

## RADIATION EFFECTS – PART 2

### Japan to raise Fukushima Crisis Level to Worst

April 12, 2011  
NHK

The Japanese government's nuclear safety agency has decided to raise the crisis level of the Fukushima Daiichi power plant accident from 5 to 7, the worst on the international scale.

The Nuclear and Industrial Safety Agency made the decision on Monday. It says the damaged facilities have been releasing a massive amount of radioactive substances, which are posing a threat to human health and the environment over a wide area.

The agency used the International Nuclear and Radiological Event Scale, or INES, to gauge the level. The scale was designed by an international group of experts to indicate the significance of nuclear events with ratings of 0 to 7.

On March 18th, one week after the massive quake, the agency declared the Fukushima trouble a level 5 incident, the same as the accident at Three Mile Island in the United States in 1979.

*Continued on page 2*

### What is the African Traditional Herbal Research Clinic?

*We can make you healthy and wise*

**Nakato Lewis**  
**Blackherbals at the Source of the Nile, UG Ltd.**

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Level 7 has formerly only been applied to the Chernobyl accident in the former Soviet Union in 1986 when hundreds of thousands of terabecquerels of radioactive iodine-131 were released into the air. One terabecquerel is one trillion becquerels.

The agency believes the cumulative amount from the Fukushima plant is less than that from Chernobyl.

Officials from the agency and the Nuclear Safety Commission will hold a news conference on Tuesday morning to explain the change of evaluation.

[http://www3.nhk.or.jp/daily/english/12\\_05.html](http://www3.nhk.or.jp/daily/english/12_05.html)



## **EPA: New Radiation Highs in Little Rock Milk, Philadelphia Drinking Water**

Milk from Little Rock and drinking water from Philadelphia contained the highest levels of Iodine-131 from Japan yet detected by the Environmental Protection Agency, according to data released by EPA Saturday.

The Philadelphia sample is below the EPA's maximum contaminant level (MCL) for iodine-131 in water, but the Little Rock sample is almost three times higher. *However, the Food and Drug Administration observes a much higher standard for milk, and all milk samples collected so far are well below that level.*

Nonetheless, the EPA does not consider the milk dangerous because the MCL is set for long-term exposure, and the iodine-131 from Japan's Fukushima-Daichi nuclear accident is expected to be temporary and deteriorate rapidly.

The Little Rock milk sample contained 8.9 picoCuries per liter. It was collected on March 30. On Sunday, EPA released data showing milk in Hilo, Hawaii with 24 pCi/L of cesium-134, 19 of cesium-137, and 18 of Iodine-131.

*The FDA's Derived Intervention Level for iodine-131 in milk is 4700 picoCuries per liter. The EPA's MCL for iodine-131 is 3 picoCuries per liter.*

*"There are a few reasons that EPA's MCL for I-131 drinking water is different than FDA's DIL for I-131 in any given food," said FDA spokesman Siobhan Delancy by email. "One of them is that EPA assumes a 70 year time period for exposure, so the MCLs are basically for continual, ongoing intake. They are meant*

*to be as low as reasonably achievable while the DILs are meant to assure that no one will reach a specific dose that would warrant protective actions as a result of an event."*

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Three drinking water samples collected in Philadelphia on April 4 contained Iodine-131, according to Saturday's data release:

- A sample from the city's Queen Lane Treatment Plant showed 2.2 picoCuries per liter—the highest concentration in EPA's drinking water data so far.
- Water collected at the Belmont Treatment Plant contained 1.3 picocuries, and
- Water collected at the Baxter Treatment Plant contained 0.46 picocuries.

Philadelphia becomes the 14th US city with radioactive fallout detected in its drinking water.

Iodine-131 has a half life of eight days: every eight days, half of its mass decays into a non-radioactive isotope of xenon.

<http://blogs.forbes.com/jeffmcmahon/2011/04/10/epa-new-radiation-highs-in-little-rock-milk-philadelphia-drinking-water/>



## **RADIATION EXPOSURE DEBATE RAGES INSIDE EPA — Plan to Radically Hike Post-Accident Radiation in Food & Water Sparks Hot Dissent**

### **NEWS RELEASE**

April 5, 2011  
PEER

Washington, DC — A plan awaiting approval by the U.S. Environmental Protection Agency that would dramatically increase permissible radioactive releases in drinking water, food and soil after "radiological incidents" is drawing vigorous objections from agency experts, according to agency documents released today by Public Employees for Environmental Responsibility (PEER). At issue is the acceptable level of public health risk following a radiation release, whether an accidental spill or a "dirty bomb" attack.

The radiation arm of EPA, called the Office of Radiation and Indoor Air (ORIA), has prepared an update of the

*Continued on page 41*

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## AFRIKAN SPIRITUALITY

# The Ainu of Japan: The History, Culture, and Discrimination Against this Aboriginal Group

Andy Thomason

July 2, 1999

The Ainu (i'ni) are aborigines of Northern Japan. Estimates vary on the age of Ainu people and culture, but it reached its height in the 13th and 14th centuries. Today, it is close to extinction.

Centuries of oppression, racism, and forced assimilation policies have contributed to the annihilation of the Ainu culture. Modern socialization and the fear of marginalization has led recent generations to deny their Ainu identity. Urban Ainu in particular face problems of alcoholism, homelessness, and violence.

### The Ainu People – Culture, Appearance, and Homeland

"Ainu" means "human." They live by hunting, fishing, farming, and selling crafts to tourists. They have an animistic spirituality that regards all things, including inanimate objects, imbued with life and spirit.

Ainu are heavily bearded and have thick wavy hair. Their mix of European and Asian physical traits contrasts so sharply from other indigenous peoples of Asia that their origin is uncertain. Some theories hold they are of Caucasian descent; others think their distinct features are a result of isolation that allowed them to remain racially unchanged.

The Japanese chronicles "Kojiki" and "Nihonsyoki" refer to them as descendants of an ancient people called Emishi. Today the term Ainu is used to denote the indigenous people of Hokkaido in Japan and Sakhalin and the Kuril Islands, in Russia.

### Spirituality, Death and Afterlife in Ainu Culture

The Ainu people regard death as the separation of soul and body. The body remains in this world and the soul goes to the other world where it is met by ancestors. The other world is underground, and a mirror image of this one, with the same structure but reversed space and time.

Souls stay in one world until they are ready to return to the other. Then they are reborn back into this world. All living creatures repeat this eternal shifting between the two worlds.

There is no distinction of Heaven and Hell, but the souls of extremely bad persons may be rejected by their ancestors. A

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*The traditional shrine as a symbol of our cultural history*

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shaman is summoned to convince the ancestors to accept the soul. Extraordinary attachments to or profound grudges against this world can cause the deceased to cling to strongly to this world. Again a shaman is called, to convince the recalcitrant soul to let go.

### The Beginning of the Threat to Ainu Culture

The threat to Ainu culture began in earnest in the 15th century when Hokkaido came under the control of the Bakufu shogunate seeking to prevent Russian advances into Southern Japan. The shogunate instituted trade policies that favored the wajin (Japanese who emigrated to Hokkaido) and exploited the Ainu. The Ainu resisted, fighting numerous skirmishes and battles, the most notable being the Battle of Kosyamain in 1457, the Battle of Syaksyain in 1669, and the Battle of Kunasiri-Menasi in 1789. The Ainu lost each time and fell increasing under Japanese control.

Ainu population decreased drastically between 1822 and 1854, due in large part to infectious diseases like smallpox, measles, tuberculosis, venereal disease, and cholera. Forced labor practices and the breakup of families also contributed heavily to the population decline.

### The Ainu in the Meiji Era

During the Meiji era (1868-1912), without any formal treaties or negotiations, the Japanese government confiscated Ainu land as "ownerless" and offered it to settlers as homesteads.

It also adopted a policy of forced assimilation, banning the Ainu from hunting and fishing and forcing them to take up farming. Ainu language and customs were prohibited. Children were forced to attend schools where only Japanese was spoken. In 1869 Ezochi (Land of the Ainu) was formally renamed Hokkaido. The following year, the modern family register system identified the Ainu as being Japanese.

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## FEATURED ARTICLES

# Japan Sets New Radiation Safety Level for Seafood

By YURI KAGEYAMA

BBC News

23 March 2011

The government set its first radiation safety standards for fish Tuesday after Japan's tsunami-ravaged nuclear plant reported radioactive contamination in nearby seawater measuring at several million times the legal limit.

The plant operator insisted that the radiation will rapidly disperse and that it poses no immediate danger, but an expert said exposure to the highly concentrated levels near the Fukushima Dai-ichi plant could cause immediate injury and that the leaks could result in residual contamination of the sea in the area.

The new levels coupled with reports that radiation was building up in fish led the government to create an acceptable radiation standard for fish for the first time. Some fish caught Friday off Japan's coastal waters would have exceeded the new provisional limit.

"Even if the government says the fish is safe, people won't want to buy seafood from Fukushima," said Ichiro Yamagata, a fisherman who used to live within sight of the nuclear plant and has since fled to a shelter in Tokyo.

"We probably can't fish there for several years," he said.

Radiation has been leaking into Pacific near the plant on the northeastern Japanese coast since a 9.0-magnitude earthquake spawned a massive tsunami that inundated the complex. Over the weekend, workers there discovered a crack where highly contaminated water was spilling directly into the ocean.

The tsunami pulverized about 250 miles (400 kilometers) of the northeastern coast, flattening whole towns and cities and killing up to 25,000 people. Tens of thousands more lost their homes in the crush of water, and several thousand were forced from the area near the plant because of radiation concerns.

Many of those "radiation refugees" have grown frustrated with the mandatory 12-mile (20-kilometer) no-go zone, and plant operator Tokyo Electric Power Co. — whose

stock value has plunged to the lowest level in its 60-year history — said Tuesday it would give affected towns 20 million yen (\$240,000) each. That would be on top of any legally required compensation.

Also Tuesday, TEPCO announced that samples taken from seawater near one of the reactors contained 7.5 million times the legal limit for radioactive iodine on April 2. Two days later, that figure dropped to 5 million.

The company said in a statement that even those large amounts would have "no immediate impact" on the environment but added that it was working to stop the leak as soon as possible.

The readings released Tuesday were taken closer to the plant than before — apparently because new measuring points were added after the crack was discovered — and did not necessarily reflect a worsening of the contamination. Other measurements several hundred yards (meters) away from the plant have declined to levels about 1,000 times the legal limit — down from more than four times that last week.

Experts agree that radiation dissipates quickly in the vast Pacific, but direct exposure to the most contaminated water measured would lead to "immediate injury," said Yoichi Enokida, a professor of materials science at Nagoya University's graduate school of engineering.

He added that seawater may be diluting the iodine, which decays quickly, but the leak also contains long-lasting cesium-137. Both can build up in fish, though iodine's short half-life means it does not stay there for very long. The long-term effects of cesium, however, will need to be studied, he said.

"It is extremely important to implement a plan to

*Continued on page 5*

reduce the outflow of contaminated water as soon as possible," he said.

Although the Fukushima prefecture surrounding the plant is not a major fishing region, fishermen there are growing alarmed. No fishing is allowed in the direct vicinity of the plant, but they fret that demand will collapse for catches elsewhere in the region — whether or not they are contaminated.

"Our prefecture's fishermen have lost their lives, fishing boats, piers and buildings" in the earthquake and tsunami and now must suffer the added effects of radioactive runoff from the plant, local fishermen's federation head Tetsu Nozaki said in a letter faxed to the company.

Some government assurances of safety have done little to quell panic. In Tokyo, for instance, there were runs on bottled water after officials said radiation in tap water there was above the level considered safe for infants, though insisted it was still OK for adults.

On Tuesday, officials decided to apply the maximum allowable radiation limit for vegetables to fish, according to Edano.

"We will conduct strict monitoring and move forward after we understand the complete situation," he said.

The move came after the health ministry reported that fish caught off Ibaraki prefecture — which is about halfway between the plant and Tokyo — contained levels of Some government assurances of safety have done little to quell panic. In Tokyo, for instance, there were runs on bottled water after officials said radiation in tap water there was above the level considered safe for infants, though insisted it was still OK for adults.

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"We will conduct strict monitoring and move forward after we understand the complete situation," he said.

The move came after the health ministry reported that fish caught off Ibaraki prefecture — which is about halfway between the plant and Tokyo — contained levels of radioactive iodine that would have exceeded the new provisional limit. Cesium also was found, at just below the limit. The fish were caught Friday, before the new provisional safety limits were announced.

Such limits are usually very conservative. After spinach and milk tested at levels far exceeding the safety standard, health experts said you would have to eat enormous quantities of tainted produce or dairy before

getting even the amount of radiation contained in a CT scan.

Radioactivity is pouring into the ocean, in part, because workers at the plant have been forced to use a makeshift method of bringing down temperatures and pressure by pumping water into the reactors and allowing it to gush out wherever it can. It is a messy process, but it is preventing a full meltdown of the fuel rods that would release even more radioactivity into the environment.

The government on Monday gave the go-ahead to pump more than 3 million gallons of less-contaminated water into the sea — in addition to what is leaking — to make room at a plant storage facility to contain more highly radioactive water.

TEPCO's reputation has taken a serious hit in the crisis. On Tuesday, its stock dropped 80 yen — the maximum daily limit, or 18 percent — to just 362 yen (\$4.3), falling below its previous all-time closing low of 393 yen from December 1951.

Since the quake, TEPCO's share price has nose-dived a staggering 80 percent.

The stress of announcing all the bad news also appears to be taking a toll. One official teared up and his voice began shaking as he gave details at a news conference near the plant this week.

In what could be an effort to counter the bad publicity, Takashi Fujimoto, TEPCO's vice president, said it was offering 20 million yen (\$240,000) to each town or city affected by a mandatory evacuation zone. He called the cash "apology money" and noted that one town had refused it because it disagreed with the approach. He did not give further details.

<http://www.guardian.co.uk/world/feedarticle/9580877>



## **Japan fears Radioactive Contamination of Marine Life**

**By Ian Sample**

30 March 2011  
Guardian.co.uk

*Fukushima coastal waters see high levels of radioactive iodine, which could build up in seaweed commonly eaten in Japan*

High levels of radiation in the sea off the coast of Fukushima have raised concerns over harm to local marine life and the risk of contaminated fish, shellfish and seaweed entering the food chain.

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### FEATURED ARTICLES

## “No Safe Levels” of Radiation in Japan

**Dahr Jamail**

*Experts warn that any detectable level of radiation is "too much"*

**04 April 2011**

**Al Jazeera**

According to the US Department of Energy, no level of radiation is so low that it is without health risks [EPA]

In a nuclear crisis that is becoming increasingly serious, Japan's Nuclear Safety Agency confirmed that radioactive iodine-131 in seawater samples taken near the crippled Fukushima Daiichi nuclear power complex that was seriously damaged by the recent tsunami off the coast of Japan is 4,385 times the level permitted by law.

Airborne radiation near the plant has been measured at 4-times government limits.

Tokyo Electric Power Company, the company that operates the crippled plant, has begun releasing more than 11,000 tons of radioactive water that was used to cool the fuel rods into the ocean while it attempts to find the source of radioactive leaks. The water being released is about 100 times more radioactive than legal limits.

Meanwhile, water that is vastly more radioactive continues to gush into the ocean through a large crack in a six-foot deep pit at the nuclear plant. Over the weekend, workers at the plant used sawdust, shredded newspaper and diaper chemicals in a desperate attempt to plug the area, which failed. Water leaking from the pit is about 10,000 times more radioactive than water normally found at a nuclear plant

Thus, radiation from a meltdown in the reactor core of reactor No. 2 is leaking out into the water and soil, with other reactors continuing to experience problems.

Yet scientists and activists question these government and nuclear industry "safe" limits of radiation exposure.

"The U.S. Department of Energy has testified that there is no level of radiation that is so low that it is without health risks," Jacqueline Cabasso, the Executive

Director of the Western States Legal Foundation, told Al Jazeera.

Her foundation monitors and analyzes U.S. nuclear weapons programs and policies and related high technology energy, with a focus on the national nuclear weapons laboratories.

Cabasso explained that natural background radiation exists, "But more than 2,000 nuclear tests have enhanced this background radiation level, so we are already living in an artificially radiated environment due to all the nuclear tests."

"Karl Morgan, who worked on the Manhattan project, later came out against the nuclear industry when he understood the danger of low levels of ionizing radiation-and he said there is no safe dose of radiation exposure," Cabasso continued, "That means all this talk about what a worker or the public can withstand on a yearly basis is bogus. There is no safe level of radiation exposure. These so-called safe levels are coming from within the nuclear establishment."

#### **Risk at low doses**

Karl Morgan was an American physicist who was a founder of the field of radiation health physics. After a long career in the Manhattan Project and at the Oak Ridge National Laboratory, he became a critic of nuclear power and weapons. Morgan, who died in 1999, began to offer court testimony for people who said they had been harmed by the nuclear power industry.

"Nobody is talking about the fact that there is no safe dose of radiation," Cabasso added, "One of the reasons Morgan said this is because doses are cumulative in the body."

The National Academy of Sciences (NAS) published a report in 2006 titled Biological Effects of Ionizing Radiation (BEIR) report, VII Phase 2. NAS BEIR VII

*Continued on page 7*

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***Continued from page 6 – No Safe Levels of Radiation in Japan***

on industry and governmental “allowable” radiation exposure limits.

That compares with a national “safety standard” in the U.S. of 250 millisieverts over a year. The U.S. Environmental Protection Agency says a single dose of 1,000 millisieverts is enough to cause internal hemorrhaging.

Meanwhile, more than 168 citizens organizations in Japan submitted a petition to their government on March 28 calling for an expanded evacuation zone near the Fukushima nuclear disaster site. The groups are also calling for other urgent measures to protect the public health and safety.

Residents of evacuated areas near the stricken Fukushima nuclear plant have been warned that they may not be able to return to their homes for months as Japan’s nuclear crisis stretched into a third week.

The neighbourhoods near the plant will remain empty “for the long term”, Yukio Edano, the country’s chief cabinet secretary, said on April 1.

Though he did not set a timetable, he said residents would not be able to return permanently “in a matter of days or weeks. It will be longer than that”.

The official evacuation zone remains only 20 kilometres, while the government has encouraged people within 30 kilometres to evacuate.

Yet levels of cesium-137 in the village of Iitate, for example, have been measured at more than twice the levels that prompted the Soviet Union to evacuate people near Chernobyl. Iitate is 40 kilometres northwest of Fukushima.

Radioactive Iodine has already been found in the tap water in all of Tokyo’s 23 wards.

The U.S. Nuclear Regulatory Commission had already recommended an 80-kilometre evacuation zone for U.S. citizens in Japan.

**Fukushima as Chernobyl**

This month marks the 25th anniversary of the Chernobyl nuclear disaster.

“There are still no-go areas there, and the workers town has long since been abandoned, and we are seeing radioactive refugees from there, like we are now seeing generated in Japan.”

Dr Kathleen Sullivan, a disarmament educator and activist who has been engaged in the nuclear issue for over 20 years told Al Jazeera, “Tepco is trying to cover

their rear-end, and the Japanese government is being cagey about it, and I believe people don’t understand that radiation is a major problem and issue.”

Dr Sullivan, cited Albert Einstein, who said, “The splitting of the atom changed everything, save man’s mode of thinking; thus we drift towards unparalleled catastrophe.”

“So we don’t understand this mistake because of the timeless invisible nature of the problem that radiation is,” Sullivan, who has been an education consultant to the UN Office for Disarmament Affairs, added.

Some experts have warned of a nightmare scenario where clouds of radioactive material could spread lethal toxins across the planet for months on end if the spent fuel rods catch fire due to lack of coolant.

The Central Institute for Meteorology and Geodynamics of Vienna told New Scientist on March 24: “Japan’s damaged nuclear plant in Fukushima has been emitting radioactive iodine and caesium at levels approaching those seen in the aftermath of the Chernobyl accident in 1986. Austrian researchers have used a worldwide network of radiation detectors – designed to spot clandestine nuclear bomb tests – to show that iodine-131 is being released at daily levels 73 per cent of those seen after the 1986 disaster. The daily amount of caesium-137 released from Fukushima Daiichi is around 60 per cent of the amount released from Chernobyl.”

The same group of scientists stated, “The Fukushima plant has around 1760 tonnes of fresh and used nuclear fuel on site,” while, “the Chernobyl reactor had only 180 tonnes.”

According to a report from the New York Academy of Sciences, due to the Chernobyl disaster, 985,000 people have died, mainly from cancer, between 1986-2004.

Monitors have detected tiny radioactive particles which have spread from the reactor site across the Pacific to North America, the Atlantic and even Europe.

Andrea Stahl, a senior scientist at the Norwegian Institute for Air Research, told Reuters, “It’s only a matter of days before it disperses in the entire northern hemisphere.”

Tens of thousands of people living near the plant have been evacuated or ordered to stay indoors, while radioactive materials have leaked into the sea, soil and air.

Last week also marked the 32nd anniversary of the Three Mile Island nuclear disaster in Middletown, Pennsylvania, in the United States.

**250,000 years of radiation**

*Continued on page 10*

### FEATURED ARTICLES

## Deadly Dishonesty of only Reading, Reporting Iodine 131 Levels

By Dick Eastman

April 5, 2011

*"Tablets only protect against Iodine 131, not against Cesium 134, 137, Plutonium, Uranium, and Strontium 90 radioactive particles. It's not a surprise that the gov'ts hasn't been more forth coming with the true readings of the radiation. Also, everything is as said, speculative, why?? As we continue to research the bits of info given to us, we too can speculate just how bad it really is!! After all, the Gulf Oil Spill is supposed to all cleaned up now and of course the 9 11 first responders, fire fighters, police officers and volunteer workers all have cancer or have already passed. All the while the EPA said everything was OK!!" -- Ralph Langner*

The deadly dishonesty of measuring and reporting only Iodine 131 levels...

Those in high positions critical to our protection but also most able to cause harm through omission or misinforming or under-responding are all showing the same pattern. Where the evidence can't be hidden they are vague and elusive on everthing but what is already obvious -- where data collection requires their diligence which we cannot check up on them -- we see no fruits forthcoming showing that that kind of work has been done.

This is especially so in radiation detection in the atmospher and in detection in plants, animals, water and soil. There is no effort to measure what is being released into the atmosphere. There is no cordon of captive balloons at different altitudes around Fukushima taking readings. Right now whoever the decision-makers in Japan are they are only interested in getting the radiation away from Japan -- no one is thinking of North Amnerica even as much as to get a rough estimate of what is being put into the atmosphere that almost certainly will be carried by the prevailing westerlies population and environment of our continent. And there is no report from anyone on Plutonium and Strontium 90 -- even though we know Plutonium at Chernobyl was carried as far as Sweden.

Radioactive Iodine has a half-life of around 8days -- Plutonium radiates half of its mass (half life) only after 20,000 years.

Let me show you how dishonest and fatally misleading it is for those in charge of readings to measure only radioactive Iodine and not the longer lasting (effectively permanent) radioactive elements.

Thus if you add to a box one gram of Iodine 131 and a gram of Plutonium every 8 days - and if you only meausred radioactive Iodine the readings for Iodine would be on successive days sum of:

1.0 total grams of radioactive Iodine found in the box (with half life of 8 days)

1.5 total grams on 8th day

1.75 total grams on 16th day

1.875 total grams on 24th day

1.9375 total grams on 32nd day

1.96875 total grams grams on 40th day

1.984375 total on 48th day

1.9921875 total grams on 56th day

1.99609375 total grams on 64th day

1.998046875 total grams on 72nd day

1.9990234375 total grams on 80th day -- less than 2 grams!

On the eightieth day of adding one gram of radioactive Iodine to the box there is still less than 2 grams in the box to be measured.

Now look at how Plutonium accumulates in the box if one gram is added every eight days:

1.0 total grams of Plutonium in the box

2.0 total grams on the 8th day

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- 3.0 total grams on the 16th day
- 4.0 total grams on the 24th day
- 5.0 total grams on the 32nd day
- 6.0 total grams on the 40th day
- 7.0 total grams on the 48th day
- 8.0 total grams on the 56th day
- 9.0 total grams on the 64th day
- 10.0 total grams on the 72nd day
- 11.0 total grams on the 80th day

We are only getting readings for the radioactive iodine isotope, we are not getting it for Plutonium and the other effectively permanent contaminants.

Do you see how misleading it is to report only Iodine readings!!!

After 80 days at an increase of one unit every 8 days Plutonium will be increased by a factor of 10.

Do you see what a crime it is not to fill the air with radiation counters?

Do you see that this is so obvious that high authorities and the scientific establishments they command must be aware of how misleading this is -- how the people are being given information that drastically understates the rate at which nuclear contamination is increasing in the environment?

We are being murdered and you are too polite to upset anyone by giving out the warning. Why upset people, especially when it will be painful to see and when they will almost certainly turn on you in denial rather than face this most unpleasant music.

The question is do you want a trouble free ride to the morgue or do you love people enough to inform them so they can at least have a fighting chance however poor the odds in our favor? Do you tell loved ones they are dying? Do you tell them when the knowledge may lead them to actions that could give us a shot at survival? - Dick Eastman

<http://www.rense.com/general93/disv.htm>



**Continued from page 7 – No Safe Levels of Radiation in Japan**

Sullivan explained that when dealing with long-lived radioactive materials, in addition to carcinogens there are inter-generational effects that include the mutation of the genetic structure of life.

“This is permanent and irreversible,” she added.

Sullivan uses Fukushima reactor No. 3 as an example, because it is fueled with Mox fuel uranium and plutonium. Plutonium has a half-life of 24,000 years, which means it is carcinogenic and mutagenic for up to 250,000 years, or 12,000 human generations.

A radioactive half-life means that in this case, in 24,000 years, half of the ionizing radiation will have decayed, then in another 24,000 years half of that radiation will decay, etc.

“That’s not really understandable or explainable in a conventional sense of knowing,” Sullivan said, “We have to apply our moral imagination to 12,000 generations to even begin to understand what we are doing in this moment.”

