of the world is confused little by little with its destruction, and the radiant planet collapses in its refuse and obscenity. Is it time to say that the modern age is foundering and that we are all sailing on an old tub that is sinking beneath our feet.

Before describing some symptoms of nihilism, I would like to indicate one of the paths towards understanding this extraordinary transformation that took us so brutally from our unshakeable confidence in the progress of science, technique and industry, to our rejection of this stupid belief, and above all, to our fear of opening the last door in Bluebeard's castle (8), thus reducing the whole place, i.e. our dustbin-planet, to ruins.

I need to advance carefully since the transmutation is so fast and so sudden from the trust placed in the progress of the techno-sciences to the anguish caused by their present-day performances that one must avoid making the mistake caused by undue haste, especially since

attempts to understand this transformation are recent. I would however like to indicate some philosophical orientations allowing us to grasp the planetary events that are taking place; but I will merely evoke them in this text since they are highly complex, meaning we must spend time with the works that set out their general lines.

To be continued in the next issue. We will examine the following points:

- **secularisation or the fatal aspect of the history of progress;**

- **falling short of secularisation, the cosmic origins of the wreckage:**

The modern age as a new gnosis

The wreckage of the modern age and its "nihilist" analyser.

- **re-examination of some recent clinical symptoms:**

On the NATO report, *Towards a grand strategy for an uncertain world – Renewing the transatlantic partnership*, 2007

On the Large Hadron Collider (LHC), the CERN accelerator and its inauguration in September 2008.

On the article *Doomsday Seed Vault* in the Arctic, F. Engdahl published on 4/12/2007

(5) Tibon-Comillot, *The General Reconstruction of the World*, in *Planète-laboratoire*, n°1, page 4.

(6) This approach is found in Hegel's preface to the *Phenomenology of Mind*: "That it [the spirit of the world] is tottering to its fall is indicated only by symptoms here and there. Frivolity and again ennui, which are spreading in the established order of things, the undefined foreboding of something unknown – all these betoken that there is something else approaching. This gradual crumbling to pieces, which did not alter the general look and aspect of the whole, is interrupted by the sunrise, which, in a flash and at a single stroke,

brings to view the form and structure of the new world. But this new world is perfectly realised just as little as the new-born child; and it is essential to bear this in mind. It comes on the stage to begin with in its immediacy, in its bare generality. A building is not finished when its foundation is laid; and just as little, is the attainment of a general notion of a whole the whole itself." Hegel, preface to *The Phenomenology of Spirit*, Baillie translation.

(7) By "the modern age" we mean Western Scientific, Technical, Industrial and Financial Modernity.

(8) G. Steiner, *In Bluebeard's Castle*, Yale University Press,

Research into the driving forces of annihilation

by Bureau d'études
Independent conceptual group

We will not repeat here the now commonplace observation concerning the approaching obsolescence and death of humanity or nature, but will rather outline some of the opposing forces that are working towards their fulfilment on the planet. But first, to situate our remarks, we need to sketch out certain features of the history of the Earth and the special position attributed to the nervous system in its history. The history of the Earth is a laboratory, an experimental situation in which the animal, the vegetable, the mineral and the human interact. In this vast laboratory, the period in which consciousness and knowledge began to affect the Earth is sometimes called the *Psychozoic Era*. (1) This term suggests an emergence, the emergence of psychic activity. Yet we might consider that the animal kingdom and mankind are already present in the vegetable and mineral kingdoms through the way in which seeds already contain leaves, flowers and fruits. We can identify a geological force here that is neither material nor energetic with the name *noosphere*, which, alongside the geosphere and the biosphere, maps out the tripartite organisation of our planet. (2) The emergence and development of the noosphere is linked, according to some writers, to cerebral development, that is, to a particular form of the biosphere. (3) We might call the idea according to which the central nervous system and cephalisation are the organic sites of consciousness and knowledge, that is, of the constitution of the noosphere on Earth, *cephalocentric*.

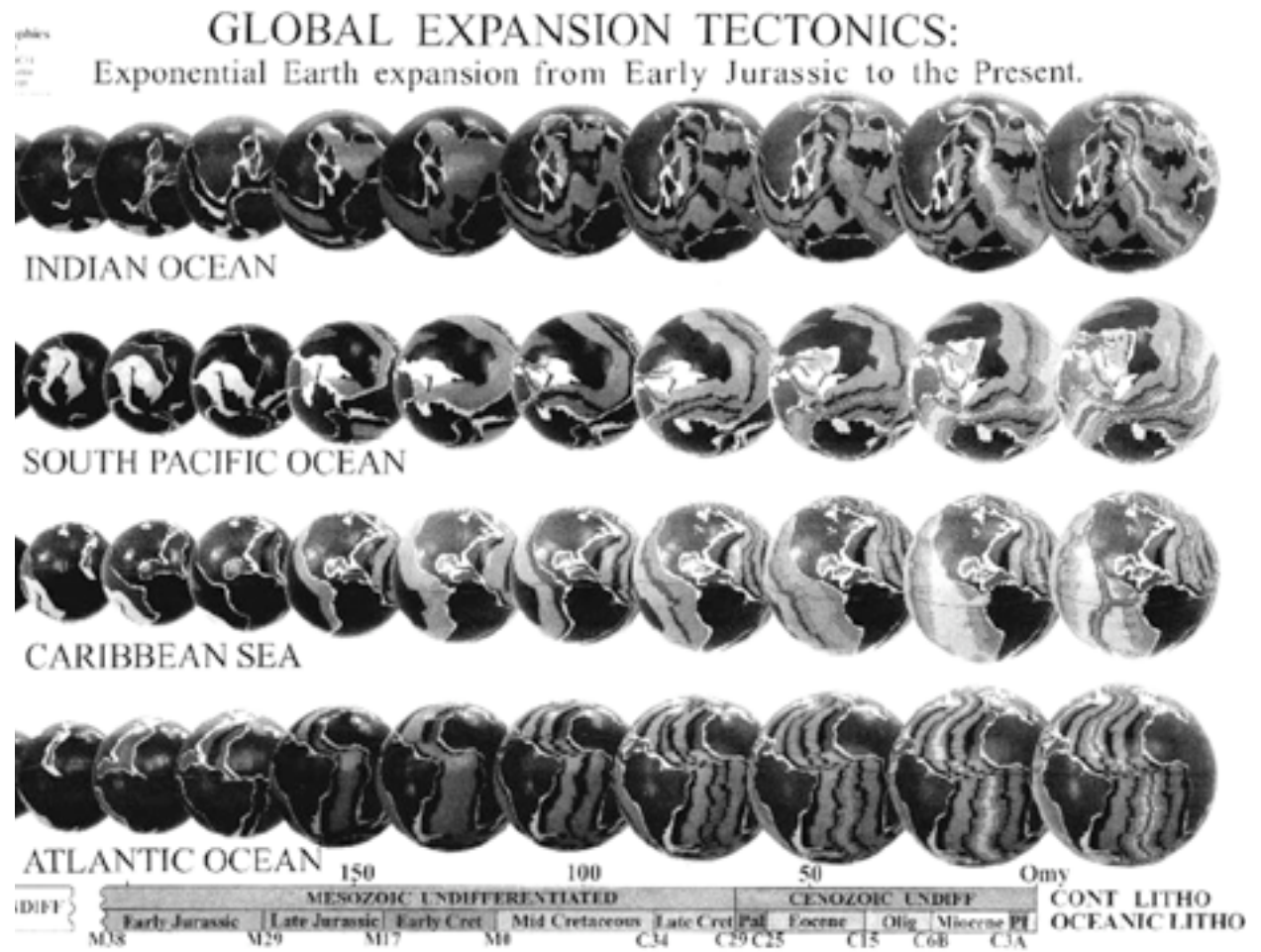
This focus on the central nervous system can be contested when we consider, for example, that the enteric nervous system with the abdominal brain that serves as its central organ is the centre of the vital functions (vascular and visceral functions, nutrition, gestation, respiration, circulation) – functions that are independent of the cranial brain to the extent that a child born without a cerebrospinal system can still live (4). These vital functions, although generally unconscious and not mediated by representations, maintain relations with the outside world. Yet it is considered that thinking activity and self-consciousness are located in the neuro-sensorial system.

The nervous system is a closed system. "As a closed system, the nervous system is not capable of distinguishing between neuronal activity that comes from the outside and others coming from the inside". (5) In other words, from the point of view of the nervous system, there is no subject/object distinction, no difference between perception and hallucination, between inside and outside. It functions without direct relations with the outside world and is thus built up using only the elements that it constitutes itself. But though closed in on itself, the central nervous system does not lie outside the world. The particles that make up perceived matter also compose the matter that constitutes the eye, the brain, etc, or in short the neuro-sensorial system itself. This continuum between the ego and the non-ego was already noticed by the German philosopher Schelling, for whom nature cannot be distinguished from the observer since the observer himself is part of nature (6). **What observes is precisely what is observed.**

Since there is a continuum between the observer and the observed, there is no reality-in-itself, that is, an object radically alien to the observing subject. The observer cannot distance himself sufficiently from the real to transform it into a distant object, all properties of an observed reality being, as a result, intimately linked to the thought that brings it to light. Moreover, no observer can separate in the language he uses a part that describes the world and another part that describes his conceptual contribution. Finally, the attempt to understand reality-in-itself comes up against the excess in the complexity of the real. The attempt to overcome this complexity by

(1) - The American geologist Joseph Le Conte (1823-1901) developed the idea that living matter was evolving in a definite direction, which he called the Psychozoic era. James Dwight Dana (1813-1895), a geologist, mineralogist, and biologist, developed a similar idea, which he called cephalisation. Dana pointed out that in the course of geological time, at least 2 billion years and probably much more, there occurs an irregular process of growth and perfection of the central nervous system, beginning with the crustacea (whose study Dana used to establish his principle), the mollusca (cephalopoda), and ending with man. It is this phenomenon he called cephalisation. Dana was a member of the Wilkes Exploring Expedition, (1838-1842), which discovered the Magnetic South Pole and determined that Antarctica was a continent.

(2) - cf. Vladimir I. Vernadsky, "Some Words about the Noosphere", *American Scientist*, January 1945. The concept of the "biosphere," i.e., "the domain of life," was introduced in



This Expanding Earth models show relative increase in Earth radii during Earth history. (Geology after the CGMW and UNESCO bedrock geology map, 1990)

concentrating on means or diagrams of recurrence are not equivalent to a specular grasp of the real but a selection of the aspects that are most relevant in terms of our cognitive interests.

Contrary to the belief in reality-in-itself that claims to distinguish the observer from the observed object – removing, in the process, all aesthetic, ethical and teleological value from the observation – the continuum connecting the observer with the object observed implicitly calls on aesthetic, ethical and teleological values. These values point, as it were, to the imaginary limits of the object observed. It is no different from theoretical creation, which, although it makes use of ideal objects, is also a certain kind of observation.

We need now to move to the thought of a nineteenth century philosopher who aimed to grasp the dynamic and the ends of this continuum that connects the observer to the observed object. For Hegel, "knowledge knows that by relating itself to an object, it is only outside itself, it exteriorises itself; that it is only itself that appears to itself as an object, or that what appears to itself as an object is only itself." (7) Now this objectivity, the mediation of the object in the knowledge of oneself is, for Hegel, an alienated relation to itself, a relation that does not correspond to the essence of man. For this essence is realised as absolute knowledge. Absolute, unmediated knowledge demands the overcoming, the annihilation of the object, the overcoming and annihilation of being (Nature).

Although the object is first of all necessary for consciousness to know itself, the suppression of the object is the condition for the constitution of a consciousness that depends on itself alone. **The constitution of a consciousness that only depends on itself is thus closely linked to the killing of Nature.** Nature "only has the meaning of an exteriority that must be suppressed." (8) So is absolute knowledge the root of the driving forces of annihilation?

This exteriority of Nature that must be suppressed in Hegel vanishes from itself in Schelling by becoming

biology by Lamarck (1744-1829) at the beginning of the 19th Century, and in geology by Edward Suess (1831-1914) at the end of that century.

(3) - See Teilhard de Chardin, *Le Phénomène Humain*, Seuil, 1955

(4) - Jönnhans Langley says that "... the ganglia of the gut do more than simply relay and distribute information from the cephalic [cerebral] brain. He was unable to reconcile conceptually the great disparity between the 2×10^8 neurons in the gut and the few hundred vagus fibers from the big brain, other than to suggest that the nervous system of the gut was capable of integrative functions independent of the central nervous system." (cf. Wood, J. D. (1994). 'Physiology of the enteric nervous system' in L.R. Johnson, (Ed.), *Physiology of the gastrointestinal tract* (3rd ed.) (Vol.1), New York, Raven Press, p.424)

(5) - Maturana, Erkennen. *Die Organisation und Verkörperung von Wirklichkeit. Ausgewählte Arbeiten zur biologischen*

obsolete. For the transcendental history of the ego evolves according to an immanent law "according to which the subject of an anterior moment becomes the object of the ulterior moment". (9) Thus, he says, light, which is opposed to matter like the subject to the object, itself becomes an object. It becomes an organism. (10) In this way, the organism, light that has become object, concretised light, becomes in turn subject.

Then the organism, which seemed to exist for itself, becomes in turn the instrument of a superior term. "Once the (organic) process has reached its goal, this hitherto subjective term must itself pass into the object; its reign, its sovereignty are over, it makes way, in turn, for a higher power. (...) [When the organism] in turn becomes objective, and so subordinates itself to a still higher subject – this moment corresponds to the birth of man: with him nature as such is accomplished and a new world begins, a completely new series of developments." (11) In other words, the sovereignty of being is over and makes way for pure knowledge: "What appears, as regards being in its totality, as a higher term, where the latter is included, could only be knowledge. Thus, we have taken the subject to the point where it is pure knowledge: at this point, its being consists only in knowledge and we can no longer find it in the form of a thing or of matter." As for Hegel, man, as the site of absolute knowledge or pure knowledge, is the driving force of annihilation.

That being, that Nature should be obsolete (Schelling) or that it must be suppressed (Hegel), that objectivity, that Nature should be nothingness, alienation, this is a thought that Goethe did not share, and Marx even less, who can be seen, as regards the theory of knowledge, as a successor of Goethe. Both (however opposed they were on the social and political levels) shared an intensive understanding of knowledge that cannot be seen as an isolated faculty but that must be an experience lived by the whole subject; the same refusal of the division of nature into objects torn artificially from their environment; the same idea of the sense organs and human speech as valid and reliable means of knowledge. For Marx, true knowledge is externalised knowledge, it is

Epistemologie. 2. Durchges. Auflage. Autorisierte Fassung von W.K. Köck ('Wissenschaftstheorie, Wissenschaft und Philosophie' 19), Braunschweig, Vieweg, 1985

(6) Friedrich Wilhelm Joseph Schelling, *Einleitung zu seinem Entwurf eines Systems der Naturphilosophie* [1799], Stuttgart, Reclam, 1988, p. 19

(7) - This reading of Hegel comes from Marx, *Economic and Philosophical Manuscripts of 1844*.

(8) - Marx, op. cit.

(9) - Schelling, *On the History of Modern Philosophy*, Cambridge University Press, 1994.

(10) - cf. W. Vernadsky, *La Biosphère*, Félix Alcan, 1929, p. 12. It is the reflection of "the structure of the cosmos, linked to the structure and the history of the atom, of chemical elements in general."

(11) - Schelling, *On the History of Modern Philosophy*, Cambridge University Press, 1994.

Continuation of the article “Research into ...”

objectivity. Objectification is not reification. The production of the object is not negation but *position* of itself when the subject is free activity and carrying within it its own end. The non-objective being is, on the contrary, alienated if it works for another or in a non-free way, since it is not the master of its own activity. When alienated, human labour becomes negating power, a driving force of annihilation. Man ends up *without object*, loses the object in which he expresses his being. But by losing the object, the worker is deprived of the objectivity of his being, in other words, he is only subjective: he is closed in on himself, without sensuous relations with the world and, therefore, without a world. And **this absence of world joins with his self-annihilation and the annihilation of Nature.** Man is “without being”, he is not. (12). For the non-objective being “*is a non-real being, non-sensuous, a being that exists only thought, that is, a being that is only imagined, a being of abstraction*”. By being *derealised* by money or by abstract labour (mechanised labour), by submitting himself to a certain kind of non-real beings, to a certain kind of beings of abstraction, alienated man not only loses his nature as an historic being, but becomes “*anti-nature*” (13). He loses his faculty for natural and historic self-creation. He no longer reproduces without the help of machines, or uses artificial procreation. He no longer knows himself without the mediation of abstract beings. **This anti-nature, neither natural nor spiritual, is a reality of a third kind**, the reality of *automatic beings*, doted with a “life” that uses what is dead to move itself (14). The self-creating faculty of these beings is constituted by the driving forces of annihilation that, like monetary and mechanical capital (dead labour), come to replace nature and the human spirit. To the tripartite division of the Earth – geosphere, biosphere, noosphere – is added a new sphere that denies

them, a technosphere, issued from the driving forces of annihilation. By submitting themselves to the forces of death, these forces, generating non-real, non-sensuous beings, by putting themselves in the power of what Marx calls “*the empire of alien beings*”(15), by submitting to objects that, having become subjects, are now doted with movement, with a capacity for self-creation and for their own reflexivity, man debases himself, annihilates himself. And “*self-annihilations are not ideal phantasmagorias: one cannot abolish material dispossession by a purely inner action of a spiritualised nature*”. (16)

But is material action enough to abolish these abstract beings? And above all, why should we take care of man, of Nature, and resist their downfall? Must they not die, and become the *object* of a higher term? Must the Earth not become a desert and man make way for the Successor? In technological humanity's suicide, should we not recognise the ultimate sacrament that it is able to give itself?

Already, a century after Marx, man and the Earth have been plunged into the abstraction of machines to the point that, as Donna Haraway rightly saw, man is today a cyborg (17). To go against what makes up our present, to take care of mankind and nature, to delay mineralisation and abstraction, to fight against the forces of alienation, allows us to gain time, no doubt, to hold back the end without end, that acceleration we evoked in the previous issue of *Planète-Laboratoire*. For this end without end claims to be projected as far as the human ecumene, ever further, deeper, to the confines of the universe (18). But is it only a question of gaining time? Is it not, on the contrary, about pursuing another path *whose shape we do not yet know?*

The possible means of action against the forces of annihilation of beings of abstraction still remains obscure. Before any action, we need to *recognise* that these abstract beings are beings acting on history and nature, prompting a *process of organic regression* and the self-debasement, the self-degradation of man, that is, of

history and Nature. And because they debase us and push us towards our annihilation, we cannot merely see them as nuisances but also as enemy forces which – whatever their ontology, whether fictive beings or counter-entelechies – do not have the same aims as real mankind (19). But it is not the role of the present text to identify these abstract beings, to describe them or to set out the possible relations we can establish with them.

(12) - “A non-objective being is a non-being”, Marx, *Economic-Philosophical Manuscripts* of 1844.

(13) - Marx, *Economic-Philosophical Manuscripts* of 1844

(14) – Hegel quoted in Michel Tibon-Cornillot, *Les Corps Transfigurés, Mécanisation du vivant et imaginaire de la biologie*, Seuil, 1992, p. 267

(15) - Marx, *Economic-Philosophical Manuscripts* of 1844.

(16) - Marx, *The Holy Family*.

(17) – Donna Haraway, “The Cyborg Manifesto”, <http://multitudes.samizdat.net/spip.php?article800>

(18) – This push towards the edges is clearly expressed by the Russian astronomer Nikolai Kardashev, who, in 1964, drew up a scale of the classification of civilisations according to their technological level, which is also their power of annihilation. A civilisation of Type I is able to exploit, for or against itself, all the available energy on its original planet. A civilisation of Type II collects all the energy of the Sun. A civilisation of Type III, the energy of its galaxy. A civilisation of Type IV, the energy of a galactic superamas and a civilisation of Type V all the energy of the visible Universe.

(19) - By “fictive beings” we do not mean the well-founded fictions describing the infinitesimals in Leibniz. By counter-entelechies we do not mean the concretions of noumena, of things-in-themselves (as described by Friedrich Dessoir) but more – to use a term that the Romans applied to the malevolent spirits of their dead returning to haunt them – larvae or lemures. A larva is a concretion of dead labour – monetary or mechanical labour – the continuation of a living dead being that moves itself.

