## The Gulf War's Troubling Legacy - Part I

What made our Gulf War veterans sick? There were several factors – including unprecedented environmental hazards, chemical and biological warfare agents, pesticides, experimental vaccines, and weapons made from depleted uranium – and it's getting harder for the government to pretend they didn't exist.

#### Introduction

With only 148 Americans officially killed in action and only 467 wounded, ours seemed to be a shining victory in the Gulf. But this victory has lost its glow somewhat, now that we know that tens of thousands of our Gulf service people have become sick from a debilitating and sometimes deadly syndrome. The Department of Veterans Affairs has reported that approximately 6000 soldiers have died since the war's conclusion, including 1300 18- to 24-yearolds who were in perfect health prior to the war, but who mysteriously contracted various forms of cancer after their involvement with the military. According to H. Lindsey Arison, III, aide to the undersecretary of the US Air Force, there are now over 50,000 veterans suffering from Gulf War syndrome, including about 11,000 still on active duty.1

Arison outlines the causes of Gulf vets' health problems. First, they were exposed to nonlethal levels of chemical and biological agents released primarily by direct Iraqi attack via missiles, rockets, artillery, or aircraft munitions and by fallout from allied bombings of Iraqi chemical warfare munitions facilities during the 38-day 1991 air war.

Exposure to chemical and biological agents alone is one thing. But the effects of these were exacerbated by a whole gamut of other factors to which vets were exposed. Arison enumerates them: nerve agent pretreatment pills, called pyridostigmine bromide, that our service were ordered to take; people investigational botulinum toxoid vaccines; anthrax vaccines; and depleted uranium, used in armor-piercing munitions. Other factors entering into the synergistic mix included oil fire contamination and pesticides, and some people believe that an artificially engineered bacterium / virus cross called a mycoplasma, and, separately, that a vaccine ingredient, the adjuvant squalene, were significant factors too.

Arison emphasizes the point that

by Gary Null

since different people were exposed to different hazards at different levels, a whole variety of symptomatologies have arisen in Gulf War vets. This variability of symptoms is sometimes taken to mean that Gulf War syndrome is a "mystery illness" or that people are imagining things, when in fact it just shows that the syndrome is a multifactorial problem.

Dr. Garth Nicolson is a specialist in cell biology and biochemistry and a professor of internal medicine and pathology at the University of Texas Medical School in Houston. After extensive study of Gulf veterans' ailments, he estimates that 100,000 Americans have become sick from Gulf War syndrome (this number includes both soldiers and members of their immediate families), and says that over 7000 soldiers may have died. He points out that although Gulf War syndrome is not a universal disease that everyone who served in the Persian Gulf region has acquired, there are entire units that have become sick, which suggests some variance dependent on exact locations within the region.

Nicolson stresses that in addition to affecting Americans, Gulf War syndrome has taken its toll on others who participated in the coalition forces. Currently 27 of the 28 coalition nations have claimed that they have numerous sick veterans - and sick members of veterans' families - and this is especially true in England, where, depending on whose estimates you use, between 1200 and over 3500 Gulf War vets are afflicted with the syndrome, referred to as "desert fever" in that country. Many Gulf vet families in Britain are suing their government after having had deformed children, and it was reported that at least one ex-soldier has requested a vasectomy because he is terrified of having any more children with problems.<sup>2</sup>

It should be noted that there is a coalition nation not reporting Gulf War illnesses – France. That country has not observed any sick soldiers or affected children, possibly because they did not immunize their troops with experimental vaccines, or because they treated them with the antibiotic doxycycline prior to active service.

An important dimension of the Gulf's health legacy is that families of Gulf War veterans have not been spared from the suffering. Unfortunately, many of them

haven't been properly diagnosed, due to the lack of objective clinical findings associated with the syndrome. A survey of 1,000 servicemen and women conducted by the Senate Committee on Banking, Housing, and Urban Affairs revealed that an assortment of illnesses associated with Gulf War syndrome are, in fact, contagious. According to Senator Donald Riegle (D.-Michigan), who headed the committee's two-year investigation of Gulf War veterans' health problems, the survey was designed for maximum reliability by inserting a few "ringer" questions to identify false responses, and the replies were indeed consistent with the pool of common symptoms. In most cases, responses to the poll indicated that spouses and children of Gulf War veterans are experiencing only a few of the indications, whereas the veterans themselves are suffering from up to 20 symptoms.3

But both the families and the veterans have suffered because of the government's lack of concern about their service people's post-war ailments. Since, until recently, the Department of Defense did not acknowledge the existence of any war-caused illnesses, soldiers who claim that they have the syndrome have been denied proper medical attention and have in some cases been instructed to leave the military. In pain, neglected by their country, and mistakenly diagnosed with psychiatric ailments, many veterans have tragically turned to suicide to cope with a problem that no one seemed to understand or care about.

