

*This piece was published as Chapter 6, pp. 99-128, in Adolfo Leyva, ed., *Cuba: Assessing the Threat to U.S. Security* (Miami: The Endowment for Cuban American Studies, 2001). It was entered into the Congressional Record by U.S. Senator George Allen at the hearing "Cuba's Pursuit of Biological Weapons: Fact or Fiction?," Hearing Before the Subcommittee on Western Hemisphere, Peace Corps and Narcotics Affairs of the Committee on Foreign Relations, United States Senate, June 5, 2002.

Does Cuba have biochemical weapons?

By Maria C. Werlau

"Today this country has more options than ever, is stronger than ever, and has more weapons than ever to wage the ideological battle –and let's not forget the other weapons we have stored away and the very clear idea on how we'd use them, so we are calm."

-Fidel Castro, October 17, 2001.¹

This lamb can never be devoured –not with planes nor smart bombs– because this lamb is smarter than you and in its blood there is, and always will be, poison for you."

-Fidel Castro, January 28, 1998.²

What does the U.S. government know?

In May of 1998, then Secretary of Defense William Cohen submitted a report to Congress titled "The Cuban Threat to U.S. National Security." Prepared by the Defense Intelligence Agency as a result of an inter-agency effort, the Executive Summary of its section "Biological Warfare Threat" read: "Cuba's current scientific facilities and expertise could support an offensive BW program in at least the research and development stage. Cuba's biotechnology industry is one of the most advanced in emerging countries and would be capable of producing BW agents."³

¹ Castro compared the United States to a dragon and warned against the dragon eating the lamb, Cuba. ("Fidel inaugura nueva escuela de formación de trabajadores sociales," *Granma Internacional Digital*, 18 de Octubre de 2001. <http://www.granma.cu/espanol/octu3/43escuela-e.html>. Translation by the author.)

² Armando Correa, "'Veneno' de Castro abre sospechas que Cuba oculta armas bacteriológicas." *El Nuevo Herald*, May 4, 1997, Sec. A. p.6. (Translation by the author.)

³ *The Cuban Threat to U.S. National Security*, Report Submitted to Congress by Secretary of Defense, William Cohen, 1998. The *Transmittal Letter* of May 6, 1998 from the Secretary of Defense to The Honorable Strom Thurmond, Chairman, Senate Armed Services Committee, states that the review and assessment was conducted by the Defense Intelligence Agency (DIA) in coordination with the National Intelligence Council, the Central Intelligence Agency, the National Security Agency and the Intelligence and Research Bureau at the State Department. The Joint Staff, the United States Southern Command, the National Security Council, and the Bureau of Inter-American Affairs at the Department of State were also consulted. <http://www.defenselink.mil/pubs/cuparpt.htm>

At a congressional hearing held recently, Rep. Chris Shays, R-Connecticut, Chairman of the House Government Reform's Subcommittee on National Security, Veterans Affairs and International Relations, asserted that the Defense Department openly lists the countries believed to have biological weapons, mentioning Cuba alongside fourteen others.^{4/5}

In 1995, the congressional Office of Technology Assessments⁶ had submitted a report to Congress identifying seventeen countries believed to be in possession of biological weapons –the list included Cuba.⁷ Cuba, in fact, might well be among the countries alluded to in a Defense Department 2000 report to Congress: “Intelligence analysts believe that at least seven potential adversaries have an offensive BW capability to deliver anthrax.”⁸

In 2000, Michael Osterholm and John Schwartz -recognized experts on biochemical weapons,⁹ cited a 1999 report by the congressionally created *Commission to Assess the Organization of the Federal Government to Combat Proliferation of Weapons of Mass Destruction*: “most of the nations identified as sponsors of terrorism either have or are seeking weapons of mass destruction. (Those nations are Cuba, Iran, Iraq, Libya, North Korea, Sudan and Syria). According to the commission ... more than a dozen states have offensive and/or chemical weapons programs.”¹⁰

In addition to intelligence reports, albeit imprecise, leading experts and journalists, relying on diverse sources, have included Cuba in the short list of countries suspected or said to have biological weapons. In 1998, for example, Richard Preston, a journalist who's written extensively on biological and chemical weapons, reported that the U.S. government “keeps a list of nations and groups that it suspects either have clandestine stocks of smallpox or seem to be trying to buy or steal the virus.” The classified list is “said to include” Cuba along with nine other countries.¹¹

⁴ Hearing of the House Intelligence Terrorism and Homeland Security Subcommittee, October 11, 2001. At the hearing, Col. Edward Eitzen, who heads the Army's lead biological defense lab at Fort Detrick, Maryland (Medical Research Institute of Infectious Diseases) refused to say which countries are thought to have experimented with bioterrorism weapons.

⁵ Remaining countries listed are: Bulgaria, China, Egypt, Iran, Iraq, Israel, Laos, Libya, North Korea, Russia, South Africa, Syria, Taiwan, and Vietnam. (Carolyn Skorneck, “Anthrax Dangerous, Difficult Weapon,” Washington, *Associated Press*, October 11, 2001.)