Geo-engineering from the Atom bomb to rising water level

by Bureau d'études

1. From ‘civil’ atom bombs to ‘clean’ atom bombs

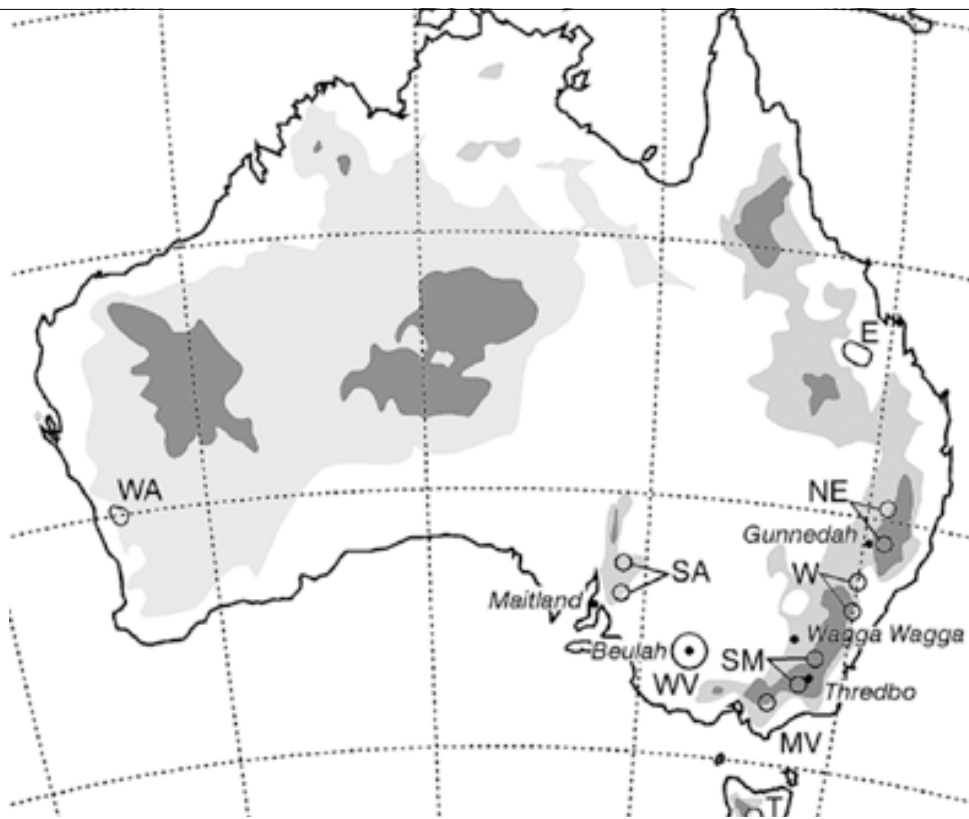
An article in the *Bulletin of Atomic Scientists* in June 1950 discusses the possibilities of using nuclear explosives to blast canals and mines or to break up icebergs. But the starting signal for nuclear geoengineering dates from the famous speech entitled “Atoms for Peace” given by President Eisenhower on 8 December 1953. Following this, the UN financed a conference in 1955 on the “peaceful” use of atomic explosives. In France, enthusiastic about the idea of peaceful bombs, the scientist Camille Rougeron wrote a monograph describing a range of possible applications for nuclear devices including diverting rivers, modifying climate, melting glaciers, building subterranean power stations and blowing up mountains to extract ore. (1) In the Soviet Union, the engineer G.I. Pokrovskii also spoke of the possible use of atomic devices to excavate canals, considering that “radioactive contamination from a nuclear explosion should not be considered an unsurmountable obstacle to the use of this kind of explosive for mining or construction work.”(2)

The companies involved in the American military-industrial complex were quick to profit from these harebrained schemes; they were the first to launch secret programmes devoted to the “civil” use of nuclear devices (the Plowshare Program). At that time, so-called ‘clean’ nuclear projects were not yet on the agenda.

In 1957, the first civil nuclear explosion was carried out on a military site in the Nevada desert. It confirmed the engineers’ conjectures and was soon followed by the Gnome Project in 1961 which carried out the first ever underground nuclear explosion.

In 1956 Edward Teller, the creator of the hydrogen bomb, presented the crazy project of digging a “second Suez Canal” using nuclear explosives. 300 nuclear devices buried in South Panama would be enough to excavate the channel. Another option involved burying a string of 764 bombs across Colombia.

In 1958 the Atomic Energy Commission (AEC) put Teller in charge of the Chariot Project, which involved the building of a man-made harbour at Cape Thompson in Alaska using a hydrogen bomb.



Location of cloud seeding experiments in Australia. E, (Emerald Experiment), NE, (New England Experiment), W, Waragamba Dam Experiment, SM, (Snowy Mountains Experiment) MW, (Melbourne Water Experiment), WV (Western Victorian Cloud Seeding Experiment), SA, South Australian Experiment, WA (Western Australian Northern Wheatbelt Cloud Study) and Tasmania (T).

However, the growing sensitivity of public opinion to radioactive contamination called these projects into question, and the Plowshare Project itself was ultimately wound up in 1977.

In the 1950s the first studies appeared showing the global effects of civil and military nuclear testing. A UN report mentioned that “*The radioactive strontium that has never existed in nature can be found today in the bones of the atomic era's children, probably everywhere in the world. (...) The Un investigators have discovered that the quantity of radioactive strontium [from H bombs explosions] absorbed by the bones system of Oriental children is six times bigger than the quantity we find in Occidental ones [the first consuming rice, directly taken from the soil]*”(3).

In the 1970s, declining revolutionary movements joined forces with the rising tide of ecological protesters. The radiation sufferers’ International replaced the Revolutionary International, radiation now appearing as the lowest common denominator shared by the governed peoples of the world.

By doing away with the idea of non-anthropogenic nature on Earth and fostering awareness of the systemic effects of human activity, large-scale nuclear experiments ushered in a new age of engineering focused on modifying the environmental, climatic, oceanic and atmospheric systems they had previously destroyed using industrial and military technology. Certain highly active atomic researchers found themselves occupying high-level positions in climatic engineering.



Some geoengineering projects, such as this plan for the irrigation of the Sahara by creating a 'second Nile' to refill Lake Chad, have become part of geoengineering folklore (cf. *Earth systems engineering and management* by Stephen H. Schneider, *Nature* 409, 417-421 (18 January 2001))

2. From atom bombs to geoengineering

Local climate modification has been tested and carried out for military and commercial purposes for many decades. The technique of cloud seeding to cause rain was discovered in the late 1940s and first tested in the 40s and 50s. (4) In 1953 a presidential advisory committee on climate control was set up to pursue these ideas and in 1958 the US Congress increased the research budget for weather modification.

Large-scale experiments were also taking place in the Soviet Union, although the research was more secretive. Around 1956, Soviet engineers came up with the idea of a dam on the Bering Strait which would make it possible to pump water into the Arctic Ocean from the Pacific. Warm water flowing into the upper Atlantic would melt the Arctic ice cap, making the ocean navigable and warming up Siberia.

In 1955 John Von Neumann, a mathematician and physicist and the father of cybernetics, told *Fortune* magazine that "Microscopic layers of colored matter spread on an icy surface, or in the atmosphere above one, could inhibit the reflection-radiation process, melt the ice, and change the local climate." In 1961 Russian climatologist Budyko speculated upon the possibility of changing the climate by spreading powdered soot on snow and Arctic ice from the air. The soot would lower the albedo (rate of sunlight reflection) and the surrounding air temperature would increase (5).

In 1965, in order to pre-empt the scandal that might be caused by these "unnatural" processes, the US government gave itself the authorization to take compensatory measures should climate warming due to increased greenhouse gases such as CO₂ become critical. These compensatory measures did not include limiting the use of fossil fuels, but instead involved geoengineering solutions such as spreading particles over the ocean or in the atmosphere in order to create artificial "mirrors" which would reflect more sunlight. The annual cost of these projects has been estimated at \$500 million, and it is claimed that they are less costly than all other government anti-global warming programmes (6).

It would be impossible to list here all the proposed scenarios to prevent climate change. One American study describes some of the most exotic among them (7). It seems certain that some are beyond the experimental stage (eg spreading micro- and nanoparticles of iron on the oceans) and others have apparently been deployed on a global scale for several years (eg civil aircraft bouncing sunlight back into space using reflective particles of aluminium) (8). These operations are linked to huge computerized global climate system modelling projects (as far back as 1945, John von Neumann stated that such models were a necessary condition for any form of climate engineering).

In the 1970s the ARPA (Advanced Research Projects Agency) launched a secret multi-million dollar project to develop such models, codenamed Nile Blue. In the 1920s, L. F. Richardson had imagined a suite of 64,000 computers (the *Computing Theater*) designed to produce climate models and predict global weather patterns (9). Richardson's flight of fancy has been made reality by researchers at Los Alamos National Labs who have been able to simulate a planetary sphere divided into 500,000 tetrahedrons with sides measuring 20 miles, in order to produce a model for the Earth's climate.

Disasters contribute to the development of global systems designed to control them.

They contribute to the development of the craziest ideas. Old notions are given a second wind, such as the great project dreamed up by German engineer Herman Sorgel, who proposed building a huge dam across the Strait of Gibraltar to seal off the Mediterranean (10). The Dutch already possess a \$2.5 trillion infrastructure (equivalent to all trade between the EU and the US) designed to protect the Dutch population from rising water. A global 2 metre rise in water levels could spur gigantic projects to protect inhabited areas.

If the war economy has often made it possible to kickstart creaking economic machinery while increasing labour coercion, the economy of environmental disaster could well be its identical twin in that it offers work and new opportunities for industrial redeployment. Such an economy depends on a radical functionalization of the planet. Beyond any strategic advantages it may bring, a disaster is first and foremost a loss to be recovered. As an article in *Nature* suggests (11), there is nothing to prevent us from considering the Earth as a vast *input-output table of environmental exchanges*, an economic system producing goods and services in the framework of what might be termed 'sustainable capitalism'. Here, ecology outlines a new programme for systemic engineering, where the planet differs from the factory not only in the size and complexity of the factors involved, but also – and primarily – in its ultimate purpose.

- (1) – Camille Rougeron, *Les applications de l'explosion thermonucléaire*, Berger-Levrault, 1956.
- (2) – G.I. Pokrovskii, *On the Use of Nuclear Explosives for Industrial Purposes*, Gornyi Zhurnal, Vol. 1, pp. 29-32.
- (3) – Cf. Calder, Ritchie (1963), *L'homme et ses techniques*, Payot, p.236
- (4)– 29 US States have authorized climate modification programmes. Low-temperature cloud dispersal by seeding with liquid nitrogen or compressed air has become routine at some airports. From Israel to Russia and from Australia to the Philippines, cloud seeding is regularly used to increase rainfall. The largest cloud seeding system in the world is in China.
- (5) - Budyko, Mikhail I. (1962). *Some Ways of Influencing the Climate*. Meteorologiiia I Gidrologiia 2: 3-8.
- (6) - cf. President's Science Advisory Committee (1965). *Restoring the Quality of Our Environment. Report of the Environmental Pollution Panel*. Washington, DC: The White House, p. 127.
- (7) – For example: 24,000 people employed to manoeuvre 350 cannons installed at sea, each firing 120 860-kilo shells containing uranium dust, 250 days per year (cost: 100 billion dollars) (p.818, National Academy of Sciences, National

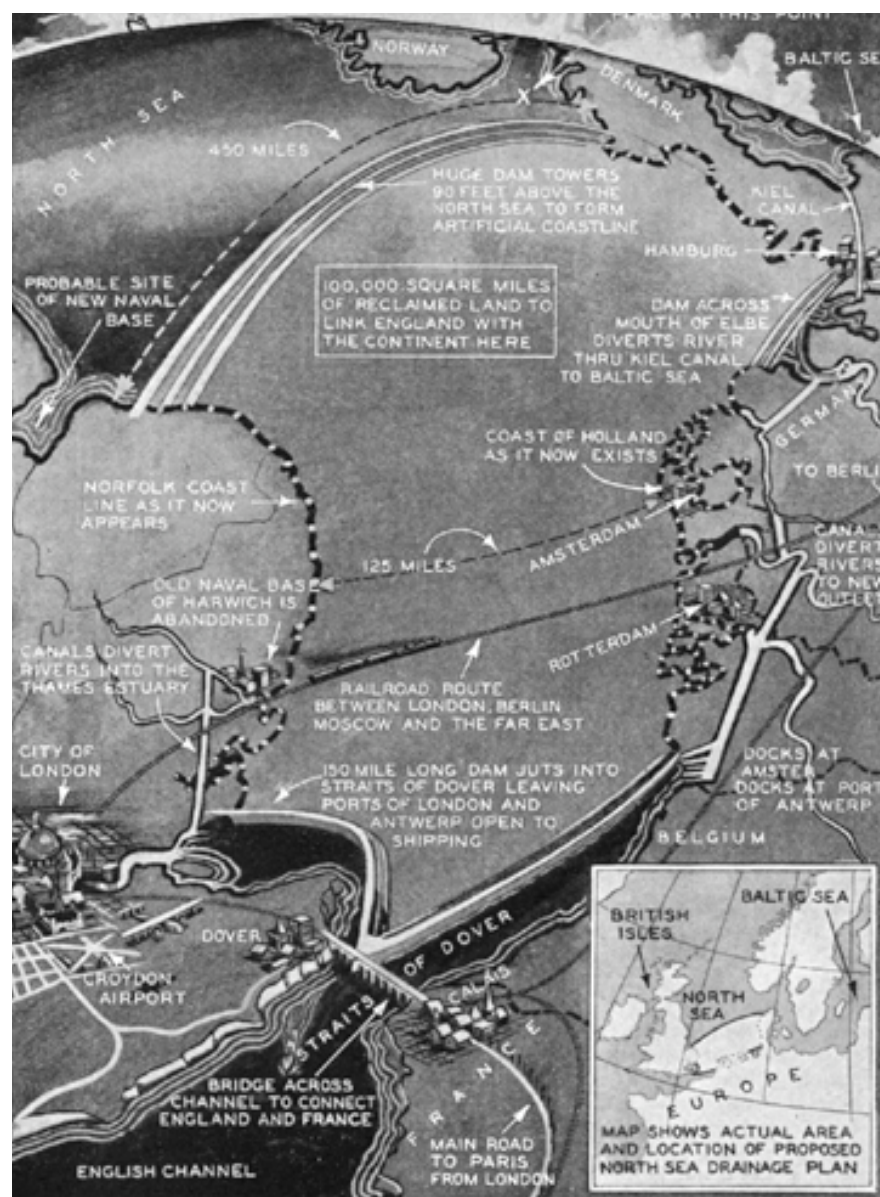
Academy of Engineering, Institute of Medicine (SEM). *Policy Implication of Greenhouse Warming : Mitigation, Adaptation and the Science Base* (1992). "http://www.nap.edu/books/0309043867/html/index.html" www.nap.edu/books/0309043867/html/index.html. See also *Active Climate Stabilization : Practical Physics-Based Approaches to Prevention of Climate Change* in National Academy of Engineering, Washington DC, 23-24 April 2002, "http://www.llnl.gov/globalwam/148012.pdf" www.llnl.gov/globalwam/148012.pdf

(8) – The danger of an alteration of global climate systems – while even a small experiment like Biosphere II has not been successfully maintained – has nevertheless been expressed by the US National Academy of Sciences: "Geoengineering options have the potential to affect greenhouse warming on a substantial scale. However, precisely because they might do so, and because the climate system and its chemistry are poorly understood, these options must be considered extremely carefully. . . . Some of these options are relatively inexpensive to implement, but all have large unknowns concerning possible environmental side-effects."

(9) – cf. Richardson's *Weather Prediction by Numerical Process*, published in 1922. In *The Mathematics of Chaos*, Ian Stewart compares numerical weather prediction to a three-dimensional chess game. The tetrahedral grids form the board, the numerical values assigned to weather variables are the pieces, and tomorrow's weather corresponds to a position of the game. The governing rules are the equations of motion of the atmosphere.

(10) - Commencing about 1929, and ceasing by about 1953, the German architect Herman Sorgel (1885-1952) proposed the construction of the world's most powerful hydroelectric dam, which he estimated capable of generating 50,000 Mwe at the Strait of Gibraltar alone, when the Mediterranean Sea had been reduced by 200 m. Sorgel's "Atlantropa" means a macroproject that suggests "turning towards the North Atlantic Ocean" for hydroelectricity.

(11) - "The services of ecological systems and the natural capital stocks that produce them are critical to the functioning of the Earth's life-support system. They contribute to human welfare, both directly and indirectly, and therefore represent part of the total economic value of the planet. We have estimated the current economic value of 17 ecosystem services for 16 biomes, based on published studies and a few original calculations. For the entire biosphere, the value (most of which is outside the market) is estimated to be in the range of US\$16-54 trillion (10 12) per year, with an average of US\$33 trillion per year. Because of the nature of the uncertainties, this must be considered a minimum estimate. Global gross national product total is around US\$18 trillion per year." (Robert Costanza, Ralph d'Arge, Rudolf de Groot, Stephane Farber, Monica Grasso, Bruce Hannon, Karin Limburg, Shahid Naeem, Robert V. O'Neill, Jose Paruelo, Robert G. Raskin, Paul Sutton et Marjan van den Belt, *The value of the world's ecosystem services and natural capital*, Vol.387, 15 mai 1997)



North Sea Drainage Project to Increase Area of Europe - Some 10 millennia ago, sea levels were 120 m lower than today. The North Sea consequently wasn't a sea, but a land bridge between Britain and Europe. Geologists call this Doggerland, after the Dogger Bank, the shallowest, largest sand bank in the North Sea today. In the 1930s, there existed at least one wild plan to reclaim this particular piece of sunken real estate from the seas. "If the extensive schemes for the drainage of North Sea are carried out according to the plan illustrated above, which was conceived by a group of eminent English scientists, 100,000 square miles will be added to the overcrowded continents of Europe. The reclaimed land will be walled in with enormous dykes, similar to the Netherlands dykes, to protect it from the sea, and the various rivers flowing into the North Sea will have their courses diverted to different outlets by means of canals." (September 1930)

Voodoo planet

by Ewen Chardronnet

On December 13, 2001, in view of the new post-11-September situation, the United States announced its withdrawal from the 1972 Anti-Ballistic-Missile (ABM) treaty. The treaty had been signed to limit the race to develop intercontinental nuclear missiles, and led to what was known as the period of 'detente' between the two sides in the Cold War. By withdrawing from the treaty, the US put an end to thirty years of equilibrium in nuclear deterrence in the name of the 'War on Terror'. It was also a formal recognition of developments in the Eurasian region, but above all allowed the US to redeploy its nuclear forces and systems of detection.

A year later, on December 16, 2002, George W. Bush signed the plan to establish a new National Missile Defence system (NMD) by 2004, and already spoke of the interest expressed in the system by the Polish, Czech and Hungarian delegations during the 2002 NATO summit. So it came as no surprise to experts in nuclear deterrence when in January 2007 the US made an official request to set up sites in these countries. Despite Russian protests 'of feeding the arms race', on March 28, 2007 the Czech Republic gave the green light for negotiations to begin with the US about the installation of a radar system outside Prague. The antimissile shield the Americans wish to set up in central Europe by 2012 includes ten interceptor missiles deployed in Poland and a high-performance radar in the Czech Republic.

Let us retrace the history of radar technology and the successive installations of these monuments of the nuclear era.

Early Warning

The Second World War led to the rapid development of radar technology (1) in the air or on the seas. In 1945, with the material demonstration of the destructive power of the atomic bomb, the question of long-range missile detection was first raised. The concept of anti-ballistic missile defences soon took shape, with early detection radars and anti-ballistic missiles for in-flight destruction of enemy nuclear warheads.