#### Symptoms

Gulf War syndrome is manifested in many ways. Chronic fatigue immune dysfunction syndrome affects over half of the victims, according to Dr. Garth Nicolson, who, with his wife, molecular biophysicist and University of Texas professor Dr. Nancy Nicolson, has examined and evaluated many syndrome patients. Other symptoms include lymphoma, cardiac ailments, memory leukoencephalopathy, loss, and neurological diseases such as multiple sclerosis. Public health expert Dr. Leonard Horowitz estimates that 80 to 90% of syndrome patients are plagued with severe aches and pains in their joints. Others commonly experience dizziness, nausea, stomach pains, light sensitivity, intense anxiety, breathing

difficulty, muscle spasms, diarrhea, blurred vision, inexplicable skin rashes, hives, bleeding gums, eye redness, night sweats, and acute migraine-like headaches. Sexual and urination disorders plague numerous victims, while up to 25% of syndrome patients have experienced hair loss, and 25% have acquired multiple chemical sensitivities, which means they have become allergic to a wide variety of chemical substances and can consequently have severe reactions to even the most common household items.<sup>4</sup>

According to Drs. Garth and Nancy Nicolson, the chronic fatigue immune dysfunction syndrome (CFIDS) characteristic of sick Gulf vets is induced by an unusual microorganism that seems to be the product of weaponization, that is, human manipulation of germs for the purposes of warfare. The Nicolsons report that the organism present in each of the CFIDS patients is an odd variant of a typical mycoplasma. Ordinarily, mycoplasma is a cross between a bacterium and a virus, and can be effectively combated with antibiotics. But in this case, the organism contains human immunodeficiency virus (HIV-1) and anthrax genes. Since it is not possible for the typical mycoplasma to naturally mutate into a modified form of anthrax and the alleged AIDS virus, this seems to be an engineered organism.<sup>5</sup> The Nicolsons contend that the US military created this mycoplasma and sold it to Iraq, which subsequently used it against US troops.

The Drs. Nicolson go on to explain that since the mycoplasma sequence associated with the various Gulf syndrome symptoms is quite infectious, prolonged contact, or even casual contact, with an infected person can facilitate its dissemination. In one instance, the wife and children of a soldier serving in Operation Desert Storm became seriously ill after being exposed to clothing sent back from the Gulf region. Within weeks, the soldier's wife and two sons were diagnosed with asthma, while the 22-month-old daughter nearly died from gangrenous lesions. In another case recounted before the Riegle Committee, a nurse whose brother had returned from the Gulf with the disease had had to rush him to the hospital with an abnormally high fever. His sweat, she reported, had actually left reddish burn marks on her skin. Shortly after this incident, the nurse mysteriously contracted several health conditions that could not be explained by doctors.6

#### **A New Generation Affected**

Reed West, daughter of Gulf veteran Dennis West from Waynesboro, Mississippi, was born prematurely with collapsed lungs and a faulty immune system. Joshua Miller, the son of veteran Aimee Miller, constantly suffers from strange colds, pneumonia, and high fevers. These are just a couple of the Gulf War's second-generation casualties; there are many others, including children who are dying of heart defects, liver diseases, and other rare disorders.<sup>7</sup> It's been estimated that 30% of Gulf War veterans'

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babies are born with deformities; this is ten times higher than the number of birth defects one would expect to find in the general population.

In Waynesboro, Mississippi, the site of the National Guard quartermasters corps, 13 out of 15 children born to Gulf veterans suffer from serious disorders. Infant mortality rates have dramatically escalated in four counties in Kentucky

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and Tennessee, where the Army's 101st Airborne Division is based, in three counties in Georgia, where the Army's 197th Infantry Division is located, and at Ft. Hood, in Texas.

At a Congressional hearing, Dr. Ellen Silbergeld, a molecular toxicologist at the University of Maryland, reported that men can pass toxic chemicals on to their unborn children through their semen. Indeed, many wives of ill veterans report urinary tract and vaginal infections after sex, and say that their husband's semen burns their skin. And Akron, Ohio, environmental pediatrician Dr. Francis J. Waickman reports a 30% rate of abnormalities among Gulf vets' children, which is about 10 times the expected incidence. Waickman reminds us that toxic chemicals can lower immunity and increase susceptibility to infections in newborns, and he speculates that severe chemical exposure can alter genes as well. He offers this advice about our Gulf experience: "To my knowledge, this is the first time we've ever had such a large group exposed to a possible large degree of chemicals, so we better learn from this whole series of events."7

One organization attempting to learn more about birth defects in Gulf vets' families is the Orlando, Florida-based Association of Birth Defect Children. They maintain a registry for Persian Gulf War families, and are keeping track of babies with Goldenhar syndrome, missing limbs, chronic infections, failure to thrive, cancer, heart problems, and immune problems.

Steve Miller is a Persian Gulf vet who can explain what the rare condition called Goldenhar syndrome involves because his son, conceived soon after Miller's return from the Gulf, was born with it: "He had hydrocephalus, spinal scoliosis, spina bifida, was missing his left eye and left ear, the heart was on the right side of the body...For a child to be born completely missing an eye, according to the National Institute of Health, is either hereditary or caused by teratogenic exposure [fetal exposure to a substance blocking normal growth]. In our case we both tested negative in genetic testing. The normal occurrence for this type of birth defect is one in 26,500. And I believe as of right now [August '97] we have located 17 children of Gulf War vets with the same birth defect. And there were only 75,000 born after the Persian Gulf War."