Source: Al Jazeera

<http://english.aljazeera.net/indepth/features/2011/04/20114219250664111.html>



## **EPA: Expect More Radiation in Rainwater**

By JEFF MCMAHON

March 28, 2011

The Environmental Protection Agency yesterday reported finding elevated levels of iodine-131, a product of nuclear fission, in rainwater in Pennsylvania and Massachusetts. The levels exceed the maximum contaminant level (MCL) permitted in drinking water, but EPA continues to assure the public there is no need for alarm:

“It is important to note that the corresponding MCL for iodine-131 was calculated based on long-term chronic exposures over the course of a lifetime – 70 years. The levels seen in rainwater are expected to be relatively short in duration,” the agency states in a FAQ that accompanied yesterday’s brief news release.

“In both cases these are levels above the normal background levels historically reported in these areas.”

EPA said it is receiving “verbal reports” of higher levels of radiation in rainwater samples from other states as well, and that Americans should continue to expect short-term contamination of rainwater as radioactive isotopes spread through the atmosphere from Japan.

“We continue to expect similar reports from state agencies and others across the nation given the nature and duration of the Japanese nuclear incident.”

*Continued on page 10*

***Continued from page 9 – EPA: Expect More Radiation in Rainwater***

EPA is analyzing rainwater samples taken from 18 monitoring stations around the nation, promising to release results soon. It is stepping up sampling of rainwater, drinking water, and milk.

The Food and Drug Administration released a statement on milk Saturday:

At this time, theoretical models do not indicate that harmful amounts of radiation will reach the U.S. and, therefore, there is little possibility of domestic milk being contaminated as a result of grass or feed contamination in the U.S. FDA, together with other agencies, is carefully monitoring any possibility for distribution of radiation.”

EPA also maintains 140 air monitoring stations. Those have detected radiation from the Fukushima nuclear disaster in five Western states: California, Colorado, Hawaii, Washington, and, as of yesterday, Nevada.

The isotopes detected in Western states have been found in minuscule amounts, officials say, much too small to threaten health. Scientists trace the isotopes to Japan because they are products of nuclear fission—iodine-131, xenon-133, and cesium-137.

“Unless you have an accident like this, you wouldn’t expect to see this. No doubt it’s from Japan,” Ted Hartwell, manager of the Desert Research Institute’s Community Environmental Monitoring Program, told [the Associated Press](#).

<http://blogs.forbes.com/jeffmcmahon/2011/03/28/epa-expect-more-radiation-in-rainwater/>



## **Japan Radiation detected in at least 15 States and in Milk Samples in Washington State**

**by Ethan A. Huff**

March 30, 2011  
Natural News

Radioactive isotopes unique to the Fukushima disaster are now being detected in at least 15 US states, according to recent reports from CNN (<http://www.cnn.com/2011/HEALTH/03/2...>). And the Associated Press (AP) has issued a report claiming that milk samples taken in Washington state have tested positive for low levels of the same radioactive component, Iodine-131, raising concerns about the true widespread effects of the Fukushima nuclear fallout (<http://www.sfgate.com/cgi-bin/artic...>).

The US Environmental Protection Agency (EPA) and various state and local authorities continue to repeat the same empty reassurances that all detected levels of radiation -- whether they be in air, water, or food -- are far below levels of concern, and that people do not need to worry or do anything in response. But is this sound advice?

Earlier in the week, several nuclear facilities in North and South Carolina, as well as in Florida, reportedly detected low levels of Iodine-131 in the air ([http://www.naturalnews.com/031881\\_r...](http://www.naturalnews.com/031881_r...)). That same radiation has also been detected across the West Coast, as well as in northeastern states like Pennsylvania and Massachusetts, which clearly indicates that Fukushima radiation has made its way throughout the US, at least in very low levels.

But now, reports have been issued claiming that milk samples from Washington state have also turned up contaminated with Iodine-131. The levels were alleged far lower than the US Food and Drug Administration (FDA) concern limits for the radioactive particles, but they are not necessarily safe even at the levels being detected.

According to the FDA "Radiation Safety" website, the Derived Intervention Level (DIL) for Iodine-131 is 170 becquerels per kilogram (Bq/kg) (<http://www.fda.gov/newsevents/publi...>). A Wall Street Journal report of the milk incident explains that the Washington samples contained only 0.8 picocuries per liter (pCi/l), or 0.03 Bq/kg. That level is clearly far lower than the FDA's DIL for Iodine-131, but is any level of this radiation actually "safe"? And what about the other more serious types of radioactive particles being emitted from Fukushima that authorities appear to not even be looking for?

Based on Japanese guidelines for radiation safety, Iodine-131 is the least of our worries. Cesium, uranium, and plutonium all have much lower maximum "concern" thresholds, with plutonium being the most serious. A Bloomberg report explains that just one Bq/kg of plutonium is enough to cause major concern if found in water or milk (<http://www.bloomberg.com/news/2011-...>). Are authorities testing for plutonium and the other serious radioactive particles that we know have escaped from the Fukushima plant?

The mainstream media has mostly abandoned the Fukushima incident in favor of the newly-instigated war in Libya. And yet reports are still continuing to trickle in -- though mostly without much fanfare -- concerning Japan radiation popping up across the US in air, water,

*Continued on page 11*

**Continued from page 10 – Japan Radiation detected in at least 15 States**

and now food. But all the while, the EPA and others repeatedly dismiss the situation as being no big deal, despite the fact that conditions at Fukushima have basically reached a frightening dead end ([http://www.naturalnews.com/031894\\_F...](http://www.naturalnews.com/031894_F...)).

As we keep saying here at NaturalNews, preparedness is key. And preparedness, of course, does not involve panic. It does, however, involve using your critical thinking skills to evaluate the seriousness of the situation, consider the anomalies surrounding the official US government position on it, and take appropriate steps to prepare you and your family for whatever may soon come as a result.

[http://www.naturalnews.com/031909\\_radiation\\_milk.html](http://www.naturalnews.com/031909_radiation_milk.html)



**Continued from page 5 - Japan fears Radioactive Contamination of Marine Life**

Tests on seawater near the nuclear power plant showed that levels of radioactive iodine reached 3,355 times the legal limit on Monday, one of several peaks in recent days that have fallen rapidly as radioactive substances decayed and were steadily diluted and dispersed by ocean currents.

Officials are watching levels of iodine-131 in seawater because although it has a half-life of eight days, meaning it is half as radioactive after that time, the substance builds up in seaweed, a common food in the Japanese diet. If consumed, radioactive iodine collects in the thyroid and can cause cancer.

The International Atomic Energy Agency said iodine-131 in seawater would "soon be of no concern" presuming there are no further discharges of contaminated water from the power station into the sea.

The IAEA added that Japanese authorities have released the first analyses of fish, caught at the port of Choshi, in Chiba prefecture south of Fukushima, which found one of five to be contaminated with a detectable level of caesium-137, a far more persistent radioactive substance, though at a concentration that was far below safety limits for consumption.

Many countries, including Britain, have begun radiation testing of fish, shellfish and other fresh produce from Japan or have imposed wider bans on imports from the region. Fisheries are not entering waters within the 20km (12-mile) exclusion zone around Fukushima, said Hidehiko Nishiyama, a spokesman for Japan's Nuclear and Industrial Safety Agency.

The fate of many local seafood and shellfish farms, in-

cluding scallops, oysters, sea urchins and sea snails, was sealed more than two weeks ago when the tsunami wiped out beds and destroyed fishing vessels and ports around Fukushima. In Iwate prefecture, authorities say the disaster may have wiped out businesses that account for 80% of the revenue of the region's fisheries.

At the Fukushima power plant, engineers continued the arduous task of trying to pump contaminated water from turbine rooms and trenches, which is hampering work to connect the reactor cooling systems to the national grid. Tepco, the power station operator, plans to spray parts of the site with a resin to stop radioactive dust blowing off the site and is considering shrouding the reactor buildings with sheets to reduce radiation being released into the air.

Fish and other sea creatures are unlikely to be seriously harmed by the radioactive leaks, even in the most contaminated areas. After the Chernobyl nuclear disaster, fish in three freshwater lakes within the exclusion zone became contaminated with radioactive caesium but showed no obvious health problems, though some fish were born with reproductive abnormalities which may have been caused by radiation, said James Smith, an environmental physicist at Portsmouth University who studied fish in the area. While fish accumulate radioactive contamination, this happens less in the ion-rich waters of the oceans than in freshwater lakes.

<http://www.guardian.co.uk/world/2011/mar/30/japan-radioactive-contamination-marine-life>



## Highly Radioactive Water leaks into Pacific from Japan Nuke Plant

*There could be other similar cracks in the area, and we must find them as quickly as possible,' official warns*

April 2, 2011

TOKYO — Japan's tsunami-stricken nuclear power plant was leaking highly radioactive water into the sea Saturday, nuclear safety officials said.

The plant has been spewing radioactivity since March 11, when a magnitude-9.0 earthquake and ensuing tsunami knocked out power, disabling cooling systems and allowing radiation to seep out of the overheating reactors. The water was seeping Saturday from a newly discovered crack in a maintenance pit on the edge of the Fukushima Dai-ichi nuclear site into the Pacific Ocean, Japan Nuclear and Industrial Safety Agency spokesman Hidehiko Nishiyama said.

*Continued on page 12*

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**Continued from page 12 – Highly Radioactive Water leaks into Pacific**

Measurements show the air right above it contained 1,000 millisieverts of radioactivity. Exposure to 500 millisieverts over a short period of time can increase the long-term risk of cancer. But experts say radiation is quickly diluted by the vast Pacific and that even large amounts have little effect.

It wasn't immediately clear whether workers who have been rushing to bring the reactors under control were exposed. People living within 12 miles of the Fukushima plant have been evacuated, with those living up to about 19 miles away also urged to leave.

Nishiyama said officials will check the level of radiation in seawater near the reactor as well as seawater around 9 miles from the reactor.

**Concrete to seal crack**

They will use concrete to seal the 8-inch crack and try to stop the radiation from leaking.

"With radiation levels rising in the seawater near the plant, we have been trying to confirm the reason why, and in that context, this could be one source. We're testing samples of water from the pit and from the sea near the plant, and we can't really say for certain until we've studied the results," Nishiyama said. "There could be other similar cracks in the area, and we must find them as quickly as possible," he added.

Over the past week, radioactivity beyond the legal limit has been detected in seawater just off the plant. News of the leak came after Japan's prime minister, Naoto Kan, laid eyes on the extensive damage in the northeast for the first time Saturday and troops trolled the decimated coastline in an all-out search for any remaining bodies swept out to sea by a tsunami three weeks ago.

More than 16,000 people are still missing after the disaster, which officials fear may have killed some 25,000 people. The magnitude-9.0 earthquake and ensuing tsunami also ravaged a nuclear power plant.

Kan went to the Fukushima Dai-ichi complex immediately after the wave knocked out cooling systems, leaving workers unable to control overheating nuclear reactors and allowing radiation to seep out. But Saturday marked his first visit to some of the dozens of villages, towns and cities wiped out in the March 11 disaster.

Dressed in the blue work clothes that have become almost a uniform for officials, Kan stopped first in Rikuzentakata — a town of about 20,000 people that was flattened by the torrent of water. The town hall still stands, but all its windows are blown out and a tangle of

metal and other debris is piled in front of it. The prime minister paused in front of the building for a minute of silence.

**'Long haul'**

"It is going to be a long haul, but the government is with you. We all should hang in there," Kan told firefighters and officials, according to the Kyodo news agency.

About 90 miles down the coast, near the Japanese military's Kasuminome air base, a constant stream of helicopters roared overhead throughout Friday afternoon, shuttling to and from the more remote coastal regions. Planes and boats were dispatched from other bases near the city.

Altogether, 25,000 troops, 120 helicopters and 65 ships from the Japanese and U.S. militaries will continue searching through Sunday. So far, more than 11,700 deaths have been confirmed. "Unfortunately, we've come across remains over the scope of our mission, so it may be more likely than you think" to find bodies at sea so long after the disaster, said U.S. Navy Lt. Anthony Falvo.

Some may have sunk and just now be resurfacing. Others may never be found. After the 2004 Indian Ocean tsunami, 37,000 of the 164,000 people who died in Indonesia simply disappeared, their bodies presumably washed out to sea. The Japanese military stopped short of saying the search would end for good after Sunday, but public affairs official Yoshiyuki Kotake said activities will be limited.

The search includes places that were submerged or remain underwater, along with the mouths of major rivers and the ocean as far as 12 miles from shore.

Police officers have also been searching for bodies in decimated towns inland, but in some cases their efforts have been complicated or even stymied by dangerous levels of radiation from the nuclear plant, which is 140 miles northeast of Tokyo.

[http://www.msnbc.msn.com/id/42388474/ns/world\\_news-asiapacific/](http://www.msnbc.msn.com/id/42388474/ns/world_news-asiapacific/)



## **Jellyfish Taking Over World's Oceans; Shutting Down Nuclear Power Plants**

December 15, 2008  
DiscoverMagazine

Massive swarms of jellyfish are a growing threat to swimmers, the fishing industry, and even the nuclear power industry, a new report argues, and it's high time for scientists to begin researching the causes of the population

*Continued on page 13*

**Continued from page 12 - Jellyfish Taking Over World's Oceans**

boom and how to reverse the trend. The new report from the National Science Foundation may tend towards sensationalism (the report is titled "Jellyfish Gone Wild!!"), but the problem is very real. The report says more than 1,000 fist-sized comb jellies can be found in a cubic yard (meter) of Black Sea water during a bloom. They eat the eggs of fish and compete with them for food, wiping out the livelihoods of fishermen, according to the report [Reuters].

A big swarm of jellies can also burst a fishing net or poison and crush a load of captured fish, the report says, and their bodies can clog boat engines.

"When jellyfish populations run wild," the NSF jellyboffins warn, "they may jam thousands of square miles with their pulsing, gelatinous bodies." It seems that no less than half a billion "refrigerator sized" slimy horrors weighing 450 pounds each invade the Sea of Japan daily, while Australian waters are plagued with "deadly, peanut-sized" Jellybabies of Death [The Register]. Popular tourist beaches from Spain to Alabama have been closed in recent years when swarms of stinging jellies threatened to harm bathers. As for their impact on nuclear power: The report claims that swarms of jellies sometimes clog the water intake pipes of power plants, and notes that in 1999 just such an incident forced a power plant in the Philippines to shut down, which "plunged 40 million people into darkness and started rumors of a coup d'etat."

Jellyfish (which are not really fish, as they're invertebrates) have been called the cockroaches of the sea for their ability to thrive under all sorts of conditions, and the report says their numbers are now booming because they're able to adapt to a variety of man-made environmental changes. They're... definitely linked to ocean pollution. There are now oxygen-starved dead zones in the oceans so polluted that jellyfish are the only creatures able to survive. Also, their major natural enemy are sea turtles but all seven sea-turtle species are now in decline and threatened. And warming seas make it easier for the various soft-bodied critters to spread and thrive [ZDNet].

The report comes at the same time as the European Union is reviewing the fish quotas set for commercial fishing operations, a process that has been heavily criticized by scientists and environmentalists who say that high quotas are putting many fish species at risk of extinction. Scientists have said that unless the system is completely overhauled fish stocks will continue to deplete to the point of extinction by 2048, leaving consumers little

option but to eat jellyfish or the small bony species left behind at the bottom of the ocean... "If we do not change our ways we will have less and less to catch... so jelly fish could end up on the menu as opposed to cod in our fish and chips" [Telegraph], said marine conservationist Callum Roberts.

<http://blogs.discovermagazine.com/80beats/2008/12/15/jellyfish-taking-over-worlds-oceans-shutting-down-nuclear-power-plants/>



## Giant Jellyfish invade Japan

By Julian Ryall

10 Mar 2011

*Millions of 6ft, 440lb jellyfish are congregating off the western coast of Japan, their numbers apparently boosted by rising sea temperatures and a decline in natural predators.*



*Increasing numbers of the jellyfish have been recorded in the Sea of Japan since 2002 Photo: AFP/GETTY IMAGES*

Nomura's jellyfish are one of the largest species of the creature in the world. Their scale was demonstrated in the autumn of 2009, when a 10-ton fishing boat was sunk as the crew tried to haul in a net containing dozens of the creatures. Increasing numbers of the jellyfish have been recorded in the Sea of Japan since 2002, with experts suggesting the population explosion in recent years is due to the 1.89 degree Fahrenheit increase in temperature in waters off China making conditions more favourable for breeding.

In the early 1900s, according to Professor Shinichi Uye, a leading expert on the species at the Graduate School of Biosphere Science of Hiroshima University, large numbers were only reported every 40 years or so. Another contributing factor, experts believe, is a decline in the number of predators, which include sea turtles and certain species of fish.

Japan was invaded on a similar scale in the summer of 2005

*Continued on page 14*

when the jellyfish damaged nets, rendered fish inedible with their toxic stings and even caused injuries to fishermen. In 2007, there were 15,500 reports of damage to fishing equipment caused by the creatures. In November 2009, the three-man crew of the Daisan Shinsho-maru had a lucky escape when the trawler capsized off Chiba as it was trying to haul in a net containing dozens of the jellyfish.

<http://www.telegraph.co.uk/earth/earthnews/8373420/Giant-jellyfish-invade-Japan.html>



## **7.5 Million Times Legal Limit of Iodine in Sea**

April 05, 2011

The operator of the stricken Fukushima Daiichi nuclear power plant says 7.5 million times the legal limit of radioactive iodine 131 has been detected from samples of seawater near the plant.

Tokyo Electric Power Company, or TEPCO, found on Saturday that contaminated water was leaking from a cracked concrete pit near the No. 2 reactor.

Experts say this makes it clear that highly radioactive substances from the reactor are flowing into the sea, and that the leak must be stopped as soon as possible.

The utility firm said samples of water taken near the water intake of the No. 2 reactor at 11:50 AM Saturday contained 300,000 becquerels of iodine 131 per cubic centimeter, or 7.5 million times the legal limit.

TEPCO said the figure had dropped to 200,000 becquerels per cubic centimeter, or 5 million times the legal limit, in samples taken at 9:00 AM Monday. Monday's sample also contained 1.1 million times the legal limit of cesium 137, which has a half life of 30 years.

On March 27th, 13-million becquerels of iodine 131 per cubic centimeter of water were detected in the turbine building of the No. 2 reactor. On Wednesday, water was found accumulated in a tunnel near the turbine building and the radiation level on the surface was measured at more than 1,000 millisieverts per hour.

The Nuclear and Industrial Safety Agency says it believes the radioactive substances are from nuclear fuel which leaked from the reactor into the water and flowed out.

[http://www3.nhk.or.jp/daily/english/05\\_27.html](http://www3.nhk.or.jp/daily/english/05_27.html)



## **Govt did not reveal High Level Radiation Estimate**

April 04, 2011

It has been learned that the Japanese government withheld the release of computer projections indicating high levels of radioactivity in areas more than 30 kilometers from the troubled Fukushima Daiichi nuclear power plant.

The estimates were made on March 16th following explosions at the plant by an institute commissioned by the government using a computer system called SPEEDI. The system made its projections on the assumption that radioactive substances had been released for 24 hours from midnight on March 14th, based on the available data.

But the government was reluctant to reveal the SPEEDI projections, and did not release them until March 23rd.

The released data showed that higher levels of radioactive substances would flow over areas to the northwest and southwest of the plant.

The estimates showed that the radiation would exceed 100 millisieverts in some areas more than 30 kilometers from the nuclear plant if people remained outdoors for 24 hours between March 12th and 24th.

That is 100 times higher than the 1 millisievert-per-year long-term reference level for humans as recommended by the International Commission on Radiological Protection.

The Nuclear Safety Commission says it did not release the projections because the location or the amount of radioactive leakage was not specified at the time.

Professor emeritus Shigenobu Nagasaki of Nagasaki University, says the government should release more data about the dangers of possible radiation exposure and draw up evacuation plans and other measures together with residents.

[http://www3.nhk.or.jp/daily/english/04\\_10.html](http://www3.nhk.or.jp/daily/english/04_10.html)



## **America and EU Agree: Raise Radiation Levels for Food**

**Brandon Turbeville**

April 5, 2011  
Activist Post

On March 28, 2011, I wrote an article entitled EPA to Help Mainstream Media Obscure The Truth About Radiation Exposure to Americans, in which I discussed the changes to

*Continued on page 15*

the PAGs (Protective Action Guides) being proposed by the EPA (Environmental Protection Agency) that would raise the acceptable levels of radiation allowed in the environment, food, and even the general public themselves in the event of a nuclear emergency.

Interestingly enough, an article was published on April 3, 2011, by Alexander Higgins citing Kopp Online and Xander News, stating that a similar rule change was occurring in the European Union.

PAGs are policies and guidelines established by the EPA that guide the agency's response in the event of a radioactive emergency. Specifically, PAGs deal with how the EPA should enforce laws such as the Clean Air and Water Act in relation to the disaster. Although PAGs had already been established by the EPA in 1992, the agency now plans to amend these guidelines to much higher levels of acceptable radiation.

No congressional approval is legally needed to make such changes, because the EPA is a regulatory agency that sets "policy" and, although these types of agencies can be directed by congress or the president, they often form their own policies. All that is required when agencies such as the EPA wish to change their policy is that they first publish the proposed changes in the Federal Register for a designated period of "public comment."

However, since public opinion is worth virtually nothing, once a proposed change is published in the Federal Register, it is well on its way to becoming new policy. This is unfortunate considering the fact that, according to PEER (Public Employees for Environmental Responsibility, the new standards would result in a "nearly 1000-fold increase for exposure to strontium-90, a 3000 to 100,000-fold hike for exposure to iodine-131; and an almost 25,000 rise for exposure to radioactive nickel-63" in drinking water.

Which brings us to the new EU mirror of EPA policy. Actually set as far back as 1989 (by amending standards set in 1987) for the purpose of responding to a nuclear or radiological emergency, the EU ordinance 297/2011 was implemented on March 25, 2011, which finally enacted the standards that were set back in 1989.

EU ordinance 297/2011 raises the Maximum Levels of radiation and radioactive isotopes for food and feed to rather serious levels. In some cases, such as the case of Cesium-134 and Cesium-137, the levels are actually twice the amount of previously acceptable levels. Many of these increases are allowed in products such as infant

formula and baby foods.

It should be noted that the new EU changes only apply to food imported from Japan. The justification behind this is that in the event of a nuclear emergency the traditional levels of acceptable radiation should be ignored so as not to cause a food shortage as a result of legal constraints.

However, in this context, making such changes is a completely ridiculous decision. Although it is true that the radiation cloud from Fukushima has almost spread across the entire globe, food imported from Japan itself only makes up a small percentage of the EU food supply. As Thilo Bode and Christina Hacker stated, "These rules now to bring into force is absurd, because in Europe there are no nuclear emergency, and certainly no shortage of food." [sic] Indeed, it seems the best course of action would be to ban imports of Japanese food or, at the very least, to ban the importation of contaminated Japanese food. Nevertheless, it all seems a bit too coincidental that both the American EPA and the European Union EC have decided to change their standards at the same time. It is almost enough to make one wonder if there is not a hidden agenda at work amidst this ordeal. Could it be that there is a coordinated effort to increase the levels of radiation the public is subjected to, while at the same time reduce the amount of alarm being expressed (to the extent that it is) over the potential health concerns?

Only time will tell whether or not there is an ulterior motive in regards to the new changes implemented by the EU and those proposed by the EPA. However, it is always good practice to assume that when you see different countries implementing the same policies at the same time, there is much more to the story than meets the eye.

*Brandon Turbeville is an author out of Mullins, South Carolina. He has a Bachelor's Degree from Francis Marion University. He has had numerous articles published dealing with a wide variety of subjects including health, economics, and civil liberties. He also the author of Codex Alimentarius - The End of Health Freedom and his latest book 7 Real Conspiracies*

<http://www.activistpost.com/2011/04/eu-follows-epa-raises-acceptable.html>



## **THE AFRICAN TRADITIONAL HERBAL RESEARCH CENTRE**

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# Why is Japan dumping Radioactive Water into the Ocean?

By Peter Grier

April 4, 2011

Radioactive water continued to drain from the damaged Fukushima Daiichi nuclear plant into the Pacific Ocean on Monday, as Japanese officials mounted a desperate effort to find and plug the source of the leak.

Japanese officials allowed owners of the damaged Fukushima nuclear power plant to empty tanks holding 10,000 tons of slightly radioactive water into the ocean – in order to make room to pump highly contaminated water out of reactor No. 2.

On Saturday, the Tokyo Electric Power Company (TEPCO) thought it had discovered the leak's headwaters – a crack in a concrete pit near reactor No. 2. TEPCO workers poured concrete into the pit to close the breach, but the leak continued.

On Sunday, workers broke through the top of a connecting trench and dumped in a mix of sawdust, newsprint, and absorbent polymers in an attempt to glue the leak shut. That didn't work either, noted the International Atomic Energy Agency in a Monday update on Fukushima's status: "Leaking has not stopped."

## Radioactive water

As the Fukushima crisis passes the three-week mark, the thousands of tons of water – used to keep crippled reactors and spent-fuel pools cool – are becoming an increasing concern.

Much of the water evaporates, or else collects inside spent-fuel pools or other secure areas. But in the wake of the March 11 earthquake, water has also escaped from the damaged reactor buildings, flowing into the maintenance tunnels and basements, and then to unknown parts.

The problem now is that TEPCO does not have enough storage tank capacity at the site in which to store contaminated water. That is why the Japanese government Monday authorized Fukushima workers to release 10,000 tons of wastewater containing low-level radioactivity directly into the sea.

Dumping this water should free up space for TEPCO to pump highly contaminated water out of reactor No. 2's basement and tunnels, potentially putting an end to the

leakage problem.

"The fact that they're encountering ... these large sources of contaminated water – and still are unable to say exactly where it's coming from – is troubling," said Edward Lyman, a senior scientist in the Global Security Program at the Union of Concerned Scientists, in a briefing for reporters late last week.

Treating radioactive water – if contained – is easy enough, noted Dr. Lyman. Reprocessing plants could boil off pure water, concentrating the radioactivity into a denser waste solution. Filters can also remove some contaminants.