In the 1950s, two over-riding aims defined the first generation of anti-nuclear defences: the construction of a barrier for early detection of transpolar ballistic missiles and the centralised computer synchronisation of radar detection systems. If long-range nuclear missiles could not actually cross the Atlantic, they could still reach their targets by passing over the North Pole. This threat was taken very seriously by the US and the Soviet Union, and triggered a race to create anti-missile weaponry.

The US successfully carried out computer synchronisation using the Semi-Automatic Ground Environment (SAGE) system, which was set up in 1951. Linked to 50 screens and communicating with some hundred radars on the Canadian Pinetree Line, the apparatus could track 400 planes.

The range of radar detection systems grew each year, and the Ballistic Missile Early Warning System (BMEWS), which could detect missiles from the moment they left Soviet airspace, entered service at the end of the 1950s. The BMEWS involved the deployment of three huge bases for long-range radar detection (about 4500 km): Fylingdales Moor in England, Thule in Greenland and



Sea-based X-Band Radar (SB-XBR-1). Operating from Adak Island in Bering Straits.

Clear in Alaska. The bases were located strategically in relation to the North Pole, and scrutinised the Soviet transpolar ballistic threat. They are still a key element in the US system today.

For its part, the Soviet Union deployed and tested various systems of satellite detection radars and long-range radars from 1959: Dunai-2 in Kazakhstan (west of Lake Balqash), and Dniester in Siberia (Angarsk) and in Kazakhstan. All Soviet ABM radars were named after rivers in the USSR. Tested successfully, the system opened the way for construction from 1962 of a base protecting Moscow named A-35 or the 'Dog House' (according to NATO's imaginative designation). From 1963 to 1969, two Dniester-M radars for detecting Anti-Ballistic Missiles (ABM-1) were set up on the north Atlantic transpolar front in Olenegorsk (near Mumansk) and Skrunda (Latvia). In 1969 the EKVATOR project synchronised the Soviet ABM-1 system. NATO christened this emergent defence system the 'Hen House'.

The Non-proliferation treaty and total protection of the territory

At the end of the 1960s, the two synchronised early warning anti-missile networks above the North Pole area were operational. But the Cuban missile crisis and the increasing range and speed of missiles revealed the threat from sites nearer to hand and the vulnerability of transpolar defences. Attack warning times fell from 15 to 2 minutes in ten years. This situation led to the proliferation of anti-ballistic missiles at the end of the 1960s and resulted in the USSR and the US signing the Anti-Ballistic Missiles (ABM) treaty in 1972, heralding a period of 'détente'. The treaty limited the number of anti-ballistic missiles and authorised the construction of radar defences, but confined their development to capital

cities and national borders.

Under cover of this treaty, the period of 'detente' was to give both sides the time they needed to build a second generation of defence systems (ABM-2).

Second Cold War

On March 23, 1983, Ronald Reagan and the neo-conservatives launched the Strategic Defence Initiative (SDI) of space-based protection known as 'Star Wars'. In the corridors of the Pentagon, discussions centred around Mutually Assured Destruction (MAD); 'detente' was at an end; Iran and Nicaragua had undergone revolutions; Thatcher and Reagan had been elected; the USSR had invaded Afghanistan. The SDI's chief goal was to energise the American 'voodoo' economy and stifle Soviet military investment in what became known as the 'Second Cold War'.

In 1984, the Soviet transmitter/receiver radar systems of the Daryal type, a new generation rivalling the US Pave Paws radars, were set up in Pechora (Siberia) and Qabala (Azerbaijan). They completed the Hen House (2). The construction of a modified version, the Volga radar, was undertaken in Belarus in response to the deployment of Pershing missiles in West Germany. Unlike the Dnieper, which was accurate to within one metre, the Daryal and the Volga systems were precise to within about a decimetre (3).

The 'Woodpecker' signal

From the beginning of the 1970s, the US began developing a system of Over-the-Horizon Backscatter (OTH-B) radars, which is today considered as the biggest radar system in the world. (4)

The USSR also set up a system of transhorizon radars from 1976. They long remained secret, however. But a

(1) - The radar is a system using radio waves to detect and determine the distance and/or the speed of distant objects. A transmitter sends out radio waves, which are reflected by the target and detected by a receiver that is often located in the same place as the transmitter. The position of the object is estimated through the time taken by the signal to return, and the speed is measured using the change in frequency of the signal through the Doppler effect. Radars are used in many situations: in weather-forecasting, air-traffic control, the surveillance of road traffic, by the army, in space travel, etc. The word itself is an acronym: RAdio Detection And Ranging. Discovered in 1900 and defined theoretically in 1917 by Nikola Tesla, radar technology was patented in 1935 by Robert Watson-Watt, which meant that he was considered as its 'official' inventor. The British Defence Ministry ordered a network of radars, bearing the codename 'Chain Home', to be built along the south and east coast. It played a crucial role during the Battle of Britain in 1940. From 1937 Nazi Germany developed the 'Freya' radar, which was more powerful than the Chain Home system, but also more expensive, which prevented its efficient deployment before the start of the war. Despite operations carried out between May and August 1939, the German Zeppelin LZ130 airship failed to prove that the 100-metre-high towers built by the British from Portsmouth to Scapa Flow were linked to radar operations, and concluded instead that they formed radio communications and life-saving networks. The British remained silent during the passage of the Zeppelin... It is said that the technological advantage the

Germans believed they had confirmed their decision to invade Poland on September 1, 1939...

(2) - From 1975, the USA built the PAVE PAWS system (Phased Array Warning System). To the BMEWS system intercepting transpolar missiles were added the bases in Cape Cod (Massachusetts), Robins (Georgia), Eldorado (Texas) and Beale (California), for the interception of trans-oceanic missiles. The two systems are centralised at the Cheyenne Mountain base (Colorado). On the Soviet side, two Dniester radars entered service in 1973 at Mishelevka (Irkutsk) and Lake Balqash (Kazakhstan), but above all the same year tests were carried out on the first radar of the Dnieper type, which would also be set up in the Lake Balqash region. It successfully opened the way for a new generation of radars. Construction work on Dnieper radars were also confirmed in Skrunda (Latvia), Mukachevo (Ukraine), Sevastopol (Ukraine) and Mishelevka. The Sevastopol and Mukachevo radars became operational in 1978, completing the ABM-2 early warning 'Hen House' system. The eastern part of the continent (east of the river Lena) was still unprotected, but the deserted region was out of reach of the American ballistic threat at the time. In 1977, however, the US created the Cobra Dane radar, located at the Eareckson base on the island of Shemya in the Bering Sea. Cobra Dane was conceived as an early-warning spy radar that could collect data on launch-tests of Soviet missiles in Kamchatka and the Pacific Ocean.

(3) - Other Daryal constructions were begun, but many never entered service (such as the Skrunda in Latvia). In 1989, the

Soviet Union admitted the existence of a Daryal radar in Krasnoyarsk, which infringed the ABM treaty of 1972. The treaty stipulated that no ABM radar could be built more than 150 kilometres from the country's borders and that each one should be directed towards the exterior. Krasnoyarsk, however, is situated in central Siberia, over 800 km from any border. The radar was dismantled progressively from 1989 to 1991. Despite this setback, and before the fall of the regime, the USSR completed the ABM-3 Moscow defence fortress, which included, in particular, a radar of the Don type, a truncated pyramid 45m high and measuring 100m at the base.

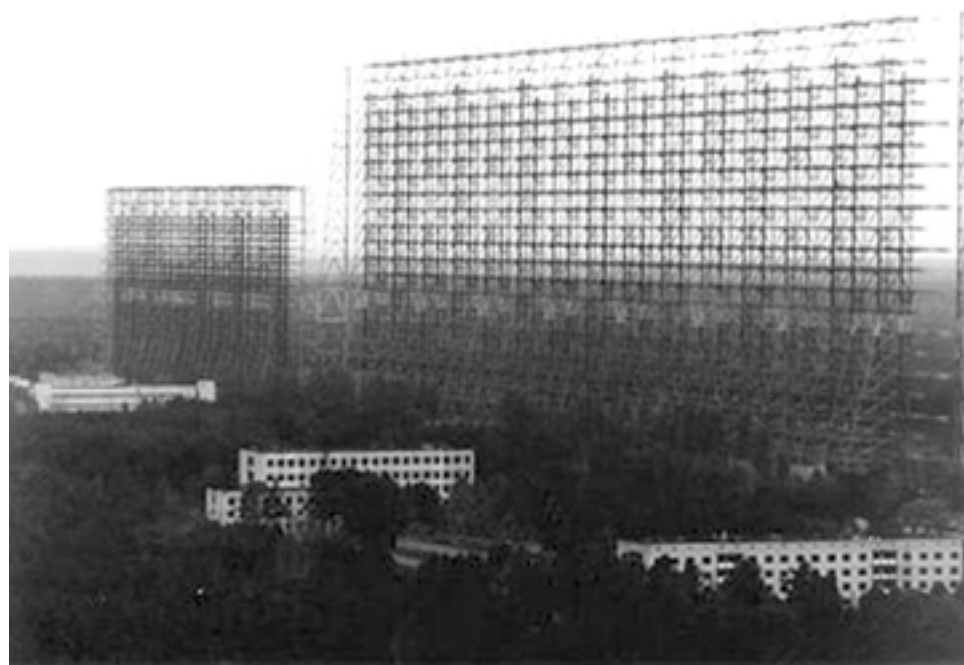
(4) - Radio waves tend to travel in a straight line. This limits the range of detection of radar systems to objects in their visual horizon due to the rotundity of the Earth. OTH radars use the reflection of short waves (HF), between 3 and 30 MHz, on the ionosphere, the only part of the electromagnetic spectrum presenting these characteristics. This technique means that planes and missiles can be detected over a longer range. As these signals are also reflected by the land and the sea, the Doppler effect is used to distinguish the 'targets' from background noise. The Doppler effect is the gap between the frequency of the wave emitted and the wave received when the transmitter and receiver are moving relatively to each other; it also appears when the wave is reflected on an object in movement relative to the transmitter or the receiver. The effect is thus used to calculate the speed at which objects move.

repetitive HF tapping signal was frequently picked up by radio hams from the very beginning of Soviet OTH activities. Due to its similarity with the tapping noise made by the bird, it became known as the 'Woodpecker' signal. NATO was well aware that the signal might come from unofficial OTH radars in the Soviet ABM network, and called it 'Steel Yard'. Triangulation led to its being located in Ukraine, although measurement errors meant that opinions differed as to its exact source. For many years, disagreements continued concerning the signal's origin, prompting radio hams to express speculative theories centring around a climate-control system, scalar wave weapons or attempts at long-distance mind control. The signal's virtual disappearance from 1986 left speculation in suspense for many years afterwards.

Today it is widely accepted that Soviet OTH radars were located at Komsomolsk-on-Amur in far-eastern Siberia and above all at Chernobyl (transmitter) and near Gomel (receiver), both in the nuclear disaster's contamination zone. The location of the immense transmitter (over 200 metres long and 100 metres high), a few kilometres from the nuclear power station, may explain why the Russians and Ukrainians were so unforthcoming about the source of the 'Woodpecker' signal... In any event, the nuclear catastrophe put an end to the activities of the OTH radar in Chernobyl. Fresh speculative theories today raise the question whether the nuclear power station brought the OTH radar to a halt or if it was the other way round.

New Order

In the 1990s, after the collapse of the USSR, the Latvian government ordered the closure of the Skrunda site for strategic reasons (rapprochement with NATO), but also because of the alarming rumours and studies into irradiation of people living nearby (5). The



OTH Radar, Duga-3, Chernobyl

functions of the Skrunda radar were partly taken over at the end of the 1990s by the Volga radar at Baranovichi, Minsk having better relations with Moscow. It had taken over fifteen years for the Baranovichi site to become fully operational and strategically effective. Since then it has been progressively updated.

Lastly, the prototype for the new strategic radar of the Voronezh type, set up in 2006 near Lejtusi, outside Saint-Petersburg, filled the gap left by the demolition of the Skrunda radar. Another Voronezh is being planned in Armavir in southern Russia to forestall uncertainties linked to its partners in Ukraine and Azerbaijan.

In the US, 'Star Wars' was temporarily put on hold. Despite the ambiguity of studies into the dangers of non-

ionising rays and the proportionally higher cancer levels near the Cape Cod site in particular (6), the BMEWS and Pave Paws installations were regularly updated in the 1990s, and are now considered the detection systems that are hardest to break through.

From 1995, the USA developed a new generation radar operating in the X band (X-Band Radar, XBR), which can detect debris measuring less than 10 cm. The first prototype, christened 'Have Stare', was tested on the air force base in Vandenberg, California, and was then moved to the Vardø site in northern Norway in 1998 (today called Globus). The radar's job is to keep watch on orbital debris, but also on Russian missile tests in the North Atlantic polar area.

In 2006, the first sea-based XBR radar emerged from Texan shipbuilding sites. This was an XBR positioned on a sort of mobile oil-rig that can be moved to strategic areas. The mobile XBR was sent to the Misawa base in Japan for purposes of deterrence and to supervise North Korean airspace, and to the Bering Sea for surveillance of Russian missile tests.

The radar planned by the Americans in the Czech Republic is thought to be the one used in the Kwajalein Atoll (Marshall Islands), a high-performance XBR model that could also guide interceptor missiles that will probably be installed in Poland.

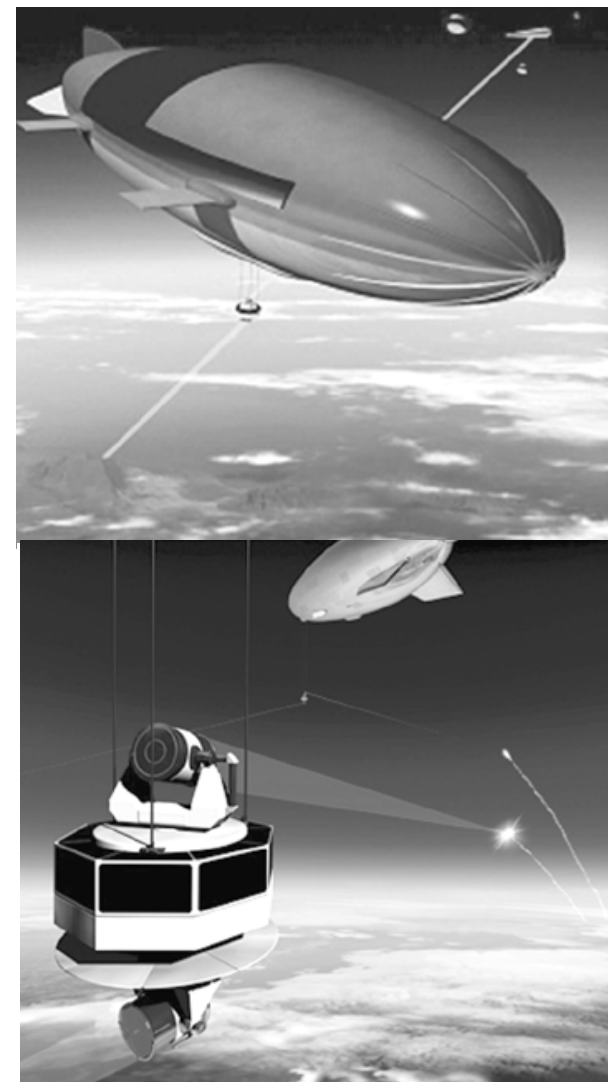
Common Shield?

During the G8 meeting in 2007, Vladimir Putin made a proposal to set up common defences against the Middle East and Iran, using installations in Qabala, Azerbaijan, but the proposal seemed to result from dilatory manoeuvres. According to Moscow, the Daryal radar in Qabala is one of the most sophisticated in the Russian system. Operational since 1985, it has a range of

8000 kilometres. Yet in Baku increasingly insistent rumours claim that Azerbaijan will stop renting its radar to Russia in 2012. The radar has been the object of an inquiry about irradiation in the surrounding areas since 2005 (like in Latvia). The Qabala radar is incompatible with the systems of US anti-missile control, and the Americans will not rebuild it to adapt it to their interests. The radar in Qabala, like the one planned for Amavir, will not be able to undertake guidance of Polish missiles and both have the great disadvantage of being able to observe everything except

Russia.

Vladimir Putin formally acknowledged the delicate situation in which he found himself in April 2007 by announcing a moratorium on the application of the CFE treaty (Treaty on Conventional Armed Forces in Europe), which had been signed in Paris on November 19, 1990, between 22 representatives of NATO states and the Warsaw Pact, and later by the former states of the USSR. The situation is indeed critical for Russia, first of all because many of its radars are located outside its territory (in Belarus, Azerbaijan, Ukraine) and Moscow does not feel immune from its partners' orange revolutions, and has much to lose at the geo-strategic level in these countries, above all regarding its ABM



Simulation of Boeing's laser reflector carried from a Stratellite (High Altitude Airship).

system. Georgia, situated between Russia and Azerbaijan, pay the price of the new Big Game. Another major factor in a period of financial crisis is that the moratoriums allow the US and Russia to relaunch their arms industries.

For the moment, the Americans and the Russians are reviving the old schemas of the Cold War, which in terms of economic war has the advantage of serving their common meta-strategic interests and of doing nothing to help the revival of the European Union (7). It remains that the US is forcing through discussions over ABM protection against a Middle Eastern nuclear threat by 2020, which has prompted Mahmoud Ahmadinejad to call the shield project a 'menace for all the Eurasian continent and for the member countries of the Shanghai Cooperation Organisation (SCO)' (Russia, China, Kazakhstan, Tajikistan, Kyrgyzstan and Uzbekistan, with India, Pakistan, Iran and Mongolia as observers). Russia does not feel directly threatened by Iran, but under Putin is playing a double Atlanticist-European game guided by its own interests: to defuse orange revolutions and to maintain its ABM defence grid, but also to fight Islamism in the south of the federation. Russia sides with the Americans when necessary and joins up with the Iranians when the American policy of containment becomes too blatant. In any event, an American system set up in Europe would make Europe a territory under *de facto* US protection, while a reinforcement of the position in Azerbaijan at the Iranian border would risk stirring up still more the already unstable Caucasian region, which stretches from Chechnya to Iraqi Kurdistan.

"If Russia wants to preserve the oil of Baku (deprived of it Russia would hardly be able to keep not only the Transcaucasus, but also the Northern Caucasus under its control), it should prevent Georgia's independence." (8)

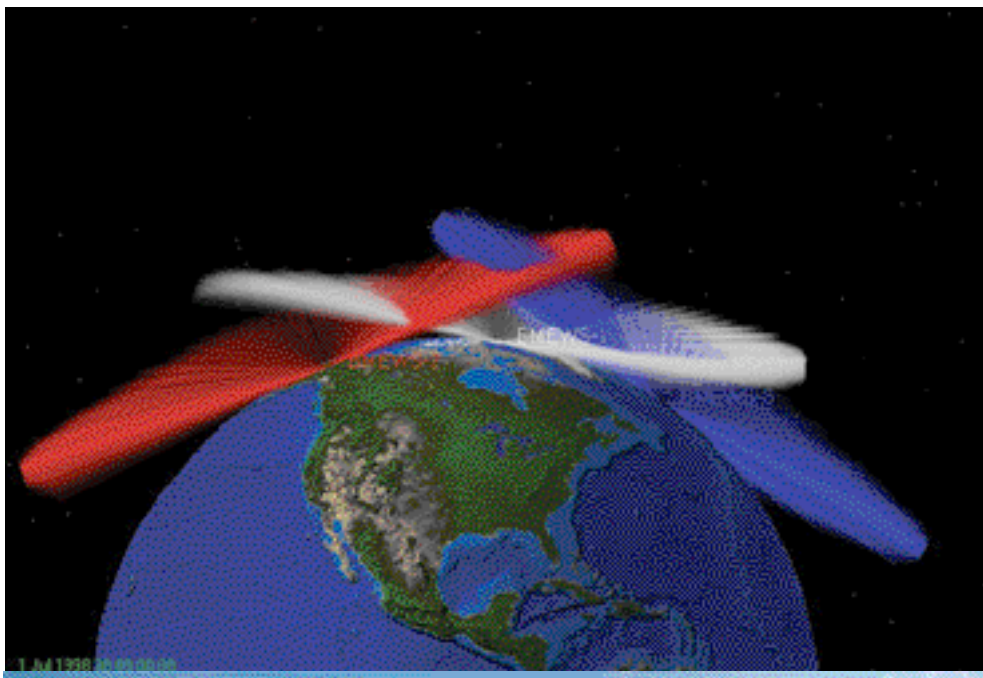
(5) - *International Conference on the Effect of Radio Frequency Electromagnetic Radiation on Organisms*, Skrunda, Latvia (17/06/1994) and *Motor and psychological functions of school children living in the area of the Skrunda Radio Location Station in Latvia*; A. A. Kolodynski and V. V. Kolodynska; Institute of Biology, Latvian Academy of Sciences (1996). This study was carried out on 966 pupils, of whom 224 lived in the areas of Skrunda neighbouring a military early-warning radio location station. The installation emitted frequencies between 154 and 162 MHz, modulated by impulses at 24,4 Hz. Three hundred and eighty-five children lived in the sectors of Skrunda that were not directly exposed to the station ('non-exposed' children). A control group, formed by 2357 subjects from the region of Preili, was also examined, this region having similarities to Skrunda. Diverse tests evaluating motor functions, attention-span and memory were carried out. The exposed group from Skrunda obtained poorer results than the non-exposed group; these differences were moreover more marked in girls.