Betty Mekdeci, founder of the Association of Birth Defect Children, confirms that Goldenhar syndrome is now occurring disproportionately in Gulf veterans' offspring. And she cites chronic, serious immune problems as the type of problem most frequently reported to the organization in connection with veterans' offspring.<sup>9</sup>

#### A Multiplicity of Poisons

As mentioned, the term Gulf War syndrome is not one, easily defined problem, but rather encompasses a wide variety of ailments. Congressman Steven Buyer from Indiana, whose Army reserve unit was stationed at a prisoner of war camp in the region, feels that Gulf War syndrome is really a misnomer, explaining that he and other afflicted servicemen have been plagued with a broad spectrum of chronic disorders. Having experienced some of the symptoms firsthand, Representative Buyer attributes the heightened frequency of illnesses among veterans to the wide variety of hazardous substances that they encountered in the Gulf, including poison gases, diesel fumes, petroleum-related pollution, parasites, experimental medications, and biological warfare agents.<sup>10</sup>

Dr. Boaz Milner, of the VA hospital in Allen Park, Michigan, has treated over 300 patients claiming to have become ill as a result of their Gulf War experience. Milner agrees with Buyer that the collection of symptoms that have manifested can be attributed to a variety of factors, which he has categorized into five syndromes. Milner's first category of Gulf War syndrome sufferers consists of soldiers who were exposed to excessive quantities of radiation, possibly from the uranium used in munitions. The second form of the syndrome was induced by the widespread use of experimental vaccines that were designed to protect the troops from the harmful elements they might encounter, while another category encompasses veterans exposed to various environmental pollutants, including the more than 700 burning oil wells that contaminated the region's air and water. Milner believes that other soldiers may have contracted illnesses due to the presence of toxic chemical compounds such as pesticides, while the fifth form of the syndrome was brought on by the release of biological warfare agents.6

Germs from the Gulf are good travelers, according to members of the medical community who have expressed concern regarding the possibility of infectious microorganisms becoming fastened to equipment and other

materials. They cite incidences of Navy personnel on aircraft carriers who never set foot on land, but who mysteriously acquired the syndrome subsequent to active duty in the Gulf region. When aircraft returning from overseas service were unloaded in domestic Air Force bases at the conclusion of the war, the contaminated equipment aboard the returning planes may have facilitated the disease's dissemination into the general population. This hypothesis is strengthened by reports of illness in stevedores assigned to unload repatriated transport planes. It is estimated that clothing brought back by soldiers may contain infectious microorganisms that can survive for up to seven years.

#### Unproven Vaccines, Unmonitored Medicine

The widespread use of experimental vaccines during Desert Storm has often been cited as a possible cause of Gulf War syndrome. Dr. Garth Nicolson elaborates: "I'm not a big fan of experimental vaccines. There have been too many mistakes. Usually you find these things out years later. Often agents that we think innocuous turn out to be harmful." He explains that during the Gulf War, the established procedures of vaccination were ignored. Normally, only one inoculation should be given at a time, but the military insisted on giving multiple shots at once, which, according to Nicolson, is the worst thing you can do because it suppresses the immune system.5

The troops immunized for the Gulf have been called guinea pigs, and for good reason. They received experimental vaccines, e.g., those for anthrax and botulinum that were not approved for use by the FDA and have since proven to cause potentially dangerous side effects. Soldiers who were given these experimental vaccines, without informed consent, have reported suffering from a variety of neurological problems and aberrant bleeding from all parts of their body. Because of these vaccines' experimental nature, many questions have arisen as to why our government dispensed them. Not the least of these questions is, what about the Nuremberg Code? Developed by the Allies after World War II in response to inhumane Nazi experimentation, the Nuremberg code says that voluntary and informed consent is absolutely essential from all human subjects who participate in research, whether during peace or war.<sup>11</sup>

Nerve-gas-countering pills were a big problem for many Desert Storm

participants. Documents released by the Pentagon in 1995 revealed that highranking military officials had pressured the Food and Drug Administration into authorizing experimentation with pyridostigmine bromide (PB) tablets for protection against Iraqi chemical or biological attacks. PB tablets are usually only used for the treatment of the chronic muscle weakness disorder myasthenia gravis, but the military and the FDA waived the traditional informed consent procedures during the early stages of the conflict. Many soldiers did inquire about the classified nature of the pills, but, nevertheless, they were forced to consume them in excessive quantities by their commanding officers. Others, fearing for their safety, ignored the orders of their superiors after witnessing the pills' highly unpleasant gastric effects upon their fellow servicemen.

