Volume 4 | Issue 12 | Article ID 2286 | Dec 02, 2006

Live Ammo: Testing of Biochemical Agents on U.S. Sailors

Mark J. Rauzon

Live Ammo: Testing of Biochemical Agents on U.S. Sailors

By Mark J. Rauzon

The Pacific Project exposed U.S. sailors to biowarfare and chemical agents. Forty years later, some of these sickened warriors are still 'lost' at sea.

Mention that you're a biologist at a party, and half the people in the room will begin to yawn. The other half will be intrigued, and someone will say that they always wanted to be Jacques Cousteau. Go on to tell them that you study seabirds on tropical isles, and visions of paradise will dance in their heads. The mystique, if not the money, holds a strong allure.

What I don't tell them about is the dark side of biology—the way things really work in the natural world. Most partygoers don't want to hear about the role that rats, mites, ticks, lice, seabirds and mosquitoes play in the health of marine ecosystems and humans. In fact, when I started my career 30 years ago, the notion that birds can transmit disease to people came as a surprise to me as well, notwithstanding my mother's mantra: "Don't touch dead birds!"

It was only after I fell ill with a tick-induced fever on Laysan Island, in northwestern Hawaii, that I wondered what those birds had been scratching as I focused on their calls and courtship antics, their flight and feeding behaviors. Soft-bodied bird ticks look like grains of coral sand. Mobile and heat-seeking, they are hard to detect as they work their way under loose clothing to bite one's skin. Reactions among people vary from nonchalant scratching to intolerable itching. I seemed especially sensitive. My tick bites, soon bloody lymph pustules, itched fiendishly and looked horrible.

Laysan Island (c)R.J. Shallenberger

It slowly dawned on me that perhaps the bites on my swollen ankles were the cause of my 101-degree fever. My appetite fell off and my dreams grew restless. In one, I was bicycling in a valley surrounded by green cliffs when, all of a sudden, my bike slipped into the path of an oncoming four-wheel-drive pickup. I sensed the end was near, but the wheels swerved away at the last second. I knelt and blessed myself. The following night I dreamed of Bob Hope, the next night Bruce Willis. God save me, this fever was too much. After several days the aching in my joints and listlessness passed, and I returned to my research.

In the following days, I thought more about the

source of my illness. It had been so strange, unlike anything I had felt before. And then suddenly I remembered: When I first began surveying seabirds, I'd heard a vague rumor about the Pacific Project, a government program that supposedly involved germ-warfare research in the remote reaches of the ocean. Was it possible that I had been touched by the residue of some cloak-and-dagger experiment?

Over time, I became convinced that the Pacific Project wasn't responsible for my sickness; evidently I had caught a nasty case of Laysan fever, a tick-borne malady lacking any government connection. Nevertheless, I was now bitten by another kind of bug: What was the Pacific Project really all about?

In 1998, several years after I recovered, my colleague Rick Steiner from the University of Alaska Anchorage and I began to follow a paper trail with the help of a Freedom of Information Act request to the Department of Defense. I eventually learned that the Pacific Project was a Cold War-era initiative, known only to those with the highest security clearances. No one was talking. The government's responses were a shell game.

I was finally told by the aptly named Norman Covert, the command historian at Fort Detrick, Md., that a thorough review of all Pacific Project reports had been conducted in order to comply with an executive order from President Nixon in 1969 outlawing offensive biowarfare research. But after that review, the material dealing with the development and use of biological weapons was mostly destroyed.

Fort Detrick

The records destroyed? Now my suspicions were really aroused. What happened out there 40 years ago? A new fever gripped me.

An American scientist in "defense biology" was once asked what he was looking for, to which he sardonically replied: "A cure for metabolism."

It is a gruesome thought stretching back hundreds of years. Biological warfare may have begun when the Tartars catapulted flea-bitten corpses infected with bubonic plague over Genoese fortifications and stoked the Black Death epidemic that decimated Europe in the 14th century. During World War I, Germany used livestock diseases against other nations. In World War II, Japan delivered the bubonic plague to China via airdrops of insects.

