

Captions for “Life on the Edge...The Half-Lives and Half-Truths of Chernobyl”

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<http://gabrielabulisova.photoshelter.com/gallery/Chernobyl-Exhibit-2010-2011/G0000L1Q11Nk0tH0/>

Image # [starting at the top left, moving left to right, top to bottom]:

Row One

- (1) The rural populations of Ukraine, Belarus, and Russia have lived an agricultural lifestyle for many generations, also depending on family gardens and even wild edibles for a significant share of their subsistence. Ironically, this “bread basket” of the former Soviet Union was hardest hit by Chernobyl’s radioactive fallout. Chernobyl released 200 times that of the combined releases from the atomic bombs dropped on Hiroshima and Nagasaki. The UN estimates that 7 million people in the three countries of the Ukraine, Belarus and Russia were affected by this disaster, half of which are children. The 7 million people living in the affected areas have received the highest known exposure to radiation in the history of the atomic age. About 5.5 million people - including more than a million children - continue to live in contaminated zones. In Belarus, 2 million people, of whom 500,000 are children, still live in heavily contaminated zones of between 1 and 40 curies per square kilometer. Belarus, 2005.
- (2) This Chernobyl refugee, like countless thousands of others, lost most of her worldly possessions when forced to evacuate radioactively contaminated homes for re-location elsewhere. She was told she would be able to return to her home in a matter of no time, but she was never allowed to go back. She, her daughter and grandchild live in utmost poverty, shunned by neighboring villagers due to the stigma of Chernobyl contamination. Belarus, 2002.
- (3) 31-year-old Julia of Kiev has just undergone thyroid removal surgery, leaving her with a scar often dubbed the "Belarus necklace." The continuing epidemic of thyroid pathologies experienced after the Chernobyl catastrophe in Belarus, Russia and Ukraine has resulted in an unprecedented and alarming number of such operations. Ukraine, 2005.

Neighboring Poland, which also suffered widespread radioactive Iodine-131 (I-131) fallout in the first months after the catastrophe, averted a thyroid cancer and pathology epidemic by quickly distributing potassium iodide (KI) tablets to its population. This saturated thyroid glands with healthy iodine, allowing the radioactive I-131 to be excreted without causing injury. The Soviet Union, however, did not distribute KI pills, instead initially covering up the accident altogether, and then later downplaying the very real hazards.

KI tablets only protect the thyroid from radioactive I-131, however – they do not protect the human body against the scores of other radioactive poisons that were discharged from the Chernobyl atomic reactor, including hazardous Cesium-137 (around 300-year persistence, muscle-seeker, mistaken by the human body for Potassium), Strontium-90 (around 300-year

persistence, bone-seeker, mistaken for Calcium), and Plutonium-239 (240,000-year persistence, concentrates in bones and gonads, can initiate lung cancer in microscopic quantities).

- (4) A visually impaired resident of a “dead” village who refused to be evacuated with his neighbors. He plays the accordion and chain-smokes to pass the time, using old newspapers to roll his own cigarettes. Although his visual impairment was likely not caused by Chernobyl’s radioactive fallout, a dramatic increase in radiogenic eye pathologies – especially in children – has been documented in contaminated regions. Belarus, 2003.

Row Two

- (1) Reminiscent of a Chagall painting – Marc Chagall (1887-1985) hailed from Vitebsk, Belarus – this domestic cow has taken up residence in an abandoned village house.

A small number of people – who moved back, or never left in the first place – inhabit this otherwise evacuated village, selling their milk and dairy products in the market of a nearby town, likely circumventing official monitoring for radioactive contamination. Belarus, 2003.

- (2) This young man would not have survived were it not for his mother’s insurmountable determination to find medical help for him. In 1986, the family lived in Pripyat, the city built for Chernobyl nuclear power plant workers. The father, an engineer, was at the plant when the accident happened. The family evacuated to Kiev, the capital of Ukraine, thinking they would be able to return to their home in a matter of days. But soon after, their son developed a complicated thyroid illness that Soviet doctors were unable to cure. Thanks to his mother’s tireless efforts, French doctors conducted -- *pro bono* -- seven life-saving surgeries. To avoid the shame of being recognized as a “Chernobyl victim,” he did not want his face to be identified in this photograph. Ukraine, 2005.

- (3) A child suffering hydrocephaly, who died shortly after this photo was taken. Belarus, 2003.

