

The South African Experience

by E.Blaurock-Busch PhD

The North West University Conference, Nov.29, 2010

I participated as a speaker at the North West University's (NWU) Conference in Johannesburg, South Africa, titled: FORUM ON TOXIC BODIES – TOXIC ENVIRONMENTS- SOME MULTIDISCIPLINARY PERSPECTIVES, and as always, I learned a lot.

Elize van Eeden, Professor at the Department of Humanities took the challenge to bring together speakers and specialists from various backgrounds and countries to address South Africa's environmental problems. As she pointed out in her welcoming speech, multidisciplinary research is needed to address South Africa's environmental crisis. Prof. van Eeden addressed the need to understand how "abused environments affect humans and the broader eco system."

The Key Note Speaker, Prof. Chris Busby of the University of Ulster, Northern Ireland, summarized the crisis with his presentation: NEW EVIDENCE ABOUT URANIUM EXPOSURE AND THE FAILURE OF THE CURRENT RISK MODEL. The Low Dose Radiation Risk theme became the focus of the conference. Through disturbing facts and figures of international scientific research Prof. Busby demonstrated the exquisite sensitivity of the human organism to ionized radiation. He drew attention to the effects of radiation to children's health by comparing the Chernobyl situation to the low dose effects of radiation exposure of the people in Kosovo, Iraq and South Africa. He focused on how radiation exposure due to warfare or mining affects human DNA.

Veterinarian and toxicologist Prof. Jan Myburgh of the University of Pretoria supported that point by providing disturbing evidence on how toxic metals, including uranium affect animals. Crippling diseases are increasingly affecting farming animals and wildlife, and animals born with birth defects are no longer rare.

A number of highly interesting speakers illuminated South Africa's environmental situation, but Marietta Liefferink, prominent SA activist and Director of the Federation for a Sustainable Environment, captured attention like few others. Photos depicted South Africa's most critical water situation, and provided unsettling information about radioactive contamination and acid mine drainage as a result of South Africa's mining situation.

Micro Trace Minerals Workshop Nov.30th, 2010

We had a mixed group of participants, pathologists, medical doctors, geologists and mining experts all of whom contributed and enriched the program, which focused on environmental toxins, diagnosis and treatment. Discussions proved valuable, and we all agreed that South Africa's eco-system needs help NOW! Dr. Denise Bjorkman suggested to develop a research protocol that would prove or disprove the metal link to criminal behavior. I since completed a first draft proposal. It was forwarded to Dr. Bjorkman who had also helped me to get in touch with the accrediting agency of the UNIVERSITEIT VAN DE VRYSTAAT (University of the Free State).

The Micro Trace Minerals workshop received 5 CEUs for accreditation, apparently a high amount. (Thank you, Dr. Bjorkman and thank you, Marina Fourie for providing us with academic approval.)

If you need laboratory information, check www.microtrace.de or contact us at service@microtrace.de

The Speaker's Excursion, Nov. 28, 2010



On the day before the University conference, Marietta took some of us on a sightseeing tour, and reality hit home. From a distance, we observed defunct mining areas with signs warning of 'Danger'; we were reminded not to enter through the broken fences, the open gates. We inhaled the stinky smell of acid mine drainage, picked metal-covered encrusted plants, all dead, and cautiously entered metal-varnished, crusty borders of acid rivers (pH of 2.5), all devoid of life. We quietly marveled that Robinson Lake, another lifeless pool rich in uranium, was surrounded by large houses. Unbelievably, companies make brick out of radioactive dirt and tailings discarded by mining companies, only to sell (radioactive) bricks to builders all over the country. While collecting samples from Robinson Lake, I sank into the radioactive sludge and lost my shoes. Another donation to science!

Wind blew fine dust from a large hill. At first glance, it appeared snow covered, but as Marietta said, 'it's covered with uranium dust and the green nets are supposed to hold back the dirt and dust.' They don't. The whole area appears snow dusted or covered with white sand, but there is neither snow nor sand, only white, radioactive dirt.