#### Where Was the FDA?

Isn't the FDA responsible for making sure that Americans aren't given unsafe drugs? Shouldn't they at least warn people of possible dangers? They claim they tried. They blame the Pentagon for PB. In May '97, it was reported that a top FDA official told Congress the

Pentagon did not keep a promise to fully inform soldiers before giving them the experimental nerve-gas antidotes during the war.<sup>12</sup> The promise to warn soldiers about the drugs had been a condition of the FDA's agreeing, in 1991, to waive standard consent requirements. A Pentagon spokesperson said that information sheets had been sent to the Gulf, but sent late. Some members of Congress were outraged upon hearing this. For instance, Christopher Shays (R.-Connecticut), chairman of the Congressional investigating committee, said that the FDA's failure to compel the military to keep its word "blows my mind."

Evidence has indicated that the procedure for administering the pills placed the recipients at risk. Records of who received the pills were not kept, and a standard dosage was distributed, regardless of sex, age, weight, or medical history. What's more, the toxicity of this experimental drug was actually heightened by issuing it along with common household insecticides, a potentially lethal combination.

Nurse Carol Picou, who served in the Gulf, elaborates on the problems with pyridostigmine bromide:<sup>13</sup> "This has been

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used since 1955 on patients with myasthenia gravis. This drug has never been tested on healthy human beings. Yet I have a report where they show they did do testing on 10 soldiers - men. Two couldn't even finish the program. Two got severely sick .... Even when you give it to myasthenia gravis patients you monitor for levels of toxicity. You give it to them according to their height, weight, bone structures. Yet they gave us pyridostigmine - everybody - the same pack - 30 mg pills - take them three times a day. And when people had problems with them they didn't take us off. Right away, I looked it up - in 1955, if you have problems with this drug, they should take you off of it, and the antidote is atropine. Well, we received atropine during the war. We didn't know why we had to carry atropine and Valium. Well, it's because of the chemical warfare threat, and the fact that if something would happen to us from the pyridostigmine, that would be our antidote."





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Carol Picou has been experiencing a variety of serious health problems, not the least of which is head-to-toe neurological damage, since her Gulf service.<sup>13</sup>

James Moss, a former researcher for the Department of Agriculture, has criticized the military's experimentation with PB tablets and has correlated their use with the manifestation of birth defects. At a Congressional Veterans Affairs Committee hearing, committee chairman Senator John D. Rockefeller IV (D.-West Virginia) censured the Pentagon for its disregard for human rights and its utter lack of responsibility. Rockefeller believes that the Pentagon had no proof that the drugs or vaccines were safe or effective, yet proceeded to dispense them without first evaluating female recipients or apprising troops of possible side effects.14

At that same hearing, Gulf veteran Air Force Lieutenant Colonel Neil Tetzlaff explained to the committee how he and fellow servicemen experienced severe vomiting and other acute conditions after taking PB tablets during the journey to Saudi Arabia. According to Tetzlaff, officials from the Department of Veterans Affairs were reluctant to cooperate with the afflicted soldiers upon their arrival in the Gulf region because they were unable to corroborate that the medication was the cause of their problems. In defense of the Pentagon, Assistant Secretary of Defense Dr. Edward Martin asserted that the military was only trying to fulfill its obligations to its troops by offering protection from an enemy who had previously engaged in chemical and biological warfare. Regardless of these good intentions, babies with serious abnormalities continue to be born to demoralized veterans. As Senator Tom Daschle (D.-South Dakota) said at the hearing, "How many more lessons do we have to learn?" He was referring to the military's past experience with Agent Orange during the 1970s.

#### **Adjuvant Antibodies Found**

Recently, new information has been brought to light about squalene, an adjuvant (or compound that boosts the effectiveness of a vaccine) that is not supposed to be used in humans except in research on illnesses such as HIV and herpes. However, unusually high antibody levels for squalene have been showing up in the blood of Gulf War vets. This was the gist of an investigation by *Insight* magazine,<sup>15</sup> which reports that VA spokespeople have no explanation for these findings. The mystery is compounded by the disappearance of up to 70,000 service-related immunization records.

One of the scientists hired by *Insight* to investigate the presence of squalene in veterans' blood elaborates on the study's findings: "We found soldiers who are not sick that do not have the antibodies....We found soldiers who never left the US but who got shots who are sick, and they have squalene in their systems. We found people who served overseas in various parts of the desert that are sick who have squalene. And we found people who served in the desert but were civilians who never got these shots...who are not sick and do not have squalene."

According to one government official familiar with the blood test results, increased levels of sickness in veterans were indeed correlated with increased levels of antibodies for squalene. Another official explained, "I'm not telling you that squalene is making these people sick, but I am telling you that the sick ones have it in them. It's probably whatever was used [mixed] with the squalene that's doing it, or in combination with the squalene. You find that, and you may be on to something."