Although modern medicine can relieve hydrocephaly, the dire economic straits present in Belarus, combined with its international political isolation as the “last dictatorship in Europe,” means that children like this continue to suffer from otherwise treatable diseases.

- (4) Despite being officially off limits for human habitation, authorities have often looked the other way as hundreds, and even thousands, of former residents have returned to radioactive villages. Especially, elderly evacuees have chosen to return to their hazardously contaminated lifelong homes, to live out their last days. This woman, along with a few others, refused to leave her village, even as other residents were evacuated. As she always has, she continues to use the well as her drinking water source, despite the radioactive contamination of soil and groundwater. Belarus, 2003.

However, not only remote rural residents must worry about ingesting radioactivity in their drinking water: the territory adjacent to the Pripjat River, once a major meat and dairy producing area, has been turned into a depopulated radiation zone. The river is highly radioactive, and flows into the Dnieper River, contaminating its silt bed. The Dnieper is now one of the world's most radioactive rivers, and, frighteningly, serves as the drinking water supply for millions downstream, including in Kiev, the capital and largest city of Ukraine, before it empties into the Black Sea.

Row 3

- (1) Intended to provide safe shelter for Chernobyl evacuees, this now stark and largely abandoned development ironically proved to be more contaminated than the homelands from which the refugees had fled in the first place. Such radioactive "hot spots" dot the landscape for hundreds – even thousands – of miles, resulting from the actions of wind and rain distributing fallout. The spread of contamination continues to this day. Belarus, 2005.
- (2) Mikhail Gorbachev confided in his memoir that the Chernobyl nuclear catastrophe was a significant contributor to the collapse of the Soviet Union. Little known is the fact that the Chernobyl nuclear power plant was actually officially named the V.I. Lenin Nuclear Power Station.
- (3) Another "dead village" resident who refused to evacuate, paying a visit to his chain-smoking, accordion-playing, visually impaired neighbor (see above). Belarus, 2003.
- (4) A young girl at the Vesnova Children's Mental Asylum. Rates of mental illness in children have significantly increased in regions contaminated with Chernobyl's radioactive fallout. Belarus, 2003.

Ireland-based Chernobyl Children International (CCI, <http://www.chernobyl-international.com/>) has been supplying regular humanitarian and medical aid to this institution for many years. CCI provides ongoing refurbishments to the facilities, and has recently pioneered a new project for independent living for teenagers in Vesnova. Many of these teenagers, once they reached the age of 18, would have been moved to adult mental asylums elsewhere, many of which are themselves in dire need of support to improve residents' quality of life. Thanks to CCI's Independent Living Project, 6 new terrace houses have been built on the grounds of Vesnova, allowing 12 teenagers to continue living, now semi-independently, in the only home they have ever known. CCI employs 7 caregivers to work 24-hour shifts to assist these teenagers in their new homes.

Row 4

- (1) Mother of a "liquidator." Belarus, 2003.

By some accounts, from 800,000 to 1.2 million, mostly young, male “liquidators” from all across the former Soviet Union, and even other Eastern bloc countries, were sent to Chernobyl in the immediate and longer term aftermath of the catastrophe, to construct the “Sarcophagus” over the destroyed reactor, “clean up” radioactive contamination over a vast territory, and perform other work. Alarming large numbers have suffered a broad array of debilitating radiogenic illnesses; many have died young; and very few, if any, have received adequate compensation or medical assistance.

- (2) A typical scene in a market. Questions linger about the adequacy of radiological monitoring of the food supply in certain areas. But given economic realities, the choice is risking eating radioactively contaminated food, or not eating at all.
- (3) This abandoned, rough-hewn log house is typical of those to be found in rural Belarussian villages, that families and their ancestors have inhabited for centuries – until Chernobyl. Approximately 2,000 towns and villages have been permanently evacuated. These depopulated areas will be uninhabitable for hundreds of years, or longer, given the half-lives (the time it takes for half of the radioactive substance to decay into another substance, itself potentially radioactive and hazardous) and hazardous persistence (10 to 20 times the half-life) of various radioactive contaminants (Cesium-137, half-life 30 years; Strontium-90, half-life 29 years; Plutonium-239, half-life 24,400 years; etc.). At least another 70,000 people in Belarus were still awaiting evacuation, 25 years after the accident. Belarus, 2003.
- (4) The Polesie of Belarus is a unique bio-geographical area with vast forests, wetlands and floodplains, that have retained their natural condition. The region is rich in biological diversity, and of enormous environmental and even climatic importance, hence one of its nicknames, “the lungs of Europe.” Covering 52 administrative districts of Belarus and over 30% of the national territory (6 million hectares of land in total), Polesie is greater in area than Denmark, the Netherlands or Switzerland. It is also contaminated with radioactivity at differing levels, depending on the movement of contamination with the winds, rains, and flowing waters over the past quarter-century. Belarus, 2005.