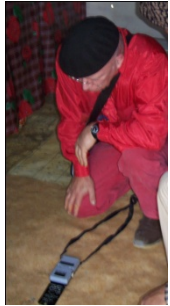
Across the street, a senior housing compound had been closed due to the radioactive pollution and just beneath, young people were riding motor cycles on metal-rich roads, inhaling uranium-rich nanoparticles, all the while pretending (or believing?) that they engaged in healthy fun.



We entered radioactive landfills with radioactive counts not unlike the now-deserted senior center, but on these ugly landfills, the poorest of the poor are allowed to build their 'homes'. Pregnant women and children live in 4 square meter sheds that sit on highly radioactive dirt floors, and proud men fence off meager crops of sad looking vegetables. Running water and sanitation is unheard of.



Acid water of radioactive rivers and ponds supplies animals and people with needed fluid, and nobody seems to care. Children smile and pose for photographs and a black woman proudly offered us to enter her tiny yet spotless hut, allowed us to step on the newly swept dirt



floor. Prof. Busby's Geiger counter measured 1100nSv/h inside the house. In areas outside, he measured twice that radioactivity. (As a comparison, background measurements in the hotel garden where the conference was held was 180nSv/h). Prof. Busby stated that "it should be illegal to let people stay here (on these landfills): this radiation is like the Chernobyl exclusion zone, higher in fact!"

It makes you shiver, in spite of the heat. It makes our European health care issues seem frivolous. Germans are upset because they now must pay €10 (about 89 SA Rands) per yearly quarter when visiting their doctor; people write editorials and engage in angry panel discussions on television and radio because prescription items or dental treatments are no longer fully covered, but they take it for granted that they have free access to medical treatment including hospitals and rehabilitative centers. And yes, whatever poor people Germany has (and there is no comparison to the poverty of South Africa), all have access to adequate living quarters, all have access to clean water. Germany's air and soil generally meet the standards as set by environmental protection agencies, the government does punish polluters with hefty fines. While in South Africa I could not locate information regarding a limit for mercury in water. Nobody seemed to know. Nobody had ever asked the question, or so it seemed.

Uranium limits exist for drinking water, but which, if any South African group monitors? Who gives clean water to people living on landfills? When one stands face to face with a South African pregnant woman living on uranium-rich, radioactive grounds, when one knows that toxic metals, particularly the radioactive ones are destructive to human development, Germans appear like a bunch of whining, spoiled children, myself included.

It is astonishing, but South Africans of whatever color appear numb to the situation, as if it were taboo to talk about the threat to South Africa's scenery, the increasingly polluted nature parks, the intoxicated animals. It is surprising that a country so dependent on tourism ignores that its seemingly undisturbed areas are greatly endangered. Already, the land and its animals suffer. Do rangers show tourists the blinded hippos, the disfigured horses, the bisexual fish who are victims of pollution? Do South Africa's wealthier people realize that toxic dust and toxic water do not stop in front of their door steps? Does government recognize that its country's immense resources not only bring wealth (to a few), but carry extreme danger?

The toxic effects are all around, but the majority of people seem blind. They appear to ignore that near-distinct animals and the vast beauty of its land are destroyed by toxic water ways which feed (and poison) animal, crop and people. It will not take long until the effects are in everybody's face. Problems are looming, and they will not only affect the poor black living on landfills, growing uranium-rich plants. Pollution will diminish the health of people

of all color, white included. Toxins do not differentiate between rich and poor. Intoxicated soils and waters feed all crops, all farm animal, and more or less all people.

I collected random soil and water samples, and the data below indicates the severity of the problem. In itself, this data is not a valid representation. It demonstrates, however, that independent and thorough research is needed.

SampleName	Date	Sample Source	Information	As	Pb	U	Y
2x108346	10.12.2010	soil - Tudor Shaft (housing)	radioactivity measured	1215	511	373	100
2x108347	10.12.2010	soil near uranium mine	radioactivity measured	814	242	1015	200
values mg/kg			safe limit	20-40	<400	2**	*

SampleName	Date	Sample Source	Information	As	Pb	U	Y
2Wa108345	10.12.2010	Robinson Lake, Jo'burg	water	3.6	0.38	3.38	1
			Safe limit	0.01	0.01	0.01	*

* No safe limit

**http://www.esrf.eu/news/timeout/AScheinost/to_ascheinost/

Note: Yttrium (Y) is a rare earth element, found in uranium ores.