Research immunologist Pam Asa has worked with about 150 individuals with Gulf War syndrome. Asa is one of the investigators looking into squalene, and she stresses that this is not a substance approved for use in humans, as it hasn't been through rigorous safety testing. She reports that the autoimmune manifestations of squalene vary from person to person, depending on the patient's genetic make-up. "In other words, patient A will have a certain spectrum of symptoms, and patient B will have another. But it's still the same disease process, basically. It does also involve neurological disease."16

Mark Zeller is one of the service people affected by this issue: "I sent my blood and got a notice back that I'm positive for this stuff called squalene, which is an adjuvant, which goes into a vaccine. This adjuvant is still not for human use. I'm here to tell you, I've got squalene in my body. And I said, 'It's not supposed to be in humans.' To this date, it's still not used in humans except for research. I never sought to be a guinea pig out in the desert. I signed on to protect my country. At least that's what I thought."<sup>17</sup>

#### Iraq's Deadly Arsenal

Another possible cause of Gulf War syndrome was the presence of biological and chemical additives present in the Scud B and Frog missiles. On May 1, 1996, senior physician at Walter Reed Army Hospital Major General Ronald Blanck admitted to the President's Panel on Gulf War Illnesses that chemical and biological weapons had been used during Operation Desert Storm, and that lowlevel exposures to these agents probably occurred. Studies had confirmed that hundreds of Iraqi missiles had been loaded with biological warfare agents, but until Major General Blanck's report - five years after the war - the evidence had been completely disavowed by official sources.

Disclosures by high-ranking Iraqi officials have in fact confirmed that Iraq possessed an extensive chemical and biological arsenal during the Gulf War. After the August 1995 defection of Lieutenant General Hussein Kamel Majid, Saddam Hussein's top biological weapons adviser, the Iraqi government, in an attempt to lessen the impact of Majid's revelations, unveiled an abundance of classified information to United Nations investigators documenting the development of biological and chemical warfare arsenals. The Iraqis revealed that prior to the Gulf War their nation engaged in a top-secret program to develop biological, chemical, and nuclear weapons that could be used against any of their foes, including the US, Israel, and Saudi Arabia. Prior to the disclosures, Iraq had claimed that it had only ten people employed by its biological programs, but it has since admitted that 150 scientists and an extensive support staff were involved in the massdevelopment of biological warfare agents in the 1980s. According to UN officials, Iraq possessed at least 50 bombs loaded with anthrax, 100 bombs containing botulinum, and 25 missile warheads carrying other germ agents.

The Iraqi government's goal was to create a diversified arsenal that went way beyond conventional weapons. For instance, one viral agent manufactured by the Iraqis was capable of generating hemorrhagic conjunctivitis, which commonly results in temporary blindness or bleeding eyes, while another agent developed by the Iraqis could be used to induce chronic diarrhea, a condition quite effective in immobilizing troops. Secret Iraqi biological warfare programs were also responsible for the production of at least 78 gallons of gangrene-inducing chemicals that were capable of penetrating the body and infecting wounds. Other agents included "yellow rain," a lethal fungi responsible for bleeding lungs, and ricin, a deadly toxin derived from castor oil plants.

Was Iraq ready to use its poisons on the battlefield? Jonathan Tucker, in an article in The Nonproliferation Review<sup>18</sup> documents that they were, and that they in fact did use them, in 76 incidents. And Tucker mentions that, during the conflict, London's Sunday Times reported that intercepted Iraqi military communications indicated that Saddam Hussein had authorized front-line commanders to use chemical weapons as soon as coalition forces began their ground offensive.19 The American Newsweek, as well, reported this fact.<sup>20</sup>

We do have military documentation to support assertions of biological and chemical weapons presence. For instance, battlefield reports of the 513th Military Intelligence Brigade confirmed the release of anthrax on Feb. 24, 1991, at King Khalid Military City, while documentation from the following day reveals the presence of Lewicite, a nerve gas that could have been released either by an Iraqi assault or as a result of secondary explosions.

#### The US as Supplier of Chemical Weapons

A sad irony of the Gulf War involves the origin of Iraq's biological and chemical weapons. At least some of them came from the United States. By sharing weapons and intelligence throughout Iraq's long war with Iran in the 1980s, the US helped create the largest stockpile of chemical weapons in history. That these were later used to our detriment is an example of the phenomenon known as "blow-back," i.e., what happens when we don't look at the long-term consequences of our foreign policy actions.

According to the Riegle report, during the 1980s the US government supplied the Iraqi Atomic Energy Commission with at least 28 biological weapons to use in its bitter war with neighboring Iran. In 1987, then Vice President Bush met with Iraqi officials to ensure that technological equipment used to produce chemical and biological warfare agents would continue to be exported to the Iraqis. When he assumed the presidency, Bush maintained this policy, despite Congressional dissension. Corporations involved in transactions with the Iraqi government, including Hewlett-Packard, Honeywell, Rockwell, and Tektronix, were licensed to export more than \$1.5

million of highly sophisticated equipment in the five years preceding the Gulf War, and these companies frequently delivered their products directly to Iraqi chemical and nuclear plants.<sup>21</sup>

On June 6, 1994, 26 Gulf veterans filed a \$1 billion class action lawsuit in Angleton, Texas, naming 11 firms involved in biological and chemical warfare production as defendants. The attorney for the plaintiffs cited the defendants' cognizant participation in the manufacture of unreasonably dangerous biological compounds as the basis for the

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suit. In addition, the defendants have also been accused of allowing their business practices to enable an outlaw country like Iraq to obtain and use biological and chemical weapons.<sup>22</sup>

In his report to Congress, Senator Riegle was quite explicit, being able to name the biologicals involved, the batch numbers sent to Iraq, and their dates. For instance, among the agents delivered to various agencies of the Iraqi

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government were Clostridium perfringens, a gaseous gangrene causing agent, Brucella melitenis, Clostridium botulinum, salmonella, Klebsiella pneumoniae, Escherichia coli, Bacillus subtilis, and Staphylococcus epidermis.