(6) - *Assessment of Public Health Concerns Associated with Pave Paws Radar Installations*, Report Prepared for The Massachusetts Department of Public Health; 1999; By Linda S. Erdreich, Om

P. Gandhi, Henry Lai, Marvin C. Ziskin. And *An Assessment of Potential Health Effects from Exposure to Pave Paws low-level phased-array radiofrequency energy*; 2005; Board on Radiation Effects Research, Division on Earth and Life Studies, National Research Council, National Academies Press. The analysis undertaken in Cape Cod by the NRC committee on the basis of data from 2000, using the information available on population density, topography, and the direction of the Pave Paws radar beam, reckoned that the proportion of the North Cape Cod population (main residence) submitted to a direct exposure of the Pave Paws radar was 11.8% in 1990 and 12.4% in 2000. "The analysis carried out by the NRC regarding certain cancers, especially colorectal, breast (women), prostate and lung cancer, did not show a direct relation between the high number of cancers in the geographic sector and the exposure to the Pave Paws beam".

(7) - Nicolas Sarkozy's accession to power in France coincided with the creation of an ultramodern radar system for the surveillance of orbital space, the GRAVES ('Grand Réseau Adapté à la Veille Spatiale': 'Large network adapted to spatial surveillance'), set up at two different locations in the country: the emission system at Broye-les-Pesmes in Burgundy and the

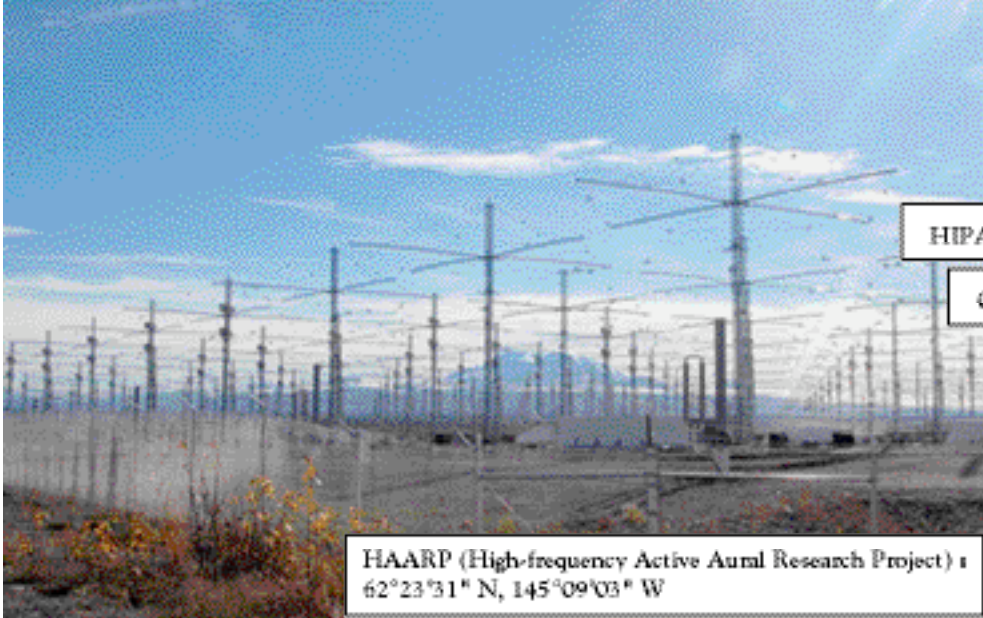
system of reception on a former nuclear silo site on the Plateau d'Albion in the Alps. Since 2005 France has already had at its disposal the revolutionary transhorizon radar Nostradamus (located near Dreux, west of Paris), which can detect objects up to 2000 kilometres away in a 360-degree radius and which thus constitutes a powerful secondary defence system for western Europe. But the official launch of the GRAVES radar at the last Bourget air-show turned France into an essential player in 'full spectrum dominance', since hitherto only Russia and the US had disposed of systems of this kind, like the AN/FPS-85 Electronically Steered Array Radar (ESAR) near Freeport in Florida. At its inauguration, moreover, the chess game of spatial intelligence took on a totally new aspect with the announcement of the detection of some thirty US army satellites gravitating in what are known as 'low' orbits around the Earth and which did not appear in the Pentagon's official catalogue: spy satellites, in short. There is no doubt that the technology developed by the engineers from ONERA, the French aerospace laboratory, should allow the Atlanticist Nicolas Sarkozy to carry some weight in American plans to extend strategic defences.



DETECTION NUCLEAR GEOSTRAT

Arctic complex of space war & nuclear missiles defense shields :

- ballistic nuclear missiles early warning radar (USA, Russian Federation, EU)
- spy satellite detection radar
- ionospheric heater : The American DARPA (Defense Advanced Research Project Agency) is funding HAARP through its Slight or HAND project, which seeks to mitigate the effects of High Altitude Nuclear Detonation (HAND) on low earth orbiting spacecraft.



HIPAS (High Power Aural Stimulation) : 64.52°19'N, 146°50'33" W

CLEAR Air Force Station, Alaska : 64°17'19"N, 149°11'22"W

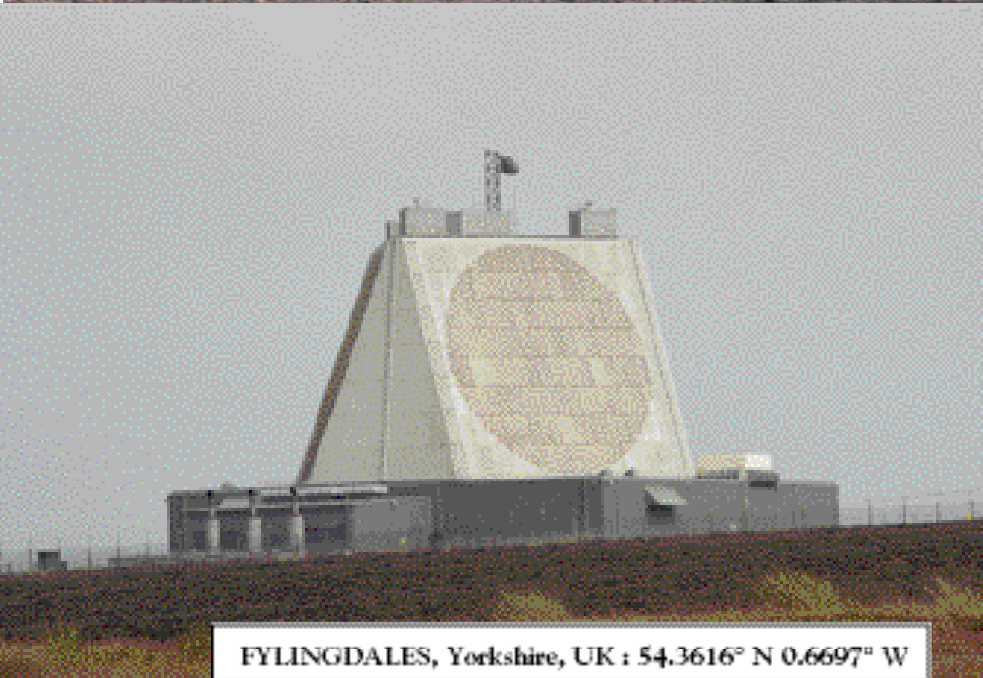
HAARP (High-frequency Active Aural Research Project) : 62°23'31" N, 145°09'03" W



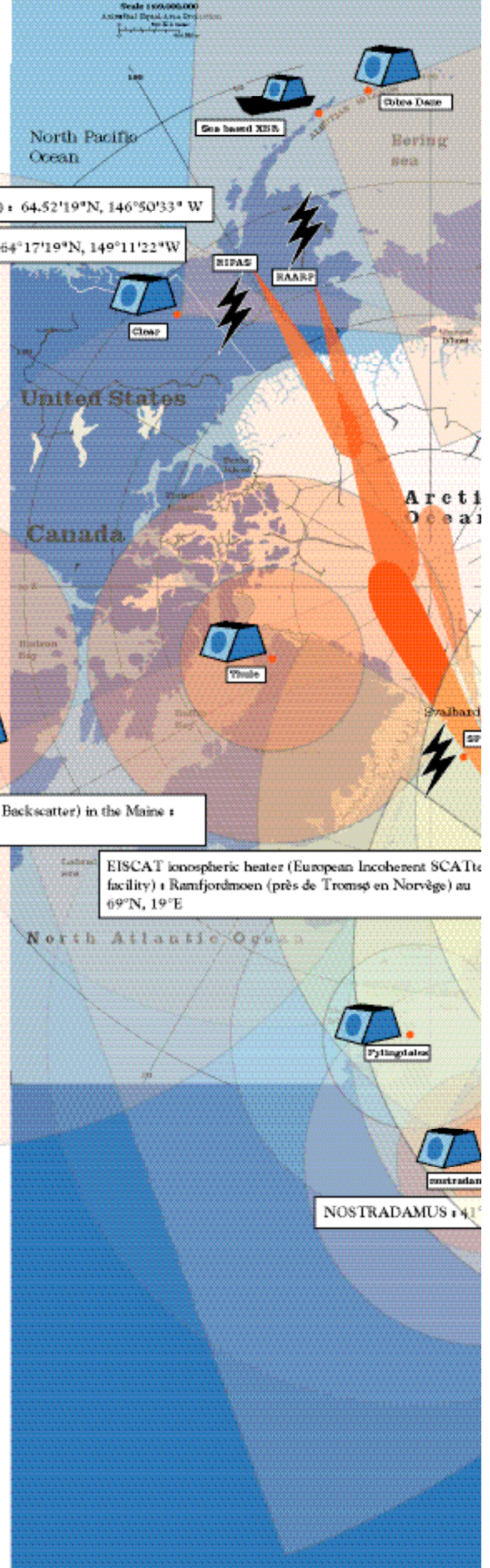
COBRA DANE, Shemya Island (Aleutian Islands), Bering Strait : 52°44'13"N, 174.05'30"E








THULE Air Base Greenland : 76.569° N 68.318° W

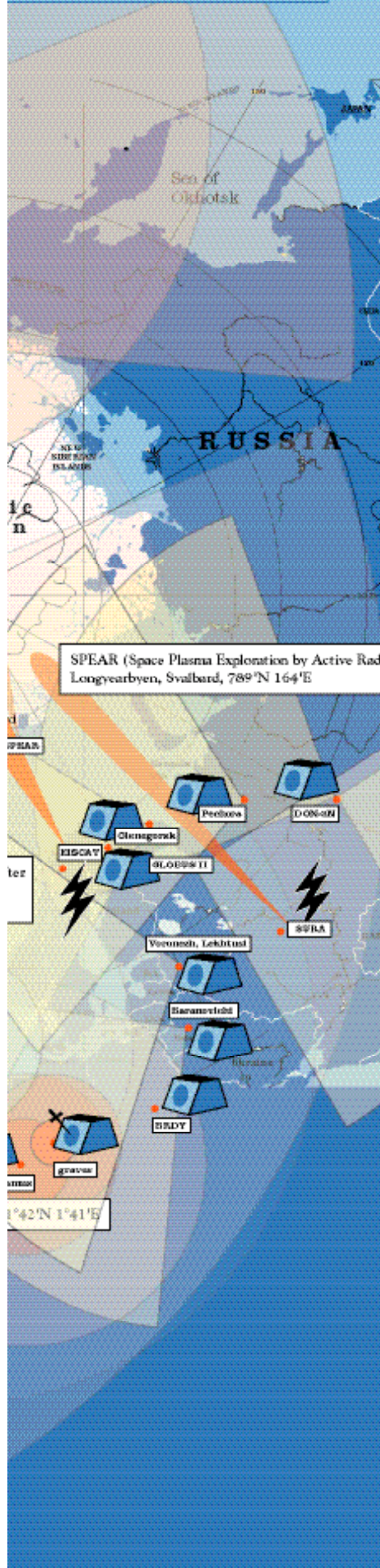


FYLINGDALES, Yorkshire, UK : 54.3616° N 0.6697° W

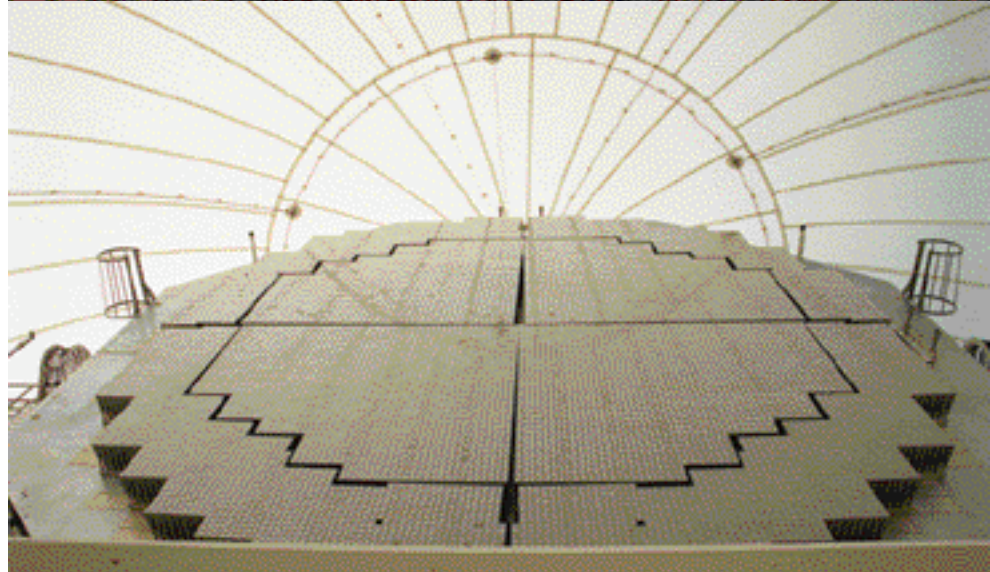


N AND STRATEGY IN ARCTIC

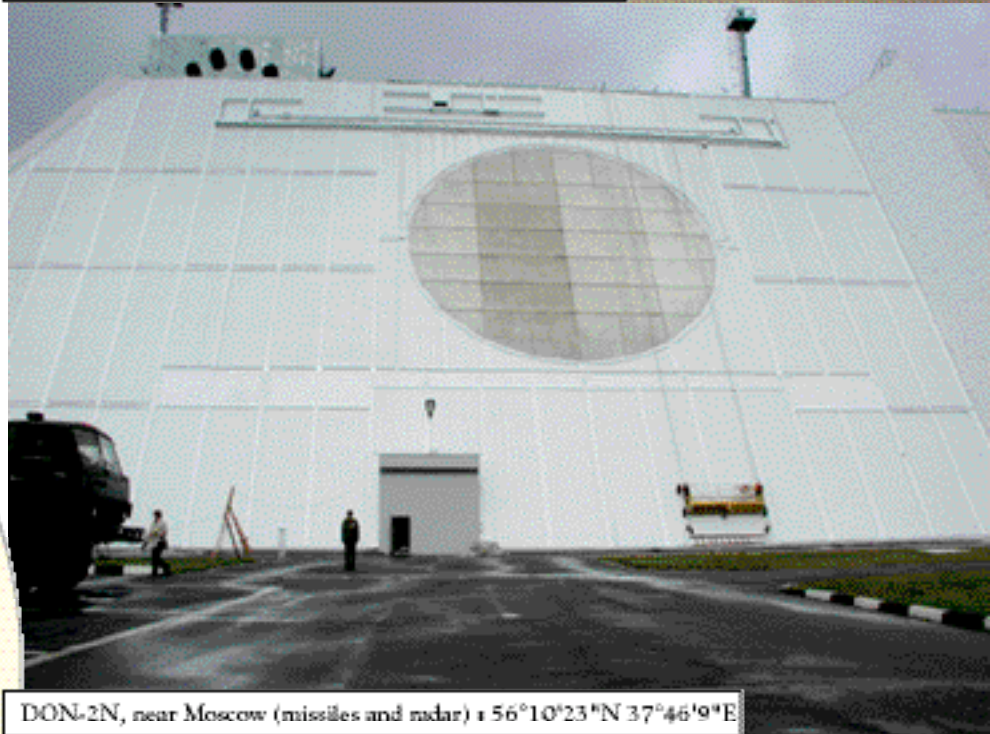
-  Detection
-  Early Warning System
-  Satellite detection
-  Ionospheric heater
-  Range



PECHORA Daryal radar : 65°12'39"N 57°17'6"E



Globus II : 70°22'02"N 31°07'38"E, Vardø, Norway



DON-2N, near Moscow (missiles and radar) : 56°10'23"N 37°46'9"E



Voronezh radar, Lekhtusi, near Saint Petersburg, Russia

Genesis of a Geo-Industry Using water from icebergs

by Ewen Chardronnet

How can deserts be irrigated? By making use of the icebergs melting in the polar circles... One of the first people to make serious plans to transport icebergs from the Antarctic, in the 1950s, was John Issacs, an oceanographer from the Scripps Institution of Oceanography in La Jolla, California. He proposed that three tugboats pull a 15km-long and 1.5km-wide iceberg as far as Los Angeles. But enthusiasm for the idea of transporting icebergs was particularly marked in the 1970s. In 1972, the US National Science Foundation funded a study, written by John Hult and Neill Ostrander, from the highly military-oriented think-tank, the Rand Corporation, entitled *Antarctic Icebergs as a Global Fresh Water Resource*. (1) They argued that five to six tugboats with a tensile strength of 125 tonnes each could in theory pull a 100-million-tonne iceberg. They suggested carving icebergs to give them the shape of a ship's prow, (2) and to pull them along like a 1.2km-long 'iceberg train' with the aid of tugboats fitted with a nuclear power station at the rear, enabling them to be powered by nuclear energy. The melted ice would then be pumped from the coast along pipelines, and the icebergs would be used as a reservoir, while leisure facilities would be set up on them for Californians. Taking the discussion further, in 1973, the Americans Weeks and Campbell published an article in the *Journal of Glaciology*, analysing whether tabular icebergs from the Antarctic could be used for their water. A few years later, in 1977, the 'First International Conference and Workshop on iceberg utilization for fresh water production, weather modification and other applications' took place at Iowa State University. The Egyptian Abdo Husseiny, who taught nuclear physics there, dreamt of transporting icebergs to the Red Sea. Much of the impetus and funding for the conference came from Saudi Arabia, especially from Iceberg Transport International Ltd., whose founder and president was Prince Mohammed Al-Faisal, the nephew of King Khalid, and a rich oil tycoon. The firm, founded in 1977, was mandated to study the feasibility of transporting 100 million tons of iceberg water from Antarctica to the port of Jeddah, a distance of 14,000 kilometres. The countries that made the most substantial contributions to the conference were France, Canada, Saudi Arabia, Australia, England, Egypt and Libya. Several scenarios were put forward: Professor Sharkail Ismail, a technical advisor to Prince Mohammed Al-Faisal, imagined propelling icebergs forwards mechanically with a kind of oar, using energy obtained from the difference in temperature; Dr. Job, from Adelaide University, suggested locating the icebergs that had already gone part of the way and tying a cable around them to pull them along. As for climate change, mention was made of the potential consequences of the icebergs' passing through tropical regions; the problem for fauna and flora of keeping an iceberg stagnant so that pipelines could be fitted to it in California or Arabia, as well as the idea of putting icebergs into the path of hurricanes to lower air temperature.