"Over time ... assuming the situation is stabilized and they were able to get at least the physical capacity to store the liquids, then they would just be left with potentially a high-level radioactive waste problem, like the US has in spades with liquid waste left over from defense production," said Lyman.

## Tracing the leak

While pumping water out of the damaged reactor could help solve the problem, workers continue to try to identify the source of the leak. They have tried dumping a milky dye into the suspect pool to see if they can trace the water's path. So far, that has not shown up in nearby ocean waters.

TEPCO now is weighing other strategies as it considers that the leak might be elsewhere.

One possible move: setting up undersea silt barriers near the reactor's seawater intake duct, in an attempt to block radioactive water from moving further into the ocean. Response of the Japanese government

The Japanese government said it is becoming increasingly concerned about the amount of radioactivity that has already leached into surrounding waters.

Japan's Nuclear and Industrial Safety Agency says the disposal of the low-level waste is an emergency measure and that it will increase monitoring of water and sea life in the surrounding area to ensure levels of radioactive iodine do not spike too high.

"Even if they say the contamination will be diluted in the ocean, the longer this continues, the more radioactive particles will be released and the greater the impact on the ocean," said Chief Cabinet Secretary Yukio Edano at a press conference. "We are strongly urging TEPCO that they have to take immediate action to deal with this."

<http://www.csmonitor.com/USA/2011/0404/Why-is-Japan-dumping-radioactive-water-into-the-ocean>

**www.BLACKHERBALS.COM**

### FEATURED ARTICLES

## Radiation Particles in Food Are a Slow-Release Health Threat

By Shafiz Qadri, MD

Globe and Mail

March 29, 2011

After the burial of the Japanese earthquake victims, another health challenge is brewing. While measures to control damage at the Fukushima nuclear facility continue, radiation has spread. So far, low levels of radioactivity have been detected in various locations in flowers, vegetables, milk, tap water and at sea. And that's likely just the start.

Despite the Japanese government's shifting assurances of safety, international agencies are concerned about human health over the long term.

"Repeated consumption of certain products is going to intensify risks, as opposed to radiation in the air that happens once," says Gregory Hartl, a spokesman for the World Health Organization. In a country that suffered the aftermath of the atomic bombs of Hiroshima and Nagasaki, this is particularly poignant.

China, the United States, Canada and other countries have already begun screening Japanese food exports for radiation. Japan itself has voluntarily stopped exports of raw milk and various vegetables from the Daiichi district, where the Fukushima nuclear facility is situated.

But it is the Japanese people themselves who may suffer the long-term health risks. Pregnant women and their fetuses, young children and people with strong family histories of certain cancers are at heightened risk. The Canadian Pediatric Society notes that the unborn fetus, particularly during the first three months of pregnancy, is more susceptible to harmful influences such as street drugs, excess alcohol, maternal illness and radiation.

In 1991, I discovered this for myself. A Ukrainian patient who had lived in Pripjat, a city near the Chernobyl nuclear plant, came to my clinic. She had been pregnant with twins in 1986, the time of the Chernobyl meltdown. Her children, a boy and a girl,

were born two months prematurely. They had always been somewhat weak and pale, but their health deteriorated after they arrived in Canada five years later. The children had been losing weight, were always fatigued and would bruise and swell easily. After performing blood tests on them, I had the terrible duty to inform the mother of the diagnosis. Both of them had blood cancer, acute lymphoblastic leukemia.

I remember being shocked and asking her, "How is this possible? One child might have leukemia, but two at the same time?" It was only then that I understood the impact of being from a radioactive hot zone such as Chernobyl.

Of course, the radiation exposure from the Chernobyl disaster was vastly higher than the radiation leaks in Japan so far. But there is a twist to the potential long-term radiation exposure that should be considered. Even though the radiation intensity is very low, the fission product particles that have leaked into the Japanese landscape might hang around for days, years, centuries or even eons.

Consider these fission product half-lives, the time it takes for 50 per cent of the substance to dissipate: for iodine-131, eight days; cesium-137, 30 years; molybdenum-99, 200,000 years; zirconium-93, 1.5 million years; palladium-107, seven million years.

To gauge the effect of medications on human health, doctors consider two key elements dosage and duration. If a doctor prescribes an antibiotic, say a tablet of 500 milligrams once a day for a week, a patient may experience side effects. But we know that the medication will be completely washed out of his system in a matter of days.

*Continued on page 18*

Now consider the time frame of radioactive particles.

What happens if a doctor prescribes another pill, say a low dose of only one milligram a day, but this time for 30 years, or perhaps seven million years? It is this potential for low but super-long exposure that is worrying.

There are hundreds of manufacturing cycles in the human body that can be affected by chronic low radiation exposure. For example, it takes just the right biological steps over 75 days to make sperm, one month to make new skin, nine months for a baby and one year to renovate 10 per cent of your bone mass. Such processes can be derailed or deranged by ever-present radiation.

In fact, it is such high-throughput manufacturing that is particularly susceptible to radiation. The body releases 100 billion new red blood cells into the bloodstream daily. With an assembly line that productive, slight errors can accumulate rapidly, which is one of the reasons blood cancers develop.

Another frustration for medical authorities is that our standard hygiene advice for avoiding infections does not apply to radiation. No amount of hand washing, coughing into your sleeve, antiseptic gels or cloth isolation gowns will help. For the most part, you can't hide from radiation released into the environment especially if you're bathing in radioactive water.

And what happens when authorities discover radiation in ocean fish that have been bathed by a cloud of radioactive particles? For a society that eats raw fish and gave the world sushi, this will be a food resource challenge.

Perhaps eventually there will be a new level of product warning, first in Japan and then elsewhere. Instead of the usual labels such as "no sugar added" or "caffeine-free," food chains may have to add "radiation-free" or "no fission products added."

In any case, there is a slow-release international health challenge on the horizon. Ten years will need to pass before we can gauge its full extent.

*Dr. Shafiq Qaadri is a Toronto family physician.*

<http://www.theglobeandmail.com/life/health/new-health/health-news/radiation-particles-in-food-are-a-slow-release-health-threat/article1959891/>

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## **Codex Alimentarius and Food Irradiation in the U.S.**

**Brandon Turbeville**



Food irradiation symbol -- Wiki Commons

Activist Post  
March 23, 2011

I have written several articles dealing with the risk assessment methods used by Codex Alimentarius in order to water down the levels of nutrition available in vitamin and mineral supplements, as well as the potential removal of many supplements from the market entirely. All of this is of vital importance. However, Codex Alimentarius Guidelines are relevant to many more issues than just vitamins and minerals. One of these issues has to do with food irradiation.

Clearly a threat to public health, irradiated foods are not safe for human consumption and contribute to a host of health problems such as cancer and birth defects. Irradiation also causes genetic damage to cells.[1] One of the reasons for this is the fact that irradiated food is exposed to gamma rays of radioactive material or electron beams causing chemical changes in the food.

Essentially, the food becomes mutated by this exposure, a condition which does not occur in nature, and is the cause for many forms of cancer and genetic modification.[2] Yet, Codex pushes irradiation as if it were a great tool of disinfection with no adverse side effects at all.

Indeed, prior to the easing of restrictions on food irradiation by Codex, the United States had been irradiating food at an alarming rate. The process began in 1963 when wheat flour became the first food allowed to be irradiated. In 1964, white potatoes were added to the list and the process continued until the present day. In 2011, almost the entirety of the food supply is eligible for irradiation.

It should be noted that under current US law, organic food cannot be irradiated. However, that is not the case with

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**Continued from page 7 – Codex Alimentarius and Food Irradiation in the U.S.**

Codex standards, as there is no categorization of what foods can and cannot be “treated” with radiation.

It should also be mentioned that current US law states that all irradiated food must be labeled with the radura symbol and some amount of text stating its irradiation. However, that labeling only has to be made visible to the “first consumer” and that is generally individuals such as the distributor, not the average grocery store shopper. [3]

However, even these labeling requirements are severely inadequate. While these “first consumers” must, by law, be able to see the words and symbol on some products the law does not require the labeling of many others.[4]

It would seem that the FDA, USDA, NRC (National Regulatory Commission), and the DOT (Department of Transportation), if truly concerned with the health and welfare of consumers, would require clear and appropriate labeling for any and all foods that have been irradiated. Although not irradiating at all would be the best policy, at least allowing the real consumer an opportunity to choose seems like a bare minimum in terms of public health and basic fair business practice.

However, in contrast to their rhetoric and stated objectives, it is also clear that these regulatory agencies have no real interest in protecting the public from any danger or insuring fair business dealings.

The FDA governs most aspects of food irradiation but the USDA, DOT, and NRC regulate some aspects as well. There are some differences in policy, but it should be noted that the latter three agencies only deal with specific aspects of the process. For instance, the USDA deals only with meat/poultry and fresh fruits, while the NRC addresses the safety of the facilities used in irradiation. The DOT regulates the transportation of the materials.

For the most part, the differences between the policies of these agencies are very slight. Most of the differences exist between the FDA and the USDA but deal only with things such as where labels should be posted and what size type and font should be used. For instance, the USDA requirement for multi-ingredient products that contain irradiated meat is that it should be stated to the consumer by the label yet the FDA has no such requirement at all.

But before one mistakenly gets the impression that the USDA is somehow more interested in protecting the consumer than the FDA, consider the fact that the USDA even allows claims touting the “beneficial effects” of irradiation.[5] Ironically, vitamin and mineral supplements such as Vitamin C are highly regulated in

the claims that can be made about their health benefits but radiation may be touted as safe and beneficial.

To add to the shady language of the labeling requirements already in existence, in 2002 Congress created a loophole that had been the desire of the meat and poultry industry for some time. With the creation of this new escape hatch, companies can now use terms like “electronically pasteurized” instead of “treated with radiation” or “irradiated” by bypassing the FDA and going straight to the Secretary of Health and Human Services to request permission to use the new semantically gifted term.

The HHS Secretary has the authority to grant them such permission. Indeed, in 2007, the FDA itself proposed a new rule similar to the congressional loophole. This rule would allow irradiated food to be labeled as “pasteurized” as opposed to “irradiated.”[6] The very fact that this rule would even be proposed should worry every American.

Clearly, if the FDA were truly concerned about those individuals they are supposed to be protecting from adulterated foods, they would, at the very least, require that companies label their products honestly. This proposal, however, clearly shows the true intent behind FDA policies and regulations.

**Notes**

- [1] Krebs, Al. “WTO Codex To Allow Dangerous Levels of Food Irradiation.” Organic Consumers Association. July 10, 2003. [http://www.organicconsumers.org/corp/071403\\_wto\\_irradiation.cfm](http://www.organicconsumers.org/corp/071403_wto_irradiation.cfm) Accessed May 24, 2010.
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- [4] Ibid.
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<http://www.activistpost.com/2011/03/codex-alimentarius-and-food-irradiation.html>



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# The Codex Alimentarius Irradiated Food Cover-up

Brandon Turbeville

Activist Post  
March 28, 2011

In the last article, I briefly discussed [a proposal made by the FDA](#) which was very similar to one made by Congress five years earlier. This proposal would have allowed production companies to use terms such as “electronically pasteurized” instead of “irradiated” and, going further, simply allow the food to be categorized as “pasteurized” with no indication whatsoever that the food had been subject to radiation.

The proposal made by the FDA in April, 2007 is an interesting one indeed. In the opening summary of the text, the FDA states that one of the purposes of the proposal is to make it so that “only those irradiated foods in which the irradiation causes a material change in the food, or a material change in the consequences that may result from the use of the food, bear the radura logo and the term ‘irradiation,’ or a derivative thereof, in conjunction with explicit language describing the change in the food or its conditions of use.”[1]

While this may seem like a strengthening of a rule, in reality it is not. This proposal is merely another cover mechanism for the pretense of protecting the consumer with strong regulation, while allowing industry to do just what it wants, i.e. produce high levels of irradiated food to cover up unsanitary manufacturing practices.

The FDA acknowledges the fact that irradiation changes the makeup of food when it says in the same proposal that “Irradiation has various effects on foods that may cause changes in the characteristics of the food. Such changes may occur in the food’s organoleptic, nutritional, or functional properties that would not be noticeable at the point of purchase but could be apparent when consumed or cooked.”[2] Of course, the FDA does not go so far as to say that such changes occur at the genetic level causing cancer and a host of other health problems, or even that the changes are dangerous.

In fact, they say that out of all the food allowed to be irradiated by the FDA regulations, there have been no changes. The proposal states, “Currently, we are not aware of any changes to the nutritional properties of any food FDA has approved for irradiation.”[3] Though not a direct contradiction, it seems highly suspect that irradiation is known to cause “changes” in food; so well known that the FDA is forced to admit it, yet it is unaware of any changes to the foods which it allows to be

irradiated. This shows that the FDA is proposing a position that would allow it to appear as if it were taking a harder stance with tougher rules, while allowing for the continuation of the approval of irradiated food.

A second rule change, as mentioned earlier, made in the same proposal should also draw much ire. As mentioned above, it allows food producers to discard the “irradiation” label in favor of a more palatable and misleading “pasteurized” designation. As stated in the proposal:

FDA is also proposing to allow a firm to petition FDA for use of an alternate term to ‘irradiation’ (other than ‘pasteurized’). In addition, FDA is proposing to permit a firm to use the term ‘pasteurized in lieu of ‘irradiated,’ provided it notifies the agency that the irradiation process being used meets the criteria specified for use of the term ‘pasteurized’ in the Federal Food Drug, and Cosmetic Act and the agency does not object to the notification.[4]

On an interesting side note, the “alternate term to ‘irradiation (other than ‘pasteurized’)” is not clearly defined here.[5] It is possible, because of this clause, to not only allow the term “pasteurized” to be used, but another more evasive unrelated term in its place.

Yet the proposal clearly allows the term “pasteurized” to be used -- at least pending the FDA’s approval and the harmonization with the criteria of pasteurization. Even though the FDA admits in the proposal that public comments demonstrated labeling irradiated products as anything but irradiated was misleading, they continue on with this policy.[6] As usual, the feelings and opinions of those whom the FDA claims to protect are virtually meaningless.

Yet with all of these loopholes and outright fabrications by our own FDA, Codex manages to go even further. Using carefully crafted legal loopholes of their own, Codex effectively removes the limit on the dose of irradiation as it has been understood for many years. Previous to the revision of Codex standards in 2003, the limit on the dose of radiation stood at 10kGy.

This in itself is a very dangerous amount of radiation, as 10kGy is the equivalent to 330 million chest x-rays.[7] Such a large quantity of radiation would obviously be a death wish for anyone who received it, yet it has been rationalized to the public (the very few of them that are actually aware of it) that it is safe to be absorbed into food. Nevertheless, this has been the official Codex guidelines on irradiation limits since they were developed in 1983.[8]

Since Codex classifies irradiation as an additive (not a

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**Continued from page 20 - The Codex Alimentarius  
Irradiated Food Cover-up**

contaminant), the committee that bears responsibility for its regulation is the Codex Committee on Food Additives and Contaminants (CCFAC). In dealing with irradiation, this committee works closely with the International Atomic Energy Agency (IAEA), Joint FAO/WHO Expert Committees on Food Additives (JECFA), and the International Consultative Group on Food Irradiation (ICGFI).[9] All of these organizations are interrelated and have a vested interest in promoting the irradiation of food as well as the harmonization of laws and trade between countries for the purpose of globalization.

For instance, the IAEA is the leading advocate for the expansion of nuclear technology, which was developed by the UN.[10] The ICGFI, another UN facilitated organization created under the FAO and WHO along with the IAEA, serves basically as a propaganda arm and direct advocate for food irradiation. The ICGFI has been active in creating fact sheets promoting the “benefits” of irradiation and helping “inform” the public on its safety. [11] Also, the JECFA(a globalist agency by its very nature as it is a combination of the FAO and WHO) claims to have “developed principles for the safety assessment of chemicals in food that are consistent with current thinking on risk assessment and take account of recent developments in toxicology and other relevant sciences.”[12]

Yet with all of these scientific resources, the agency cannot bring itself to acknowledge toxic radiation as anything but an additive. These three organizations are connected to many more globalist international and UN-based agencies, but suffice to say that true independent science, free from political or ideological preconceptions, is not at work here.

It stands to reason then that Codex began “updating” its guidelines for food irradiation several years ago, in 1999. It appears that most of the relaxation of the guidelines and regulations regarding irradiation were spearheaded by individuals in the United States itself. One such man, who was chairman of the Codex Alimentarius Commission at the time of the ratification of these new guidelines, is Tom Billy[13], the former administrator of the USDA’s Food Safety and Inspection Service.[14]

Billy has been credited with playing a major role in the deregulation of the meat and poultry industries during his tenure with the USDA.[15] Incidentally, he was appointed Chair of Codex on June 29, 1999, around the same time that Codex decided to reevaluate their stand-

ards on Irradiation. He remained in this position until the revised standards were ratified by the full Codex Commission.

**Notes:**

- [1] *Federal Register Proposed Rule – 72 FR 16291 April 4, 2007: Irradiation in the Production, Processing, and Handling of Food p.1*  
<http://www.fda.gov/Food/LabelingNutrition/FoodLabelingGuidanceRegulatoryInformation/RegulationsFederalRegisterDocuments/ucm077977.htm> Accessed May 24, 2010.
- [2] *Ibid. p. 4*
- [3] *Ibid p.4*
- [4] *Ibid. p.1*
- [5] *Ibid.*
- [6] *Ibid.*
- [7] “WTO Codex to Allow Dangerous Levels of Food Irradiation,” *Organic Consumers Association*. July 10, 2003  
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- [10] [www.iaea.org](http://www.iaea.org) <<http://www.iaea.org/>>  
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<http://www.activistpost.com/2011/03/codex-alimentarius-irradiated-food.html>

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# Simple Foods provide Protection against Radiation Exposure

by T.M. Hartle

March 29, 2011  
Natural News

In the wake of the Fukushima nuclear power plant disaster it is crucial to understand the protective nature of foods in order to protect yourself and your family against radiation exposure. Research on food based radiation exposure after the Chernobyl disaster can give us insight on what foods can reduce radiation exposure from our diet. We also have research from Hiroshima after the atomic bomb attacks that has highlighted the protective nature of fruits and vegetables in the diet against cancer. Research following previous nuclear disasters gives us insight into the measures we can take to protect against the damaging effects of radiation exposure.

The Swedish Government monitored the radiation level of foods following the Chernobyl disaster. They found that most animal based foods including meat, dairy, and fish had higher levels of radioactive substances than fruits, vegetables, grains, and potatoes. Eating plant based foods can reduce exposure to radioactive substances by avoiding concentrations of these substances in animal fat and tissues. A plant centered diet in the midst of radiation exposure provides lower levels of radioactive substances as well as fiber, antioxidants, and phytochemicals that have the potential to reduce cancer rates associated with radiation exposure.

Radiation exposure causes cellular damage by forming free radicals that can have damaging effects on health, including the development of cancer. A study evaluating over 30,000 atomic bomb survivors in Hiroshima and Nagasaki found that those with the highest consumption of fruits and vegetables had a 13% lower risk of dying from cancer over the twenty year study period than those who consumed fruits and vegetables less than once per week. Sulfur-containing antioxidants found in cruciferous vegetables, such as broccoli, kale, and cabbage, have been found to provide protection against radiation exposure through their detoxifying properties. Pectin in fruits has also been shown to reduce levels of the radioactive substance Cs-137. Plant based foods provide protection against free radical damage and they can reduce the absorption of radioactive substances.

A study published in Russia reviewed the protective nature of dietary fiber against radiation. Researchers used

concentrates of dietary fiber from lemon peel and beet root among other plants and found that the fiber did have radioprotective properties. The authors concluded that concentrated dietary fiber can be used in human nutrition to accelerate the elimination of nuclides or radioactive elements.

Whether or not the Fukushima plant meltdown materializes into a global disaster, the simple change to a strong plant diet can provide significant protection and health benefits for you and your family. Consuming a broad spectrum of fruits and vegetables can provide powerful protection against the ravaging effects of radiation exposure.

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[http://www.naturalnews.com/031878\\_radiation\\_protection.htm](http://www.naturalnews.com/031878_radiation_protection.htm)

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## Japan faces Another Dilemma: Radiation-Contaminated Bodies

*Near Fukushima plant, hundreds of corpses uncollected because of contamination fears*

**By Kari Huus**

April 6, 2011

As if the Japanese government did not have enough on its hands, now it has this dilemma: What to do with as many as 1,000 bodies near the leaking Fukushima nuclear plant that may be contaminated with radiation. A solution will require decisive action and a high-degree of delicacy.

After losing family members to the tsunami and earthquake, most Japanese would normally go forward with a traditional cremation and place the remains with those of the victims' kin. But the bodies near the plant have been exposed to radiation, making them potentially dangerous to handle or move. And nearly a month after the disaster, decontaminating them so they can be transported is rapidly becoming impossible.

The earthquake and tsunami that struck Japan on March

*Continued on page 23*

11 badly damaged the Fukushima Dai-Ichi nuclear power plant owned by Tokyo Electric Power Co., or TEPCO. As the crisis around the plant built, the Japanese government called for evacuation of residents living within 12 miles of the damaged plant, which is now essentially a no-go zone.

### **Does the government have a plan?**

Emergency responders have been struggling ever since to cool the plant's reactors and prevent a catastrophic meltdown. But several explosions, fires and discharged water from the plant have released radiation into the air and ocean near the plant, affecting anyone who remains in the area — including the dead.

If the Japanese government has a plan for the bodies in "hot zone," it has not been made public. The Japanese Ministry of Health, Labor and Welfare, which is in charge of disposition of disaster victims' remains, did not respond to msnbc.com queries on the subject and has said very little about it.

For the first three days of April, some 25,000 Japanese and American troops mounted a massive search for thousands of dead or missing residents. But they did not enter the 12-mile "exclusion zone" around the Fukushima plant, according to the Japanese government.

The International Atomic Energy Agency, which is working closely with the Japanese government to monitor radiation in the water and food, does not know how Japanese authorities plan to deal with the Fukushima victims. "This is an area of concern that the IAEA and other UN organizations have been seeking clarification and information about from Japan," said a spokesperson for the IAEA.

Safe handling of the bodies may not allow for cremation according to Japanese tradition — yet another blow to people who have endured losses from the quake, the tsunami and evacuation due to the ongoing crisis at the plant.

### **'Worst case' scenario for survivors**

"They say the worst case is when you don't have anything to bury or cremate, that's why the surviving family members are desperate," said Kyoko Tokuno, senior lecturer of East Asian religions at University of Washington in Seattle. "What they want to do is bring back the remains, which presumes finding the body and cremating them."

Internationally, there are various protocols on managing all types of materials contaminated with radiation, including bodies.

Two sets made available to msnbc.com — a 1,000-page protocol issued by the National Council on Radiation Safety in the United States and similar guidelines from the Centers for Disease Control — urge against cremation, calling instead for deep burial in a sealed container marked by radiation warning symbols.

The NCRS does describe a way of decontaminating a body that could make it safe for cremation, especially if, like the victims in Fukushima, the body was contaminated externally only.

"If it's a surface contamination as this probably was ... normally you could wash it off or wipe it off and remove clothing, to remove most of the contamination," said Kathryn Higley, head of the Department of Nuclear Engineering and Radiation Health Physics at Oregon State University. "But the body decomposes, so it might be more complicated."

### **Bodies likely 'not intact'**

After more than three weeks outside, bodies of quake-tsunami victims would be "not skeletonized, but not intact, either," according to a California forensic scientist, who spoke on condition that he not be identified.

Two workers who were killed at the nuclear power plant were washed, decontaminated, autopsied and cremated, a Japanese nuclear physician told msnbc.com on condition of anonymity.

Other reports suggest decontamination has already become impractical, or impossible in some cases.

Japan's Kyodo news service reported that the police in Fukushima put off collecting remains of the dead after measuring an extremely high level of radiation on the body of a man found on March 27.

"Police were considering performing decontamination where the bodies are found," the report said. But another Kyodo report four days later said that "there are some difficulties around cleansing the bodies, resulting in damaging the already decomposing victims."

Even identification is going to be difficult, according to the Kyodo report: "The victims' nails can be extracted for DNA testing for identification, however, nails also need to be decontaminated and this will take tremendous amount of work and time," it said.

### **Cremation believed to release karmic energy**

Cremation is important to Japanese Buddhists because it is thought to release the karmic energy that continues on and leads to future rebirth. That belief, and Japan's severe shortage of land for graveyards, means that nearly all Japanese are cremated after death.

Perhaps even more critical is the idea of recovering the bones so that they can be placed in the family tomb, with kin.

“One of the things that is important to people is that family members are buried together,” said Tokuno, the University of Washington lecturer. “To be scattered all over is not comforting. Being buried together ... is very comforting.”

For now, the Japanese government is preoccupied with the crisis at the Fukushima reactor, but Tokuno says it will have new problems if it fails to address survivors' concerns.

"If the government and TEPCO do not pay attention and delay the proper treatment of people in terms of basic necessities — including how they treat the deceased in terms of tradition — there may be some serious consequences,” said Tokuno. “I think there will be an outcry.”

[http://www.msnbc.msn.com/id/42441638/ns/world\\_news-disaster\\_in\\_japan/](http://www.msnbc.msn.com/id/42441638/ns/world_news-disaster_in_japan/)



## **Fukushima: A Nuclear Threat to Japan, the U.S. and the World**

*Japan Disaster Could Have Far-Reaching Consequences*

**By Stephen Brozak and Henry Bassman**

April 6, 2011

For several weeks, radioactive leaks from the Fukushima nuclear power plants have been incapacitating a large part of Japan. Information from the Japanese government and TEPCO, the power company that operates the site, has been sparse, often incomplete and sometimes contradictory. A confidential assessment by the Nuclear Regulatory Commission obtained by The New York Times suggests that the damaged Fukushima Daiichi plant is far from stable. The report concludes that the Fukushima plant is facing a wide array of fresh threats that could persist indefinitely.