The US was a participant in the Geneva Biological Weapons Convention of 1972, and we (as well as Iraq!) signed the resultant agreement that prohibited both experimentation with and the sale of biologicals or weapons of mass destruction. Now, obviously, our government has a considerable interest in keeping the US breach of this agreement covered up. Plus there's the inconvenient fact of our history of cooperation with Saddam Hussein, a tyrant who was denounced by the global community and likened to Adolf Hitler. Embarrassment about revealing our past dealings with our current enemy has hampered our government's readiness to deal fairly with veterans.

#### **The Corporate Connection**

The January 1996 issue of *Media Bypass* magazine<sup>23</sup> carries a hard-hitting article by Sarah McClendon that exposes US corporations' production and sale of chemical and biological weapons to Iraq. McClendon writes that "Proof is building upwards, stronger than ever, that big US corporations made the weapons that Iraq's Saddam Hussein used to kill American soldiers in the Persian Gulf war. These corporations also provided the chemical and biological weapons that the Iraqis used to make thousands of surviving soldiers chronically ill."

The article goes on to condemn both the Bush and Clinton administrations' Justice Departments for agreeing not to prosecute the big-name American corporations for trading with the enemy: "The building up of Iraq's weapons, paid for by US taxpayers, was conducted for years before the Persian Gulf war and after it started.... But at this very moment, the Clinton Justice Department turned this question over to the Treasury Department's Office of Foreign Assets Control where, at first, officials were pondering whether this should be treated as a criminal or civil offense."

Even after being warned, the Clinton administration assigned the same FBI men, the same prosecutors who had ruled that the corporations during the Bush administration should not be prosecuted, to investigate the case to see if charges should be filed against the corporations and their officers. In 1995 the Justice Department said it did not prosecute the corporations because they did not have the proof to win the case.

Not to be overlooked is the matter of the \$5 billion loan to Iraq from the BNL Italian bank of Rome which was guaranteed by US taxpayers through the Department of Agriculture's Commodity Credit Corporation. Iraq turned this loan into letters of credit with which it bought \$5 billion in weapons (including biologicals and Scuds from the US), and when Iraq later defaulted on the loan, the US taxpayer essentially paid the bill for weapons that were later shot back at US soldiers.

Why was there no investigation? When Sarah McClendon asked George Bush to give the public a list of the corporations in the Pittsburgh area that were making weapons for Saddam Hussein, he refused. Perhaps it was no coincidence that these corporations were tied to the Brown Brothers Harriman Bank, which had been managed by President Bush's father, the late Senator Prescott Bush.

Says McClendon: "How was this cover-up of the manufacture of weapons for Iraq arranged in the US? Bush arranged for 70% of the policy-makers in the Justice Department to remain in their jobs when the transition from Bush to Clinton took place. They took a lower pay scale, but stayed in control. These holdovers are running the Justice Department today. Clinton has been told about this, but somehow he does not seem to act on the information."

#### **Unheeded Alarms**

Many Gulf War veterans have testified that chemical warfare detector alarms at bases across the region were frequently triggered, yet troops were ordered to ignore the alarms. According to General Colin Powell, who had been chairman of the Joint Chiefs of Staff during the war, American commanders had believed the frequent alarms to be false, because nobody seemed to be getting sick immediately. It was believed by those involved that you had to become obviously ill at the time of exposure to chemical or biological agents for exposure to mean anything.<sup>24</sup>

One veteran who did get immediately ill, Petty Officer Sterling Symms of the Naval Reserve Construction Battalion, was stationed in Saudi Arabia when one morning he was awakened by an extremely loud explosion overhead. Right after the detonation, chemical alarms were sounded, and a strong ammonialike aroma permeated the air. Before he could rush to get his protective gear on, Symms's face and eyes began to burn; several months later, he began to suffer from typical Gulf vet symptoms, including chronic fatigue, open sores, and rashes. Symms and several of his comrades, who had contracted similar symptoms, described to Congress how they were issued orders by their commanding officers to avoid any further discussion of the incident.

Another veteran who testified before the Riegle Committee, Army Sergeant Randall L. Vallee, explained how orders to ignore chemical-detector alarms were rationalized by a variety of absurd scenarios, such as the idea that supersonic aircraft or sand-infested equipment had triggered the alarms. Vallee, like Symms, testified that the alarms frequently sounded throughout the conflict, especially after Iraqi Scud attacks. In Senator Riegle's report, it was confirmed that 14,000 chemical alarm monitoring units were installed by the military throughout the region to provide an early warning of imminent gas attacks, but many of them were disarmed after they began to sound too frequently. Members of the Riegle Committee chastised the Department of Defense for its apathetic disregard for the safety of our service people, concluding that the Department's insistence that all of the alarms had been false was a little hard to believe.