It was claimed that 1200km³ of icebergs are created each year, of which 800km³ could be 'harvested' in a sustainable way. For a global water consumption of 3,100km³, this would constitute a 25% increase in the global water supply. During the closing ceremony, the conference was even compared to the International Conference on the Panama Canal in 1879. But no consensus concerning the 'optimal' size of an iceberg that could be towed was found during the conference, while legal uncertainty about the ownership of icebergs still came up against the Antarctic Treaty, and the oil crisis raised the cost of such projects and made collaboration between the West and Saudi Arabia appear risky. The Saudis preferred to concentrate on their industry of desalination of sea water. (3)

Yet at the conference it was also pointed out that engineers from the Memorial University of Newfoundland had already experimented with certain techniques for hauling icebergs, with a view to protecting off-shore oilrigs. Icebergs from the west coast of Greenland drift towards Newfoundland every year between April and July – the 'hunting season'. Newfoundland, an island lying in the path of the icebergs, has developed a tourist industry from the

phenomenon, named *Iceberg Watch*. In 1990, Gary Pollack, a businessman from the region, suggested bottling water from an iceberg to supply plentiful water to soldiers from the coalition deployed in Saudi Arabia during Operation Desert Storm. Seldom taken seriously during his search for funding, Pollack nonetheless studied, worked on and finalised a safe method for taking water from icebergs without the risk of these enormous ice cubes overturning in the process. The idea of using iceberg water to make beer, vodka and bottled water thus first took shape in Newfoundland in the early 1990s. From then on, two companies, the Canadian Iceberg Vodka Corporation, founded by Garry Pollack, and Iceberg Industries Corp., would develop the techniques for collecting ice and would try to obtain health authorisations.

Canadian Iceberg was set up in 1995. Since icebergs were not then recognised by the American and Canadian governments as a source of water, the firm decided to bottle vodka, *Iceberg Vodka*, in partnership with the Newfoundland Liquor Corporation, which handled bottling.

Set up by a former director of Canadian Iceberg in 1996, Iceberg Industries Corp is a subsidiary of Iceberg Corp of America, Nevada. In 2000, the US Food and Drug Administration (FDA) granted a temporary licence to Iceberg Industries Corp to bottle iceberg water under the brand name *Borealis Iceberg Water*. The company began production in its Trepassey, Newfoundland plant and, alongside its *Borealis Iceberg Water* brand, produced *Borealis Iceberg Beer* with its water in Ontario, and signed a major contract with Loblaw Cos. Ltd., which marketed iceberg water under its house brand name *President's Choice*. (4) In 2002, Iceberg Industries Corp announced plans to run a floating bottling plant. A 22-metre mechanical digger was to carry out excavation work as if it were a coalmine. The ice would then be pumped by a pneumatic system as far as the plant-ship. But by 2004 the firm had become inactive and in May 2005 the FDA revoked the temporary licence granted to Iceberg Industries Corp. In July 2005, *Canada's Original Iceberg Water*, the other brand produced by Canadian Iceberg, was on sale in upmarket grocery stores in New York and New Jersey, in 0.3, 0.5 and 1 litre designer bottles. David Hood, vice-president of *Iceberg Water*, commented: "It cost the company more than \$150,000 in legal and FDA fees for the right to call its bottled water iceberg water." (5) The firm sent ships to the Atlantic in search of iceberg fragments, blocks of ice of one to three tonnes that had come away from icebergs, which had themselves been separated from the icecap and could measure up to 250 or 300 metres. Transported to the distillery, the ice fragments underwent a controlled melting process. Thus the ice is never exposed to the environment and its purity is protected, "like when snow fell at the North Pole hundreds of thousands of years ago," adds David Hood. (6) *Iceberg Vodka* is sold in 13 American states, the most important market being Florida (60,000 to 70,000 cases in 2005). The company launched *Iceberg Gin* in 2007. In 2008, Canadian Iceberg decided to convert a former fish plant in Port Union into a world-class bottling plant for iceberg water. (7)

Several companies make use of the water and ice of Greenland on site, including Greenland Ice Cap Productions, which has produced a beer (nicknamed "the global-warming beer") in Narsaq since 2006 using ice from glaciers. Greenland Ice Cap Productions has just signed a partnership agreement with Premium Glacier Inc., a Canadian firm that makes *Siku Glacier Ice Vodka* in the Netherlands, *Siku Ice Beer* in Germany, and *Siku Ice Water*. In the 2004 architectural exhibition *Too Perfect: Seven New Denmarks*, the curator, Bruce Mau, outlined a vision of Denmark's future role in the fresh water market: instead of leaving others to make profits from the country's natural resource, instead of letting Manhattan and Bangladesh flood, and before tons of fresh water bring catastrophic disruption to the ocean currents and the world climate, Greenland could start to bottle billions of litres of water floating in the sea and win a healthy share of the world bottled water market. Bruce Mau writes: "Using the ocean to transport melted ice is an industry in its infancy, but many examples and

technologies are already available". For instance, he cites the Medusa Bag, "a giant bag designed in 1988 by James Cran from Calgary, Alberta, attempting to meet the huge needs for water imports in California, Israel, Jordan and Palestine. It can carry up to 1,000,000m³ of melted ice". (8) The Medusa Bag licence is today owned by the Australian company *MH Waters* and the largest bag measures 670 metres by 160 metres.



Advertisement for the Iceberg Vodka

The general view of global warming has its opponents, but they have little influence when faced with industrialists wanting to open up new markets – by using icebergs, for example, a resource that had hitherto been spared by industry. When you take the ice cubes out of your glass, does your gin and tonic stay cool for long?

(1) "Antarctic Icebergs as a Global Fresh Water Resource", by John L. Hult, Neill C. Ostrander, Rand Corporation, 1973. www.rand.org/pubs/reports/R1255/

(2) This is somewhat reminiscent of the "Habakkuk" iceberg-airport project conceived by the British during the Battle of the Atlantic in 1942. They imagined a one-kilometre-long, 200-metre-wide and 40-metre-high iceberg-ship that could resist torpedoes from German U-boats and would operate as an airplane base in the heart of the ocean, which prompted Winston Churchill and Lord Mountbatten to back a technical study carried out in Canada. The project was initiated by Geoffrey Pike, Lord Mountbatten's military inventor and scientific advisor, around the idea of adding a small quantity of sawdust to water before freezing it. Pike named the mixture pykrete. Tests were made in Canada, but the Normandy landings put a stop to this titanic project, which was also an enormous consumer of wood.

(3) Prince Mohammed al-Faisal was later to concentrate his activities in Geneva on Islamic finance through his trust *Dar al-Maal al-Islami*, which he founded in 1981 after the failure of the Iceberg project. The trust had links with the bin Laden family, and among the twelve members of the board were Haydar Mohamed bin Laden, Osama Bin Laden's half-brother, and Khalid bin Mahfouz, who was also implicated in the notorious Bank of Credit and Commerce International scandal, a Luxembourg-based bank, but with funding from the United Arab Emirates, which was the crossroads at the time of the interests of the Bush and bin Laden families. Mahfouz owned 20% of shares at the end of the 1990s and helped fund Osama bin Laden's activities in Afghanistan in the late 1990s.

(4) "The use of icebergs to make drinking water... From hauling to bottling" ("L'exploitation des icebergs pour l'eau potable...Du remorquage à l'embouteillage"), Marianne Audette-Chapdelaine, June 2007. www.agissonsensemble.org/spip.php?article27

(5) "A Quality Competitor in a Spirited Industry." Ministry of Foreign Affairs and International Trade, Canada, 2006. www.international.gc.ca/commerce/success/iceberg-vodka-en.asp

(6) "Icebergs hit new ground." Canadian Tourism Commission, Media Centre, 14 March 2008. http://mediacentre.canada.travel/content/travel_story_ideas/icebergs-hit-new-ground

(7) "Government of Canada supports tourism and business development in Port Union." Atlantic Canada Opportunities Agency, 31 May, 2008.

www.acoa-apeca.gc.ca/e/media/press/press.shtml?4145

(8) "Too perfect: seven new Denmarks." 29 September – 21 November 2004, curator: Bruce Mau Design, Danish Centre of Architecture, Copenhagen, and Venice Biennale of Architecture.

“Doomsday Seed Vault“ in the Arctic

Bill Gates, Rockefeller and the GMO giants know something we don't

F. William Engdahl, research Associate, *Centre for Global Research, Canada**

One thing Microsoft founder Bill Gates can't be accused of is sloth. He was already programming at 14, founded Microsoft at age 20 while still a student at Harvard. By 1995 he had been listed by Forbes as the world's richest man from being the largest shareholder in his Microsoft, a company which his relentless drive built into a de facto monopoly in software systems for personal computers.

In 2006 when most people in such a situation might think of retiring to a quiet Pacific island, Bill Gates decided to devote his energies to his Bill and Melinda Gates Foundation, the world's largest 'transparent' private foundation as it says, with a whopping \$34.6 billion endowment and a legal necessity to spend \$1.5 billion a year on charitable projects around the world to maintain its tax free charitable status. A gift from friend and business associate, mega-investor Warren Buffett in 2006, of some \$30 billion worth of shares in Buffet's Berkshire Hathaway put the Gates' foundation into the league where it spends almost the amount of the entire annual budget of the United Nations' World Health Organization.

So when Bill Gates decides through the Gates Foundation to invest some \$30 million of their hard earned money in a project, it is worth looking at.

No project is more interesting at the moment than a curious project in one of the world's most remote spots, Svalbard. Bill Gates is investing millions in a seed bank on the Barents Sea near the Arctic Ocean, some 1,100 kilometers from the North Pole. Svalbard is a barren piece of rock claimed by Norway and ceded in 1925 by international treaty.

On this God-forsaken island Bill Gates is investing tens of his millions along with the Rockefeller Foundation, Monsanto Corporation, Syngenta Foundation and the Government of Norway, among others, in what is called the 'doomsday seed bank.' Officially the project is named the Svalbard Global Seed Vault on the Norwegian island of Spitsbergen, part of the Svalbard island group.

The seed bank is being built inside a mountain on Spitsbergen Island near the small village of Longyearbyen. It's almost ready for 'business' according to their releases. The bank will have dual blast-proof doors with motion sensors, two airlocks, and walls of steel-reinforced concrete one meter thick. It will contain up to three million different varieties of seeds from the entire world, 'so that crop diversity can be conserved for the future,' according to the Norwegian government. Seeds will be specially wrapped to exclude moisture. There will be no full-time staff, but the vault's relative inaccessibility will facilitate monitoring any possible human activity.

Did we miss something here? Their press release stated, 'so that crop diversity can be conserved for the future.' What future do the seed bank's sponsors foresee, that would threaten the global availability of current seeds, almost all of which are already well protected in designated seed banks around the world?

Anytime Bill Gates, the Rockefeller Foundation, Monsanto and Syngenta get together on a common project, it's worth digging a bit deeper behind the rocks on Spitsbergen. When we do we find some fascinating things.

The first notable point is who is sponsoring the doomsday seed vault. Here joining the Norwegians are, as noted, the Bill & Melinda Gates Foundation; the US agribusiness giant DuPont/Pioneer Hi-Bred, one of the world's largest owners of patented genetically-modified (GMO) plant seeds and related agrichemicals; Syngenta, the Swiss-based major GMO seed and agrichemicals company through its Syngenta Foundation; the Rockefeller Foundation, the private group who created the "gene revolution with over \$100 million of seed money since the 1970's; CGIAR, the global network created by the Rockefeller Foundation to promote its ideal of genetic purity through agriculture change.

THE CGIAR PROJECT

As I detailed in the book, *Seeds of Destruction*, in 1960 the Rockefeller Foundation, John D. Rockefeller III's Agriculture Development Council and the Ford Foundation joined forces to create the International Rice Research Institute (IRRI) in Los Baños, the Philippines.⁽¹⁾ By 1971, the Rockefeller Foundation's IRRI, along with their Mexico-based International Maize and Wheat Improvement Center and two other Rockefeller and Ford Foundation-created international research centers, the IITA for tropical agriculture, Nigeria, and IRRI for rice, Philippines, combined to form a global Consultative Group on International Agriculture Research (CGIAR).

CGIAR was shaped at a series of private conferences held at the Rockefeller Foundation's conference center in Bellagio, Italy. Key participants at the Bellagio talks were the Rockefeller Foundation's George Harrar, Ford Foundation's Forrest Hill, Robert McNamara of the

World Bank and Maurice Strong, the Rockefeller family's international environmental organizer, who, as a Rockefeller Foundation Trustee, organized the UN Earth Summit in Stockholm in 1972.

To ensure maximum impact, CGIAR drew in the United Nations' Food and Agriculture Organization, the UN Development Program and the World Bank. Thus, through a carefully-planned leverage of its initial funds, the Rockefeller Foundation by the beginning of the 1970's was in a position to shape global agriculture policy. And shape it did.

Financed by generous Rockefeller and Ford Foundation study grants, CGIAR saw to it that leading Third World agriculture scientists and agronomists were brought to the US to 'master' the concepts of modern agribusiness production, in order to carry it back to their homeland. In the process they created an invaluable network of influence for US agribusiness promotion in those countries, most especially promotion of the GMO 'Gene Revolution' in developing countries, all in the name of science and efficient, free market agriculture.



Inside Svalbard's Global Seed Vault

The "Green Revolution"

The same Rockefeller Foundation created the so-called Green Revolution, out of a trip to Mexico in 1946 by Nelson Rockefeller and former New Deal Secretary of Agriculture and founder of the Pioneer Hi-Bred Seed Company, Henry Wallace.

The Green Revolution purported to solve the world hunger problem to a major degree in Mexico, India and other select countries where Rockefeller worked. Rockefeller Foundation agronomist, Norman Borlaug, won a Nobel Peace Prize for his work, hardly something to boast about with the likes of Henry Kissinger sharing the same.

In reality, as it years later emerged, the Green Revolution was a brilliant Rockefeller family scheme to develop a globalized agribusiness which they then could monopolize just as they had done in the world oil industry beginning a half century before. As Henry Kissinger declared in the 1970's, 'If you control the oil you control the country; if you control food, you control the population.'

Agribusiness and the Rockefeller Green Revolution went hand-in-hand. They were part of a grand strategy which included Rockefeller Foundation financing of research for the development of genetic engineering of plants and animals a few years later.

John H. Davis had been Assistant Agriculture Secretary under President Dwight Eisenhower in the early 1950's. He left Washington in 1955 and went to the Harvard Graduate School of Business, an unusual place for an agriculture expert in those days. He had a clear strategy. In 1956, Davis wrote an article in the *Harvard Business Review* in which he declared that "the only way to solve the so-called farm problem once and for all, and avoid cumbersome government programs, is to progress from

agriculture to agribusiness." He knew precisely what he had in mind, though few others had a clue back then—a revolution in agriculture production that would concentrate control of the food chain in corporate multinational hands, away from the traditional family farmer.⁽²⁾

A crucial aspect driving the interest of the Rockefeller Foundation and US agribusiness companies was the fact that the Green Revolution was based on proliferation of new hybrid seeds in developing markets. One vital aspect of hybrid seeds was their lack of reproductive capacity. Hybrids had a built in protection against multiplication. Unlike normal open pollinated species whose seed gave yields similar to its parents, the yield of the seed borne by hybrid plants was significantly lower than that of the first generation.

That declining yield characteristic of hybrids meant farmers must normally buy seed every year in order to obtain high yields. Moreover, the lower yield of the second generation eliminated the trade in seed that was often done by seed producers without the breeder's authorization. It prevented the redistribution of the commercial crop seed by middlemen. If the large multinational seed companies were able to control the parental seed lines in house, no competitor or farmer would be able to produce the hybrid. The global concentration of hybrid seed patents into a handful of giant seed companies, led by DuPont's Pioneer Hi-Bred and Monsanto's Dekalb laid the ground for the later GMO seed revolution.⁽³⁾

In effect, the introduction of modern American agricultural technology, chemical fertilizers and commercial hybrid seeds all made local farmers in developing countries, particularly the larger more

F. William Engdahl, author of "Seeds of Destruction, the Hidden Agenda of Genetic Manipulation", edited by *Global Research* (www.globalresearch.ca).
Contact by e-mail : info@engdahl.oilgeopolitics.net

(1) - F. William Engdahl, *Seeds of Destruction*, Montreal, (Global Research, 2007).

(2) - John H. Davis, *Harvard Business Review*, 1956, cited in Geoffrey Lawrence, *Agribusiness, Capitalism and the Countryside*, Pluto Press, Sydney, 1987. See also Harvard Business School, *The Evolution of an Industry*

and a Seminar: *Agribusiness Seminar*, <http://www.exed.hbs.edu/programs/agb/seminar.html>.

(3) - Engdahl, op cit., p. 130.

Continuation of the article “Doomsday Seed Vault...”

established ones, dependent on foreign, mostly US agribusiness and petro-chemical company inputs. It was a first step in what was to be a decades-long, carefully planned process.

Under the Green Revolution Agribusiness was making major inroads into markets which were previously of limited access to US exporters. The trend was later dubbed “market-oriented agriculture.” In reality it was agribusiness-controlled agriculture.

Through the Green Revolution, the Rockefeller Foundation and later Ford Foundation worked hand-in-hand shaping and supporting the foreign policy goals of the United States Agency for International Development (USAID) and of the CIA.

One major effect of the Green Revolution was to depopulate the countryside of peasants who were forced to flee into shantytown slums around the cities in desperate search for work. That was no accident; it was part of the plan to create cheap labor pools for forthcoming US multinational manufactures, the ‘globalization’ of recent years.

When the self-promotion around the Green Revolution died down, the results were quite different from what had been promised. Problems had arisen from indiscriminate use of the new chemical pesticides, often with serious health consequences. The mono-culture cultivation of new hybrid seed varieties decreased soil fertility and yields over time. The first results were impressive: double or even triple yields for some crops such as wheat and later corn in Mexico. That soon faded.

The Green Revolution was typically accompanied by large irrigation projects which often included World Bank loans to construct huge new dams, and flood previously settled areas and fertile farmland in the process. Also, super-wheat produced greater yields by saturating the soil with huge amounts of fertilizer per acre, the fertilizer being the product of nitrates and petroleum, commodities controlled by the Rockefeller-dominated Seven Sisters major oil companies.

Huge quantities of herbicides and pesticides were also used, creating additional markets for the oil and chemical giants. As one analyst put it, in effect, the Green Revolution was merely a chemical revolution. At no point could developing nations pay for the huge amounts of chemical fertilizers and pesticides. They would get the credit courtesy of the World Bank and special loans by Chase Bank and other large New York banks, backed by US Government guarantees.

Applied in a large number of developing countries, those loans went mostly to the large landowners. For the smaller peasants the situation worked differently. Small peasant farmers could not afford the chemical and other modern inputs and had to borrow money.

Initially various government programs tried to provide some loans to farmers so that they could purchase seeds and fertilizers. Farmers who could not participate in this kind of program had to borrow from the private sector. Because of the exorbitant interest rates for informal loans, many small farmers did not even get the benefits of the initial higher yields. After harvest, they had to sell most if not all of their produce to pay off loans and interest. They became dependent on money-lenders and traders and often lost their land. Even with soft loans from government agencies, growing subsistence crops gave way to the production of cash crops. (4)

Since decades the same interests including the Rockefeller Foundation which backed the initial Green Revolution, have worked to promote a second ‘Gene Revolution’ as Rockefeller Foundation President Gordon Conway termed it several years ago, the spread of industrial agriculture and commercial inputs including GMO patented seeds.

Gates, Rockefeller and a Green Revolution in Africa

With the true background of the 1950’s Rockefeller Foundation Green Revolution clear in mind, it becomes especially curious that the same Rockefeller Foundation along with the Gates Foundation which are now investing millions of dollars in preserving every seed against a possible “doomsday” scenario are also investing millions in a project called The Alliance for a Green Revolution in Africa.