The Fukushima disaster has become more than a local, regional or national Japanese event. The worldwide implications of the event are becoming apparent: though a major leak in a maintenance pit of the plant has been plugged, there is still a great likelihood that significant amounts of radioactive water will continue to be released

into the Pacific Ocean; the worldwide Just-In-Time manufacturing cycle has been interrupted; and increased levels of radiation have been detected on the U.S. East Coast. Though the amount of radiation to reach the U.S. is small and poses no present danger, its presence demonstrates that the Fukushima event has global impact.

Circumstances are still evolving too fast and too out-of-control for the consequences to be fully appreciated in real time. Every day brings new revelations of failure and growing frustration in Japan and elsewhere. It has become obvious that not all the facts about the Fukushima tragedy will be known until the danger is long past.

In Japan, there continues to be uncertainty about the extent of the danger from radiation exposure and lack of information about how many people have already been exposed to health-impairing radiation. We don't know how much contamination has leaked into surrounding land and water or when and how those leaks can be repaired.

The Japanese government announced an evacuation zone extending 19 miles from the crippled Fukushima plants, the same distance as the exclusion zone around Chernobyl in Ukraine. But Japan is neither as large or as sparsely populated as Ukraine. Close to 73 percent of Japan is unsuitable for agricultural, industrial, or residential use. Millions of people could be dislocated in addition to those already homeless because of the quake. These people will need to be relocated and new homes will have to be created for them.

With the international challenge of wars in Iraq, Afghanistan and Libya, and national concerns about Congress being unable to agree on Federal Government funding, the U.S. news spotlight that was on Fukushima has been pointed elsewhere. However, smart investors and social observers continue to monitor the responses to the Fukushima tragedy and gauge its potential impact on world markets.

It will take the equivalent of billions of dollars for the Japanese to recover from these disasters and the U.S. economy is closely linked to theirs. The Japanese government and Japanese investors comprise the second largest holders of U.S. Treasuries, at \$885 billion. The Bank of Japan also is reported to hold \$493 billion in its reserve balance to avert credit problems. Some financial observers have speculated that the earthquake and tsunami may force Japan's government and investors to liquidate much of the U.S. debt they hold. This possibility doesn't even consider that there is

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*Continued from page 24 - Fukushima: A Nuclear Threat to Japan, the U.S. and the World*

no transparency as to what plans exist for using these funds.

The wholesomeness of much of Japan's food supply has come under question. Farmers have been forced to destroy crops and dispose of dairy products. Because of continuing contamination of seawater, the healthfulness of seafood from the Pacific Ocean is in question. Japan is already a net food importer. In response to a continuing shortage of Japanese home-grown food, the Japanese government may encourage importation of even more foreign food, which is likely to increase the price of food in a nation where food is already an extremely expensive commodity. Worldwide, increased competition for food is likely to affect prices, causing some people in marginal economies to go hungry.

Japanese manufacturers are increasingly in competition with other Asian countries. With the domestic Japanese industrial base severely damaged by the earthquake, delivery of Japanese-manufactured products to the U.S. has been disrupted. Some U.S. plants using Japanese parts have been forced to slow down or halt production. They will probably recover when Japan begins exporting a full supply again, but in an already shaky economy, that could take months. If severe enough, the postponements could cause demand to disappear.

Some industries where Japan now has a predominant position are already threatened. Pre-Fukushima Japan produced a significant percentage of the world's supply of silicon wafers, the base on which integrated circuits and memory chips are made. Because of the earthquake, it has been estimated that wafer supply has diminished by 25 percent.

A shortage of silicon wafers is likely to cause the price to rise, thus increasing the price of chips worldwide, which would have impact on the price of all sorts of goods from jumbo jet airplanes to programmable coffee makers. Korean manufacturers said they would fill the void. If customers establish supply agreements with new manufacturers in Korea, return to their former suppliers in Japan will become even more difficult.

Japan is a culturally unified nation, with more than 98 percent of its population sharing the same ethnicity. It also is a nation where the social norm is to achieve consensus and conform to standards. Japanese people are careful about expressing dissent or participating in controversy. Yet, we are seeing increased, almost unprecedented criticism of TEPCO and the government beginning to be expressed. If this is possible in such a polite and restrained society, imagine the response to a

similar disaster elsewhere.

Increasingly, reports of heroic workers, dubbed the Fukushima Fifty by the press, have made their way into Western news media. There may be as many as 1,000 workers who are sacrificing themselves to prevent additional damage and repair existing damage to the nuclear reactors. It is possible some of these workers have been exposed to so much radiation that their lives will be changed in unforeseeable ways. It is likely many of these workers will suffer the long-term effects of radiation exposure, including increased likelihood of leukemia within a few years and other cancers as much as a decade or more from now. DNA damage to workers could become apparent only when these workers have children.

Though the aftermath of Fukushima will be with us for decades, and perhaps generations, immediate attention to this matter is imperative to save lives, provide knowledge that will avert a similar disaster elsewhere, and minimize domestic and worldwide economic impact.

After almost a month, there continue to be more questions than answers. There has been marginal success in cooling the at-risk reactors and little success stemming the flow of radioactive waste water. We have no credible estimate of the impact this disaster will have on the Japanese economy in particular or the world economy in general. There have been no credible steps in the U.S. or by the International Atomic Energy Agency to begin learning from this event and its aftermath and to apply those lessons to avert or minimize future tragedies.

The Japanese authorities, with the help of other experts, will have to muddle through this disaster, making up solutions as they go along. Hopefully, the damaged reactors will be brought under control before serious permanent harm is inflicted on national and international resources.

Looking to the future, as fossil fuels are depleted and become more costly, the world inevitably will become more dependent on nuclear power. It is likely that another nuclear disaster will occur sooner or later. Depending on ad-hoc solutions to disasters of this magnitude is shortsighted at best. In the U.S., we have seen no concerted response by U.S. regulators and nuclear power operators to re-examine safety standards in the 104 nuclear plants in this country. Most of them are decades old, some are based on the same design as Fukushima, and some sit on or near fault lines as unstable as those in Japan.

*Continued on page 26*

What is needed, in our opinion, is a permanently staffed, international nuclear rescue team. The team could have a core staff of full-time team members with stand-by team members, drawn from government and industry experts, who would be activated in the event of a disaster. The team would be furnished with the scientific, technical and equipment resources necessary to address an equivalent or a worse level of nuclear disaster than Fukushima. It would create scenarios, plans and tactics for remediating disasters when they occur. It would train to prepare to respond to a nuclear accident as a cohesive unit.

Such a resource would not provide a fool-proof solution to inevitable nuclear disasters. However, it is a necessary first step in controlling the potentially cataclysmic effects of a Fukushima-scale, or worse, nuclear reactor tragedy. After Chernobyl, Three-Mile Island and Now Fukushima, failure to prepare in advance for another such tragedy would be foolishly self-destructive.

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<http://abcnews.go.com/Health/fukushima-leak-threat-japan-us-world/story?id=13303513>



## **WHO Issues Guidelines on Radiation Exposure**

Mar 17, 2011

(Reuters) - In the wake of Japan's nuclear crisis, the World Health Organization (WHO) issued fresh guidelines on how to minimize exposure to radiation that can cause cancers, especially in children and young adults.

The United Nations agency said measures taken by Japan so far meet its public health recommendations, including evacuating people within 20 km of the crippled Fukushima nuclear power plant and asking those within 30 km to stay indoors.

There was no indication of food safety risks due to imports of food products from Japan. It was also unlikely food production or harvesting in the affected area was taking place, but it said crops and livestock in the area should be protected.

Following is a list of the main WHO recommendations:

\* The main radionuclides released in a nuclear power plant accident are radioactive cesium and radioactive iodine. "Members of the public may be exposed directly to such radionuclides in the suspended air or if food and drink are contaminated by such materials," the WHO said.

\* If radioactive iodine is breathed in or swallowed, it will concentrate in the thyroid gland and increase the risk of thyroid cancer. This risk can be lowered by taking potassium iodide pills which saturate the thyroid gland and help prevent the uptake of the radioactive material. "When given before or shortly after exposure, this step can reduce the risk of cancer in the long term," it said. National authorities are best placed to determine if it is warranted to take the tablets.

\* If a dose of radiation exceeds a certain threshold level, then it can produce skin redness, hair loss, radiation burns and acute radiation syndrome. Due to their work, rescuers and nuclear power plant workers may be exposed to higher radiation doses than the general population.

\* Exposure to radiation can increase the risk of cancer. Among the survivors in Japan of U.S. atomic bombs dropped in August 1945, the risk of leukemia increased a few years after radiation exposure, while the risks of other cancers increased more than 10 years after the exposure.

\* The risk of thyroid cancer following radiation exposure is higher in children and young adults.

\* If warranted, steps such as restricting the consumption of vegetables and dairy products produced in the vicinity of the power plant can also reduce exposure.

\* "If you are coming indoors after radiation exposure, undress in the doorway to avoid further contamination in your home or shelter. Remove clothing and shoes and place them in a plastic bag. Seal the bag and place it in a safe location, away from living areas, children, and pets," it said.

\* "Shower or bathe with warm, not scalding hot, water and soap. Notify authorities that you may have contaminated clothing and personal belongings to be handled appropriately and disposed of according to accepted national procedures," the WHO said.

\* "If you are advised to stay indoors, you should find the safest room in your house or office building that has no windows or doors. Ventilation systems, such as heating and cooling systems, should be shut down," the agency said.

*Continued on page 27*

**Continued from page 26 – WHO Issues Guidelines on Radiation Exposure**

\* Foods can be contaminated with radioactive materials as a result of a nuclear or radiological emergency. "The surface of foods like fruits and vegetables or animal feed can become radioactive by deposit of radioactive materials falling on it from the air or through rain water."

\* Over time, radioactivity can also build up within food, as radionuclides are transferred through soil into crops or animals or into rivers, lakes and the sea where fish and shellfish could take up the radionuclides.

\* "Radioactivity cannot contaminate food that is packaged; for example, tinned or plastic-wrapped food is protected from radioactivity as long as the food is sealed," the WHO said.

\* In the early stages of an emergency, and if it is safe to do so, vegetables and animal fodder can be protected with plastic sheets or tarpaulins. "Bring livestock in from pasture; move animals into a shed or barn. Harvest any ripe crops and place under cover," it said.

\* Avoid consumption of locally produced milk or vegetables, avoid slaughtering animals and avoid fishing, hunting or gathering mushrooms or other forest foods.

<http://www.reuters.com/article/2011/03/17/us-who-issues-guidelines-idUSTRE72G81Y20110317>



**Continued from page 3 – The Ainu of Japan**

In 1899, the government enacted the Hokkaido Aborigine Protection Act, ostensibly to protect the Ainu people. However, the real purpose of the act was to legitimize its assimilation policies. The act designated the Ainu as "kyudojin" (former aborigines with derogatory connotations).

Under the act, each Ainu family was given a small plot of land for agriculture, but by this time the best land was already occupied by Japanese farmers. Many Ainu farmers lost the land parcels because they didn't have the experience to cultivate it.

**Ainu Culture after WWII and Democratization**

The democratization of Japan and the implementation of the present Constitution in 1946 sparked a renewed movement to restore Ainu rights. The Ainu people, as Japanese nationals, became entitled to equal protection by law. They formed organizations advocating their rights and seeking to protect their cultural heritage, the largest being the Ainu Association of Hokkaido, founded in 1946.

Submitting to pressure from these organizations and international opinion, Japan ratified the International

Covenant on Civil and Political Rights, ICCPR, in 1979. Article 27 stipulates that in those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practice their own religion, or to use their own language.

However, Japan has officially stated that no such ethnic minorities exist in Japan. Only in 1991, in a report to the United Nations did Japan publicly recognize the Ainu as an ethnic minority. This admission did little, as the Japanese government still refused to recognize the Ainu as an indigenous people.

**The Act on the Encouragement of Ainu Culture**

On March 27, 1997, in response to a lawsuit brought by the Ainu people, the Sapporo District Court ruled that the Ainu should be granted recognition as an indigenous people of Japan and entitled to the protection of their distinct culture.

Partly as a response to the court's decision, the Diet (Congress) passed the "Act on the Encouragement of Ainu Culture and the Diffusion and Enlightenment of Knowledge on Ainu Tradition" on May 8, 1997, Japan's first legislation acknowledging the existence of an ethnic minority in the country. The Act advocates research on Ainu culture, provides opportunities to study the Ainu language and supports preservation of Ainu customs and traditions.

As big a step as the Act is, it can only be regarded as the first toward addressing the needs of the Ainu culture. The Act does not include any apology or deliberation on past assimilation or discrimination policies. Although the Bill provides financial support for traditional dance, crafts, and learning the Ainu language, many feel that the Japanese government is still ignoring the Ainu's basic problems.

The new law does not mention any form of recognition or protection of indigenous rights. It provides no guarantee or dispensation for allowing the Ainu to live their traditional culture or incorporate it into their daily lives. Some see the Act as the government's arrogant attempt to define Ainu culture as "the language and 'cultural properties' such as music, dance, crafts." It also does not take into account the Ainu living outside of Hokkaido.

**Ainu Culture and Discrimination Today**

The basic perception of the Japanese government and the people of Japan is that there is no ethnic problem. Little about the Ainu are taught in Japanese schools.

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### FEATURED ARTICLES

## Silent Spring

by **Lauren Monaghan**

Issue 21 of Cosmos, June 2008

*Deep in the radioactive bowels of the smashed Chernobyl reactor, a strange new lifeform is blooming.*

TWENTY-TWO YEARS AGO, on 26 April 1986, reactor No 4 at the Chernobyl Nuclear Power Plant, in Ukraine, blew apart, spewing radioactive dust and debris far and wide.

Ever since, a 30 km 'exclusion zone' has existed around the contaminated site, accessible to those with special clearance only. It's quite easy, then, to conjure an apocalyptic vision of the area; to imagine an eerily deserted wasteland, utterly devoid of life.

But the truth is quite the opposite. The exclusion zone is teeming with wildlife of all shapes and sizes, flourishing unhindered by human interference and seemingly unfazed by the ever-present radiation. Most remarkable, however, is not the life buzzing around the site, but what's blooming inside the perilous depths of the reactor.

Sitting at the centre of the exclusion zone, the damaged reactor unit is encased in a steel and cement sarcophagus. It's a deathly tomb that plays host to about 200 tonnes of melted radioactive fuel, and is swarming with radioactive dust.

But it's also the abode of some very hardy fungi which researchers believe aren't just tolerating the severe radiation, but actually harnessing its energy to thrive.

"Our findings suggest that [the fungi] can capture the energy from radiation and transform it into other forms of energy that can be used for growth," said microbiologist Arturo Casadevall from the Albert Einstein College of Medicine at Yeshiva University in New York, USA.

Fungi are weird, yes. They chow down on everything from decaying plant matter to the more exotic fare of asbestos and jet fuel. But being able to produce their own energy, independent of an actual food source, and use dangerous ionising radiation to boot?

That's very new and very exciting, Casadevall says.

In 1999, a robot sent to map the inside of the reactor returned with samples of a particularly black fungi, indicating an abundance of the biological pigment melanin, which also colours your skin.

Though melanin is typically associated with 'protective' properties – absorbing and safely transforming different electromagnetic wavelengths, such as DNA-damaging ultraviolet light – the researchers had an inkling that a more extraordinary phenomenon was allowing the fungi to prosper; something still involving the combination of melanin and radiation, but beyond the bounds of radioactive protection.

After all, even without melanin, many fungi are intrinsically radiation-resistant.

Their hunch was bolstered by findings of melanised fungi, happily congregating in the cooling pools of functional nuclear reactors, and by studies of dark, 'radiation-seeking' fungi, purposefully growing towards radioactive particles in soil, particularly around Chernobyl.

The team looked to the example of photosynthesis as a model, said Casadevall. If plants can use the green pigment, chlorophyll, to absorb energy from the Sun and produce a usable form of chemical energy, they reasoned, fungi might be able to use their melanin pigment and radiation energy in a similar way. They even devised the snazzy moniker, 'radiosynthesis', for the process.

To test their idea, the group analysed three different types of fungi, including *Cladosporium sphaerospermum*, the species abundant in and around Chernobyl.

Using ionising radiation from the radioactive isotope, caesium-137, they exposed the fungi to radiation doses

*Continued on page 29*

similar to those inside the damaged reactor, and about 500 times greater than the Earth's normal background level.

Melanin-containing fungi exposed to the radiation – even when nutrient-starved on purpose – grew significantly larger and up to 2.5 times faster than fungi without melanin and those not exposed to radiation.

According to Yeshiva's Ekaterina Dadachova, the nuclear chemist who led the study, "the presence of melanin in the cells gives them a distinct advantage over non-melanised cells, in terms of better growth [with radiation]."

Dadachova's team also had a look at what melanin molecules were actually doing, searching for signs of active involvement in the growth process. They were able to show radiated melanin capable of boosting a type of reaction important in metabolism – called an oxidation-reduction reaction – four times faster when exposed to the influence of caesium-137.

They also saw a change in the pigment's electronic structure. This, Dadachova says, is evidence "that melanin transformed part of the ionising radiation energy into the energy of electrons, which represents the 'chemical' form of energy [that] fungi could potentially use in their metabolism."

Taken together, the researchers think their results do indeed hint that fungi can live off ionising radiation, harnessing its energy through melanin to somehow generate a new form of biologically usable growing power.

If they're right, then this is powerful stuff, said fungal biologist Dee Carter from the University of Sydney. The results will challenge fundamental assumptions we have about the very nature of fungi, she said.

It also raises the possibility that fungi might be using melanin to secretly harvest visible and ultraviolet light for growth, adds Casadevall. If confirmed, this will further complicate our understanding of these sneaky organisms and their role in ecosystems.

Radiation-loving fungi may also prove useful, according to Dadachova. Their melanin gene, she said, might eventually be popped into food crops and used to help growth in difficult regions. And astronauts on long spaceflights might one day find a useful, self-replenishing diet in black, melanin-rich fungi.

And because the fungi don't actually 'eat' radioactive material, but simply use the energy it radiates, Dadachova said, they're in no danger of becoming radioactive

themselves.

But Fraser Torpy, a microbiologist at the University of Technology in Sydney, warns that we shouldn't get too excited – at least, not yet. He would prefer more definitive evidence that fungi use radiation for energy.

The researchers have been able to deduce this only "from the otherwise unexplained superior growth of the melanised organisms," he cautions. "Much more work will be required before a convincing case [for the cellular use of this energy] can be presented."

Casadevall himself agrees. "We have not ruled out all other explanations – science is always cautious. [But] our leading hypothesis continues to be that melanin captures the energy from radiation and transforms it into energy for growth."

<http://www.cosmosmagazine.com/node/2095/full>

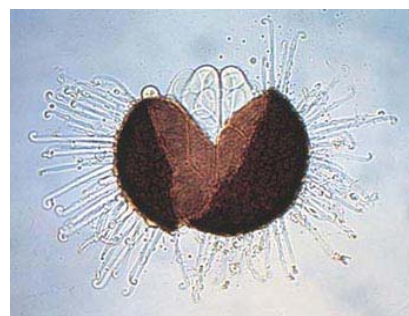


## **Melanin Covered Nanoparticles Prevent Radiation Damage**

**By iSpit**

December 28, 2010

Tiny, melanin-covered nanoparticles may protect bone marrow from the harmful effects of radiation therapy, according to scientists at Albert Einstein College of Medicine of Yeshiva University who successfully tested



**Melanin saves the day again...**

the strategy in mouse models. Infusing these particles into human patients may hold promise in the future. The research is described in the current issue of the International Journal of Radiation Oncology, Biology and Physics. Radiation therapy is used to kill cancer cells and shrink tumors. But because radiation also damages normal cells, doctors must limit the dose. Melanin, the naturally occurring pigment that gives skin and hair its color, helps shield the skin from the damaging effects of sunlight and has been shown to protect against radiation.

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***Continued from page 29 – Melanin Covered Nanoparticles Prevent Radiation Damage***

“A technique for shielding normal cells from radiation damage would allow doctors to administer higher doses of radiation to tumors, making the treatment more effective,” said Ekaterina Dadachova, Ph.D., associate professor of nuclear medicine and of microbiology & immunology and the Sylvia and Robert S. Olnick Faculty Scholar in Cancer Research at Einstein, as well as senior author of the study.

In previously published research, Dr. Dadachova and colleagues showed that melanin protects against radiation by helping prevent the formation of free radicals, which cause DNA damage, and by scavenging the free radicals that do form.

“We wanted to devise a way to provide protective melanin to the bone marrow,” said Dr. Dadachova. “That’s where blood is formed, and the bone-marrow stem cells that produce blood cells are extremely susceptible to the damaging effects of radiation.”

Dr. Dadachova and her colleagues focused on packaging melanin in particles so small that they would not get trapped by the lungs, liver or spleen. They created “melanin nanoparticles” by coating tiny (20 nanometers in diameter) silica (sand) particles with several layers of melanin pigment that they synthesized in their laboratory.

The researchers found that these particles successfully lodged in bone marrow after being injected into mice. Then, in a series of experiments, they investigated whether their nanoparticles would protect the bone marrow of mice treated with two types of radiation.

In the first experiment, one group of mice was injected with nanoparticles and a second group was not. Three hours later, both groups were exposed to whole-body radiation. For the next 30 days, the researchers monitored the blood of the mice, looking for signs of bone marrow damage such as decreased numbers of white blood cells and platelets. Compared with the control group, those receiving melanin nanoparticles before radiation exposure fared much better; their levels of white cells and platelets dropped much less precipitously. Ten days after irradiation, for example, platelet levels had fallen by only 10 percent in mice that had received nanoparticles compared with a 60 percent decline in untreated mice. Furthermore, levels of white blood cells and platelets returned to normal much more quickly than in the control mice.

A second experiment assessed not only bone-marrow protection but whether the nanoparticles might have the undesirable effect of infiltrating and protecting tumors

being targeted with radiation. Two groups of mice were injected with melanoma cells that formed melanoma tumors. After one group of mice was injected with melanin nanoparticles, both groups received an experimental radiation treatment designed by Dr. Dadachova and her colleagues specifically for treating melanoma.

This treatment uses a radiation-emitting isotope “piggybacked” onto an antibody that binds to melanin. When injected into the bloodstream, the antibodies latch onto the free melanin particles released by cells within melanoma tumors. Their isotopes then emit radiation that kills nearby melanoma tumor cells.

Following the second experiment, the melanoma tumors shrank significantly and to the same extent in both groups of mice – indicating that the melanized nanoparticles did not interfere with the radiation therapy’s effectiveness. And once again, the melanized nanoparticles prevented radiation-induced bone-marrow damage: between the third and seventh day after the antibody-isotope radiation therapy was administered, mice injected with nanoparticles experienced a drop in white cells that was significantly less than occurred in mice not pre-treated with nanoparticles.

“The ability to protect the bone marrow will allow white cells that was significantly less than occurred in mice not pre-treated with nanoparticles.

“The ability to protect the bone marrow will allow physicians to use more extensive cancer-killing radiation therapies and this will hopefully translate into greater tumor response rates,” said Arturo Casadevall, M.D., Ph.D., professor of medicine and of microbiology & immunology, the Leo and Julia Forchheimer Chair in Microbiology & Immunology, and a co-author of the study.

Some nanoparticles could still be found in bone marrow 24 hours after their injection, which shouldn’t pose a problem. “Since the nanoparticles are rapidly removed by phagocytic cells, they’re unlikely to damage the bone marrow,” said Dr. Dadachova. “We didn’t detect any side effects associated with administering the particles.”

“These results are encouraging for other potential applications of melanin, including radioprotection of other radiation-sensitive tissues, such as the gastrointestinal tract,” noted Andrew Schweitzer, M.D., formerly a Howard Hughes Medical Institute fellow at Einstein and lead author of the study.

Clinical trials testing whether melanized nanoparticles might protect cancer patients undergoing radiation

*Continued on page 31*

therapy could begin in two to three years, Dr. Dadachova predicted. She also noted that melanized nanoparticles might also have other applications, such as protecting workers charged with cleaning up nuclear accidents, protecting astronauts against radiation exposure in space, or even protecting people following a nuclear attack.

<http://iamnotarapperispit.com/2010/12/melanin-covered-nanoparticles-prevent-radiation-damage/>



## Vitamin D and Sunlight

David Niven Miller

### Why we are deficient

Getting sufficient vitamin D is one of the keys to staying healthy and long-lived. Hundreds of studies show that most people in the Western world are deficient in vitamin D. Even the most conventional journals now acknowledge that a lack of vitamin D in the population is responsible for a wide variety of ailments (1, 2) including autoimmune diseases, infections, cardiovascular disease, and cancer.

Humans evolved in equatorial Africa, where there is constant and regular sun throughout the year. With all that sunlight, the black skin of our African ancestors synthesised much higher levels of vitamin D than most humans obtain today. About 50,000 years ago a single mutation that occurred was responsible for the appearance of white skin in humans. White skin, with less melanin, synthesizes vitamin D in sunlight six times faster than dark skin (3). These humans were able to successfully migrate to higher latitudes around the world because they could synthesise sufficient vitamin D to survive in the lower levels of sunlight there.

The majority of the world's population now lives above latitude 35 North. Most people are unable to synthesise vitamin D from sunlight for some of the winter months, depending on the angle of the sun and the amount of skin exposure they get. For example, in Seattle (47 N) and London (52 N), there is insufficient sun for skin to make vitamin D from October to April. People living at high latitudes have an increased risk of diseases caused by a lack of vitamin D. (8, 9)

The half-life of vitamin D circulating in the body is approximately one month. By the end of winter in the high latitudes most people are deficient in vitamin D unless they have a vitamin-rich diet.

### How much vitamin D?

The level of vitamin D needed for good health is a lot

higher than the U.S. Food and Nutrition Board set as the Recommended Dietary Allowance (RDA). The RDA recommends 200 international units (IU) per day for children and adults less than 50 years old, 400 IU for adults age 50-70, and 800 IU for adults over the age of 70. The RDA was set at a level that prevents rickets but does not prevent numerous other diseases.