Interestingly, after his testimony before Congress, Sergeant Vallee received a phone call from Lieutenant Colonel Vicki Merriman, an aide to the deputy assistant secretary of defense for chemical and biological matters, who, after initially seeming sympathetic, interrogated the veteran and attempted to alter his recollections.<sup>25</sup>

#### **Depleted Uranium**

There's an aspect of our participation in the Gulf that hasn't gotten wide publicity, but should: our use of depleted uranium. Depleted uranium is a byproduct of the uranium enrichment process.<sup>26,27</sup> Its name implies that this is a harmless material, but, in actuality, it is still a highly poisonous, radioactive, heavy metal. The term "depleted" comes from the fact that natural uranium is made from a fissionable isotope, U-235, while depleted uranium is made from a relatively stable isotope, U-238. After U-235 is extracted from U-238 for use in nuclear weapons and breeder reactors, only U-238 remains. While it is now

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depleted because it no longer contains U-235, due to its density the uranium still emits one-third of its original level of radioactivity.

The military uses depleted uranium to tip bullets and tank shells, praising the material's ability to make metals super-hard so that they can penetrate steel as easily as butter. But what the military neglects to consider in its enthusiasm for depleted uranium is that the downside to this technology far outweighs its benefits. Once bullets reach their destination, they explode upon impact, releasing a fine, radioactive, aerosol mist. These toxic particles travel in the wind, mix with water and soil, and are inhaled and ingested by anyone in their path.

US and British forces used Operation Desert Storm as a testing ground for the widespread employment of depleted uranium. It is estimated that over 940,000 30-mm uranium-tipped bullets and 14,000 large-caliber depleted rounds were used. Between 350 and 800 tons of depleted uranium residue, with a halflife of 4.4 billion years, permeate the ground and water of Iraq, Kuwait, and Saudi Arabia.

In light of such immense pollution, it is easy to see that many people have come into contact with depleted uranium. Inhalation and ingestion of the substance were unavoidable for troops in close proximity to exploding shells. In addition, soldiers spent long hours sitting in tanks, handling uranium-laced shells and casings. Weapons were also taken home as souvenirs. Families of veterans came in contact with the substance after handling clothing laced with it.

The insidious action of depleted uranium in the body was illustrated by scientists at the Defense Department Armed Forces Radiobiology Research Institute in Maryland, in research presented to the American Association for Cancer Research and the Society of Toxicology. They tested the effects of embedded DU by inserting shrapnel-like pellets into the legs of rats, and they were surprised at how quickly they discovered oncogenes - genes believed to be precursors to cancer. Another finding was that depleted uranium kills suppressor, or health-maintaining, genes. The experiments also demonstrated that DU spreads throughout the body, depositing itself in the brain and spleen, among other organs, and that it can be passed by a pregnant rat to a developing fetus.<sup>28</sup>

Many of the symptoms experienced by Gulf War veterans and their families are indicative of radiation poisoning. Some of these are nausea, vomiting, wasting, memory loss, and raised rates of cancer. As has been mentioned, vets' children are manifesting an alarming rate of birth defects, lowered immunity, and childhood cancers, some of which may be due to radiation-affected sperm.

Dr. Jay Gould, author of The Enemy Within: The High Cost of Living Near Nuclear Reactors, has long been an outspoken critic of low-level radiation. Gould says that exposure to depleted uranium released into the atmosphere poses the same grave dangers as does any other exposure to uranium.29 "There is nothing new about it," Gould says, stressing that a biochemical impact of low-level radiation is that it immediately attacks the immune response. Since the immune response is a key factor in maintaining good health, this means that people are then vulnerable to any kind of infection or allergic response. So, everything from cancer to allergies to multiple chemical sensitivities can be activated by the uranium dust.

Gould adds that one of the reasons people generally ignore the problem is that low-level radiation is often confused with background radiation: "Background radiation is something that humans have lived with for hundreds of thousands of years. Over that long period, our immune response has developed a capacity to

## **Gulf War Legacy**

resist natural forms of radiation from cosmic rays and radiation in the soil. But ever since the nuclear age began, we have introduced new fission products, like radioactive iodine and radioactive strontium, that are released in the operation of a nuclear reactor or an explosion of a bomb. These have the ability to impact the immune response. This is what we mean by low-level radiation. It's an internal radiation. In other words, if you ingest a fission product or a piece of uranium dust, it is like having a tiny X-ray go off for a tiny fraction of a second for the rest of your life. The effects of low-level radiation are quite awful, depending on which organ is affected."