AGRA, as it calls itself, is an alliance again with the same Rockefeller Foundation which created the “Gene Revolution.” A look at the AGRA Board of Directors confirms this.

It includes none other than former UN Secretary General Kofi Annan as chairman. In his acceptance speech in a World Economic Forum event in Cape Town South Africa in June 2007, Kofi Annan stated, ‘I accept this challenge with gratitude to the Rockefeller Foundation, the Bill & Melinda Gates Foundation, and all others who support our African campaign.’

In addition the AGRA board numbers a South African, Strive Masiyiwa who is a Trustee of the Rockefeller Foundation. It includes Sylvia M. Mathews of the Bill & Melinda Gates Foundation; Mamphela Ramphele, former Managing Director of the World Bank (2000 – 2006); Rajiv J. Shah of the Gates Foundation; Nadya K. Shmavonian of the Rockefeller Foundation; Roy Steiner

of the Gates Foundation. In addition, an Alliance for AGRA includes Gary Toenniessen the Managing Director of the Rockefeller Foundation and Akinwumi Adesina, Associate Director, Rockefeller Foundation.

To fill out the lineup, the Programmes for AGRA includes Peter Matlon, Managing Director, Rockefeller Foundation; Joseph De Vries, Director of the Programme for Africa’s Seed Systems and Associate Director, Rockefeller foundation; Akinwumi Adesina, Associate Director, Rockefeller Foundation. Like the old failed Green Revolution in India and Mexico, the new Africa Green Revolution is clearly a high priority of the Rockefeller Foundation.

While to date they are keeping a low profile, Monsanto and the major GMO agribusiness giants are believed at the heart of using Kofi Annan’s AGRA to spread their patented GMO seeds across Africa under the deceptive label, ‘bio-technology,’ the new euphemism for genetically engineered patented seeds. To date South Africa is the only African country permitting legal planting of GMO crops. In 2003 Burkina Faso authorized GMO trials. In 2005 Kofi Annan’s Ghana drafted bio-safety legislation and key officials expressed their intentions to pursue research into GMO crops.

Africa is the next target in the US-government campaign to spread GMO worldwide. Its rich soils make it an ideal candidate. Not surprisingly many African governments suspect the worst from the GMO sponsors as a multitude of genetic engineering and biosafety projects have been initiated in Africa, with the aim of introducing GMOs into Africa’s agricultural systems. These include sponsorships offered by the US government to train African scientists in genetic engineering in the US, biosafety projects funded by the United States Agency for International Development (USAID) and the World Bank; GMO research involving African indigenous food crops.

The Rockefeller Foundation has been working for years to promote, largely without success, projects to introduce GMOs into the fields of Africa. They have backed research that supports the applicability of GMO cotton in the Makhathini Flats in South Africa.

Monsanto, who has a strong foothold in South Africa’s seed industry, both GMO and hybrid, has conceived of an ingenious smallholders’ programme known as the ‘Seeds of Hope’ Campaign, which is introducing a green revolution package to small scale poor farmers, followed, of course, by Monsanto’s patented GMO seeds. (5)

Syngenta AG of Switzerland, one of the ‘Four Horsemen of the GMO Apocalypse’ is pouring millions of dollars into a new greenhouse facility in Nairobi, to develop GMO insect resistant maize. Syngenta is a part of CGIAR as well. (6)

Move on to Svalbard

Now is it simply philosophical sloppiness? What leads the Gates and Rockefeller foundations to at one and the same time to back proliferation of patented and soon-to-be Terminator patented seeds across Africa, a process which, as it has in every other place on earth, destroys the plant seed varieties as monoculture industrialized agribusiness is introduced? At the same time they invest tens of millions of dollars to preserve every seed variety known in a bomb-proof doomsday



Rudolf Schlichter, *Blind Power* (1937), *Berlinische Galerie – Landesmuseum Für Moderne Kunst*

vault near the remote Arctic Circle ‘so that crop diversity can be conserved for the future’ to restate their official release?

It is no accident that the Rockefeller and Gates foundations are teaming up to push a GMO-style Green Revolution in Africa at the same time they are quietly financing the ‘doomsday seed vault’ on Svalbard. The GMO agribusiness giants are up to their ears in the Svalbard project.

Indeed, the entire Svalbard enterprise and the people involved call up the worst catastrophe images of the Michael Crichton bestseller, *Andromeda Strain*, a sci-fi thriller where a deadly disease of extraterrestrial origin causes rapid, fatal clotting of the blood threatening the entire human species. In Svalbard, the future world’s most secure seed repository will be guarded by the policemen of the GMO Green Revolution—the Rockefeller and Gates Foundations, Syngenta, DuPont and CGIAR.

The Svalbard project will be run by an organization called the Global Crop Diversity Trust (GCDT). Who are they to hold such an awesome trust over the planet’s entire seed varieties? The GCDT was founded by the United Nations Food and Agriculture Organisation (FAO) and Bioversity International (formerly the International Plant Genetic Research Institute), an offshoot of the CGIAR. The Global Crop Diversity Trust is based in Rome. Its Board is chaired by Margaret Catley-Carlson a Canadian also on the advisory board of Group Suez Lyonnaise des Eaux, one of the world’s largest private water companies. Catley-Carlson was also president until 1998 of the New York-based Population Council, John D. Rockefeller’s population reduction organization, set up in 1952 to advance the Rockefeller family’s eugenics program under the cover of promoting “family planning,” birth control devices, sterilization and “population control” in developing countries.

Other GCDT board members include former Bank of America executive presently head of the Hollywood DreamWorks Animation, Lewis Coleman. Coleman is also the lead Board Director of Northrup Grumman Corporation, one of America’s largest military industry Pentagon contractors.

Jorio Dauster (Brazil) is also Board Chairman of Brasil Ecodiesel. He is a former Ambassador of Brazil to the European Union, and Chief Negotiator of Brazil’s foreign debt for the Ministry of Finance. Dauster has also served as President of the Brazilian Coffee Institute and as Coordinator of the Project for the Modernization of Brazil’s Patent System, which involves legalizing patents on seeds which are genetically modified, something until recently forbidden by Brazil’s laws.

Cary Fowler is the Trust’s Executive Director. Fowler was Professor and Director of Research in the Department for International Environment & Development Studies at the Norwegian University of Life Sciences. He was also a Senior Advisor to the Director General of Bioversity International. There he represented the Future Harvest Centres of the Consultative Group on International Agricultural Research (CGIAR) in negotiations on the International Treaty on Plant Genetic Resources. In the 1990s, he headed the International Program on Plant Genetic Resources at the FAO. He drafted and supervised negotiations of FAO’s Global Plan of Action for Plant Genetic Resources, adopted by 150 countries in 1996. He is a past-member of the National Plant Genetic Resources Board of the US and the Board of Trustees of the International Maize and Wheat Improvement Center in Mexico, another Rockefeller Foundation and CGIAR project.

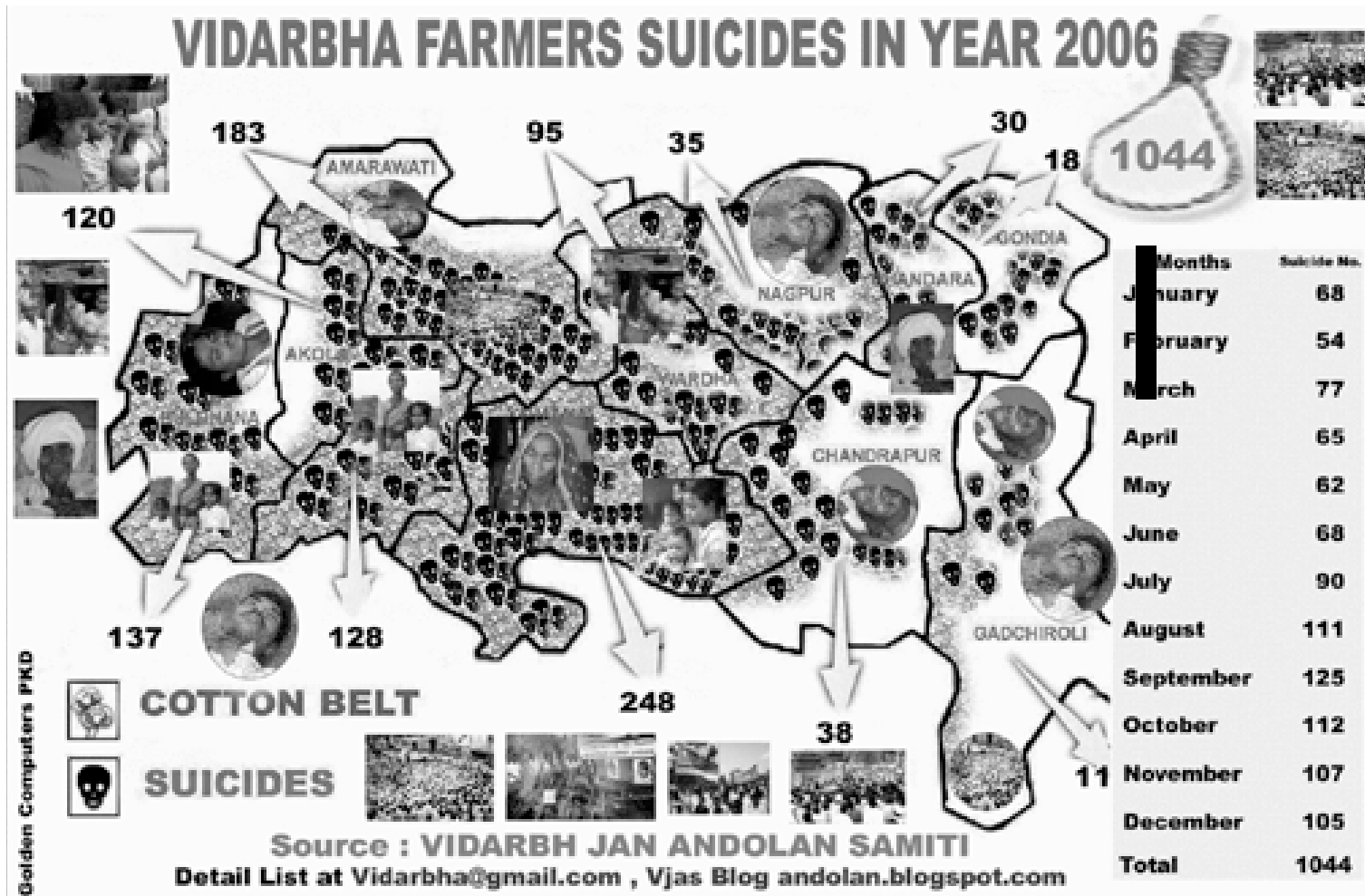
GCDT board member Dr. Mangala Rai of India is the Secretary of India’s Department of Agricultural Research and Education (DARE), and Director General of the Indian Council for Agricultural Research (ICAR). He is also a Board Member of the Rockefeller Foundation’s International Rice Research Institute (IRRI), which promoted the world’s first major GMO experiment, the much-hyped ‘Golden Rice’ which proved a failure. Rai has served as Board Member for CIMMYT (International Maize and Wheat Improvement Center), and a Member of the Executive Council of the CGIAR.

Global Crop Diversity Trust Donors or financial angels include as well, in the words of the Humphrey Bogart Casablanca classic, ‘all the usual suspects.’ As well as the Rockefeller and Gates Foundations, the Donors include GMO giants DuPont-Pioneer Hi-Bred, Syngenta of Basle Switzerland, CGIAR and the State Department’s energetically pro-GMO agency for development aid, USAID. Indeed it seems we have the GMO and population reduction foxes guarding the hen-house of mankind, the global seed diversity store in Svalbard. (7)

Why now Svalbard?

We can legitimately ask why Bill Gates and the Rockefeller Foundation along with the major genetic engineering agribusiness giants such as DuPont and Syngenta, along with CGIAR are building the Doomsday Seed Vault in the Arctic.

Who uses such a seed bank in the first place? Plant breeders and researchers are the major users of gene banks. Today’s largest plant breeders are Monsanto, DuPont, Syngenta and Dow Chemical, the global plant-patenting GMO giants. Since early in 2007 Monsanto holds world patent rights together with the United States Government for plant so-called ‘Terminator’ or Genetic Use Restriction Technology (GURT). Terminator is an



According to official statistic, more than 150,000 Indian farmers committed suicide since 1997 unable to repay crop loans. The crisis has been building for years and Prime Minister Manmohan Singh's government came up with a plan in the 2008-09 budget: cancel debts of small farmers with loans overdue on December 31, 2007, and which remained unpaid up to February 29. But the write-off came with riders, beneficiaries can own up to two hectares (five acres) and only bank loans will be cancelled, which meant nearly a quarter of 40 million targeted farmers will not benefit because most borrowed from rapacious moneylenders or they own larger tracts of land.

ominous technology by which a patented commercial seed commits 'suicide' after one harvest. Control by private seed companies is total. Such control and power over the food chain has never before in the history of mankind existed.

This clever genetically engineered terminator trait forces farmers to return every year to Monsanto or other GMO seed suppliers to get new seeds for rice, soybeans, corn, wheat whatever major crops they need to feed their population. If broadly introduced around the world, it could within perhaps a decade or so make the world's majority of food producers new feudal serfs in bondage to three or four giant seed companies such as Monsanto or DuPont or Dow Chemical.

That, of course, could also open the door to have those private companies, perhaps under orders from their host government, Washington, deny seeds to one or another developing country whose politics happened to go against Washington's. Those who say 'It can't happen here' should look more closely at current global events. The mere existence of that concentration of power in three or four private US-based agribusiness giants is grounds for legally banning all GMO crops even were their harvest gains real, which they manifestly are not.

These private companies, Monsanto, DuPont, Dow Chemical hardly have an unsullied record in terms of stewardship of human life. They developed and proliferated such innovations as dioxin, PCBs, Agent Orange. They covered up for decades clear evidence of carcinogenic and other severe human health consequences of use of the toxic chemicals. They have buried serious scientific reports that the world's most widespread herbicide, glyphosate, the essential ingredient in Monsanto's Roundup herbicide that is tied to purchase of most Monsanto genetically engineered seeds, is toxic when it seeps into drinking water. (8) Denmark banned glyphosate in 2003 when it confirmed it has contaminated the country's groundwater. (9)

The diversity stored in seed gene banks is the raw material for plant breeding and for a great deal of basic biological research. Several hundred thousand samples are distributed annually for such purposes. The UN's FAO lists some 1400 seed banks around the world, the largest being held by the United States Government. Other large banks are held by China, Russia, Japan, India, South Korea, Germany and Canada in descending order of size. In addition, CGIAR operates a chain of seed banks in select centers around the world.

CGIAR, set up in 1972 by the Rockefeller Foundation and Ford Foundation to spread their Green Revolution agribusiness model, controls most of the private seed banks from the Philippines to Syria to Kenya. In all these present seed banks hold more than six and a half million seed varieties, almost two million of which are 'distinct.' Svalbard's Domesday Vault will have a capacity to house four and a half million different seeds.

GMO as a weapon of biowarfare?

Now we come to the heart of the danger and the potential for misuse inherent in the Svalbard project of Bill Gates and the Rockefeller foundation. Can the development of patented seeds for most of the world's major sustenance crops such as rice, corn, wheat, and feed grains such as soybeans ultimately be used in a horrible form of biological warfare?

The explicit aim of the eugenics lobby funded by wealthy elite families such as Rockefeller, Carnegie, Harriman

and others since the 1920's, has embodied what they termed 'negative eugenics,' the systematic killing off of undesired bloodlines. Margaret Sanger, a rapid eugenicist, the founder of Planned Parenthood International and an intimate of the Rockefeller family, created something called The Negro Project in 1939, based in Harlem, which as she confided in a letter to a friend, was all about the fact that, as she put it, 'we want to exterminate the Negro population.' (10)

A small California biotech company, Epicyte, in 2001 announced the development of genetically engineered corn which contained a spermicide which made the semen of men who ate it sterile. At the time Epicyte had a joint venture agreement to spread its technology with DuPont and Syngenta, two of the sponsors of the Svalbard Domesday Seed Vault. Epicyte was since acquired by a North Carolina biotech company. Astonishing to learn was that Epicyte had developed its spermicidal GMO corn with research funds from the US Department of Agriculture, the same USDA which, despite worldwide opposition, continued to finance the development of Terminator technology, now held by Monsanto.

In the 1990's the UN's World Health Organization launched a campaign to vaccinate millions of women in Nicaragua, Mexico and the Philippines between the ages of 15 and 45, allegedly against Tetanus, a sickness arising from such things as stepping on a rusty nail. The vaccine was not given to men or boys, despite the fact they are presumably equally liable to step on rusty nails as women.

Because of that curious anomaly, Comite Pro Vida de Mexico, a Roman Catholic lay organization became suspicious and had vaccine samples tested. The tests revealed that the Tetanus vaccine being spread by the WHO only to women of child-bearing age contained human Chorionic Gonadotrophin or hCG, a natural hormone which when combined with a tetanus toxoid carrier stimulated antibodies rendering a woman incapable of maintaining a pregnancy. None of the women vaccinated were told.

It later came out that the Rockefeller Foundation along with the Rockefeller's Population Council, the World Bank (home to CGIAR), and the United States' National Institutes of Health had been involved in a 20-year-long project begun in 1972 to develop the concealed abortion vaccine with a tetanus carrier for WHO. In addition, the Government of Norway, the host to the Svalbard Domesday Seed Vault, donated \$41 million to develop the special abortive Tetanus vaccine. (11)

Is it a coincidence that these same organizations, from Norway to the Rockefeller Foundation to the World Bank are also involved in the Svalbard seed bank project? According to Prof. Francis Boyle who drafted the Biological Weapons Anti-Terrorism Act of 1989 enacted by the US Congress, the Pentagon is 'now gearing up to fight and win biological warfare' as part of two Bush

national strategy directives adopted, he notes, 'without public knowledge and review' in 2002. Boyle adds that in 2001-2004 alone the US Federal Government spent \$14.5 billion for civilian bio-warfare-related work, a staggering sum.

Rutgers University biologist Richard Ebricht estimates that over 300 scientific institutions and some 12,000 individuals in the USA today have access to pathogens suitable for biowarfare. Alone there are 497 US Government NIH grants for research into infectious diseases with biowarfare potential. Of course this is being justified under the rubric of defending against possible terror attack as so much is today.

Many of the US Government dollars spent on biowarfare research involve genetic engineering. MIT biology professor Jonathan King says that the 'growing bio-terror programs represent a significant emerging danger to our own population.' King adds, 'while such programs are always called defensive, with biological weapons, defensive and offensive programs overlap almost completely.' (12)

Time will tell whether, God Forbid, the Svalbard Domesday Seed Bank of Bill Gates and the Rockefeller Foundation is part of another Final Solution, this involving the extinction of the Late, Great Planet Earth.



Poster campaign by the Unitarian Service Committee in Canada.

(4) - Ibid. P. 123-30.

(5) - Myriam Mayet, The New Green Revolution in Africa: Trojan Horse for GMOs?, May, 2007, African Centre for Biosafety, www.biosafetyafrica.net.

(6) - ETC Group, Green Revolution 2.0 for Africa?, Communique Issue #94, March/April 2007.

(7) - Global Crop Diversity Trust website, in http://www.croptrust.org/main/donors.php.

(8) - Engdahl, op. cit., pp.227-236.

(9) - Anders Legarth Smith, Denmark Bans Glyphosates, the Active Ingredient in Roundup, Politiken, September 15, 2003,

in organic.com.au/news/2003.09.15.

(10) - Tanya L. Green, The Negro Project: Margaret Sanger's Genocide Project for Black American's, in www.blackgenocide.org/negro.html.

(11) - Engdahl, op. cit., pp. 273-275; J.A. Miller, Are New Vaccines Laced With Birth-Control Drugs?, HLI Reports, Human Life International, Gaithersburg, Maryland; June/July 1995, Volume 13, Number 8.

(12) - Sherwood Ross, Bush Developing Illegal Bioterror Weapons for Offensive Use, December 20, 2006, in www.truthout.org.