An optimal level of vitamin D can prevent and heal cancers (4), multiple sclerosis (5), cardiovascular disease, autoimmune diseases, and infections such as influenza (6, 7). Here is the most recent thinking on blood vitamin D levels:

ng/ml	nmol/L	
<10	<25	severely deficient
10-19	25-49	deficient
20-29	50-74	insufficient for good health
30-49	75-124	sufficient for good health
50-99	125-249	optimal for good health, healing and disease prevention
100-150	250-375	excessive
>150	>375	potentially toxic

Without sun exposure, the optimal level of vitamin D of 50-99 ng/ml requires 5,000 IU per day in food or as a supplement. Most multivitamin tablets contain 400 IU of vitamin D, which is insufficient.

### Sunlight

A light-skinned adult human will synthesise 5,000 IU of vitamin D in 5 minutes of naked sunbathing at midday on the equator. Five minutes per day is all you need to get your optimal daily supply. In a little over half an hour, you'll get your entire week's allowance (assuming you get no vitamin D from your food, which is unlikely). Further from the equator, and further from mid-summer and midday, the level of vitamin D synthesised will fall, but at a temperate latitude it is still easy to get your full daily requirement just from the sun. A black-skinned person will only synthesise one sixth as much; these people are much more at risk of vitamin D deficiency at temperate and cooler latitudes. (3)

Sunlight has many beneficial effects in addition to creating vitamin D. The light regulates sleep cycles and helps create melatonin, and the far infrared warms the body and helps with other systems.

Sunlight has two types of ultraviolet radiation. Ultraviolet-B radiation is the light that helps your skin make vitamin D. It is the short wavelength light that that causes sunburn and does not penetrate the skin deeply.

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### Continued from page 31– Sunlight and Vitamin D

UV-B does not penetrate glass. If you get your sunlight behind a window, while driving etc, you will not get vitamin D. Sunscreens also prevent the formation of vitamin D.

Ultraviolet-A radiation has a longer wavelength, and penetrates through the outer skin deep down to the melanocytes, the cells that become cancerous in melanoma cases. Most sunscreens do not block UV-A, which can also pass through glass, cloud and polluted air. Do not sunbathe behind a glass window - the damaging UV-A radiation gets through the glass, but the beneficial UV-B radiation is blocked by the glass.

Cloud cover blocks ultraviolet light, particularly UV-B. However, some UV-B still gets through, and of course more of the damaging UV-A. It is easy to get severely burned through over-exposure to the sun in cloudy weather.

#### Food sources

The best food sources of vitamin D are wild (not farmed) oily fish like salmon, mackerel, and sardines and cod liver oil. Other sources include free-range eggs and free-range meat, and fresh or sun-dried mushrooms. Very little vitamin D is naturally present in our food, especially for those who consume a modern, processed food diet or people who avoid animal-based foods

#### Supplement D2 or D3?

There are two kinds of vitamin D supplements: vitamin D3 (cholecalciferol), the kind our skin makes, and vitamin D2 (ergocalciferol), an inferior synthetic variant. Vitamin D2 is only 10-30% as effective in raising 25-hydroxyvitamin D blood levels compared to vitamin D3. A recent study concluded the "Vitamin D2 should not be regarded as a nutrient suitable for supplementation or fortification" (10)

#### Toxicity

You can take a daily 10,000 IU vitamin D supplement for many months with no evidence of adverse effect (11)

Daily consumption of 50,000 IU for several months will cause hypercalcemia (elevated calcium level in the blood), which is the first manifestation of vitamin D toxicity. In contrast, the optimal level of 5,000 IU per day prevents the build up of calcium in blood vessels (12)

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## Dual Role of Melanins and Melanin Precursors as Photoprotective and Phototoxic Agents: Inhibition of Ultraviolet Radiation-Induced Lipid Peroxidation

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#### Abstract

Ultraviolet radiation (UVR) is one of the risk factors for skin cancer and the main inducer of melanin pigmentation, the major protective mechanism of mammalian skin against radiation damage. The melanin pigments, eumelanin and pheomelanin, are likely to be important in protection against UVR, but their precursors are generally considered as phototoxic. The available data suggest DNA damage as the mechanism of phototoxicity. However, the effect of melanin precursors on membrane damage through lipid peroxidation, another important and probably more relevant (from the point-of-view of the melanosomal confinement of these molecules) mechanism of phototoxicity, not known. As a model system for UVR-melanin-membrane interactions, we irradiated liposomes in the presence of eumelanin, pheomelanin and two of their major precursors, 5,6-dihydroxyindole (DHI) and 5-S-cysteinyldopa (SCD). The presence of the two melanin precursors substantially reduced the formation of lipid peroxidation products resulting from UVR exposure. The antioxidant activity of the melanin

Continued on page 33

precursors was diminished under strong prooxidant conditions (presence of Fe<sup>3+</sup>). These results suggest that melanin precursors may have an important role in the protection of skin against the harmful effects of UVR including photocarcinogenesis.

PMID: 7568412 [PubMed - indexed for MEDLINE]

<http://www.ncbi.nlm.nih.gov/pubmed/7568412>



## Melanin in Biology

### Introduction

Melanin is a complex polymer synthesized (made) by living organisms. A polymer is a large chemical compound often made up of hundreds of smaller chemical parts, monomers. A variety of melanins can be found through biology, most commonly being composed of derivatives of acetylene, a black monomer.

### Human melanin

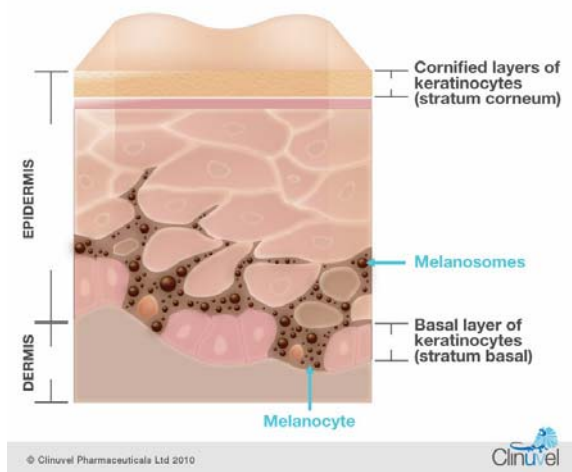
Melanins are found in a wide variety of organs in humans. They have been found in a few regions of the brain, where they are termed neuromelanins. Their exact function is unknown, but it has been suggested that they could be a byproduct of the synthesis of a neurotransmitter. Neuromelanin is probably the only source of these specific neurotransmitters with a variety of neurodegenerative compounds coupled with a reduction in neuromelanin. In the inner ear melanin protects against hearing damage, this is presumed because it has been found that it is the best sound absorber known. In the eye it protects the iris against UV damage, similar to the way it protects the skin. It is has also been discovered in the birth canal and adrenal gland. All of these melanins have different structures, they might be slight alterations of each other, or distant relatives.

### Melanin in the skin

Human skin and hair contain both the reddish pigment pheomelanin and brownish eumelanin, where eumelanin is the most abundant in the human body. Pheomelanin is more present in females, leaving females with a more reddish skin.

Where reference is made to melanin in the text, eumelanin is implied. The precise function of melanin is the subject of much debate; its exact role is still unclear. In the dermis (skin), the pigment is a primary determinant of both skin and hair colour. Melanin is produced by melanocytes, special skin cells located in the basal layer of the epidermis (Figure 1). The process of activating

pigmentation in the skin is termed melanogenesis, and is initiated after cellular damage following exposure to UV radiation or the sun. Visibly, increased melanin in the skin results in a darker skin complexion, and better protection.



**Figure 1. Melanosomes leaving the melanocyte as a result of sunburn in the upper epidermis.**

Both melanins are synthesized in the basal layer, which is located at the bottom of the epidermis (top layer of the skin), above the dermis (see Figure 1). Special cells, melanocytes, produce melanin containing packets, called melanosomes. These melanosomes are spread throughout the epidermis by tentacle-like projections called dendrites. The dendrites, which are connected to the melanocytes, transfer the melanosomes to separate keratinocytes (skin cells). Once the melanosomes reach the end of the projections they are squeezed out, into the keratinocytes. The melanin containing packets spread out above the nucleus, where they stay, protecting the DNA inside the organelle from harmful UV radiation. The skin cells eventually rise to the top of the epidermis where they die and are desquamated (shed away).

All humans appear to almost have the same number of melanocytes and keratinocytes (at a ratio of 1:36). The size and number of melanosomes, however, can vary dramatically between individuals. People with fair skin tend to produce small melanocytes, containing little melanin, which is portrayed as a fine brown dust covering the nucleus of keratinocytes. Dark skin individuals produce larger melanin containing packets that are seen as dark patches covering the nucleus. Both of these forms of melanosomes protect the DNA in two ways, by scattering incoming ultraviolet radiation and by absorbing it. Because of this protective ability that melanin possesses, it is called a photoprotectant, that is a substance that can protect an organism from damage caused by the absorp-

*Continued on page 34*

tion of photons from a radiating source, particularly the sun. This degradation is called photodegradation.

The more incoming UV radiation that is randomly scattered, the less the chance of DNA's exposure to it. The amount and direction of the scattering is dependent on both the wavelength of the incident ray, and the size of the particle that it is striking.

Research has shown that the smaller a particle size, the greater the evenness of scattering. It has been revealed that even though some radiation passes through the melanin, if the layer is thick enough, it will eventually be dispersed or absorbed elsewhere.

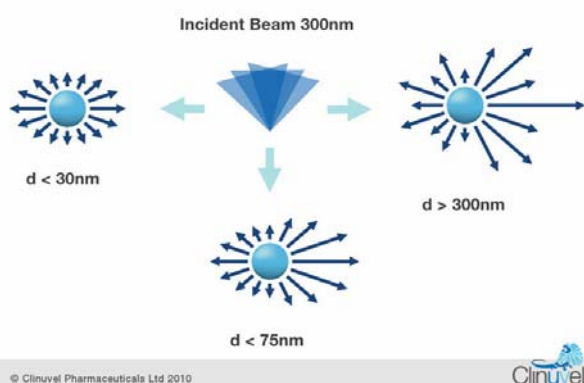


Figure 2. Scattering caused by different sized particles when subject to the same wavelength of light.

The sizes of human melanosomes range from around 228nm to 684nm. It is therefore desired, on a scattering basis, to have melanosomes closer to 230nm rather than 690nm.

On the other hand, light absorption is favored by a larger surface area, which requires larger melanosomes. Once the energy is absorbed by the melanin, it raises electrons to excited states and, in turn, passes the energy to the cell it is situated in. The cell is then assumed to use this energy to regulate its conditions and drive chemical reactions, a role similar to that of chlorophyll in photosynthesis.

As a photoprotectant, melanin can be artificially produced and incorporated into products and substances that seek to offer protection against UV radiation. In other domains, similar types of melanin have also been used in conjunction with plastics, plastic films, and optical lenses.

### Organisms

In the same way that melanin provides skin and hair colour, it also provides the colour of birds' plumage, amphibians' and reptiles' skin or scales, and other

animals' fur. Pigmentation in animals provides bright colours that attract mates in the animal kingdom and is used for camouflage, as illustrated by the cuttlefish, which releases an ink composed of melanin particles, to distract and confuse its predators. It is thought to also be involved in the defense of fungi and bacteria against ionizing UV radiation, chemical strain and biochemical strain.

Additionally, in pathogenic microbes, melanin is used to protect the microbe from immune responses by its host. Also, in some organisms, melanin is involved in a self-defense mechanism, it encapsulates invading pathogens and is accompanied with the production of radical byproducts, it aids in the killing of pathogens.

Recently, due to the presence of melanin, fungi have shown to survive under harsh radioactive conditions. It is thought that melanin is converting ionizing radiation into a useable energy source, which promotes growth. This was first noticed after the melt down at the Chernobyl nuclear power plant in Ukraine. A sample taken of a black fungus found inside a reactor was found to contain melanin, triggering the speculation that the polymer melanin was harnessing the energy from the radioactive rays into a usable energy.

### Melanin structure

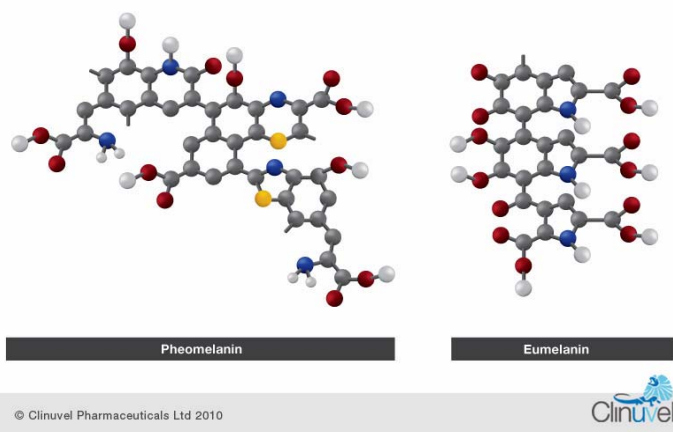
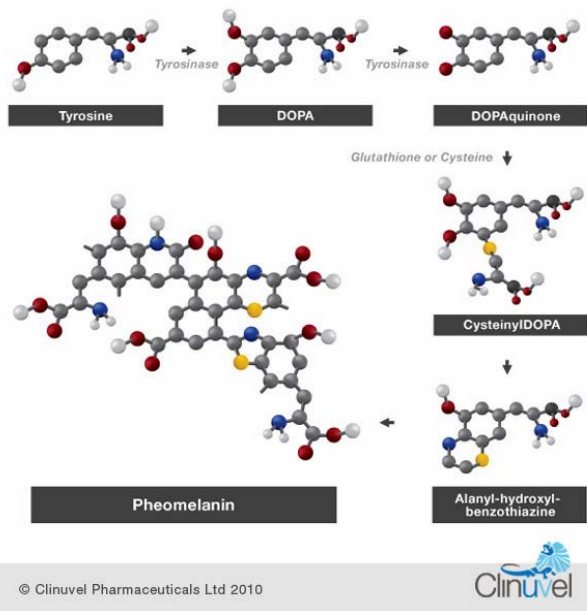


Figure 3. Different structures of repeating units of pheomelanin and eumelanin.

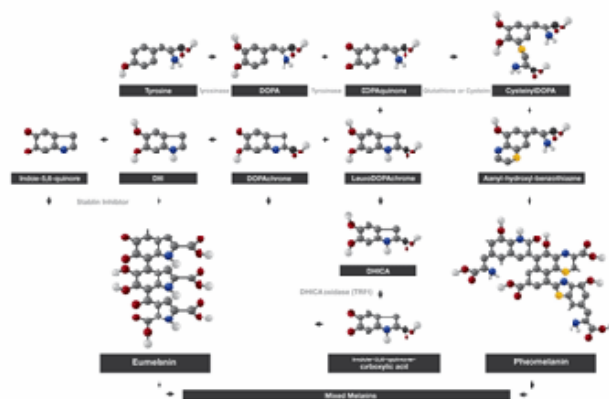
The chemical structure of the different forms of melanin have proven difficult to analyze, due to the properties of the molecule. They are found to be insoluble, amorphous, and cannot be studied as a solution or in crystal form. To overcome the frustrating properties, a partial degradation process has been used to study the separate components of each melanin structure. Two of the main melanins in the human body are eumelanin and pheomelanin (Figure 3).

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**Figure 4. Simple presentation of the pathway which converts tyrosine to pheomelanin.**

The pathway to synthesize melanins is also not fully understood. It is known that tyrosine is the starting reactant, and tyrosinase the enzyme that catalyses the reaction (Figures 4 and 5).



**Figure 5. The two distinct pathways of melanins commonly found in the human body.**

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### Continued from page 27 - The Ainu of Japan

The image of traditional Ainu culture held by most Japanese consists almost entirely of tourist trade Ainu villages, "ethnic" performances, commercialized wood-carvings and other such "folk art" objects.

Yet discrimination against the Ainu is still a problem. In July, 1998, in a statement to the U.N. Working Group on Indigenous Populations the Ainu International Network stated that the Ainu continue to stated that no such ethnic minorities exist in Japan.

### The Act on the Encouragement of Ainu Culture

On March 27, 1997, in response to a lawsuit brought by the Ainu people, the Sapporo District Court ruled that the Ainu should be granted recognition as an indigenous people of Japan and entitled to the protection of their distinct culture.

Partly as a response to the court's decision, the Diet (Congress) passed the "Act on the Encouragement of Ainu Culture and the Diffusion and Enlightenment of Knowledge on Ainu Tradition" on May 8, 1997, Japans' first legislation acknowledging the existence of an ethnic minority in the country. The Act advocates research on Ainu culture, provides opportunities to study the Ainu language and supports preservation of Ainu customs and traditions.

As big a step as the Act is, it can only be regarded as the first toward addressing the needs of the Ainu culture. The Act does not include any apology or deliberation on past assimilation or discrimination policies. Although the Bill provides financial support for traditional dance, crafts, and learning the Ainu language, many feel that the Japanese government is still ignoring the Ainu's basic problems.

### Ainu Culture and Discrimination Today

Yet discrimination against the Ainu is still a problem. In July, 1998, in a statement to the U.N. Working Group on Indigenous Populations the Ainu International Network

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## FEATURED ARTICLES

# Japan's Earthquake – Natural or Engineered?

By Stephen Lendman

March 31, 2011

An earlier article considered whether Haiti's January 2010 quake was engineered. Despite no corroborating proof, technologies exist to do it. More information below.

On March 11 at 14.46 JST, the earth shook around 81 miles east of Japan's Oshika Peninsula of Tohoku near Sendai, its hypocenter about a 20 mile depth. Measured at 9.0, it triggered a 33-foot high tsunami in minutes, compounding the destructive damage over a wide area.

Of greatest concern is damage to four or more nuclear reactors at Tokyo Electric's (TEPCO) Fukushima Daiichi plant. So far (besides many thousands injured and homeless), those dead or missing number almost 30,000, a total to rise exponentially if the worst Fukushima's fears materialize.

According to some experts, it's no longer speculation. It's reality, though government and media reports deny it, concealing the disaster's magnitude, affecting the entire Pacific rim and Northern Hemisphere.

Nonetheless, on March 29, New York Times writers Ken Belson and Hiroko Tabuchi headlined, "Confidence Slips Away as Japan Battles Nuclear Peril," saying:

Plutonium traces in soil and increasing hazards for plant workers "forced government officials to confront the reality that the emergency measures they have taken to" contain the disaster haven't worked. In fact, conditions are worse, not better, suggesting perhaps nothing can contain this monster, threatening to make northern Japan (the size of Pennsylvania) an uninhabitable dead zone, though it's still too early to tell.

On March 29, London Guardian writer Ian Sample headlined, "Japan may have lost race to save nuclear reactor," saying:

"The radioactive core in a reactor at the crippled Fukushima nuclear power plant appears to have melted through the bottom of its containment vessel (onto) a concrete floor, experts say, raising fears of a major release of

radiation at the site." It's already major and increasing.

According to Richard Lahey, former GE boiling-water reactors head of safety research:

"The indications we have, from the reactor to radiation readings and the materials they are seeing, suggest that the core has melted through the bottom of the pressure vessel in unit two, and at least some of it is down on the floor of the drywell. I hope I am wrong, but that is certainly what the evidence is pointing towards."

"The reason we are concerned is that they are detecting water outside the containment area that is highly radioactive and it can only have come from the reactor core." Lahey added that it won't be as bad as Chernobyl. In fact, it's multiples worse from:

- increasing radiation releases, including deadly plutonium;
- spreading them catastrophically across the entire Northern Hemisphere, especially over wide parts of Japan;
- causing permanent contamination; and
- potentially killing millions from deadly cancers.

According to Dr. Tom Burnett:

"Fukushima is going to dwarf Chernobyl. (Its) reactions are getting worse. I suspect three nuclear piles are in meltdown....When the molten mass (reaches) the water table, (it) will explode (releasing) more radioactive particulate matter. The concrete will melt and the problem will get worse."

It'll continue for months. The only solution is bad; namely, "detonat(ing) a 10 kiloton fission device inside each reactor containment vessel and hope to vaporize the cores."

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***Continued from page 36 – Japan's Earthquake - Natural Or Engineered?***

Nuclear core meltdowns are self-sustaining. Only halting the reaction can stop them. That "require(s) a nuclear weapon....in each containment vessel....(b)ut it will be messy."

On March 30, New York Times writer David Jolly headlined, "High Radiation Levels Found in Seawater Near Nuclear Plant," saying:

Seawater "about 300 yards from the (site contained) iodine-131 at 3,355 times the safety standard, the highest levels reported so far." Each day, they're rising and spreading hazardous contamination. Yet Japan's Nuclear and Industrial Safety Agency's (NISA) Hidehiko Nishiyama claims public health isn't threatened, perhaps waiting for corpses for proof.

"In a separate development, smoke was seen rising from a second (TEPCO Daini nuclear plant) about six miles south of" Daiichi. As expected, NISA and TEPCO officials downplayed it, perhaps again concealing the worst.

**Coverup and Denial in America**

Despite spreading contamination in America, the Environmental Protection Agency (EPA) stopped measuring radiation levels in eight of its 18 monitoring stations, including California, Oregon and Washington because readings are getting too high.

In addition, Obama's EPA may substantially increase allowable radiation amounts called safe in food, water and the environment. New guidelines will also permit much laxer long-term cleanup thresholds, greatly endangering public health.

**Five Types of Human Activity Causing Quakes**

**(1) Damn construction**

Since water is heavier than air, the crust beneath it is greatly stressed, easily setting off mostly moderate shocks. University of Alaska seismologist Larry Gedney explained:

"Since the (Hoover Dam) reached its peak of 475 feet in 1939, the level of seismicity has fluctuated in direct response to water level. None of the shocks have been particularly damaging - the largest was about magnitude 5 - but the area had no record of being seismically active."

According to geophysical hazards expert Christian Klose, dams trigger about one-third of human-caused quakes. No wonder given their global proliferation, 845,000 according to Discover magazine, including 80,000 in America. Hoover Dam is the largest, storing

1.2 trillion cubic feet of water. China's Three Gorges Dam is the world's largest, holding back 1.4 trillion cubic feet. In 1967, western India's Koyna Dam may have caused a 7.0 magnitude quake. If so, dams in seismically active areas may be much more destructive than believed.

**(2) Liquid injection into the ground**

In 1951, the US Army constructed Basin F at the Rocky Mountain Arsenal to handle 243 million gallons of contaminated liquid chemical wastes in about a 93 acre area. In 1961, another way was chosen - by drilling a 12,000-foot deep well in the Rocky Mountains to inject napalm toxic waste into the earth's crust. From 1962 - 1966, 165 million gallons went in, likely triggering regional quakes and getting the Army to shut it down. According to seismologist Dave Wolney:

"If you are doing deep well injection, you are altering the stress on the underlying rocks and at some point, (it) will be relieved by generating an earthquake."

Klose also worries about carbon dioxide sequestration, a process of compressing CO2 from coal plants and injecting it into underground deposits. It, too, can generate quakes close to cities, as that's where facilities are located.

**(3) Coal mining**

Coal provides over half of America's electricity and an even larger percentage in China. Mines produce millions of tons annually, extract up to a dozen times as much water as coal, and cause huge regional mass changes. They, in turn, increase stress that can cause quakes as explained above. According to Klose, mining produces over half of recorded ones.

**(4) Oil and gas drilling**

A June 23, 2009 New York Times article headlined, "Deep in Bedrock, Clean Energy and Quake Fears," explaining that former oil man, Markus O. Haring, drilled a hole three miles down in Basel, Switzerland prospecting for clean, renewable energy, deep within the earth's bedrock. On December 8, 2006, an earthquake terrified residents who remembered the devastating one, striking the city 650 years earlier.

Having terminated his project, but a US start-up company, AltaRock Energy, uses the same technology to drill deep into quake-prone areas two hours' drive north of San Francisco for geothermal energy. The Energy Department backs it with more than \$36 million, and several large venture capital firms are involved, despite the risk.

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**According to The Times:**

"The California project is the first of dozens that could be operating in the United States in the next several years, driven by a push to cut emissions of heat-trapping gases and the Obama administration's support for renewable energy. Using the Basel method, it's hoped a breakthrough can be achieved, even though it's known that large quakes occur at great depths."

Three of the largest human-caused ones happened near an Uzbekistan natural gas field, the result of liquid extraction and injection changing its tectonic action. The most severe one registered 7.3, and according to Russian scientists:

"Few will deny that there is a relationship between hydrocarbon recovery and seismic activity, but exactly how strong a relationship exists has yet to be determined."

In regions with high tectonic activity, like northern California near San Francisco, Haiti around Port-au-Prince, or Japan, extraction could trigger severe quakes. It's believed Haiti has significant oil, gas, and other mineral deposits, including gold, copper, and coal. Perhaps drilling around Port-au-Prince bay, the Gulf of La Gonave, and the Island of La Gonave set off the quake, why US domination and human neglect are related to it, and why America, France, Canada and other nations seek to profit from disaster.

**(5) Large building construction**

On December 2, 2005, Kate Ravilious' UK Guardian article headlined, "Skyscraper that may cause earthquakes." It referred to Taipei 101 in Taiwan, the world's tallest building at 1,667 feet, weighing 700,000 tons. According to National Taiwan Normal University geologist Cheng Horng Lin, the building's stress may have reopened an ancient fault.

Before its construction, the Taipei basin was very stable with no surface ones. Thereafter, "The number of earthquakes increased to around two micro-earthquakes per year during the construction period (1997 - 2003). After completion, two larger quakes were registered, strong enough to feel at magnitudes 3.8 and 3.2."

Lin believes that "the considerable stress might be transferred into the upper crust due to the extremely soft sedimentary rocks beneath the Taipei basin. Deeper down this may have reopened an old earthquake fault."

Other experts are more cautious. UCLA quake expert John Vidale says "A building will change the stress on

the ground under (it), but this probably won't reach down to around 10km, the level where earthquakes occur." Compared with dams, coal mining, oil drilling, and underground waste deposits, skyscrapers cause minor stress to the earth's surface. Klose shares that view.

**HAARP Technology - High Frequency Active Auroral Research Program**

HAARP manipulates the atmosphere, climate, and weather for military purposes. Based in Gokona, Alaska, it's a jointly managed US Air Force/Navy weather warfare program, operating since 1992, yet the HAARP web site explains its purpose as follows:

"HAARP is a scientific endeavor aimed at studying the properties and behavior of the ionosphere (the atmosphere's upper layer), with particular emphasis on being able to understand and use it to enhance communications and surveillance systems for both civilian and defense purposes. (It will be used) to induce a small, localized change in ionospheric temperature so that resulting reactions can be studied by other instruments located either at or close to the HAARP site."