Still, in the '50s, chemical and biological weapons capabilities were limited for a variety of reasons, the biggest being gaps in predictability. With the Cold War paranoia of the early '60s, Defense Secretary Robert McNamara tried to fix that. The result was Project 112—so-called because at the time 112 chemical and biological weapons programs were put under investigation. The Pacific Project was one of them.

Its purpose became to support the hot war raging in Asia as well as the Cold War. Open-air testing of germ warfare was considered essential to determine the dispersal and longevity of aerosolized particles that might be used by our enemies. Specifically, test sites in the tropical Pacific were needed to duplicate conditions found in Vietnam. In the summer of 1962, the Army began looking for someone to conduct an ecological baseline study of test sites in the central Pacific Ocean.

The Army asked the Smithsonian Institution to conduct the study, and Philip S. Humphrey, curator of birds and chairman of the Department of Vertebrate Zoology, acted as project leader. The Pacific Project would evolve into the world's most comprehensive ocean survey, covering more than 4 million square miles.

From 1963 through 1969, the Smithsonian put several dozen biologists on military ships to visit select islands in the central Pacific and study the fauna and flora.

Many of the islands surveyed were U.S. possessions in our forgotten "Back Forty." Although these islands have a shared lineage of ancient Polynesian discovery, many were first claimed by Yankee whalers in the 1800s and named New Nantucket, Washington and American islands. In the great rush of Pacific exploration in the 19th century, we pushed the American frontier beyond California, beyond Hawaii, to claim small, obscure tropical islands most people had never heard of: Kingman Reef; Jarvis, Howland and Baker islands; Palmyra, Rose and Swain's atolls.

Kingman Reef

Better known is the military base on Wake Island and the former base on Johnston Atoll, but finding them quickly on a map would challenge even most geographers. Uncle Sam, however, has been sailing out here for a long time, going about his business in these isolated isles, far from prying eyes.

Most of the islands the biologists descended upon were uninhabited coral atolls located near the equator, although some Alaskan islands were also visited. The Smithsonian scientists were able to survive the heat, dryness, isolation, treacherous surf and biting bugs, not to mention the beaucoup bird dung.

For young biologists in particular, living for weeks at a time in immense bird colonies was a dream come true. Part of their work was to count and mark the seabirds. More than 2 million were banded with numbered aluminum markers, and some were tagged with colored plastic streamers. (The best bander, Roger B. Clapp, held the record for marking the most birds in a single night: 565 masked boobies.)

One biologist waxed poetic about the banding experience:

As I was marking birds with bands,

I knew there was nothing in my hands,

No leg, no wing, no bird indeed.

Of bands and pliers I was in need.

My allergy to feathers is at rest,

Now that I'm banding at my best.

And here's the existential "Ode to a Mess" by another biologist:

Shit gets in your eye

On your thigh

Why oh why

Am I a bird bander?

Why? Because bands confirmed the birds' comings and goings, their ranges and timing of movements, their trans-Pacific peregrinations. In the 1965 annual report of the Smithsonian Institution, Humphrey wrote: "Perhaps the most important practical accomplishment of the Smithsonian survey will be the delineation of the environment over a relatively short period of time. This will provide a baseline of comparison for biologists concerned, 10 or 20 years from now, with measuring the effects of man-made modifications of the environment on natural populations of organisms.

"The need for such a baseline is most urgent today," he added, "when man, in his struggle to advance himself, is changing the face of the earth at an appallingly rapid rate, and is subjecting the total environment—water, atmosphere and living tissues—to physical and chemical influences which need to be measured now and in the future. For unless these fundamental changes in his environment are properly assessed, man himself, through ignorance, may fall victim to his own progress."

I thought the words "living tissues" a curious choice. Humphrey seemed to suggest that something that could affect the metabolic makeup of organisms was afoot.

Biologists under his direction were given a series of inoculations to protect them from exposure to diseases but were not told the precise reason for the shots. Of course, it may simply have been prudent to vaccinate biologists wallowing in guano, collecting live birds, ticks and mites, and gathering more than 5,000 blood samples. The specimens were sent to two government facilities: Ft. Detrick, the bioweapons lab in Maryland, and the Deseret Test Center in Utah.