Total Geo-engineering : Soylent Green

by Jean-François Tabardin
Energy consultant

The well-known film *Soylent Green* (1973) is one of the many cultural productions that followed the first oil crisis in which Hollywood scriptwriters imagined humanity's ecological collapse, yet without foreseeing the end of the current economic system that is its cause.

Soylent Green shows an overpopulated, highly polluted and overheated world in 2020. Food is scarce, entirely synthetic and produced in protected farms. A minority of privileged people enjoy a lifestyle sheltered from the swarming and poverty-stricken masses.

In this context, *Soylent Green*, a new miracle foodstuff, is presented as a solution to the hunger that poses problems even in the heart of New York, where the story takes place. Produced by the multinational Soylent, it is said to be made from ocean plankton.

The story follows an enquiry led by a police inspector into the murder of one of Soylent's directors. The enquiry finally reveals that *Soylent Green* is actually made from the flesh of New Yorkers.

In many respects, the story might seem unrealistic:

- 1 - How could human beings be fed with other human beings? Their biomass is insufficient.
- 2 - How could the American population, which has enjoyed such abundance, tolerate such a fall in its living standards?
- 3 - Where do the energy sources used come from?

A little thought, however, aided by recent developments in our world, suggests how the scenario might come true.

1 - A simple calculation shows that "the self-consumption of humanity" would lead to the population being halved every two months, which is a somewhat excessive rate. But given that other foodstuffs still exist in the film, with *Soylent Green* being only one among many (with an increasing share, it is true), then the exponential fall in the human population would not be so dramatic. Yet such a fall would cause a negative retroactive effect on itself. When food shortages occur in the film, hunger riots are repressed using dump trucks that go to supply the *Soylent Green* factories, bringing more food to those left behind - who have no other choice but to accept the food without asking questions. Some viewers, moreover, have pointed out that between the beginning and the end of the film, the number of extras onscreen decreases. This can be interpreted as a deliberate decision on the part of the scriptwriters, pointing to a *visible* and rapid fall in the population during the film, eventually leading to human extinction.

1 - The story can be seen as showing in extreme form the way our world has developed: pollution, social inequality and the total consumption of resources (including human resources in a literal sense) by the economy, but also the increasing artificiality of food, which is controlled by multinationals, and an increasing trend to treat human beings like cattle, etc. A slow pauperisation, growing coercion of individuals, with the news media making the whole process acceptable, the absence of other choices *within the terms of the dominant ideology*, would lead to a situation close to that shown in the film. Today is it not clear that the premises of this world, with the increasing numbers of homeless people in our cities, more or more security forces and our increasingly synthetic food, etc?

A gradual shift (over one or two decades) towards a situation of this kind would make it possible and even acceptable to the population. Human beings have shown themselves capable of the worst acts in the twentieth century and before. This advance towards the world of *Soylent Green* could take place without a sudden natural or social disaster, but quite seamlessly (1). For "if it is clear that we can deduce all kinds of possible catastrophes from the uninterrupted technical surge over the past two centuries, the worst thing would probably be that nothing happens in the future, nothing other than the slow and interminable death of what remains human in the heart of the economic megamachine. Nothing, not even a social or natural disaster" (2).



Cannibalism in Muscovy and Lithuania 1571

3 - We can extend the questions dealt with in the film to look at climate and energy issues, especially since before the story starts an oil peak (3) and a decline in energy sources have taken place.

The scarce fossil fuels that are used in the world of *Soylent Green* mainly bring comforts to the rich or aid the survival/coercion of the poor (a little electricity, the production and transport of food, the fuelling of dump trucks, etc) so as to maintain a coherent, if highly unequal, society.

There are relatively few motorised engines in the film, but the skies are still clouded by pollution.

The actors sweat continually since global warming has taken place, despite the fog that darkens the sky (according to climate experts, this type of local pollution actually lowered world temperatures in the 1950s and 1960s). This is the result of massive CO₂ emissions in the atmosphere, causing a greenhouse effect that easily compensates for the cloudy skies. This dual pollution, clouding skies and raising temperatures, could be generated in the twenty-first century by the massive use of dirty resources (bituminous shale, liquid coal), which might take the place of easily extractable fossil fuels that are now being used up (light crude oil, natural gas). On our planet over the past few years, for fear of lacking hydrocarbon and with the rise in petrol prices, gigantic projects to liquefy coal (that is, making hydrocarbons from coal, in return for a very poor energy yield and high pollution levels), the extraction of shale in Canada, have in fact been proposed.

In addition, certain climatologists evoke the possibility of violent positive retro-actions, such as the melting of the permafrost, the release of CO₂ due to the death of forests and the heating of agricultural soils in temperate climates or the rise in the albedo due to melting ice. Such events, which involve even more worrying rises in temperature than those foreseen by the GIEC, would complete the picture.

We can thus see an unexpectedly prophetic character in the hero's last words: "The ocean is dying, the plankton is dying ! It's people! *Soylent Green* is made out of people!" If the world economy persists in using up all energy resources, including the extraction of all kinds of heavy oil and by liquefying coal, as for other, *too numerous examples in the past, and destructive, obsessive insanity,*

organised on a national scale and reinforced over time, the composition of the atmosphere and the oceans will be radically transformed.

Jean-Marc Jancovici, an environmental consultant-engineer, asks whether we are "going to turn the oceans into an acid lake?" (4), and concludes that it is not impossible, given the excessive amount of CO₂ in the atmosphere and the ocean. Then *plankton will indeed die*, land and oceans will indeed become virtually uninhabitable. And the consumption of all the mineral, vegetable, and animal resources will be concluded by human self-consumption, in a spiral of infernal growth closed in on itself. In other words: since human beings are part of the Earth, economic geophagy will lead to anthropophagy.

(1) - This "non-catastrophic shift" can be imagined from precedents that have occurred in so-called "modern" societies. During the siege of Leningrad in the winter of 1941-42, officially-temed "isolated cases" of anthropophagy were uncovered. In the case of Leningrad, as for *Soylent Green*, the cannibals preferred not to know what they were eating: this was possible thanks to money and to the intermediary of meat-suppliers. The suppliers said to the buyers that it was horsemeat and the consumers believed them. We can relate this situation to the forms of delegation described by the French sociologist Bourdieu: to the extent that, in most forms of delegation, the represented [mandants] write out a blank cheque to their representative [mandataire], if only because they are often unaware of which questions the representative will be faced with, they hand over responsibility to him.

Some years before, in fact, the totalitarian state of the USSR provided an example of another form of social cannibalism, when the Communist Party, devoured its own children during the purges whose pretext and starting point was the assassination of Kirov in 1934, once again in Leningrad. Hundreds of thousands of party members were arrested and shot or deported, before the police officers and denunciators who took part in this enterprise themselves suffered the same fate in an infernal spiral from which few escaped.

(2) - <http://decroissanceacolombes.zeblog.com/30138-colombes-ville-rouage>

(3) - Cf the many works of the ASPO, Association for Study of Peak Oil, indicating an oil peak between 2005 and 2020.

(4) - www.manicore.com/documentation/serre/acid.html

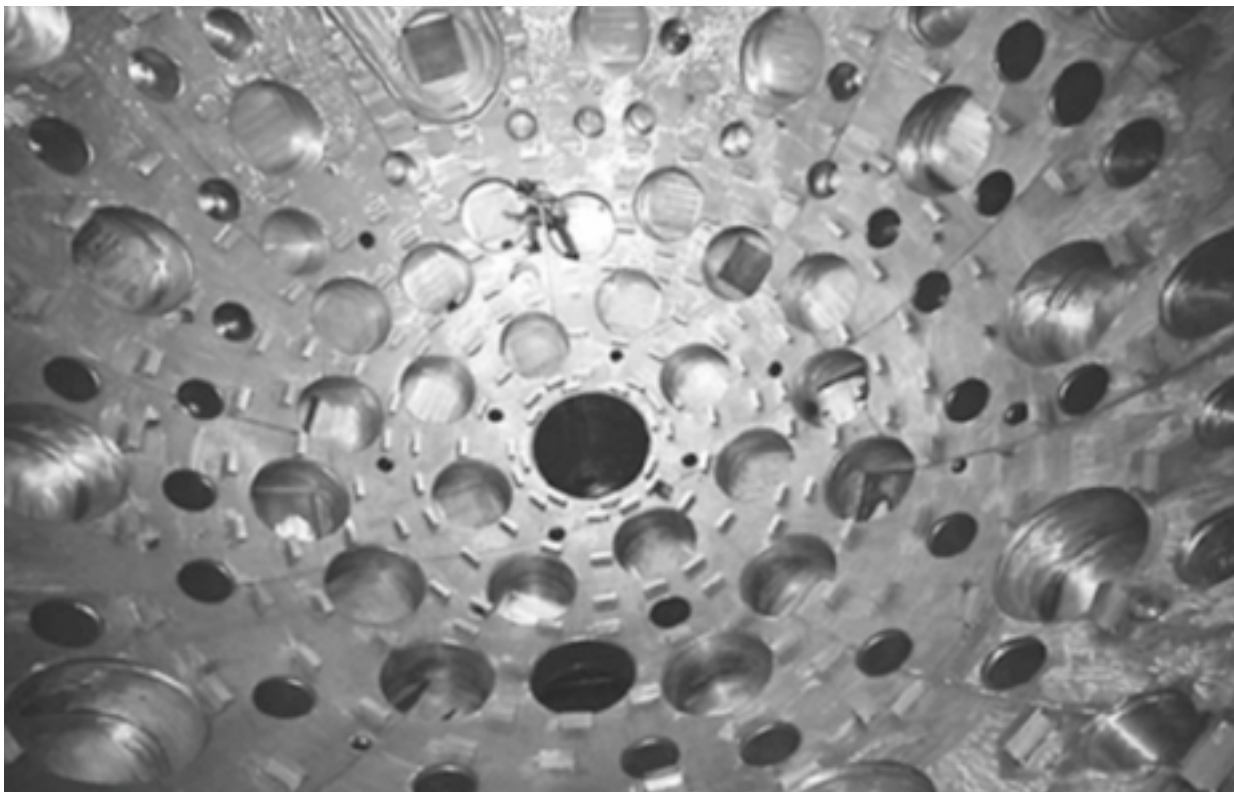
Change the world, transform life

by Jean Segont I

Pâle ouvrier qu'esquinte la machine
Verlaine

Published in 1870 the text *The Coming Race*, by Edward Bulwer-Lytton,(1), is considered today as one of the founding texts of the science fiction genre. In the long tradition of utopian narration, which allows the author to criticise the society of his own time, Lord Lytton describes the journey of an engineer who descends into the underground (3) and encounters the society of the Vril-Ya, descendants of Atlantis, who took refuge under the earth after a catastrophe. These superior beings of the Infra-World have achieved a high level of development and constitute a new race, thanks to the power of Vril, an inexhaustible energy source (4), developing knowledge and techniques many thousands of years ahead of our own:

« I should say, however, that this people have invented certain tubes by which the vril fluid can be conducted towards the object it is meant to destroy, throughout a distance almost indefinite; at least I put it modestly when I say from 500 to 1000 miles. And their mathematical science as applied to such purpose is so nicely accurate, that on the report of some observer in an air-boat, any member of the vril department



The National Ignition Facility, or NIF, is a laser-based inertial confinement fusion (ICF) research device under construction at the Lawrence Livermore National Laboratory, in Livermore, California, United States. NIF uses powerful lasers to heat and compress a small amount of hydrogen fuel to the point where nuclear fusion reactions take place. NIF is the largest and most energetic ICF device built to date, and the first that is expected to reach the long-sought goal of "ignition", when the fusion reactions become self-sustaining.

can estimate unerringly the nature of intervening obstacles, the height to which the projectile instrument should be raised, and the extent to which it should be charged, so as to reduce to ashes within a space of time too short for me to venture to specify it, a capital twice as vast as London. » (5)

Lytton's novel reflects, amongst other things, the preoccupations of his times and the growing hegemony of Victorian scientists in the field of knowledge (Darwin, Maxwell, the Royal Society, etc.). This being the case, it is not too far fetched to state that, for example, the notion of Vril, operates in a way as an explicit reference to electromagnetism:

« These subterranean philosophers assert that by one operation of vril, which Faraday would perhaps call 'atmospheric magnetism,' they can influence the variations of temperature—in plain words, the weather; that by operations, akin to those ascribed to mesmerism, electro-biology, odic force, &c., but applied scientifically, through vril conductors, they can exercise influence over minds, and bodies animal and vegetable, to an extent not surpassed in the romances of our mystics. » (6)

Today, the central position held by Lord Lytton's novel within Nazi mythology (7) seems to rather overshadow the interesting things that this story presents, in terms of techno-scientific dystopia linked to the paradigm of mutation, as described by Raymond Trousson: "As for the suffocating perfection within this world, Bulwer-

Lytton still prefers the current state of things. By questioning a civilisation founded on scientific progress and employment carried out by machines that pretends to transform human beings into half gods, he aims, through Koom-Posh, at democratic America, utilitarian et mechanised, but his own sentiment is larger and more ambitious. His utopia supposes a mutation in human nature, a dehumanisation, and is therefore a warning of a new tone: sociologically speaking, utopia is on the way to being eschatological." (8)

The following extract is highly significant:

"Thus, for our race, , long before the discovery of Vril, only the most powerful organizations had survived, and our old books recount a legend once widespread, that we have come from a region that seems to belong to the world that you're from, so as to improve our condition and achieve a purification of our species, following the terrible struggle that led our ancestors, and when our education is completed, we are destined to return to the earth's surface to reign over all inferior races there." (9)

Published anonymously two years later, *Erewhon*, by Samuel Butler, was first attributed by the British public to the writer of the *The Coming Race*. *Erewhon*, an anagram

inspired the anti-technological revolution; one cannot but notice the remarkable contemporary character of this description, right up to the questioning presented below concerning a future world which is more and more dependent on machines:

« There is no security against the ultimate development of mechanical consciousness, in the fact of machines possessing little consciousness now. (...)

But who can say that the vapour engine has not a kind of consciousness? Where does consciousness begin, and where end? Who can draw the line? Who can draw any line? Is not everything interwoven with everything? Is not machinery linked with animal life in an infinite variety of ways? (...)

"As yet the machines receive their impressions through the agency of man's senses: one travelling machine calls to another in a shrill accent of alarm and the other instantly retires; but it is through the ears of the driver that the voice of the one has acted upon the other. Had there been no driver, the callee would have been deaf to the caller. There was a time when it must have seemed highly improbable that machines should learn to make their wants known by sound, even through the ears of man; may we not conceive, then, that a day will come when those ears will be no longer needed, and the hearing will be done by the delicacy of the machine's own construction?—when its language shall have been developed from the cry of animals to a speech as intricate as our own? (...)

"... (...) we cannot calculate on any corresponding advance in man's intellectual or physical powers which shall be a set-off against the far greater development which seems in store for the machines. Some people may say that man's moral influence will suffice to rule them; but I cannot think it will ever be safe to repose much trust in the moral sense of any machine.

"Again, might not the glory of the machines consist in their being without this same boasted gift of language? 'Silence,' it has been said by one writer, 'is a virtue which renders us agreeable to our fellow-creatures.'" » (...)

« ... (...) I would repeat that I fear none of the existing machines; what I fear is the extraordinary rapidity with which they are becoming something very different to what they are at present. No class of beings have in any time past made so rapid a movement forward. Should not that movement be jealously watched, and checked while we can still check it? And is it not necessary for this end to destroy the more advanced of the machines which are in use at present, though it is admitted that they are in themselves harmless? » (11)

The anguishing questions raised by Bulwer-Lytton and Butler in these two stories are highly related to the epistemic crackdown in operation by techno-scientific materialism, that now appears like an ideology ripening to dominate an era, the era in which we still live today. This ideology crystallizes around the notion of progress; directly proceeding from the ideas of evolutionism and Darwinism; and it's latest avatar, transhumanism - "humanity must give birth to a new species, asexual and immortal, having exceeded the individuality, separation and fate" (12) - when the mask is thrown down, indeed, it is always from a divine position that the language of domination burdens us to transform the world. (13)

of the word Nowhere, uses the traditional structure of the utopian novel; in effect *Erewhon* assembles several essays devoted to a description given by a traveller lost in a world, revolutionised five hundred years ago after the victory of the "Anti-machinists" over the "Machinists".

« The parties were styled the machinists and the anti-machinists, and in the end, as I have said already, the latter got the victory, treating their opponents with such unparalleled severity that they extirpated every trace of opposition.

The wonder was that they allowed any mechanical appliances to remain in the kingdom, neither do I believe that they would have done so, had not the Professors of Inconsistency and Evasion made a stand against the carrying of the new principles to their legitimate conclusions. These Professors, moreover, insisted that during the struggle the anti-machinists should use every known improvement in the art of war, and several new weapons, offensive and defensive, were invented, while it was in progress. I was surprised at there remaining so many mechanical specimens as are seen in the museums, and at students having rediscovered their past uses so completely; for at the time of the revolution the victors wrecked all the more complicated machines, and burned all treatises on mechanics, and all engineers' workshops—thus, so they thought, cutting the mischief out root and branch, at an incalculable cost of blood and treasure. » (10)

In the following chapter after this extract, Samuel Butler presents "The Book of Machines", an essay that focuses on the visions and theories of the Anti-machinists that

(1) - Edward Bulwer-Lytton, English politician and writer, who sat in the House of Commons and then in the Upper House as a Lord, is the author many stories including *Zanoni*, and *The Last Days of Pompeii*.

(2) - As in *Utopia* by Thomas More or "Gulliver's Travels" by Jonathan Swift.

(3) - Lytton is inspired by hollow earth theories, which were popular in the novels of the nineteenth century, for example in Edgar Allan Poe (The Adventures of Arthur Gordon Pym) and Jules Verne (Journey to the Center Earth)

(4) - This explains the special status of the novel within the "free-energy" community.

(5) - E. Bulwer Lytton, *The Coming Race*, Chapter XVI, from

(6) - E. Bulwer Lytton, *The Coming Race*, Chapitre VII, from

(7) - See *Black Sun* by Nicholas Goodrick-Clarke, English translation from Lorry Black editions.

(8) - Raymond Trousson, *Sciences, techniques et utopies, du paradis à l'enfer*, L'Harmattan, 2003.

(9) - Raymond Trousson, *Sciences, techniques et utopies, du paradis à l'enfer*, L'Harmattan, 2003.

(10) - Samuel Butler, *The Colleges of miss-judgment, Erewhon*, Penguin Classics.

(11) - Samuel Butler, *The Book of Machines, Erewhon*, Penguin Classics.

(12) - Michel Houellebecq, *The Possibility of an Island*, Tra edition, 2006.

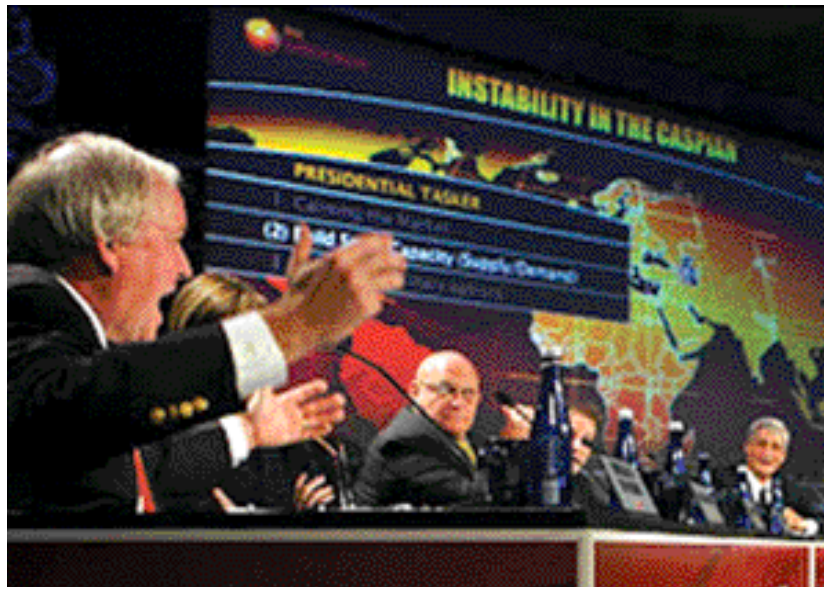
(13) - The philosophers have only interpreted the world, in various ways; the point, however, is to change it', Karl Marx in the *Theses on Feuerbach*.