According to Rosalie Bertell, a distinguished scientific expert and president of the International Institute of Concern for Public Health:

HAARP functions as "a gigantic heater that can cause major disruptions in the ionosphere, creating not just holes, but long incisions in the protective layer that keeps deadly radiation from bombarding the planet."

Writing in Earthpulse Press on November 5, 1996, Bertell explained that:

Military interest in space became intense during and after World War II because of the introduction of rocket science, the companion of nuclear technology....During this time of intensive atmospheric nuclear testing, explosions at various levels above and below the surface of the earth were tried. Some of the now familiar descriptions of the earth's protective atmosphere....were based on information gained through stratospheric and ionospheric experimentation."

Numerous projects preceded HAARP, including:

-- Project Argus in 1958 "to assess the impact of high altitude nuclear explosions on radio transmission and radar operations," and learn more about the geomagnetic field;

-- Project Starfish in 1962, using nuclear detonations to

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disrupt the ionosphere and assess the effects on the earth's magnetic field;

-- SPS: Solar Power Satellite Project in 1968, using them in geostationary orbit 40,000 km above the earth to intercept solar radiation with solar cells that potentially could be environmentally destructive;

-- Poker Flat Rocket Launch from 1968 to the present to "understand chemical reactions in the atmosphere associated with global climate change;" perhaps more to influence climate for military purposes;

-- Saturn V Rocket in 1975; due to a malfunction, it burned unusually high in the atmosphere (above 300 km) producing a "large ionospheric hole," resulting in over a 60% reduction in "total electron content" over a 1,000 km area lasting several hours; all telecommunications over the Atlantic Ocean were disrupted;

-- SPS Military Implications in 1978 to develop a satellite-based beam weapon for anti-ballistic missile (ABM) use; also as a mind-control/anti-personnel weapon by affecting the human brain;

-- Orbit Maneuvering System in 1981 to study the effect of Shuttle injected gases on the ionosphere; it was learned they could induce holes;

-- Innovative Shuttle Experiments in 1985 using gases to create ionospheric holes;

-- Mighty Oaks in 1986 to develop x-ray and particle beam weapons;

-- Desert Storm in 1991, during which the US deployed an electromagnetic pulse weapon, designed to mimic the electricity flash of a nuclear detonation; and

-- HAARP since 1992

Bertell says it's: "related to fifty years of intensive and increasingly destructive programs to understand and control the upper atmosphere. (It's) an integral part of a long history of space research and development of a deliberate military nature. (Their) implications (are) alarming. Basic to this project is control of communications, both (their) disruption and reliability in hostile environments. The power wielded by such control is obvious."

"The ability of the HAARP/Spacelab/rocket combination to deliver very large amounts of energy, comparable to a nuclear bomb, anywhere on earth via laser and particle beams, are frightening." Yet the public is told it's "a space shield against incoming weapons (or) a devise for repairing the ozone layer."

By modifying the ionosphere, HAARP can be hugely destructive. Potentially, it can trigger floods, droughts, hurricanes, tsunamis, forest fires, and power blackouts over entire regions. It can disrupt radar, other communications, agriculture, ecology, and financial and other markets. It can use weather to wage war, and perhaps cause earthquakes like the one devastating Japan.

America "Carried Out a Second Nuclear Attack on Japan"

Noted Pakistani journalist Nusrat Mirza believes that the March 11 disaster was artificially caused by America's X-37B spaceplane. In his article titled, "The Japanese Earthquake and Tsunami - Natural or Artificial?" he argued that Washington caused numerous disasters, including Pakistan's 2005 quake, the country's 2010 floods, the 2004 Indian Ocean quake/tsunami, and 2011 Japanese calamity, possibly by HAARP technology.

Specifically he said:

-- "Whenever the US Spaceplane X-37B is sent Into space, a natural disaster occurs somewhere in the world. He gave examples, including Pakistan devastated by monsoon-triggering floods.

-- America's "objectives are to continue its domination of the world, and not let another power or group of powers challenge its domination. Japan may have been targeted for collaborating with "other countries to replace the US dollar with a new currency for international trading." According to a Nibiru TV report, former Japanese finance minister Heizo Talanaka "was warned to hand over the Japanese financial system to (America or be) attacked by an earthquake.

-- "Today, 'rulers (especially in America) are coming to the forefront and, using science, are causing earthquakes, tsunamis, weather alterations, changes in airplanes' routes, plane crashes, and floods."

The Pentagon's Alaska-based transmitter ability to send three billion watts of electromagnetic waves at a frequency of 2.5 - 10 megahertz can cause all of the above destruction and more.

Geoscientist Leuren Moret believes a HAARP-aerosol/chemtrails plasma weapon likely caused Japan's disaster, citing:

-- its intensity and characteristics; and

-- using the Stuxnet virus (a Windows computer worm targeting industrial software and equipment) at Fukushima, causing malfunctions in cooling pumps and

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valves. "The trouble after the earthquake was that the pumps and valves and controllers malfunctioned so workers could not get (them) working. This just adds to the HAARP earthquake and much more evidence that it was a false flag HAARP event."

Moreover, HAARP-created vortex clouds over San Francisco on March 18 triggered heavy irradiated rain over the Bay area.

Moret also explained calculations she made, saying spent fuel rods stored in cooling ponds above each of six reactors are releasing the equivalent of "92,000 nuclear bombs. Each unit has 400 assemblies of spent fuel rods, with 60...for each assembly. Each individual rod holds 72 pounds of uranium (compared to) a 20-pound" nuclear bomb payload.

She believes enormous amounts of radiation are now being released into the troposphere, traveling below 300 feet over Japan and America, heading east. As a result, air, earth, water, food and humans are being contaminated with deadly radiation. Downplaying the hazard is scandalous.

Investigative journalist Jane Burgermeister also blames HAARP for Japan's disaster and the 2010 one in Haiti, saying: Haiti and Japan quakes "show surprising similarities that point to an artificial cause and the use of HAARP technology." In January 2010, "low frequency signals of 2.1 Hz were detected for 40 hours before the earthquake occurred, while (in) Japan something similar happened. Low frequency signals of 2.5 Hz were detected for about 55 hours before the earthquake (struck) as well as for 4 hours afterwards."

"A steady signal lasting for so many hours at such a low frequency is highly likely not caused by natural activity in space but by some type of artificial 'human-made' activity." Notably in the case of Haiti, "this signal stopped abruptly at full swing on January 11 at 01:00 hours UTC only to resume with full amplitude again at 3:30 hrs UTC as if it had been switched off and on at full power."

The UN Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (1977)

**Its Article I states that:**

"Each State Party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having wide spread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party."

Article II refers to "environmental modification (ENMOD) techniques (as) any technique for changing - through the deliberate manipulation of natural processes - the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space."

Citing Ecology News, Sourcewatch.org defines environmental warfare as:

"(1) the intentional modification of a system of the natural ecology, such as climate and weather, earth systems such as the ionosphere, magnetosphere, tectonic plate system, and/or the triggering of seismic events (earthquakes);

(2) to cause intentional physical, economic, psycho-social, and physical destruction to an intended target geophysical or population location;" and

"(3) as part of strategic or tactical war."

Environmental war weapons include chemtrails, chemical weapons systems (climate and weather modification) and electromagnetic weapons systems (climate and weather modification, as well as seismic warfare).

Other definitions are broader, including the use of depleted uranium and other environmentally destructive weapons, practices and techniques.

International standards on environmental protections during armed conflict date back as early as the 1868 Declaration of St. Petersburg. It stated that "the only legitimate object which States should endeavour to accomplish during war is to weaken the military forces of the enemy."

The 1907 Hague Regulations stressed restraint, saying "The right of belligerents to adopt means of injuring the enemy is not unlimited," and the Geneva Conventions (including Protocol I and Common Article 3) defined the principles of international humanitarian law.

In 1973, the US Senate adopted a resolution calling for an international agreement "prohibiting the use of any environmental or geophysical modification activity as a weapon of war...." President Nixon ordered the Defense Department to review the military aspects of weather and other ENMOD techniques.

During the July 1974 summit meeting in Moscow, Nixon and General Secretary Brezhnev agreed to hold bilateral talks to achieve "the most effective measures possible to overcome the dangers of the use of environmental modification techniques for military purposes."

Discussions continued in 1974 and 1975, resulting in an agreement on a common approach and language. The 1977 UN Convention followed, ratified 98 - 0 by the Senate on

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November 28, 1979. It took effect on January 17, 1980, but was violated thereafter by both sides.

Human environmental modification techniques (ENMOD) can cause irreversible damage. Yet international standards haven't stopped their development or use.

**A Final Comment**

On February 17, 1950, Council on Foreign Relations (CRF) member James Warburg told the Senate Foreign Relations Committee:

"We shall have world government whether or not you like it, by conquest or consent," because powerful globalists want it.

American ones, in fact, want total control of the world's money, resources, law, communications, populations, and military supremacy, no matter how much destructive force it takes to achieve, perhaps using HAARP and other technologies to create enormous new opportunities for greater power and profits.

Other schemes relate to America's longstanding depopulation agenda, a model Henry Kissinger presented in his 1974 National Security Study Memorandum 200 (NSSM 200). Shaped by Rockefeller interests, it developed over time to cull unwanted "useless eaters" by various means, including:

- violence;
- depleted uranium and other hazardous weapons;
- withholding disaster relief;
- sterilization;
- disease;
- starvation;
- earthquakes, tsunamis, oil spills, chemical proliferation, and other environmental disasters; as well as
- widespread radiation contamination, another way to detonate bombs.

Perhaps Japan's disaster is their latest assault on human life, welfare and survival, so global elitists can benefit more by less of us. Think unlikely? Think again.

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<http://www.progressiveradionetwork.com/the-progressive-news-hour/>



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***Continued from page 35 – The Ainu of Japan***

stated that the Ainu continue to be thought of and treated as a "barbaric" minority in Japan.

The authors went on to say that the Ainu people "oppose any international convention or domestic law which holds an assimilationist program as its basic orientation, and believe that the rights to control our own economic, social, cultural and other aspects of development as much as possible, to stand equal based on our own institutions, and to mutually cooperate with the national society should be recognized."

*The Ainu of Japan: The History, Culture, and Discrimination Against this Aboriginal Group -  
Jul 2, 1999 - © Andy Thomason*



***Continued from page 2 – Radiation Exposure debate rages inside EPA***

1992 "Protective Action Guides" (PAG) governing radiation protection decisions for both short-term and long-term cleanup standards. Other divisions within EPA contend the ORIA plan geometrically raises allowable exposure to the public. For example, as Charles Openchowski of EPA's Office of General Counsel wrote in a January 23, 2009 e-mail to ORIA:

"[T]his guidance would allow cleanup levels that exceed MCLs [Maximum Contamination Limits under the Safe Drinking Water Act] by a factor of 100, 1000, and in two instances 7 million and there is nothing to prevent those levels from being the final cleanup achieved (i.e., it's not confined to immediate response of emergency phase)."

Another EPA official, Stuart Walker of the Office of Superfund Remediation and Technology Innovation, explains what the proposed new radiation limits in drinking water would mean:

"It also appears that drinking water at the PAG concentrations...may lead to subchronic (acute) effects following exposures of a day or a week. In a population, one should see some express acute effects...that is vomiting, fever, etc."

"This critical debate is taking place entirely behind closed doors because this plan is 'guidance' and does not require public notice as a regulation would," stated PEER Counsel Christine Erickson. Today, PEER sent EPA Administrator Lisa Jackson a letter calling for a more open and broader examination of the proposed radiation guidance. "We all deserve to know why some in the agency want to legitimize exposing the public to

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# China, Russia concern over Contaminated Water

April 08, 2011  
NHK

China and Russia have expressed concern over Japan discharging water contaminated with relatively low-level radiation from the damaged Fukushima Daiichi nuclear power plant into the Pacific Ocean.

China's foreign ministry spokesperson Hong Lei released a statement on Friday saying China wants Japan to take appropriate measures to protect the ocean environment based on international laws. He urged the Japanese government to provide China with comprehensive and accurate information in a timely manner.

In a statement issued on Thursday, Russia's foreign ministry expressed displeasure by pointing out that Japan informed Russia of its move to dump the contaminated water 2 days after it began the operation earlier this week.

The ministry urged Japan to provide concerned parties with complete information about the situation at the crippled nuclear power plant. It also expressed the hope that Japan will take measures to prevent further discharges of radioactive water into the ocean.

Russia's health authorities say that radioactive contamination has not been detected in the country at present. However, they say if the contamination spreads to a wider area and becomes more serious, it could restrict fishing in waters off its far-eastern coast.

On Tuesday, South Korea expressed similar concerns over the dumping and criticized the Japanese side for failing to notify it ahead of time.

[http://www3.nhk.or.jp/daily/english/08\\_38.html](http://www3.nhk.or.jp/daily/english/08_38.html)



## ***Continued from page 41 – Radiation Exposure debate rages inside EPA***

radiation at levels vastly higher than what EPA officially considers dangerous.”

The internal documents show that under the updated PAG a single glass of water could give a lifetime's permissible exposure. In addition, it would allow long-term cleanup limits thousands of times more lax than anything EPA has ever before accepted. These new limits would cause a cancer in as much as every fourth person exposed.

PEER obtained the internal e-mails after filing a lawsuit this past fall under the Freedom of Information Act (FOIA) but the EPA has yet to turn over thousands more communications. “EPA touts its new transparency but when

it comes to matters of controversy the agency still puts up a wall,” added Erickson, who filed the FOIA suit. “Besides the months of stonewalling, we are seeing them pull stunts such as ORIA giving us rebuttals to other EPA documents they have yet to release.”

[http://www.peer.org/news/news\\_id.php?row\\_id=1325](http://www.peer.org/news/news_id.php?row_id=1325)



## **Bolivia enshrines Natural World's Rights with Equal Status for Mother Earth**

*Law of Mother Earth expected to prompt radical new conservation and social measures in South American nation*

**John Vidal in La Paz**

10 April 2011  
Guardian.co.uk

Bolivia is set to pass the world's first laws granting all nature equal rights to humans. The Law of Mother Earth, now agreed by politicians and grassroots social groups, redefines the country's rich mineral deposits as "blessings" and is expected to lead to radical new conservation and social measures to reduce pollution and control industry.

The country, which has been pilloried by the US and Britain in the UN climate talks for demanding steep carbon emission cuts, will establish 11 new rights for nature. They include: the right to life and to exist; the right to continue vital cycles and processes free from human alteration; the right to pure water and clean air; the right to balance; the right not to be polluted; and the right to not have cellular structure modified or genetically altered. Controversially, it will also enshrine the right of nature "to not be affected by mega-infrastructure and development projects that affect the balance of ecosystems and the local inhabitant communities".

"It makes world history. Earth is the mother of all", said Vice-President Alvaro García Linera. "It establishes a new relationship between man and nature, the harmony of which must be preserved as a guarantee of its regeneration."

The law, which is part of a complete restructuring of the Bolivian legal system following a change of constitution in 2009, has been heavily influenced by a resurgent indigenous Andean spiritual world view which places the environment and the earth deity known as the [Pachamama](#) at the centre of all life.

*Continued on page 54*

## FEATURED ARTICLES

# Nigeria: Man Inter-Dependence with Environment

### Analysis

9 October 2009

If one is asked to describe the major human influence on the environment, he would most likely refer to the green house effect, damage to the ozone layer, acid rain and the many other recent examples of pollution. It is easy to think that it is an only post-industrial man who has had a significant impact on the world. This is not so-pre-industrial man also caused important changes to his environment.

Primitive man affected his environment by haunting fishing and removing trees for fires and shelters. He was nomadic and therefore any effect he had on an area was temporary and the environment had adequate time to recover. About 11,000 years ago, man began to cultivate his own crops and thus communities settled in one place in order to harvest and store the crops.

The use of tools and later domestication of animals led to more efficient agriculture and the ability to produce more food and hence support a larger population. Demands were created on the environment and trees were felled to provide shelters and more land for cultivation. The cultivation of crops was aided by domestication of animals (e.g. to haul ploughs) and therefore some of the crops had to be used to feed them, leaving less for human consumption.

With the advent of fossil fuels, all this changed and little of the energy in the crops grown went back into growing more crops. Instead machines driven with fuels helped cultivate the crops, the majority of which were available to support a larger population which in turn required more efficient agriculture to support it. The cultivation of crops was aided by domestication of animals (e.g. to haul ploughs) and therefore some of the crops had to be used to feed them, leaving less for human consumption.

With the advent of fossil fuels, all this changed and little of the energy in the crops grown went back into

growing more crops. Instead machines driven with fuels helped cultivate the crops, the majority of which were available to support a larger population which in turn required more efficient agriculture to support it. Fertilizers, pesticides and rapid transportation all developed and brought with them pollution problems in addition to those caused by burning the fossil fuels. Such fuels are a limit source of energy and hence new energy sources were needed. Nuclear energy was developed with its consequent environmental problems.

## EXPLOITATION OF NATURAL RESOURCES

### AGRICULTURE:

Probably the first attempts at cultivation began with the deliberate use of fire to clear large areas of land for planting: by doing so, man began to alter the structure of communities. Climax vegetation was destroyed and replaced by monoculture, e.g. a field of cereal crops replaced a forest of oak. It was soon discovered that if the same crop was grown for several successive seasons, the gross yield fell because crops make specific demands on the soil's resources. The problem could be avoided by crop rotation or by replacing lost materials with fertilizers. The latter solution raises another problem because excess use of fertilizers often causes pollution of rivers due to teaching and draining.

Ecologically, agriculture is contrary to the natural development of communities. Monoculture results in large areas planted with a single species of plant instead of the climax community of many species. As a result, weeds and pests compete with the single species for environmental resources. When a man attacks the competitors with herbicides and pesticides, he creates additional problems of pollution of soil and water by toxic chemicals. Agriculture provides enormous food resources for those herbivores which share the same food as man.

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**Continued from page 43 – Man Inter-Dependence with Environment**

With many plants of one species grown close together, there is no problem of individuals finding new food plants at the dispersal stage. Thus, large numbers of herbivores can build up at the expense of crops. Whole ecosystems are therefore affected by the change in the original climax community because land is artificially prevented from reaching its climax vegetation as a result of regular grazing, ploughing and the use of fertilizers and pesticides. Over the past 40 years in the UK, food production has doubled as a result of greater use of fertilizers and pesticides.

The development of new strains of plants and animals, increased mechanization and changes in farm practices. The success has been so great that in food production, there are now large surplus of food in Europe, and farmers are paid to set aside up to 20% of their land for purposes of other than food production, e.g. tree planting.

Hedgerow removal is one example of a conflict of interest between agricultural production and conservation. Each year in U.K., around 8000km of hedges are removed by farmers because, they:

- (1) Restrict access by large agricultural machinery
- (2) Take up space which could be used to grow crops
- (3) Harbor diseases and pests of crops
- (4) Reduce crop yields by taking up water and nutrients

From a conservation view point however, hedges:

- (1) Produce food for a wide variety of plant and animal species
- (2) Provides habitat for many species
- (3) act as wind breaks and therefore prevent erosion of the soil by wind:
- (4) provide a corridor along which organisms can move and disperse themselves;
- (5) add interest and variety to the Landscape.

**RENEWABLE RESOURCES:**

Renewable resources are basically things that grow and are therefore replaced. This is not to imply that they are inexhaustible, for if they are utilized at too great a rate they will most certainly diminish and even disappear altogether. If, however, they are used at a rate equal to, or less than, the rate at which they grow they can be exploited indefinitely. This is referred to as a sustainable yield. A stock of fish, for example, will

breed and increase in size at a certain rate. Provided the number caught does not exceed this increase, the fish stock should not get smaller. If, however over fishing occurs and fish are removed faster than they are replaced, the stock may be reduced to a size which makes fishing uneconomic.

**NONRENEWABLE RESOURCES:**

Nonrenewable resources are, for all practical purposes, not replaceable, oil gas, coal and mineral ores are renewed at such a slow rate that we must consider them as finite resources. In the case of oil and gas, the known reserves are unlikely to last longer than around 50 years.

**BIOLOGICAL FUELS**

With non renewable fossil fuels unable to meet on long-term energy needs, attention has to be turned to renewable biological fuels. Wood and straw can be burnt directly as fuels, but most plant species can be terminated by microorganisms into methane, methanol or ethanol, all of which make excellent fuel. In Brazil, sugar cane wastes have been used to make gasohol and in Britain, sewage can be converted to methane (biogas).

**THE POPULATION EXPLOSION:**

There has been a rapid increase in human population since the seventeenth century and this has inevitably had its effect on the environment. Ancient agricultural races have been replaced in certain parts of the world by populations founded on the industrial and technological revolutions. The results have been an increase in the use of non renewable resources (e.g. fossil fuels) and an increase in population of land, sea and air by products of fuel combustion. Solutions to these problems rely on cooperation between ecologists, politicians and economists. A cost effective method of reducing pollution is usually not easy to find and conservationists must argue their case against industry and other cost conscious sections of the community. There is no dispute about the scientific aspects of the ecological situations involved.

An increase in population imposes greater strains on food supply and its distribution. There are basically two contrasting points of view relating to the food supply problem.

- (1) Many agriculturalists believe that with the use of fertilizers, herbicides and pesticides the world can produce enough food for the predicted growth rate of population.
- (2) In contrast, many ecologists argue that at least half the world's populations are already undernourished and they suggest that it will be impossible to feed adequately the probable population forecast for the year 2010.

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There are three main methods of improving this situation:

- (1) Stabilise the human population
- (2) Increase the efficiency of food production and utilization
- (3) Develop new food sources.

At present we lose a great deal of food during its transportation from the source of production to the consumer. This is due to competition between men and other organisms e.g. rats, mice, insects and moulds. Improvements in techniques for combating these are feasible. Some food is lost for economic reasons because of high transport cost from regions of overproduction to region of need. There are instances of countries burning surplus food or allowing it to rot while developing countries have populations suffering from malnutrition and starvation.

It is very easy to confuse biological and political problems in a discussion concerning human food supplies. The biological problems relate to the efficiency with which different types of food can be produced in different environments. Some energy is lost at each link of the food chains; the most efficient way for an omnivore like man to tap solar energy is to eat plants. The highest primary production comes from tropical crops e.g. sugar cane which can grow all the year round but most of the plant's structure is not eaten by man. Usually only parts such as fruit, seeds, leaves or roots are used so that much primary production is wasted.

Plant proteins differ from animal proteins in the proportion of amino acids. Herbivores have to eat large quantities of food to obtain certain essential amino acids. Eating animals is economical in terms of the bulk of food consumed although it is wasteful of solar energy. Of the present supply of protein for human food 70% comes from vegetation and 30% from animals. Intensive livestock rearing is the most efficient way of producing those animal proteins which are traditional foods.

The mass production of chicken relies on processed diet which in corporate parts of organisms normally discarded as inedible. Occasionally antibiotics and hormones are added to the diets with subsequent dangerous side effects to the secondary consumers.

Ideally, protein should form about 10% of the total food. With non renewable fossil fuels unable to meet

on long-term energy needs, attention has to be turned to renewable biological fuels. Wood and straw can be burnt directly as fuels, but most plant species can be terminated by microorganisms into methane, methanol or ethanol, all of which make excellent fuel intake. In terms of energy; this constitutes the main differences between diets of well-fed and under-fed protein production could be an answer to the world's food shortage.

However, these sources can only be exploited through energy-consuming industrial processes and the amount of energy needed to produce edible protein may be so great that the source is totally uneconomic.

### **POLLUTIONS**

Pollution is a difficult term to define. It is derived from the latin word pollure, which means to contaminate any feature of the environment. It may be broadly said to be adding to the environment a potentially hazardous substance or source of energy faster than the environment can accommodate it". In this board sense the definition includes not only man's activities but also certain natural processes.

#### **Air Pollution:**

This form of pollution is largely a result of burning fossil fuels such as coal, coke or fuel oil. Smoke contains carbon particles, carbon dioxide, sulphur dioxide and fluorites. Domestic combustion is of importance in those areas, which have not introduced smokeless fuels. Smoke is a major health hazard as it affects the respiratory tract, increasing the incidence of bronchitis, and may even be a carcinogen. Normally, the cells lining the bronchial tubes produce mucus to moisten the surface and trap bacteria.

When cells are diseased, they cannot function properly and are susceptible to bacteria. Whenever fog builds up in air heavily polluted with smoke, conditions called smog is produced. The dampness, combined with the effects of suspended carbon in smoke, increases the incidence of pulmonary disease.

The problem of reducing industrial smoke is complex; it has been tackled in a number of ways: In 1956, the British government introduced the clean Air Act, which made it illegal to discharge smoke in many areas. This meant that households and factories have to use smokeless fuels, e.g. electricity, gas, oil or solid smokeless coals.

The introduction of electricity, diesel and gas turbine locomotives also reduce air pollution from the level it was when steam engines were in use. Modern technology allows fuel to be burnt more efficiently and

washing processes can be installed to remove soluble and heavy particles before the gases are sucked up the chimney where sieves or electrostatic precipitators are also installed.

To allow efficient combustion of petrol, lead 'anti-knock' agents are added and these lead compounds are released into the atmosphere along with carbon monoxide and various nitrogen oxides. The lead is easily absorbed through the lungs and may cause mental retardation in children. The trend towards the use of unleaded petrol has been accelerated by the government decision to give it a tax advantage, thus making it cheaper than the leaded variety.

When fossil fuels are burned, sulphur dioxide is discharged into the atmosphere. Coal and coke contain about 1-2% sulphur. Much of this can be removed but the cost is high. Control of this form of pollution depends on high chimneys to carry the fumes away. In some areas, problems arise when it is washed out from the waste gases by rain as sulphuric acid.

This corrodes buildings. Plants are particularly vulnerable to sulphur dioxide pollution because the gas is absorbed through stomata and into the leaf cells in lethal closes.