Row 5

- (1) A scene of overcrowding, typical at Vesnova Children’s Mental Asylum prior to CCI’s humanitarian intervention. Children were often left to fend for themselves for long periods of time. Belarus, 2003.

When the Chernobyl Children International (CCI) first visited Vesnova in the mid-1990s, it found a bleak, horribly neglected hellhole for the children suffering -- and the severely overworked and underpaid adults employed -- there. However, after 15 years of CCI funding and hands-on support, Vesnova was voted the best orphanage for children with special needs in all of Belarus, due to its vastly improved living conditions and high level of medical service. The award is the result of a review by the Belarus Ministry of Labor and Social Protection and the Belarus Republic Committee of Trade Unions. The review was carried out

on more than 70 social institutions in Belarus. Vesnova is home to over 140 children with various forms of physical and mental disabilities.

- (2) Another harrowing, but all too common, scene of an orphan left untended at the Vesnova Children's Mental Asylum in the days before CCI's intervention there. Belarus, 2003.

To this day, 5% of Ukraine's gross domestic product goes to Chernobyl relief and recovery efforts. The situation is similar, or even worse, in Belarus. Such large expenditures – topping \$350 billion in just the first decade after the accident – left little support for such institutions as Vesnova.

- (3) The medical records of a child suffering gross facial deformities at a Ukrainian orphanage. Birth defects have significantly increased after Chernobyl, due to the mutagenic (capable of causing genetic damage) and teratogenic (capable causing birth defects and developmental malformations) impact of radioactivity on the human gene pool and developing fetuses. Ukraine, 2005.
- (4) Another orphanage, this one in Radishkovichi, as seen at the time of a humanitarian supply delivery and visit by the volunteers of the Ireland-based Chernobyl Children International. Belarus, 2003.

Row 6

- (1) A typical scene at the Vesnova Children's Mental Asylum in the time before the Ireland-based Chernobyl Children International was able to improve living conditions there. The overworked, underpaid, and often un-trained staff at Vesnova would sometimes leave children untended for long periods of time. Belarus, 2003.

Given the Depression-like economic conditions Belarus suffers, CCI's humanitarian intervention has made a world of difference for the children at Vesnova.

- (2) An orphan at the Vesnova Children's Mental Asylum doing her daily chores. Belarus, 2003.
- (3) An orphan at Vesnova, nicknamed "the General," wearing a Belarus police uniform adorned with Soviet-era medals. Belarus, 2003.
- (4) A woman gathering mushrooms within an area evacuated due to high levels of radioactive contamination. Most ironically, mushrooms are beloved within age-old Slavic cuisine and culture, but readily absorb and concentrate various hazardous radioactive isotopes. Besides providing subsistence for the families gathering them, wild edibles from Chernobyl-contaminated zones also find their way onto the markets of Minsk, Kiev, and other European cities for unsuspecting shoppers to purchase. Belarus, 2005.

Final Row

- (1) The agricultural regions of Ukraine, Belarus, and western Russia were once known as the “breadbasket of the Soviet Union,” but are now widely contaminated with various levels of radioactivity. Some 480,000 hectares of farming land, including 230,000 hectares of arable land, have been withdrawn from agricultural production. Radioactivity has accumulated in the upper soil layer and, as a result, Belarus has lost practically a quarter of its most fertile agricultural land. There is not enough uncontaminated farmland left to feed the population and, since Cesium-137 continues to stay in the upper ground level, it will be accessible for uptake by plants for a long time. Strontium-90 can also chemically change into a form easily accessible to plants and thus enter the food chain, to be ingested by people. However, due to pressure for increased food production to feed a hungry population, even radioactively contaminated land has been returned to agricultural use. This photo shows the return of food cultivation to fields in an otherwise previously evacuated area. Such “normalization” of radioactivity in the food supply raises significant health risks.