The Heartland : between Atlanticism and Continentalism

by Ewen Chardronnet

*'Those who control eastern Europe dominate the Heartland:
those who rule the Heartland dominate
the World Island (that is, Eurasia):
those who rule the World Island dominate the world.'*
Sir Halford J. Mackinder

The expression "The Great Game" was used throughout the 19th century to describe the conflict between Russia and Britain in the Caucasus, and gained coinage as a key concept in the development of modern geopolitics. Since the fall of the Berlin Wall the expression "New Great Game" has been used to refer to the contemporary struggle of influence between the US and Russia in the area that stretches from Turkey to Tibet. In fact the concept remained



Former military and political leaders participate in a mock global energy crisis at the Ritz-Carlton November 1, 2007 in Washington, DC. The group Securing America's Future Energy organized the "Oil ShockWave," an event where participants will hold mock war-room meetings and respond to a global oil supply crisis.

operative throughout the 20th century, ever since the failure of the English-speaking world to anticipate the constitution of the Bolshevik Empire.

The two key late 19th century founders of modern geopolitics are Friedrich Ratzel and Sir Halford J. Mackinder, Darwinist zoologists who became geographers and historians of human development and who favoured imperial policies based on evolutionist ideology and the secularisation of "sacred geography".

A contemporary of Darwin, Friedrich Ratzel adapted concepts of evolution to the more general scale of States, comparing the latter to biological organisms that undergo growth and decline. Referring to himself as an "anthropogeographer", he held that "The State undergoes the same influences as all forms of life. That which underlies the spread of Mankind over the Earth determines the extension of his States. (...) Frontiers should not be conceived in any other way than as the expression of organic and inorganic movement." (1) The spread of populations thus

entitled them to take over "less vigorous" neighbouring areas, an interpretation based *de facto* on an idea of racial inequality that provided justification for imperialism and colonialism (2) and which would ultimately lead to the notion of *liebensraum*.

For Sir Halford J. Mackinder, (3) world history has essentially been the story of a never-ending struggle between "sea wolves" and "land wolves", between "thalassocracies" and "tellurocracies", between naval and terrestrial world conquest. He considered the Caucasian and Eurasian region to be the "geographical pivot of history". At a lecture in 1904, when he was director of the London School of Economics, Mackinder presented his theory of a "Heartland". Russia was about to complete the Trans-Siberian Railway, and Mackinder observed that the advent of the railways in the late 19th century gave men of the land the potential to be just as mobile as naval powers. By using "interior lines" it became possible to occupy the "centre" of the Continent more rapidly than naval powers such as Britain could. A fervent partisan of the British imperial system, Mackinder put forward the "Heartland" concept to help London defend its interests against Russian expansionism, believing that in 1904 the "balance of power" was beginning to tip in favour of Russia, the pivotal state. Mackinder declared that Britain's strategic task for the 20th century would be to prevent Russia from reaching the Indian Ocean.

Later on, following the collapse of Tsarist Russia, Mackinder insisted that London should institute policies designed to prevent the Bolshevik authorities from consolidating their hold over the outside edges of their Empire. Mackinder wanted the West to uphold the independence of countries such as Ukraine, Armenia, Azerbaijan and Georgia. At that time, the British government and its allies did not follow his advice, and the Bolsheviks ended up maintaining control of most of the areas that had been ruled by their Romanov predecessors.

Somewhat paradoxically, Mackinder's geopolitics also seems to have left a deep impression on his contemporary ideological adversaries. An "Eurasian School" promoting an Eurasian Union under Russian authority emerged among Russian nationalist emigrants in the 1920s (led by Prince Nikolai Trubetskoy and others) and owed much to Mackinder's ideas (as well as to the German notion of "Conservative Revolution").

As the decades passed, strategic challenges evolved and technological advances radically changed the way a country was able to project its power. And yet Mackinder's theories on the Eurasian Heartland were to remain operative; indeed they were to continue to provide the intellectual foundations of Western politics with regard to Soviet expansionism, in particular the formulation of America's strategic policy of containment



during the Cold War.

After the collapse of the Soviet Union in 1991, Mackinder's Western concepts influenced efforts designed to promote "geopolitical pluralism" in the Commonwealth of Independent States (CIS). This concept was to be the cornerstone of the Clinton and Bush administrations with regard to the new independent States of central Eurasia. In 1997, Zbigniew Brzezinski, a former advisor to President Jimmy Carter, published *The Grand Chessboard: American Primacy and Its Geostrategic Imperatives*, which presented a version of the Great Game adapted to the 21st century. (4)

While Brzezinski was developing his ideas, a strong Neo-Eurasianist current favouring national restoration was taking shape in Russia, led by the orthodox geopolitician Alexander Dugin. Drawing first from Edward Limonov's National-Bolshevik movement, then from classic Eurasianist thinking and Atlanticist-Continentalist war theories (5), Dugin was to exercise a major influence on the development of a Eurasian strategy in Russia. Vladimir Putin was partially to embrace this strategy, the changing economic and political climate over the last decade combined with 9-11 having led to a spectacular new focus on the Eurasian region.

Islamic radicalism, riding on the stagnation of economic conditions, was to gain a foothold in the region, now considered by Russia and the West as pivotal to the fight against world terrorism. Meanwhile, regional security was to become an increasingly complex issue, with Pakistan in possession of nuclear weapons and Iran striving to develop its nuclear capacity. The Eurasian Heartland is also becoming the backdrop for an increasingly intense economic struggle, largely fuelled by a desire to control the region's abundant energy reserves. The USA, Russia and China all have key interests in the area, and Russia is eager to preserve its influence from Baku to Lake Balkhash, not only for the sake of oil but also in relation to its space and anti-nuclear strategies. Moreover if Russia loses the Caucasus, she may well have to cede Eastern Siberia to the Han Empire...

"If Russia wants to preserve the oil of Baku (deprived of its Transcaucasus, but also the Northern Caucasus under its control), it should prevent Georgia's independence."(6)

(1) *Politische Geographie*, 1897.

(2) Ratzel's theory held that primitive peoples (*Naturvölker*) in Africa, Oceania etc. had traits that set them apart from more 'evolved' peoples (*Kulturvölker*) in the Old and New Worlds, and that the latter were thus naturally entitled to occupy the territories of the former.

(3) Originally a zoology student, Mackinder took up geography and modern history "...with the idea of seeing how the theory of evolution would appear in human development".

(4) *The Grand Chessboard - American Primacy And Its Geostrategic Imperatives*, Zbigniew Brzezinski, Basic Books, 1997.

(5) Here thalassocratic civilization, seen as Anglo-Saxon, Protestant and capitalist in spirit, is considered to be the irreducible opposite of continental civilization, seen as Russian-Eurasian, Orthodox/Muslim, and socialist in spirit. cf Alexander Dugin, *The Great War of Continents*, Avatar, 2006 ; and *The Russian Conservative Revolution*, *Evrasia Journal* n° 2, 2006 ;

(6) Nikolai S. Trubetskoy, "O narodakh Kavkaza," in: *Nasledie Chingizkhana*, Agraf Publishers, Moscow, 2000, p. 472-473.

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Contact us by e-mail :
Ewen Chardronnet : ewen@no-log.org
Bureau d'études : bureaudetudes@gmail.com

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Editors : Léonore Bonaccini, Ewen Chardronnet, Xavier Fourt
Secretary : Bureau d'études
Translation : Malcolm Eden, Martyn Back, Sarah Vermande, Ewen Chardronnet, Hehe



MAKROLAB markII, Rottneest Island, WA, 2000



MAKROLAB markIIex energy systems, Campalto, IT, 2003

The main objectives of the project operations are the following:

- the setup and testing of a High Frequency radio based open source messaging and digital communications system, named : INSULAR RADIO for the Arctic to be used by all of the stakeholders in the North
- the setup and testing of a field based WiFi and microwave open data and content exchange system in the Arctic (Nunatsiavut, Nunavik, Nunavut, Inuvialuit)
- the setup and testing of zero-impact environmental sensor networks to be used by the Inuit and Inuvialuit in conjunction with the traditional methods of environmental observation
- design, prototyping and fielding of the first BALOK mobile media-centric facility and life support module with renewable energy supply, waste recycling, and communications systems as an open source mobile architecture, to be replicated and developed further using native knowledge
- direct, cumulative, and indirect environmental impact assessments of the project carried out in the identified territories
- discussions, interviews and forums with local inhabitants and the establishment of sharing this information throughout the North and further Circumpolar areas via an open-source model
- the establishment of clear policy guidelines in regard to the dissemination of content, research results, data, knowledge exchange and project participation guidelines
- the achievement of Inuit and Inuvialuit open source ICT (Information and Communications Technology) and open systems literacy through a series of free software and open source software workshops, primarily aimed at digital content production, aggregation and dissemination in a variety of media using free and open standards and methods
- the establishment of a representation structure, that would connect the Northern Cultures with the rest of the world, by linking to existing indigenous media production, aggregation and distribution projects and by enabling the presentation of the supported activities in Circumpolar venues and around the globe
- to establish a means of production and management of scientific data within the identified Northern communities.

The proposed project is the second phase of the I-TASC/C-TASC organizational activities, which started in 2006 with the presentations of the project to the Arctic research communities and indigenous peoples. The first event was the Makrolab North expedition to Igloodik, Nunavut, in April 2006, which also marked the start of the collaborative relationship of the project with the Inuit hunters, media workers and the community of Igloodik.

One of the main thrusts behind the project is the design, development and prototyping of the first BALOK module. The module gets its name from the BALOKS (or Baluks), mobile wooden huts provided with runners that can be pulled by reindeer, and are still in use today by the Dolgan people in the Siberian tundra in the Republic of Sakha (Yakutia).

Our BALOK module is based on the preliminary first design phase work done by Marko Peljhan, STVAR Architects, Jan Trost, and Nejc Trost, during a design workshop in April 2006 at the University of California, Santa Barbara. Further improvements of the design concept were done during a University of California Research in the Arts conference workshop on sustainable

architecture at the end of May 2006, with the participation of the Chilean based Arqze architecture collective, with extensive Antarctic experience, and the main designer of the International Polar Foundation Belgian sustainable Antarctic base Johan Berte. The preliminary design was presented to the Igloodik community, elders, youth, hunters and media workers during the Makrolab North expedition in the Isuma offices in April 2006 in order to get Inuit input into the potential usefulness of such an endeavour, and the response has been overwhelmingly positive, providing that this new infrastructure will be utilized and managed by them.

The module is structured around the International Standard Payload Rack (ISPR) system, a 2m high, 1m wide and 85cm deep rack module, based on the equipment and logistics exchange racks that were developed for the use on the International Space Station. With the use of this standard and universal interface, we will enable quick equipment and content exchange capability for the users and increase the speed of the module's serviceability. The skin of the prototype as planned will be made of multi-layered composite materials and wood, with vacuum insulation paneling, however, we intend to make a study of locally sourced natural materials (caribou skins and similar) which could and will be used if deemed more sensible. The insulation capabilities of the module will be enhanced by the use of thermal mass, including water. The module will be equipped according to the local safety regulations, for instance; with an insulation and fire resistance layer.

The ISPR's that will be developed for the BALOK prototype will include:

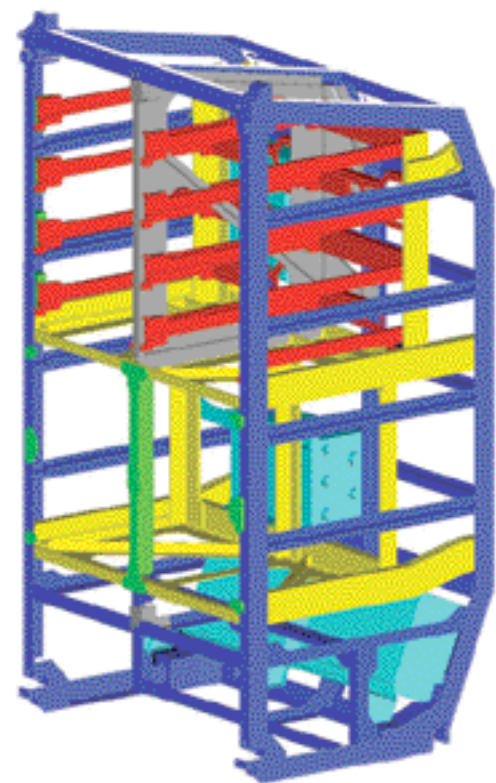
- a communications rack with High Frequency radio, FM/AM radio transmitters, VHF/UHF packet radio capability, WiFi and microwave links
- a biological solid waste processing and composting system
- a solid waste compactor
- a black water filtering and recuperation system
- a grey water recycling unit
- sleeping unit
- galley/storage unit
- a hydroponic growing system
- a renewable sources (wind, solar) power management and storage system

The other, non-ISPR based systems for the module will include a passive water production system, deployable photovoltaic generators, and wind turbines.

"Along the new DEW line the reception of climate change is constrained by enduring resentment over the past and the present conduct of federal and provincial governments in regard to forced relocations, residential schooling, land claims implementation, and the like. The persistent feeling is that Southerners have been disrespectful, callous, and cruel to Inuit. The memories go way back. They seem connected to the traditional ethic of respect that ought to govern all behavior... Small community support for cooperation on an agenda that originates with Southerners is not easy to find when the project evokes past grievances, and especially when the sense of victimhood is strong. Climate change is such a project, in its demands upon Inuit to listen and agree..." -Franklyn Griffiths "Camels in the Arctic?, Climate change as Inuit see it: from the inside out"; Walrus, November 2007

The above words and those of Louis Tapardjuk, the Nunavut Minister of Culture, who said that "...a discourse of disaster that originates with others who are known to be dominant cannot but present a threat to our autonomy, to our ability to set our own priorities, to trust what we observe and experience in our everyday lives" are important statements coming from within the Inuit world and its observers. Statements that we are taking responsibly, ethically, and with great respect. They serve as guiding principles in this project's quest to provide the Inuit and other Circumpolar cultures with facilities for enhanced sustainable mobility, tools for autonomous remote sensing and wildlife monitoring through the use of civilian Unmanned Aircraft Systems, the knowledge to operate them and an autonomous network infrastructure. These structures, both physical and virtual will enable media authoring, communications and aggregation "from the land" and will connect the culture to artists, scientists and other invested parties throughout the world.

We have to go to work!



The module is structural around the International Standard Payload Rack (ISPR) system, a 2m high, 1m wide and 85cm deep rack module, based on the equipment and logistics exchange racks that were developed for the use on the International Space Station.



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October 12th 2008 – 3 > 6 pm

Marko Peljhan – Andrea Polli

September 24th 2008

5 pm > 7 pm

MEP Auditorium



Marko Peljhan was born in 1969 and studied theatre and radio directing at the University of Ljubljana. In 1992, he founded the arts organisation Projekt Atol and was at the origins of the Makrolab Project (1997-2007). He is currently professor of interdisciplinary studies at UC Santa Barbara.

Web site : www.interpolar.org

Andrea Polli, working and living in New York.

Associate Professor in the Integrated Media Arts MFA Program at Hunter College/CUNY.

Web site : www.andreapolli.com

Marko Peljhan, ITASC Project

Andrea Polli, *Ground Truth*

The Antarctic is unlike any other place on Earth: a frontier where borders are overshadowed by scientific collaboration and cooperation, where the compass becomes meaningless yet navigation is a matter of life and death, an extreme environment with some of the most unique species, but also an ecosystem undergoing rapid change. Last year I had the opportunity to go to Antarctica for the first time, on a US National Science Foundation-sponsored artist's residency.

I wanted to go to Antarctica to more closely engage with the issue of global climate. I had been using data from remote weather stations in projects, though I had never actually visited them. While in Antarctica, I spent most of my time in two places: The Dry Valleys

(77°30'S 163°00'E), 3500 km due south of New Zealand, the driest and largest relatively ice-free area on the continent, devoid of terrestrial vegetation, and the geographic South Pole (90°00'S), the center of a featureless flat white expanse on top of ice nearly nine miles thick.

I learned that many more human beings observe and record weather and climate in Antarctica than machines, and that the scientists call this process of observation 'ground truthing.'

Why, with sophisticated instrumentation and remote sensing, do we depend upon humans on the ground to look up at clouds? What is the meaning of ground truth and can it inform and enhance our relationship with the environment? I am exploring these questions in my current series of works called *Ground Truth*.

Catherine Rannou – Bureau d'Études & Ewen Chardonnet

October 8th 2008, 5 pm > 7 pm

MEP Auditorium



Catherine Rannou, architect and artist, lives in Brittany, France.

Web site :

catherine-rannou.blogspot.com

Bureau d'Études, Conceptual group of artists founded in 2000 based in Montreuil and Saint Menoux, France.. Co-founders of *The Laboratory Planet*, with Ewen Chardonnet.

Web sites :

www.utangent.org;

www.laboratoryplanet.org

Ewen Chardonnet, independant author and curator. Studied science and journalism, develops an artistic work alone or in numerous collectives. Co-founder of *The Laboratory Planet*, with Bureau d'études.

Web sites :

semaphore.blogs.com;

www.laboratoryplanet.org;

www.e-ngo.org

Catherine Rannou, "Inhabiting" antarctica

Antarctic stations are work places, facilities dedicated to science and research. But can the continent be said to be "inhabited"? Are these bases the beginnings of an urbanization reminiscent of diffuse cities, a kind of Silicon Valley with the occasional human habitats?

A scientific station takes in laboratories, workshops, storage areas, dormitories, canteens... that is buildings, paths, platforms and between them, empty spaces... Empty spaces that are sometimes named and marked out and that can be walked through and measured... measurement being a condition necessary to urbanization.

In between, next to, or together with scientific and logistic necessities and beyond any political will to conquer new territories, the scale of those facilities, of human proportions, produces a "space poetic"... imported landmarks crucial to the survival of the exogenous beings in these extreme locations.

The conference at the Maison Européenne de la Photographie will be the opportunity to show a video entitled "Astro 1", an artistic installation entitled "Cartography of transience" and plans for the nomadic cabin "Glacio-M1", a project under construction. These pieces are examples of the work I have undertaken in Antarctica at the Dumont d'Urville

and Concordia bases, in collaboration with the French Polar Institute (IPEV), Cultures France, the Grenoble LGGE (glaciology and geophysics environment laboratory), wintering biologists, logisticians and weather technicians (...).

Bureau d'études, Ewen Chardonnet, a laboratory planet

Since the Second World War, the world has been progressively transformed into a full scale laboratory. The model of a "laboratory world" has been added to the model of a "factory world".

The Arctic and Antarctic territories, with the actual progressive dismantling of the rules administrating them (that manifest partly in the strategies preparing for the renegotiations of the maritime and polar sovereignties in 2009), are also entering in this industrial and scientific activism. These spaces formerly called naturals are sold out for cheap prices while the demiurgic experiments are multiplying.

The Laboratory Planet journal proposes to unify the heterogeneity of the critics adressed at these transformations, critics that are oftenly separated, conditioned and then given to the management statistics of the disaster.

>>>>> Art and Environment. Towards an Eco-creation ? Closing Conference <<<<<

October 12th 2008

3 > 6 pm

Le Cube Auditorium, Issy-les-Moulineaux with Jean-Luc Soret, Marko Peljhan, Ewen Chardonnet and Annick Bureau

@rt Outsiders which was created by Henry Chapier and Jean-Luc Soret in 2000 at the European House of Photography in Paris. This annual show devoted to cutting-edge creation and to the convergence of the arts, science and technology revolves around themes such as: *Digital Images* (2000), *Avatars* (2001), *Bio Art and Artificial Intelligence* (2002), *Space Art* (2003), *Censorship* (2004), *New Media Art in Brazil* (2005), *Electromagnetic Bodies* (2006), *Invisible Territories* (2007).

Président : Henry Chapier

Curator : Jean-Luc Soret

Communication : Yannick Le Guillanton

Tel : 01 44 78 75 20 / E-mail : le.guillanton@art-outsiders.com

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