Fluoride is a waste product of certain industrial process involved in the manufacture of pottery, bricks, steel and aluminum.

It is absorbed by plants and becomes concentrated in leaves. Cattle and sheep grazing on the plants become affected over a period of time. Bones become soft and joints stiffen. Methods used to get rid of fluoride depend on building higher chimneys. Other methods have proved very expensive.

### **THE GREEN HOUSE EFFECT**

Fossil fuels form an important reservoir of carbon. Since the industrial revolution, the burning of these fuels has released much additional carbon dioxide into the atmosphere. This change to the composition of atmospheric gases has prevented some of the sun's radiation, which would normally be reflected back into space from escaping. This has led to heat being trapped next to the earth in the same way that green house gases trap heat. This is the so-called global warming. Its effects could be to expand the oceans which, along with some melting of the polar ice caps, could lead to a rise in sea level and the consequent flooding of many of the major cities of the world.

Other pollutants like chlorofluoro carbons (CFC),

which are used in refrigerators, aerosol sprays and some plastic forms, can contribute to the greenhouse effect by depleting the protective ozone layer above the earth, which reduces the intensity of the sun radiation, in part by filtering out ultraviolet light.

### **AQUATIC POLLUTION**

#### **Freshwater Pollution:**

Man soon realized that rivers are the easiest and cheapest means of transport. Towns grew alongside them, and the simplest way to get rid of unwanted materials, including sewage; was to put it into the river. Rivers became the first sewers and before the population explosion of the industrialised communities, were efficient as such and still remained healthy.

However, when the bulk of the waste became too much, bacteria thrived and began to deplete the oxygen from the rivers causing a biochemical oxygen demand (BOD). In still waters the effects have been marked with many lakes in the world dying as a result. Mass epidemics have spread via water systems because of pollution by pathogens. It was not until the 1800s that sewage works were constructed to treat the waste before discharge.

Toxic wastes from industrial sources are numerous and varied. The main danger is from organic chemical and fertilizer manufacturers. Heavy metals act as non competitive inhibitors of enzymes and build up via food chain once they enter the environment. Pesticides, herbicides and fungicides drain away from fields, enter waterways and are concentrated through food chains so that top carnivores become poisoned. Excessive use of fertilizers can also give rise to a build-up of toxic by-products by leaching and draining. Thermal pollution becomes a problem where large quantities of heated water are discharged, e.g. from power stations.

The consequent rise in temperature not only kills organisms directly, but also reduces the solubility of oxygen in water, thus killing aerobic organisms. Anaerobes can thrive in these conditions and compete successfully with other forms of life for environmental resources. Detergents are rich in phosphates and these provide nutrients for the vegetation of in rivers and lakes. Toxic by-products form algal blooms result in the death of many organisms.

The prevention of these forms in pollution depends on treating waste products at the source so as to render them harmless. Cost seems to be the major problem because the expense of treatment must be met by increasing the cost of the end-product manufactured or by reducing profit margins.

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### **MARINE POLLUTION:**

Oil pollution of the sea is one of the most emotive forms of pollution probably because its effects are direct and easily visible, illegal washing of oil tanks at sea and the accidental loss of oil by collision, wrecks and oil rigs provide the biosphere with one of the most unsightly forms of pollution. The oil directly affects vertebrates which come in contact with it, e.g. sea birds, seals and fish, with the physical effect of preventing gaseous exchange. Planktonic invertebrates are also poisoned and so whole food chains become affected.

Methods of treating oil pollution have had limited success. They include absorbent methods involving covering oil with an absorbent materials such as straw and collecting the oil-soaked material. Another approach is to spray the oil with a solution of plastic. The plastic hardens to form a coating over the oil. Plastic foam and sawdust have also been used, but the problems with these methods include cost effectiveness and the difficulty of spreading the absorber evenly and then collecting it at sea.

Alternatively, heavy materials may be added to the oil causing it to sink. Bacteria break down the oil quite rapidly when it is on the sea bed. Sand, treated chemically to make oil cling to the grains, has been to sink oil and, because very small amounts of chemicals are needed to treat the sand, it is cheap and safe for marine life. Calcium sulphate and pulverised fuel ash, when treated with silicone, are other effective materials for sinking oil. Detergents have been used to reduce the surface tension of oil but unfortunately may damage a wild life when ingested.

### **RADIOACTIVE POLLUTION**

One of the unavoidable consequences of the use of nuclear energy is the production of radioactive waste. Highly reactive, long-lived wastes are usually concentrated, sealed into lead containers and dumped in deep-sea areas. Wastes with a lower level of activity are dispersed by the sea, which dilutes them to acceptably safe levels.

The amounts, which can be discharged, are strictly controlled. One of the most dangerous effects of radiation is the damage it causes to human chromosomes. Mutations often result. These may be passed from one generation to the next before they exert their often-damaging effects.

In considering the dangers posed by a radioactive substance a number of factors need to be taken into

account. These include the half-life of the substance, its possible concentration in food chains and its role in an organism. For instance, strontium is hazardous to humans:

- (1) It is produced by nuclear explosion and is therefore constantly produced.
- (2) It has a half-life of 28 years and therefore persists.
- (3) It is readily absorbed by grasses and concentrated in cow's milk, which is consumed in large quantities by humans, especially babies, who are particularly vulnerable because their cells are rapidly dividing.
- (4) It becomes concentrated in human bones, which contain the bone marrow which is rapidly dividing to produce blood cells. This division may therefore become disturbed and Leukemia can result.

A radioactive substance released at a relatively harmless level may become accumulated to dangerously high levels along a food chain.

The levels of the phosphorous isotope  $^{32}\text{P}$  in a North American river were found to be:

- (1) In the water - 1 (arbitrary unit)
- (2) In Phytoplankton - 1000
- (3) In aquatic insects - 500
- (4) In fish - 10
- (5) In ducks - 7500
- (6) In ducks eggs - 200,000 (shells contain calcium phosphate).

Here again, the main danger is that the highest levels are found next to the developing embryo which comprises rapidly dividing cells.

### **TERRESTRIAL POLLUTION**

There are two distinct types of terrestrial pollution waste materials that are dumped and pesticides. Waste heaps, derelict mines and buildings present the following problems:

- (1) They are unsightly
- (2) They waste possibly useful land
- (3) They may create a danger to life, e.g. children trapped in mines, the Aberfan slag heap disaster of 1966.
- (4) They may become a health hazard by attracting vermin.
- (5) They cause urban decline, causing people to move away, which creates social decay. *Continued on page 48*

Pesticides are numerous. It is essential that they are properly used, however, they 'drift' from their targets or are leached into streams, rivers and lakes.

A good pesticide should:

- (1) be specific only to the pest it is directed at;
- (2) be rapidly broken down and not persist in the natural environment;
- (3) not be accumulated through food chains.

#### **SOUND POLLUTION:**

Sound is measured in decibels on a logarithmic scale which means that an increase of 10dB represents a doubling of the intensity, i.e. a noise of 60dB represent a doubling of the intensity, ie. A noise 60dB is twice as loud as one of 50dB. Noise is annoying and stressful rather than dangerous, although at extremes (140dB and higher) it can cause deafness even if the duration of the noise is short.

#### **CONSERVATION:**

You will probably have heard the word conservation used when some species, habitat or valuable resources is under threat.

What then is conservation in a biological context? It is often wrongly thought to be maintaining a species, habitat or resource exactly as it is. This is preservation; conservation is more. It accepts that things especially natural things must adapt to meet changing conditions. Conservation is an attempt to maintain a balance, or status quo, so that one factor does not upset the delicate equilibrium that exists between the many living and non living components of the ecosystem. It often entails preservation, e.g. of an endangered species, but it is not exclusively this. Conservation involves careful and skillful management of a complex web of biotic and abiotic resources. It entails many strategies designed to combat the many pressure, often man-made, which endanger natural resources.

These include:

- (1) Education - to permit people to understand the reason for conserving nature.
- (2) Designation - to protect vulnerable species and habitats, e.g. giant pandas and the bamboo forests of china.
- (3) Planned use of land - to restrict human activities which might threaten nature, e.g. designating land as an environmentally sensitive Area. (ESA) or a site of special scientific interest (SSSI).

(4) Legislation to protect wildlife - to prevent endangered species becoming extinct, e.g. koala in Australia

(5) Controlling Introduced species - to prevent them out competing indigenous species in the way that the grey squirrel has ousted the red squirrel in many areas of Britain.

(6) Breeding in captivity - endangered species can be bred under controlled conditions before being returned to the world, e.g. Prezewalski's horse.

(7) Ecological study of threatened habitats - to improve our understanding and aid in their proper management.

(8) Control of pollution - measures such as reducing smoke emissions, control of pesticide and fertilizer use and prevention of oil spills help to avoid the destruction of species and their habitats.

(9) Recycling - the more material that is recycled, the less needs to be obtained from natural sources, e.g. mining for metal ores often destroys sensitive habitats in mountainous region.

<http://allafrica.com/stories/200910070224.html>



## **Cell Phone Radiation: Is It Dangerous?**

Devra Davis, Ph.D.

March 1, 2011

New studies by the acclaimed chief of the National Institute of Drug Abuse, psychiatrist Nora Volkow show that just 50 minutes of cell phone radiation excites the brain. This important finding strengthens the need for a major research program on cell phones and health, for revamping approaches to setting standards, and for putting warning labels on cell phones.

Writing in the February 23 issue of The Journal of the American Medical Association, a team of researchers led by Dr. Volkow, found that cell phone radiation significantly affected brain function and metabolism of glucose -- the brain's main fuel -- in those parts of the brain that received the most cell phone radiation.

#### **These Findings Raise Serious Health Concerns**

Ronald B. Herberman, M.D., chair of EHT's Board and a renowned cancer biologist and physician, indicated that this work offers an important clue about the ways that cell phone radiation can alter the brain and also shows why it is appropriate to take special precautions with cell phones today.

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***Continued from page 48 – Cell Phone Radiation: Is It Dangerous?***

This stunning report indicates that even short-term exposure to nerve cells from cell phones can increase glucose in the brain," said Dr. Herberman. "We know that increased glucose also occurs with infections and other inflammatory processes, and leads to the" production of potentially damaging reactive oxygen radicals that can alter the ways that cells and genes work."

According to Lloyd Morgan, Senior Science Advisor to EHT, anything that disrupts the natural metabolism of such critical areas in the brain is worrisome. "The areas of the brain that had increased glucose in the JAMA study are involved in thinking, sensing and decision making, including repression of antisocial behavior," he explained.

Sharing Morgan's concerns, EHT scientific adviser Richard A. Stein, M.D., Ph.D., said, "As glucose is the sole energy source in the brain under normal dietary conditions, and there is an absolute requirement for glucose during synaptic transmission in the nervous system, the results of the current study emerge as even more significant," said Dr. Stein. "Of course, we do not know whether the changes in glucose metabolism represent the primary perturbation, or whether they occur secondarily, as a response to some other disturbance -- such as the activation of heat shock pathways, which was reported to occur by several independent groups in response to non-ionizing radiation."

**Cell Phones May Change More Than Just Glucose**

Previous work from Prof. Dariusz Leszczynski's group at the Finnish Radiation and Nuclear Safety Authority, published in 2008 in BMC Genomics, involved a human study where punch skin biopsies were taken from the forearm of 10 human volunteers who were exposed for one hour to cell phone radiation. The study revealed that the expression level of eight proteins was changed upon exposure, and two proteins were changed in all volunteers, suggesting that protein expression changes might occur in response to RF exposure.

Writing in the journal Nature Neuroscience last month, neurobiologists at the California Institute of Technology showed that very weak varying electric fields affect the thinking, resting or sleeping brain.

**We Need Better Cell Phone Standards**

This new work, combined with studies carried out by Henry Lai, Allan Frey and others in the past three decades and documented in my new book, *Disconnect: The Truth About Cell Phone Radiation, What the*

*Industry Has Done to Hide It, and How to Protect Your Family* (Dutton, 2010), reinforces the need for revamping our current approach to cell phone safety.

Cell phone standards assume that no biological impact of microwave radiation from cell phones can occur without a detectable change in temperature. In fact, this JAMA study used phones with a Specific Absorption Rate (SAR) of less than 1 W/kg for 50 minutes and found significant increases in brain glucose -- the sugar that provides the brain's main source of energy.

The current study shows, along with other studies, that there are additional concerns related to cell phone use, besides tumors. Tumors are just the tip of the iceberg, but their development is preceded by years of other biological perturbations that have profound medical relevance -- and this study confirms that significant biological changes occur after relatively brief exposures such as those that take place daily with the world's 5 billion cell phones.

**Repeat After Me: More Research Is Needed**

Could the stimulating impact of cell phone radiation to boost brain energy explain some of the growing addiction many of us feel for our phones? That is one of the many research questions that should be addressed.

Dr. Herberman adds that the JAMA study "should stimulate many biologists to perform in-depth studies to determine the consequences of such changes in nerve cells or other bodily cells in the region of the radiation.

We need to develop a better understanding of how radiofrequency radiation might contribute to increased risk for brain tumors as well as other alterations in brain functions."

Dr. Stein echoes Dr. Herberman's call for more research:

One thing is certain -- the current study clearly reveals changes in a pathway that is essential for brain energy metabolism and synaptic transmission, and is intimately interconnected with other pathways that fulfill fundamental roles in biological systems. The Volkow study is an important contribution to public health.

EHT is working with experts and governments in a number of U.S. cities and states, and in Finland, France, Israel and other countries around the world, to encourage a major independent research program on cell phones.

**In The Meantime, Follow Safe Phone Practices**

While that research is being carried out, EHT encour-

*Continued on page 50*

ages simple precautions to reduce microwave radiation to the brain and body, such as those recommended by EHT chair Herberman in 2008 and now endorsed by a number of governments and experts around the world. Phones should be used with headsets or speakerphones and not kept directly on the body, and children should take special care not to have direct exposures.

EHT is not alone in this. Based on the growing evidence from laboratories and epidemiologic studies, two leaders of the WHO Interphone study on cell phones have recently broken ranks and are now calling for such precautions to be taken broadly. They note the growing biological evidence that microwave radiation from phones has impacts and that epidemiologic studies find increased risks of brain cancer after a decade of heavy use.

Professors Elisabeth Cardis and Siegal Sadetzki have urged that it is prudent to reduce exposure by simple means at this time, ranging from using speakerphones and headsets to reducing call time and children's use of phones generally.

"There are now more than 4 billion people, including children, using mobile phones," they write. "Even a small risk at the individual level could eventually result in a considerable number of tumours and become an important public-health issue...until definitive scientific answers are available, the adoption of such precautions, particularly among young people, is advisable."

### **Reports Concluding That Cell Phones Are Safe Are Premature**

A recent widely publicized piece in the journal BioElectromagnetics concluded that because the U.S. and U.K. do not currently have a brain tumor epidemic (from 1998-2007) and cell phones have been in use for a decade, therefore cell phones are safe and there is no need for precaution.

Regarding this study, Allan Frey, a well-known expert in the field of bioelectromagnetics, noted the fallacy of the argument:

*It is well established in the scientific literature that generally a cancer is not seen until 10 to 30 years after the exposure to an agent. In addition, the radio frequency-biological literature shows that cancer is not seen until at least 10 years after the exposure, which is consistent with the rest of the scientific literature.*

In criticizing this study, Frey points out,

The authors analyzed data on brain tumors gathered before most of their study population owned a cell phone. Also, most of their population did not have a cell phone for more than five years. Thus, the authors knew or should have known, that if cell phones induced or promoted brain cancer, that their study would not have shown it. Yet they did the study and concluded in their paper that their study showed that there was no need for ... interventions to reduce radio frequency exposure from mobile phones' that are used today. To conclude that cell phones are safe, misreads the science and misleads the people.

*President and Founder, Environmental Health Trust, lecturer, San Francisco, London*

[http://www.huffingtonpost.com/devra-davis-phd/cell-phone-radiation- b\\_828330.html](http://www.huffingtonpost.com/devra-davis-phd/cell-phone-radiation- b_828330.html)



## **FDA clears first Melanoma Drug to Prolong Survival**

*Deadliest form of skin cancer is often unresponsive to treatment*

**By MATTHEW PERRONE**

March 25, 2011

WASHINGTON— The Food and Drug Administration has approved a breakthrough cancer medication from Bristol-Myers Squibb Co. that researchers have heralded as the first drug to prolong the lives of patients with melanoma.

The federal health agency approved the injectable drug, called Yervoy, for late-stage or metastatic melanoma. The agency has only approved two other drugs for advanced melanoma, the last of which was cleared more than 13 years ago. Neither drug has been shown to significantly extend patient lives.

Known chemically as ipilimumab, the biotech drug only worked in a small segment of patients studied, and on average they lived just four months longer than patients given older medications. But experts say the drug is an important milestone in treating the deadliest form of skin cancer, which is often unresponsive to therapy.

"Clearly this is not a home run, but it's a solid base hit," said Tim Turnham, director of the Melanoma Research Foundation. "And because we see other things in the pipeline, we think this the first in a series of important new therapies for melanoma." *Continued on page 51*

***Continued from page 50 – FDA clears first Melanoma Drug to Prolong Survival***

Ipilimumab is part of a group of targeted cancer medicines that harness the body's immune system to fight off cancer, rather than attacking the disease with outside chemicals like chemotherapy. The drug works by blocking a molecule linked to melanoma called CTLA-4, which interferes with the protective activity of white blood cells. When the molecule is blocked, the cells behave normally and help fight off cancer.

Yervoy carries several side effects related to its effect on the immune system, including: diarrhea, swelling of the colon, rash and fatigue.

Mike Brockey of Frederick, Md., was diagnosed with late-stage melanoma in 2008 and tried both conventional and alternative medicines before starting therapy with ipilimumab last September. He received four infusions of the drug every three weeks through November. Though the drug took time to work, he says his latest scans show that his tumors are inactive.

"This is the first time in two years I had a sense that anything was going in the right direction," Brockey said.

Melanoma is the fastest growing form of cancer in terms of new diagnoses. Researchers attribute the acceleration to longer life expectancies among the elderly and increased use of indoor tanning by the young.

About 68,000 people in the U.S. were diagnosed last year and 8,700 patients died, according to the American Cancer Society.

FDA approved the drug based on a Bristol Myers study of 676 people with advanced, inoperable melanoma who had already failed two other treatments, giving them a very short life expectancy. They were given one of three treatments: ipilimumab by itself, ipilimumab combined with another immune-stimulating treatment, or the immune-stimulating treatment alone.

Average survival was 10 months with ipilimumab versus just more than six months for the others. But a very small group of patients survived longer than six years, suggesting that with more study the drug could be targeted to those who will respond the most.

About 85 percent of patients had little response to the drug. Researchers say the response rate should improve as the drug is used earlier in the disease cycle.

"I think the direction this is headed is toward intervening earlier, when patients' immune systems are still intact, rather than waiting until they are so sick," said Dr. Anna Pavlick, director of the New York University's melanoma program. Pavlick, a spokeswoman for the

Skin Cancer Foundation, helped conduct several early-stage trials of ipilimumab.

On Monday Bristol-Myers reported that ipilimumab also improved survival times when used as a first-line treatment against advanced skin cancer in patients who hadn't taken any other treatments. These patients are generally less sick than those first studied by the company and could see even longer survival times. Bristol said it would release those findings at the annual meeting of the American Society of Clinical Oncology in June.

Bristol said it would disclose pricing details of the drug later.

<http://www.msnbc.msn.com/id/42270739/ns/health-cancer/>



## **Amid Japan Crisis, Hunt for better Radiation Care**

*Rapid finger-prick tests are being developed that may tell who needs care most*

**By LAURAN NEERGAARD**

March 28, 2011

WASHINGTON — Japan's nuclear emergency highlights a big medical gap: Few treatments exist to help people exposed to large amounts of radiation.

But some possibilities are in the pipeline — development of drugs to treat radiation poisoning, and the first rapid tests to tell who in a panicked crowd would really need them.

The U.S. calls these potential products "counter-measures," and they are part of the nation's preparations against a terrorist attack, such as a dirty bomb. But if they work, they could be useful in any kind of radiation emergency.

"Thinking of terrorist events is what drives us. Mother Nature can be much of a terror, too," says Dr. Robin Robinson, who heads the U.S. Biomedical Advanced Research and Development Authority, or BARDA, that funds late-stage research of products the government deems most likely to pan out.

BARDA has invested \$164 million for research into anti-radiation treatment candidates since 2008, and \$44 million for radiation testing — in hopes of adding such products to the nation's emergency medical stockpile soon. That's in addition to research dollars from the National Institutes of Health and the Defense Department.

*Continued on page 52*

Japan's crisis — where last week two nuclear plant workers were hospitalized for radiation burns — is sure to renew attention to a field that has long been overshadowed by the hunt for protections against bioterrorism, not radiological emergencies. Among the radiation projects considered farthest along in development:

Rapid tests that could spot dangerous radiation doses with mere finger-pricks of blood. Already, a prototype machine sits at New York's Columbia University that could check thousands of people.

Some drugs now used to help cancer patients boost their infection-fighting blood cells, sold under such names as Neupogen. They may do the same thing for radiation victims.

An injection that saved monkeys from highly lethal beams. It seems to protect the body's two most radiation-sensitive spots, the bone marrow and lining of the gut.

Today, there are only a few proven therapies for radiation injuries. Good supportive care — lots of fluids, infusions of blood-clotting platelets, and infection-fighting antibiotics — is key for acute radiation syndrome, an overall poisoning that can begin causing symptoms days to weeks after a super-high exposure. To guard against longer-term harm, doses of potassium iodide can protect against future thyroid cancer by shielding the thyroid from one type of fallout, radioactive iodine. A few other treatments can help the body eliminate radioactive cesium and a few other isotopes.

Part of the challenge is radiation's variety of injuries — burns, bone marrow and gastrointestinal damage, lung scarring, the later-in-life cancer risk. Yet outside of an immediate blast zone where open wounds and burns make injury clear, there's no fast way to tell who got a huge dose.

Those Geiger counter-style monitors used on power-plant workers in Japan? They detect contamination on clothing or skin that might not enter the body, not what the body has absorbed, says medical physicist David Brenner, director of Columbia's Center for Radiological Research.

'If you get it wrong ... you might do more harm'

Moreover, previous emergencies have shown that sheer stress can cause nausea and diarrhea that mimic some early symptoms of radiation sickness in people who weren't exposed, he adds.

"Before you can start to treat people, you need to know what radiation doses they got," Brenner says. "If you take a guess and get it wrong, you might do more harm than good."

So his team developed a way to detect early, DNA-based signs of radiation damage that estimated dose — using a drop of blood like diabetics use to test their blood sugar.

Brenner's team built a robotic machine named RABiT — for "rapid automated biodosimetry tool" — that can analyze those bloodspots quickly. The eventual goal is to be able to test 30,000 blood samples in a day. Brenner is working with Northrop Grumman to make the machinery smaller, even portable.

Brenner says federal approval is still a few years away but that the prototype could be used in an emergency if health officials shipped blood samples to his lab.

#### **What about treatments?**

Cells in the bone marrow and GI tract are extremely vulnerable to radiation. They overreact to what should be reparable damage and commit cellular suicide, says Dr. Andrei Gudkov of the Roswell Park Cancer Institute.

Gudkov's team created a drug based on a protein from normal gut bacteria, named flagellin, that blocks some of the cellular destruction and also stimulates recovery of remaining cells. It dramatically improved the survival of monkeys treated up to 48 hours after they were zapped. And safety testing in 150 healthy people so far suggests the main side effect is a flulike reaction, Gudkov says. Cleveland BioLabs Inc. is doing further work needed for Food and Drug Administration evaluation.

BARDA's Robinson says that closest to the emergency stockpile may be those cancer drugs that spur growth of infection-fighting blood cells. Later this year, his agency will begin a push for research to prove they could work similarly in a radiation emergency.

"There isn't going to be a simple solution to any of this," cautions Dr. Nelson Chao of Duke University's countermeasures program, who also co-chairs the Radiation Injury Treatment Network. "There will be a lot of little steps to address the plethora of toxicities that come from radiation."

[http://www.msnbc.msn.com/id/42309222/ns/health-health\\_care/](http://www.msnbc.msn.com/id/42309222/ns/health-health_care/)



**We Can Make You Healthy and Wise**

### FEATURED ARTICLES

## YOU NEED VITAMIN D, YOU NEED SUN

**Mama Mawusi Ashahakir**

*Guardian Director of the Body Temple Institute of Wholistic and Herbal Studies*

April 2011



#### What is vitamin D and what does it do?

Vitamin D is a nutrient found in some foods that is needed for health and to maintain strong bones. It does so by helping the body absorb calcium (one of bone's main building blocks) from food and supplements. People who get too little vitamin D may develop soft, thin, and brittle bones, a condition known as rickets in children and osteomalacia in adults.

Vitamin D is important to the body in many other ways as well. Muscles need it to move, for example, nerves need it to carry messages between the brain and every body part, and the immune system needs vitamin D to fight off invading bacteria and viruses. Together with calcium, vitamin D also helps protect older adults from osteoporosis. Vitamin D is found in cells throughout the body. Vitamin D is also pivotal in fighting heart disease, congestive heart failure, depression and some forms of cancer.

#### Where do I get vitamin D from?

Believe it or not, you can get vitamin D from sunshine! The sun's rays cause a chemical change to happen in your skin. This helps change the form of vitamin D in your skin to a type of vitamin D that your body can use. When you are outside in the sun for about 10-15 minutes per day or sitting in the sunlight of an open window, you are able to get enough vitamin D.

The light and heat from the sun are indispensable to all nature. We are children kissed by the SUN also dependent on nature and need sunlight for health, well being, and for vitality. Sunlight has been used to heal wounds, injuries, broken bones and bruises -but don't let anybody tell you different- sunlight actually does prevent cancer in black people. When you expose most of your body to sunlight for 30 minutes, your body produces about 20,000 IUs of vitamin D -- as much as exists in 200 glasses of milk, or the equivalent of about 50 typical multivitamins!