There have been several army reports on the dangers of depleted uranium, which have been released by the Depleted Uranium Citizens' Network.<sup>27</sup> Sara Flounders, coordinator of the International Action Center, a network of organizations and activists initiated by former US Attorney General Ramsey Clark, points out that one of these reports, which was put out by the Army Environmental Policy Institute,

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discusses the negative health and environmental consequences of depleted uranium use in the army.<sup>30</sup> According to the report, the financial implications of long-term disability payments and other health care costs would be excessive if depleted uranium was indicted as a causative agent for Desert Storm illnesses. This may be why depleted uranium is not being discussed as a cause of Gulf War syndrome, Flounders feels.

#### **The Downsized Doctors**

Dr. Asaf Durakovic was a chief of nuclear medicine at the VA Medical Center in Wilmington, Delaware. After the war, Dr. Durakovic tried to test members of the 144th Service and Supply Company for depleted-uranium contamination. This was a unit that had been salvaging equipment that had been hit by depleted-uranium rounds. Durakovic first tested the vets and concluded that 14 out of 24 were contaminated. But since his testing equipment was outdated, Durakovic proceeded to send urine samples from the vets to be tested at the US Army Radiochemistry Laboratory in Aberdeen, Maryland.

This proved impossible. A number of the samples apparently never made it to the lab, and the ones that did were lost. What's more, the VA decided against further testing. Dr. Durakovic was told by both the VA and the Department of Defense to stop his depleted uranium investigation. Then, after eight years of outstanding performance at his VA position, he ended up losing his job "because of cutbacks." Meanwhile two of the vets exposed to uranium died. The Pentagon released a paper stating that uranium had not been proven to cause



health problems, but Durakovic points out that they were looking for short-term, not long-term hazards.<sup>31</sup> He also has stated that he feels certain that he was terminated from his job as a direct result of his involvement in the management of Gulf War veterans and his raising of nuclear safety issues.

Dr. Durakovic testified before a House of Representatives subcommittee in June 1997, estimating that 123,000 troops had been exposed to depleted uranium through contact with captured Iraqi tanks. "Those that were required to receive the vehicles actually lived very near them, ate lunch on top of them, and cooled themselves inside of them," he reported. "On March 10, 1991, a Battle Damage Assessment Team dressed in full radioprotective clothing arrived, stating that they were from Washington to assess the radioactivity of specific tanks. They reviewed the tanks for four days, fully dressed in 90 degree temperatures. At the conclusion of the assessment the soldier in charge of the crew, required to move the equipment, was told that the tanks were 'hot,' to mark them with the atomic symbol, and not to let people go near them. The assessment team had detected 0.26 to 1.0 rad inside the tanks....The team stated that the tanks were not dangerous to those required to work in their environment. One soldier was given an outdated dosimeter which began to detect radiation right away despite the fact that it was long past its expiration date .... All work that was conducted on behalf of DU contamination was coordinated through the Persian Gulf Registry of the Wilmington VA hospital. All records were subsequently lost."32

The Radiochemistry Lab in Aberdeen, Maryland, does admit to losing Dr. Durakovic's medical tests. What's more, Durakovic had also sought help from the Boston VA Medical Clinic. Two physicians from the Boston VA, Dr. Burroughs and Dr. Slingerland, asked for more sensitive equipment to better diagnose the 24 soldiers of the 144th Service and Supply Company who had been referred to them by Dr. Durakovic. They both lost their jobs.

Concerning testing for exposure to depleted uranium, Dan Fahey, legal assistant and outreach worker at Swords to Plowshares, a San Francisco veterans service organization, brings up the point that urinalysis tests will give accurate results only if they're used within a year of exposure. That's because, for a year, the body naturally purges most of the uranium that's been inhaled or ingested, and after a year, although the substance remains in the bones, kidneys, and lungs, it's not being excreted in the urine. Thus, today, this type of test is useless.<sup>33</sup>

Fahey also describes a 1991 incident in Kuwait during which troops were unknowingly exposed to depleted uranium: "There was a fire in July 1991 in Doha, Kuwait, in which there were several thousand DU rounds that burned up in this very large fire. There were severe explosions for six hours. The fire raged until the following day. And through the Freedom of Information Act we learned that while this fire was going on there was an explosive ordnance disposal team that was rushed to the scene of the fire, but before they arrived they warned the commanders at the Doha base ... that DU rounds were burning, that they should keep the people out of the downwind area, and that they should issue respiratory protection. And we also know that that message was never passed down to the troops. And as a result some people were exposed during the fire."33

Fahey goes on to explain that troops were exposed after the fire as well. Given no information about the presence of depleted uranium contamination, they were assigned to clean up the compound with brooms, shovels, and their hands, and were given no protection.

According to the Depleted Uranium Education Project,<sup>34</sup> "the fire at the US Army Black Base in Doha, Kuwait, destroyed more than 660 large-caliber DU tank rounds, 9,720 small-caliber DU rounds, and four M1A1 tanks with DU armor. Over 9,000 pounds of DU penetrators were lost in the fire, exposing thousands of vets to airborne uranium oxides. Despite the known health problems of vets, the US Army's report on exposures to depleted uranium at Doha has not even been released to the Presidential Advisory Committee on Gulf War Illnesses, and US troops continue to be stationed at Doha."

#### Next month:

A Half-Decade of Cover-Up

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