Humans don't necessarily comprehend the laws of biochemistry, one of which dictates that the toxic effect of one metal is enhanced when one or more toxic metals are present.

All South Africans, no matter what color or background, must eat and drink. While the rich can import 'cleaner' food from elsewhere, toxic waste as already seen in the air, water and land cannot be escaped forever- unless one leaves the country.

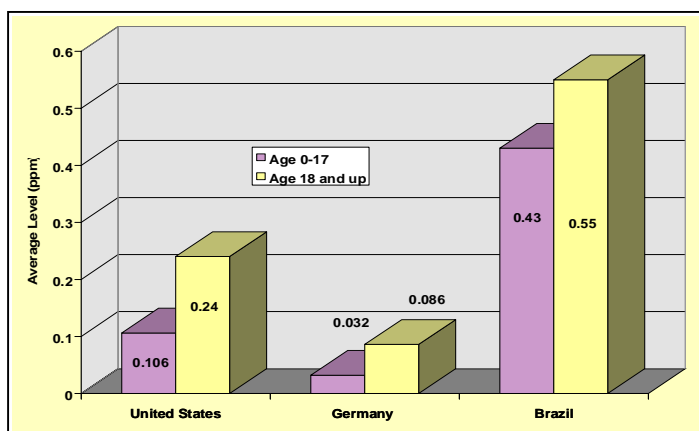
On another note: it would be interesting to test bottled water. The source will determine its safety, and drinking water standards for bottled water are less stringent than standards for tap water! Is there safe water in South Africa?

Toxic metals affect physical and mental health. The culprit is not JUST Uranium. Manganese and other metals are mined near Johannesburg. An excessive intake of manganese and/or iron creates an environment that supports bacterial and viral growth. Furthermore, manganese intoxication is a factor in the development of Parkinson and other dreadful (and costly) diseases, while iron and other potentially toxic metals are considered a cause of Alzheimer. Neurotoxic metals (lead, manganese, mercury etc) affect mental health and are a contributing factor to aberrant, even criminal behavior. Research has proven this.

There is no doubt in my mind that South Africa's increasing criminal rate is linked to its largely ignored pollution problem. Certainly, an intoxicated person does not have to become criminal, but an intoxicated person with criminal tendencies will have a lower threshold when encountering difficult situations; his or her ability to control emotion is reduced by neurotoxins.

In the 1990's, I statistically evaluated around 10000 hair samples from Brazilian, German and US people of various ages. I got involved, because my dear friend Prof. Helion Povóá, pathologist, suspected that Brazil's growing pollution was linked to the rise in juvenile violence. Our statistics clearly indicated a heavy metal burden in the Brazilian population, children included.

Tabelle 1: Mercury Content in Hair - A Comparison



Toxic environments create toxic bodies and toxic minds, a fact proven by international research. Available knowledge can be applied to the South African situation. Changes are possible.

I have provided a research proposal. It plans to compare the toxic metal load of South Africa's criminal juveniles and adults with a noncriminal peer group. The results could prove existing research, which linked metal intoxication to aberrant behavior. If the proposed research results would indicate otherwise, South Africa's government and the mining industry have an excuse to continue as is.

If the proposed research would demonstrate an unusual toxic load in the violent group, the problem can, and should be solved. As Walsh et al documented in 2004, a reduction in toxic load has a direct effect on aberrant behavior. (Walsh WJ, Glab LB, Haakenson ML. Reduced violent behavior following biochemical therapy. Physiology & Behavior 82 (2004) 835-839)

Metal detoxification is successfully practiced around the world, and various options of detoxification methods are available, ranging from intravenous application of approved chemicals to the oral supplementation of approved nutrients. South African physicians are

ready to follow this path, provided existing medical laws make room for environmental treatment methods as practiced in many countries, including Germany.

Acute and chronic metal intoxication can be reversed. Toxic bodies and toxic minds can be turned into healthy bodies and healthy minds. To achieve this requires honest compassion and a financial involvement that is 'peanuts' compared to the problem on hand.

But South Africa has the option to sit and wait until change is no longer a choice.

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