Humphrey could never be sure just what Army officials were up to, though he speculated that two biological agents were tested: the "oldie moldies"—Q fever and tularemia (also known as rabbit fever), both of which are spread by ticks. He also surmised that the Pentagon, in looking closely at the surveys of banded birds, wanted first to be certain that any potential test site was "safe." In field-testing biological weapons, it was imperative to know if the birds would carry disease out of the test area and into populated regions.

After all, driven by the winds, oceanic bird movements can be erratic and the last thing you want is the boomerang effect—the disease coming home to roost.

Having gained some perspective on the Pacific Project, my colleague and I sent another request to the Defense Technical Information Center for more leads on what had taken place on the islands where we worked. A trove of

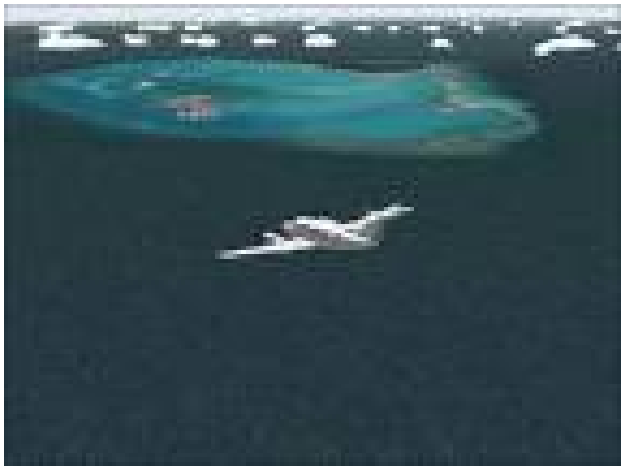
information arrived, including heavily redacted documents with intriguing names: Operation Fearless Johnny, Magic Sword, Shady Grove, Green Mist. (Thankfully, we were digging into this in the pre-9/11 world; I doubt we'd get anything today.)

Defense Technical Information Center

In all, we were to learn, 50 or so operations had been conducted during the '60s by about 20 ships transporting more than 6,400 sailors. The Granville S. Hall and the George Eastman were the flagships of the fleet, with five tugs as the workhorses in the experiments. In a typical test, the ships were deployed as targets arrayed in lines, diamonds or other patterns, with vessels at five, 15, 30, 50, 75 and 100 miles downwind of the dissemination line. The boats would "lay to" at night along the line, waiting for a Marine A4D Skyhawk or Marine F-4D Phantom jet to swoop by, "capping the T" at the top of the line with an aerosol spray.

During the initial tests, three simulants were used: the "harmless" bacteria Bacillus globigii, a stand-in for anthrax; Serratia marcescens, another bacteria; and the "benign" chemical zinc cadmium sulfide. Subsequent tests used the "real McCoy," and the sailors later decontaminated the ships with beta-propiolactone and ethylene oxide, harsh disinfecting cleansers.

The first open-air "hot germ" tests took place in 1965. Operation Shady Grove was conducted over the Pacific downwind of Johnston Atoll, about 800 miles southwest of Hawaii. In the final phase, barges loaded with rhesus monkeys were "challenged" with weaponized Q fever and rabbit fever. The monkeys were doused and taken to Johnston Atoll. Half of them died.



Johnston Atoll

And what of the exposed sailors? That's proven a lot harder to pin down. Because the nature of the tests was kept hidden from the public for so long, those serving on the Hall and Eastman have had a difficult time telling their secrets, even when they've come down with debilitating ailments. For years, no authority would acknowledge that their illnesses might be related to biological warfare experiments in the Pacific. Their initial petitions to the Veterans Administration (now the Department of Veterans Affairs) for medical assistance and compensation fell on deaf ears.

Finally, in 2001, the rumors I had first heard about the Pacific Project were confirmed when the Pentagon—under pressure from Congress and following investigative reports in the *New Yorker* and on CBS News—reluctantly admitted that the U.S. had conducted a sweeping test program involving chemical and germ warfare agents.

But just what happened to the so-called test conductors culled from the ranks of the Navy remains far from clear. At the time of the tests, some of these human guinea pigs reported respiratory irritation, illness and skin rashes. Because the cleansers and the simulants were not considered a health risk then, some sailors were not required to wear protective clothing or equipment during all the drills. Nor were their intake levels measured.