Below is a table of some healthy foods that contain vitamin D:

Food	Serving	Intl Units Vitamin D
Fortified Soy Milk	1 cup	114
Fortified Orange Juice	1 cup	142
Salmon (cooked)	3.5 ounces	360
Tuna (canned)	3 ounces	200
Vitamin D vitamins	1 capsule	600
Egg (whole)	1 large egg	44
Granola with raisins	2/3 cup	40

Your body needs at least 800 to 1000 IUs per day. Add up your consumption from foods, vitamins and going out into the sun.

**So stand in the SUN to recharge your solar melanin panels TODAY!**

*Mama Mawusi Ashshakir, Master Herbalist, is a featured writer on the ATC Newsletters.*

<http://thebodytemple.ning.com/> is her website.



Humans are considered equal to all other entities. But the abstract new laws are not expected to stop industry in its tracks. While it is not clear yet what actual protection the new rights will give in court to bugs, insects and ecosystems, the government is expected to establish a ministry of mother earth and to appoint an ombudsman. It is also committed to giving communities new legal powers to monitor and control polluting industries.

Bolivia has long suffered from serious environmental problems from the mining of tin, silver, gold and other raw materials. "Existing laws are not strong enough," said Undarico Pinto, leader of the 3.5m-strong Confederación Sindical Única de Trabajadores Campesinos de Bolivia, the biggest social movement, who helped draft the law. "It will make industry more transparent. It will allow people to regulate industry at national, regional and local levels."

Foreign Minister David Choquehuanca said Bolivia's traditional indigenous respect for the Pachamama was vital to prevent climate change. "Our grandparents taught us that we belong to a big family of plants and animals. We believe that everything in the planet forms part of a big family. We indigenous people can contribute to solving the energy, climate, food and financial crises with our values," he said.

Little opposition is expected to the law being passed because President Evo Morales's ruling party, the Movement Towards Socialism, enjoys a comfortable majority in both houses of parliament.

However, the government must tread a fine line between increased regulation of companies and giving way to the powerful social movements who have pressed for the law. Bolivia earns \$500m (£305m) a year from mining companies which provides nearly one third of the country's foreign currency.

In the indigenous philosophy, the Pachamama is a living being.

The draft of the new law states: "She is sacred, fertile and the source of life that feeds and cares for all living beings in her womb. She is in permanent balance, harmony and communication with the cosmos. She is comprised of all ecosystems and living beings, and their self-organisation."

Ecuador, which also has powerful indigenous groups, has changed its constitution to give nature "the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution".

However, the abstract rights have not led to new laws or stopped oil companies from destroying some of the most biologically rich areas of the Amazon.

### **Coping with climate change**

Bolivia is struggling to cope with rising temperatures, melting glaciers and more extreme weather events including more frequent floods, droughts, frosts and mudslides.

Research by glaciologist Edson Ramirez of San Andres University in the capital city, La Paz, suggests temperatures have been rising steadily for 60 years and started to accelerate in 1979. They are now on course to rise a further 3.5-4C over the next 100 years. This would turn much of Bolivia into a desert.

Most glaciers below 5,000m are expected to disappear completely within 20 years, leaving Bolivia with a much smaller ice cap. Scientists say this will lead to a crisis in farming and water shortages in cities such as La Paz and El Alto.

Evo Morales, Latin America's first indigenous president, has become an outspoken critic in the UN of industrialised countries which are not prepared to hold temperatures to a 1C rise.

<http://www.guardian.co.uk/environment/2011/apr/10/bolivia-enshrines-natural-worlds-rights>



## **How to Remove Radioactive Iodine-131 From Drinking Water**

April 7, 2011

The Environmental Protection Agency recommends reverse osmosis water treatment to remove radioactive isotopes that emit beta-particle radiation. But iodine-131, a beta emitter, is typically present in water as a dissolved gas, and reverse osmosis is known to be ineffective at capturing gases.

A combination of technologies, however, may remove most or all of the iodine-131 that finds its way into tap water, all available in consumer products for home water treatment.

First, the standard disclaimers: Every government agency involved in radiation monitoring—the EPA, FDA, USDA, NRC, CDC, etc.—has stressed that the radiation now reaching the United States has been found at levels thousands of times lower than standards.

*Continued on page 55*

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***Continued from page 54 – How to Remove Radioactive Iodine-131 from Drinking Water***

**via Physicians for Social Responsibility, psr.org**

No matter where you stand on that debate, you might be someone who simply prefers not to ingest anything that escaped from a damaged nuclear reactor. If so, here's what we know:

**Reverse Osmosis**

The EPA recommends reverse osmosis water treatment for most kinds of radioactive particles. Iodine-131 emits a small amount of gamma radiation but much larger amounts of beta radiation, and so is considered a beta emitter:

Reverse osmosis has been identified by EPA as a “best available technology” (BAT) and Small System Compliance Technology (SSCT) for uranium, radium, gross alpha, and beta particles and photon emitters. It can remove up to 99 percent of these radionuclides, as well as many other contaminants (e.g., arsenic, nitrate, and microbial contaminants). Reverse osmosis units can be automated and compact making them appropriate for small systems.

**via EPA, Radionuclides in Drinking Water**

However, EPA designed its recommendations for the contaminants typically found in municipal water systems, so it doesn't specify Iodine-131 by name. The same document goes on to say, “Reverse osmosis does not remove gaseous contaminants such as carbon dioxide and radon.”

Iodine-131 escapes from damaged nuclear plants as a gas, and this is why it disperses so quickly through the atmosphere. It is captured as a gas in atmospheric water, falls to the earth in rain and enters the water supply.

This is what happened in Boise, Idaho, where iodine-131 was found in rainwater samples last week and then in drinking water samples a few days later.

Reverse osmosis works by forcing water through material with very tiny pores—as tiny as .0001 microns—so that almost nothing except water emerges on the other side. Almost nothing.

“Dissolved gases and materials that readily turn into gases also can easily pass through most reverse osmosis membranes,” according to the University of Nevada Cooperative Extension. For this reason, “many reverse osmosis units have an activated carbon unit to remove or reduce the concentration of most organic compounds.”

**Activated Carbon**

That raises the next question: does activated carbon remove iodine-131? There is some evidence that it does.

Scientists have used activated carbon to remove iodine-131 from the liquid fuel for nuclear solution reactors. And Carbon air filtration is used by employees of Perkin Elmer, a leading environmental monitoring and health safety firm, when they work with iodine-131 in closed quarters. At least one university has adopted Perkin Elmer's procedures.

Activated carbon works by absorbing contaminants, and fixing them, as water passes through it. It has a disadvantage, however: it eventually reaches a load capacity and ceases to absorb new contaminants.

**Ion Exchange**

The EPA also recommends ion exchange for removing radioactive compounds from drinking water. The process used in water softeners, ion exchange removes contaminants when water passes through resins that contain sodium ions. The sodium ions readily exchange with contaminants.

Ion exchange is particularly recommended for removing Cesium-137, which has been found in rain samples in the U.S., but not yet in drinking water here. Some resins have been specifically designed for capturing Cesium-137, and ion exchange was used to clean up legacy nuclear waste from an old reactor at the Department of Energy's Savannah River Site (pdf).

**Triple Threat**

The best solution may be the one used routinely to treat water at the Savannah River Site. The process combines activated carbon, reverse osmosis, and ion exchange. If one doesn't get the iodine-131, two others have a chance to capture the radiation through other means. And that may be the best solution for the average drinker of tap water as well.

Once you have access to cleaned water, be sure to use it to wash your vegetables. The FDA has not yet begun monitoring U.S. produce for radiation because, the agency says, there is not yet a radiation threat here. The Chinese have been monitoring vegetables, and they've urged their citizens to wash their spinach:

<http://blogs.forbes.com/jeffmcmahon/2011/04/07/how-to-remove-radioactive-iodine-131-from-drinking-water/>



## **Detoxify, Detoxify and then Detoxify some More**

*That's the name of the game for most of us.*

Many of us need to detoxify anyway. Radiation is probably the best reason. I am a victim of radiation,

*Continued on page 56*

*Continued from page 55 – Detoxify, Detoxify and then Detoxify some more*

chemical and heavy-metal toxicity. I have fibromyalgia but I consider myself very lucky. I should have cancer, mental, neurological and emotional problems and every thing you can think of physically wrong with me. In my family you will find all of the chronic diseases with some of the designer diseases thrown in for good measure.

But I am here writing to you in full consciousness of whom I am and what I am. I had to made some real life choices on how I wanted my life to continue and it was not going to be sitting and spending the rest of my life in a wheelchair. So it meant taking control of myself and my health. It became easier to say no to detrimental things because I know the end result.

I eat right. Plenty of fruit and vegetables and you guessed it, herbs. Lots and lots of herbs. Different kinds, for different functions, and for different systems. Being in Africa it easy to get fresh food without chemical additives such as pesticides, herbicides, or GM.

It helps that I have melanin. Let's say it could very well be the deciding factor. Almost forgot, my husband is a Jamaican herbalist. Believe me it counts for something. One of the reasons why many of our families survived slavery in the West was because of the skills of our African ancestors.

The one thing that has been consistent for the 10 years or more is detoxification. In fact my body now tells me when its time. I listen. I take as many herbs and as often as my body feels it needs to. O yes, I still have my up and down days, but I am still here, for whatever that is worth to me and to you. To me it's worth a great deal.

We are family. Why wouldn't I want the same things for family as I want for myself? Am I being presumptuous in thinking we have some of the same problems?

Many of you facing diabetes, cancer, HIV/AIDS, chemicals, chronic diseases, parasitic and infectious diseases, radiation and now more radiation, don't you think its time we did something for ourselves; to conserve and preserve ourselves. The future really looks bad. We either get prepared to live or get prepared to die. The choice is ours. Only ours.

**Nakato Lewis**  
**Blackherbals**



**COME BACK TO YOUR ROOTS**

## Pachamama

Pachamama is a goddess revered by the indigenous people of the Andes. Pachamama is usually translated as Mother Earth, but a more literal translation would be "Mother world" (in Aymara and Quechua mama = mother / pacha = world or land; and later widened in a modern meaning as the cosmos or the universe). Pachamama and Inti are the most benevolent deities; they are worshiped in parts of the Andean mountain ranges, also known as Tawantinsuyu (the former Inca Empire) (stretching from present day Ecuador to Chile and northern Argentina being present day Peru the center of the empire with its capital city in Cuzco).

In Inca mythology, Mama Pacha or Pachamama is a fertility goddess who presides over planting and harvesting. She causes earthquakes. Her husband was either Pacha Camac or Inti, depending on the source. Llamas are sacrificed to her. After the conquest by Spain, which forced conversion to Roman Catholicism, the figure of the Virgin Mary became united with that of the Pachamama for many of the indigenous people.

Roman Catholicism is a syncretic religion, and the people worship Pachamama through it, in an indigenous ritual in some parts of Argentina, Chile, Bolivia and Peru (Merlino y Rabey 1992). Since Pachamama is a "good mother", people usually toast to her honor before every meeting or festivity, in some regions by spilling a small amount of chicha on the floor, before drinking the rest. This toast is called challa and it is made almost everyday. Pachamama has a special worship day called Martes de challa (Challa's Tuesday), when people bury food, throw candies, and burn incense. In some cases, celebrants assist traditional priests, known as yatiris in Aymara, in performing ancient rites to bring good luck or the good will of the goddess, such as sacrificing guinea pigs or burning llama fetuses (although this is no longer common). The festival coincides with Shrove Tuesday, also celebrated as Carnevale or Mardi Gras.

<http://en.wikipedia.org/wiki/Pachamama>



*Continued from page 60 – Wild Basil*

In animal studies, a water extract of holy basil protected mice against radiation damage to the liver and chromosome damage to the cells. It prevented this damage by reducing hepatic lipid peroxidation and increasing the presence of two powerful cellular antioxidants: superoxide dimutase and superoxide catalase. <http://www.holy-basil.com/6865.html>



# Oklo: Natural Nuclear Reactors

Creating a nuclear reaction is not simple. In power plants, it involves splitting uranium atoms, and that process releases energy as heat and neutrons that go on to cause other atoms to split. This splitting process is called nuclear fission. In a power plant, sustaining the process of splitting atoms requires the involvement of many scientists and technicians.

It came as a great surprise to most, therefore, when, in 1972, French physicist Francis Perrin declared that nature had beaten humans to the punch by creating the world's first nuclear reactors. Indeed, he argued, nature had a two-billion-year head start.<sup>1</sup> Fifteen natural fission reactors have been found in three different ore deposits at the Oklo mine in Gabon, West Africa. These are collectively known as the Oklo Fossil Reactors.<sup>2</sup>

And when these deep underground natural nuclear chain reactions were over, nature showed that it could effectively contain the radioactive wastes created by the reactions.

No nuclear chain reactions will ever happen in a repository for high-level nuclear wastes. But if a repository were to be built at Yucca Mountain, scientists would count on the geology of the area to contain radionuclides generated by these wastes with similar effectiveness.

## Nature's reactors

In the early 1970s, French scientists noticed something odd about samples of uranium recovered from the Oklo mine in Gabon, West Africa. All atoms of a specific chemical element have the same chemical properties, but may differ in weight; these different weights of an element are known as isotopes. Some uranium samples from Gabon had an abnormally low amount of the isotope U-235, which can sustain a chain reaction. This isotope is rare in nature, but in some places, the uranium found at Oklo contained only half the amount of the isotope that should have been there.<sup>3</sup>

Scientists from other countries were skeptical when first hearing of these natural nuclear reactors. Some argued that the missing amounts of U-235 had been displaced over time, not split in nuclear fission reactions. "How," they asked, "could fission reactions happen in nature, when such a high degree of engineering, physics, and acute, detailed attention went into building a nuclear reactor?"

Perrin and the other French scientists concluded that the

only other uranium samples with similar levels of the isotopes found at Oklo could be found in the used nuclear fuel produced by modern reactors. They found that the percentages of many isotopes at Oklo strongly resembled those in the spent fuel generated by nuclear power plants, and, therefore, reasoned that a similar natural process had occurred.<sup>4</sup>

## Uranium isotopes decay at different levels

The uranium in the Earth contains dominantly two uranium isotopes, U-238 and U-235, but also a very small percentage of U-234, and perhaps small, undetectable amounts of others. All of these isotopes undergo radioactive decay, but they do so at different rates. In particular, U-235 decays about six-and-a-third times faster than U-238. Thus, over time the proportion of U-235 to U-238 decreases. But this change is slow because of the small rates of decay.

Generally, uranium isotope ratios are the same in all uranium ores contained in nature, whether found in meteorites or in moon rocks. Therefore, scientists believe that the original proportions of these isotopes were the same throughout the solar system. At present, U-238 comprises about 99.3 percent of the total, and U-235 comprises about 0.7 percent.<sup>5</sup> Any change in this ratio indicates some process other than simple radioactive decay.

Calculating back to 1.7 billion years ago the age of the deposits in Gabon scientists realized that the U-235 there comprised about three percent of the total uranium. This is high enough to permit nuclear fissions to occur, providing other conditions are right.<sup>6</sup>

## So how did nuclear reactions occur in nature?

Deep under African soil, about 1.7 billion years ago, natural conditions prompted underground nuclear reactions. Scientists from around the world, including American scientists have studied the rocks at Oklo. These scientists believe that water filtering down through crevices in the rock played a key role. Without water, it would have been nearly impossible for natural reactors to sustain chain reactions.

The water slowed the subatomic particles or neutrons that were cast out from the uranium so that they could hit-and split-other atoms. Without the water, the neutrons would move so fast that they would just bounce off, like skipping a rock across the water, and not produce nuclear chain reactions. When the heat from the reactions became too great, the water turned to steam and stopped slowing the neutrons. The reactions then slowed until the water cooled. Then the process could begin again.<sup>7</sup>

*Continued on page 58*

**Continued from page 55 – Oklo: Natural Nuclear Reactors**

Scientists think these natural reactors could have functioned intermittently for a million years or more. Natural chain reactions stopped when the uranium isotopes became too sparse to keep the reactions going.

**What happened to the nuclear waste left at Oklo?**

Once the natural reactors burned themselves out, the highly radioactive waste they generated was held in place deep under Oklo by the granite, sandstone, and clays surrounding the reactors' areas. Plutonium has moved less than 10 feet from where it was formed almost two billion years ago.<sup>8</sup>

Today, manmade reactors also create radioactive elements and by-products. Scientists involved in the disposal of nuclear waste are very interested in Oklo because long-lived wastes created there remain close to their place of origin. The Oklo phenomenon gives scientists an opportunity to examine the results of a nearly natural two billion-year experiment, one that cannot be duplicated in the lab. By analyzing the remnants of these ancient nuclear reactors and understanding how underground rock formations contained the waste, scientists studying Oklo can apply their findings to containing nuclear waste today.

The rock types and other aspects of the geology at Oklo differ from those at Yucca Mountain. But this information is useful in the design of a repository at Yucca Mountain. Were the Oklo reactors a unique event in natural history? Probably not. Scientists have found uranium ore deposits in other geological formations of approximately the same age, not only in Africa but also in other parts of the world, particularly in Canada and northern Australia. But to date, no other natural nuclear reactors have been identified.

Scientists believe that similar spontaneous nuclear reactions could not happen today because too high a proportion of the U-235 has decayed. But nearly two billion years ago, nature not only appears to have created her first nuclear reactors, she also found a way to successfully contain the waste they produced deep underground.

The radioactive remains of natural nuclear fission chain reactions that happened 1.7 billion years ago in Gabon, West Africa, never moved far beyond their place of origin. They remain contained in the sedimentary rocks that kept them from being dissolved or spread by groundwater. Scientists have studied Yucca Mountain to see if the geology there might play a similar role in containing high-level nuclear waste.

Source : US/DOE/2004

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\*1 Cowan, G. A. 1976. "A Natural Fission Reactor," *Scientific American*, 235:36.

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3 "A Prehistoric Nuclear Reactor," *Chemistry*, January 1973:24.

4 Smellie, 21.

5 Cowan, 41.

6 Smellie, 21.

7 Cowan, 39.

8 Cowan, 39.

\*Note: In 1956 while at the University of Arkansas, Dr. Paul Kuroda described the conditions under which a natural nuclear reactor could occur. When the Oklo reactors were discovered in 1972, the conditions found there were very similar to his predictions. Dr. Kuroda used to live in Las Vegas, Nevada where he has been a scientific resource for the United States Department of Energy.

[http://www.ecolo.org/documents/documents\\_in\\_english/oklo-reactor.html](http://www.ecolo.org/documents/documents_in_english/oklo-reactor.html)



## **French Research Body Warns Pregnant Women and Infants To Stay Away From 'Risky Behavior'**

**By Alex Thomas**

April 11, 2011

A month into one of the largest nuclear disasters in history, officials in both the Japanese and America government have continually downplayed the risks while independent groups have screamed bloody murder over the dangers of high and low level radiation. Radiation has been found in milk, rainwater, and tap water throughout the United States as well as in certain areas of Europe. "New EPA milk samples in Hawaii show radiation in milk at 800% above limits for C-134, 633% above limits for C-137 and 600% above EPA federal drinking water limits." These tests are quietly being released while the corporate media continues to claim that radiation dangers are minimal and precautions are not needed.

<http://theintelhub.com/2011/04/11/french-research-body-on-radioactivity-says-risks-no-longer-negligible-warns-pregant-women-and-infants-to-stay-away-from-risky-behavior/>



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# **BLACK SHOGUN: AN ASSESSMENT OF THE AFRICAN PRESENCE IN EARLY JAPAN - Excerpts**

**By RUNOKO RASHIDI**

**DEDICATED TO WAYNE B. CHANDLER**

*"For a Samurai to be brave, he must have a bit of Black blood." --Japanese Proverb*

In 1994 I was invited to Japan to lecture at two United States military bases. It was to be my initial trip to east Asia and my second travel experience in Asia overall. Japan turned out to be an exceptionally important trip for me and the lectures themselves went very well. I gained a great deal of information and for the first time I had the opportunity to interact with the Ainu--some of Japan's most ancient residents. Now I have always thought of Japan as a fascinating country and felt extremely fortunate to be able to travel there. But I felt like I knew quite a bit about the Black presence in early Japan even before I first touched down on Japanese soil.

## **THE BLACK PRESENCE IN EARLY JAPAN**

Although the island nation of Japan, occupying the extreme eastern extensions of Asia, is assumed by many to have been historically composed of an essentially homogeneous population and culture, the accumulated evidence (much of which has been quietly ignored) places the matter in a vastly different light, and though far more study needs to be done on the subject, it seems indisputable that Black people in Japan played an important role from the most remote phases of antiquity into at least the ninth century.

Meaningful indications of an African presence in ancient Japan have been unearthed from the most remote ages of the Japanese past. To begin with, and as a significant example, a February 15, 1986 report carried by the Associated Press, chronicled that:

"The oldest Stone Age hut in Japan has been unearthed near Osaka....Archeologists date the hut to about 22,000 years ago and say it resembles the dugouts of African bushmen, according to Wazuo Hirose of Osaka Prefectural of Education's cultural division. 'Other homes, almost as old, have been found before, but this discovery is significant because the shape is cleaner, better preserved' and is similar to the Africans' dugouts."

In 1923, anthropologist Roland B. Dixon wrote that "this earliest population of Japan were in the main a blend of Proto-Australoid and Proto-Negroid types, and thus similar in the ancient underlying stratum of the popul-

ation, southward along the whole coast and throughout Indo-China, and beyond to India itself." Dixon pointed out that, "In Japan, the ancient Negrito element may still be discerned by characteristics which are at the same time exterior and osteologic."

In his last major text, *Civilization or Barbarism: An Authentic Anthropology* (published posthumously in English in 1991), the brilliant Dr. Cheikh Anta Diop (1923-1986) pointed out that: "In the first edition of the *Nations negres et culture* (1954), I posited the hypothesis that the Yellow race must be the result of an interbreeding of Black and White in a cold climate, perhaps around the end of the Upper Paleolithic period. This idea is widely shared today by Japanese scholars and researchers. One Japanese scientist, Nobuo Takano, M.D., chief of dermatology at the Hammatsu Red Cross Hospital, has just developed this idea in Japanese that appeared in 1977, of which he was kind enough to give me a copy in 1979, when, passing through Dakar, he visited my laboratory with a group of Japanese scientists.

Takano maintains, in substance, that the first human being was Black; then Blacks gave birth to Whites, and the interbreeding of these two gave rise to the Yellow race; these three stages are in fact the title of his book in Japanese, as he explained it to me."

As to linguistics, in 1987 former Senegalese president Leopold Sedar Senghor noted that, "The people who populate the island of Japan today are descendants from Blacks....Let us not forget that the first population of Japan was Black...and gave to Japan their first language."

In 1940 the great Joel Augustus Rogers (1883-1966), devoted several pages of the first volume of his *Sex and Race to the Black presence in early Japan*. He cites the studies of a number of accomplished scholars and anthropologists. In the words of Rogers:

"There is a very evident Negro strain in a certain element of the Japanese population, particularly those in the south. Imbert says, "The Negro element in Japan is recognizable by the Negroid aspect of certain inhabitants with dark and often blackish skin, frizzly or curly hair....The Negritos are the oldest race of the Far East. It has been proved that they once lived in Eastern and Southern China as well as in Japan where the Negrito element is recognizable still in the population."

*Source: African Presence in Early Asia, edited by Runoko Rashidi and Ivan Van Sertima*

<http://www.cwo.com/~lucumi/shogun.html>



## Mission Statement

Our aim at **The African Traditional Herbal Research Clinic** is to propagate and promote the awareness in Afrikan peoples at home and abroad of their health, biodiversity, history and cultural richness. We gather pertinent information on these issues and disseminate these freely to our people in Uganda, the rest of the continent, and anywhere in the Diaspora where Afrikans are located.... One of the main ingredients for increasing poverty, sickness, exploitation and domination is ignorance of one's self, and the environment in which we live. Knowledge is power and the forces that control our lives don't want to lose control, so they won't stop at anything to keep certain knowledge from the people. Therefore, we are expecting a fight and opposition to our mission. However, we will endeavor to carry forward this work in *grace and perfect ways*.

***“Where there is no God, there is no culture. Where there is no culture, there is no indigenous knowledge. Where there is no indigenous knowledge, there is no history. Where there is no history, there is no science or technology. The existing nature is made by our past. Let us protect and conserve our indigenous knowledge.”***



## CALENDAR OF EVENTS

### SPECIAL EVENT: CLINIC OPENING

PLACE: AFRIKAN TRADITIONAL HERBAL RESEARCH CLINIC

TIME:

**Afrikan Traditional Herbal Research Clinic**  
**54 Muwafu Road, P.O. Box 29974**  
**Ntinda, Kampala, Uganda East Africa**  
**Phone: +256 (0) 702 414 530**  
**Email: clinic@blackherbals.com**

ADDRESS CORRECTION REQUESTED

## Herbs of the Month

### WILD (HOLY) BASIL

In Africa, Omujaaja has been traditionally used to treat disorders of the mouth and throat, lungs, heart, blood, liver, kidney and the digestive, metabolic, immune, reproductive and nervous systems. It has been frequently used to treat coughs, colds, flu, catarrh, head and earaches, rheumatism and arthritis, malaria fever, allergies and various skin diseases. Basil protects against and reduces stress; enhances stamina and endurance. It helps to increase the body's efficient use of oxygen; boosts the immune system, reduces inflammation; protects against radiation damage; stems rapid aging; supports the heart, lungs and liver; has antibiotic, antimicrobial, antiviral and antifungal properties and enhances the efficacy of many other therapeutic treatments.

It provides a rich supply of antioxidants and other nutrients. Recent research, in its utilisation for diabetes, has demonstrated its ability to lower blood sugar and to regulate thyroid functions. In addition, it has been found that basil is a premier adaptogen, helping the body and mind adapt and cope with a wide range of physical, emotional, chemical and infectious stresses and trauma. It helps to restore disturbed physiological and psychological functions to a normal healthy state.

There has been a significant amount of both animal studies and human clinical research on the benefits of holy basil. Today, we know this versatile plant is an adaptogen with antioxidant, neuroprotective, stress reducing, and radioprotective (protects against the damaging effects of ionizing radiation) effects.

*Continued on page 56*

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