Later it was determined that for those with immune disorders, the supposedly harmless bacteria and chemicals could cause infections, allergic reactions, cancer—even death. As if this weren't enough, both the Hall and Eastman had previously participated in atomic bomb tests, and rumors were that portions of the ship frames were eventually cut away because they were radioactive.

Little wonder that later in life, the vets reported diseases such as pancreatic and kidney cancer, non-Hodgkin's lymphoma, a progressive neurological disorder called spinocerebellar degeneration, sarcoma, tumors, blinding headaches, lung problems, varicose veins and birth defects in their children.

Because no one diagnosis stands out among the vets, the Institute of Medicine in 2003 launched a three-year, $3-million epidemiological study of the potential long-term effects of the exposures. The IOM, a private group that is a branch of the National Academy of Sciences, began by taking medical histories over the phone and by written questionnaire from participants and comparing them to a veterans control group.

The study is scheduled to be wrapped up by the middle of next year, with an in-house analysis of results and an independent assessment by the National Academy. Ultimately, the findings will be released to the public, sometime in the spring of 2007.

And what action will result?

The vets aren't expecting much. They are used to being put off and denied access to the care they need primarily because, until recently, the medical industry did not understand what effects these substances might have on humans. To this day, the dosages they endured are still classified.

You can feel the sailors' sense of betrayal when you read their website postings. As one self-admitted test rat sarcastically wrote: "Would you want our government to be EMBARRASSED about their Illegal testing programs?? A lot of servicemen still don't get it, we were 'EXPENDABLE', then, and now—Only wish that I knew then what I know now!!!"

Some efforts to aid their cause are underway. The Veterans Right to Know Act, which calls for a 10-member commission to investigate the dosages used during Project 112, is slowly gathering momentum in the House. The panel, which is to be modeled after the bipartisan 9/11 commission, would also ensure that Veterans Affairs fully informs the 6,000-plus sailors of their exposures so that they can receive proper treatment and potential disability compensation. In August, the California Legislature unanimously passed a resolution

supporting the act, which was written by Democratic Rep. Mike Thompson of St. Helena. "They went to war for us," Assemblywoman Patty Berg of Eureka said of the vets. "How can we not go to the mat for them?"

Pursuing another front, several veterans filed suit against the government. The key question in the case: When do federal officials cross the line from legitimately protecting classified information to violating citizens' rights to records that are needed to obtain benefits and medical treatment?

In September, the U.S. Court of Appeals in Washington ruled against the vets, finding that they couldn't prove that the government had "completely foreclosed their opportunity to meaningfully pursue" their benefits claims. The court's decision affected not only the biowarriors but also the "atomic veterans" of the 1950s and Gulf War vets from the '90s. The vets do not have plans to appeal to the Supreme Court.

Meanwhile, a lesson might well be learned from the fallout of the Pacific Project. But I'm afraid that's being lost in this post-9/11 world.

"In the Orwellian double-think of military security," writer-pacifist Lord Ritchie-Calder wrote in 1966, "his arguments are used to justify something quite different. 'Ah yes . . . the Enemy is scheming up all kinds of horrors. We have to think what he may be . . . finding out—to get the antidotes, of course. And, in the process, we will find out things he has not found out but that is Top Secret because we might have to use them in a pre-emptive biological strike. That would not be aggression because we, as the Goodies, would just be acting in anticipatory self-defense against the Baddy.'"

Today the "Goodies" can be hard to tell from the "Baddies," for the former were slow to face up to what they did to those aboard the Hall and Eastman and other ships—to those who served with honor in the Cold War and still suffer as a result of unknown exposures.

Ten years have passed since I began to satisfy my own curiosity about my tick bites. My fever is long gone, but my head hurts when I think of what the Pacific Project has wrought.

This article appeared in the Los Angeles Times *on November 19, 2006. Posted at Japan Focus on December 5, 2006.*

Mark J. Rauzon is a wildlife biologist specializing in marine ornithology and the author of 20 nonfiction books for children. His books also include Isles of Refuge: Wildlife and History of the Northwestern Hawaiian Islands*.*