⁶ The Office of Technology Assessments was established by Congress in 1972 to provide congressional committees analysis of emerging, difficult and often highly technical issues.

⁷ Others on the list were Libya, North Korea, South Korea, Iraq, Taiwan, Syria, Israel, China, Egypt, Vietnam, Laos Bulgaria, India, South Africa, and Russia. (Congressional Hearing of the Senate Permanent Subcommittee on Investigations.)

⁸ DOD response to the staff report of the House Government Reform's Subcommittee on National Security, Veterans Affairs and International Relations entitled “The Department of Defense Anthrax Vaccine Immunization Program: Unproven Force Protection,” February 29, 2000.

⁹ Mr. Osterholm is the Director of the Center for Infectious Disease Research and Policy as well as Professor of Public Health at the University of Minnesota. Mr. Schwartz is a journalist for *The New York Times*.

¹⁰ Michael T. Osterholm and John Schwartz, *Living Terrors* (New York: Delta Publishing, 2000), p. 37.

¹¹ Also listed are Russia, China, India, Pakistan, Israel, North Korea, Iraq, Iran, Cuba, and Serbia. (Richard Preston, “The demon in the freezer,” *The New Yorker*, July 12, 1999, pp. 44-61.)

In his authoritative book on smallpox, *Scourge*, published in 2001, Jonathan Tucker¹² sustains: "... leaks and rumors of uncertain reliability suggested that several countries might have inadvertently or deliberately retained specimens of the virus from the time when smallpox was a common disease. Possible suspects included China, Cuba, India, Israel, Pakistan, and Yugoslavia."¹³ Tucker also cites a 1994 Defense Intelligence Agency report on the work of an Interagency Working Group that determined the former Soviet Union had transferred smallpox virus to Iraq in the 1980's or 1990's. Although he does not explore the Castro regime's close ties with Saddam Hussein's Iraq, these purportedly include cooperation in biochemical weapons' development.¹⁴

The most compelling indication of a Cuban bioweapons program, however, comes from a high-ranking Soviet defector. In 1998, Ken Alibek,¹⁵ former Deputy Director of Research and Production of the former Soviet Union's biological weapons program, gave a first first-hand account of the Cuban operation. In his book *Biohazard*,¹⁶ Alibek recounts how his boss -Major General Yury Kalinin, head of the Soviet bioweapons program- had returned from a 1990 visit to Cuba "convinced that Cuba had an active biological weapons program." Kalinin had been invited by Cuba to discuss the creation of a new biotechnology plant, ostensibly devoted to single-cell protein. Alibek also recalls how, in July 1995, Russia had opened negotiations with Iraq for the sale of large industrial fermentation vessels and related equipment -the very model "we had used to develop and manufacture bacterial biological weapons. Like Cuba, the Iraqis maintained the vessels were intended to grow single-cell protein for cattle feed..."¹⁷

¹² Jonathan Tucker, a leading expert on biological and chemical armament, is currently Director of the Chemical and Biological Weapons Nonproliferation Project of the Center for Nonproliferation Studies of the Monterey Institute of International Affairs in Washington, D.C. and has worked for the U.S. State Department, the congressional Office of Technology Assessments and the Arms Control and Disarmament Agency.

¹³ Jonathan B. Tucker, *Scourge: The once and future threat of smallpox* (New York: Atlantic Monthly Press, 2001), p. 205.

¹⁴ For more on the Iraq-Cuba relation, see Briefing Paper by Manuel Cereijo, *Cuba-Iraq*, October 2001. (Cereijo, former professor at Florida International University, claims he has interviewed many scientists and defectors from Cuba over a period of years. He reports that by the early 1990s Iraq had given Cuba anthrax virus for its development. See his papers at http://www.amigospais-guaracabuya.org/index_cereijo.html). Also see Marcelo Fernández Zayas, *Intelligence Report* of October 25, 2001. (Fernández-Zayas has written has interviewed numerous defectors and has contacts with diplomats and government sources worldwide. His articles are available at <http://www.amigospais-guaracabuya.org/index.mfz.html>.)

¹⁵ Formerly Dr. Kanatjan Alibekov, from 1987 to 1992 he was first deputy chief of research and production of *Biopreparat*, known as "The System," the Soviet Union's clandestine biological weapons program. Its top scientist, he had thirty-two thousand scientists and staff people working under him. After an inspection trip to the U.S. in December 1991, Alibek became convinced it had no active biowarfare program. Confirming his already growing doubts, he realized the Soviet leadership had used propaganda lies to justify its huge offensive biological program. He resigned and left the Russian Federation for the U.S. several months later, in October 1992. (Ken Alibek, "Behind the Mask: Biological Warfare," *Perspective*, Volume IX, No. 1, September-October 1998 (*Perspective* is a publication of Boston University's Institute for the Study of Conflict, Ideology and Policy); Richard Preston, "The bioweaponers," *The New Yorker*, March 9, 1998, pp. 52-65; J. Tucker, *Scourge*, pp. 138-162.)

¹⁶ Ken Alibek with Stephen Hendelman, *Biohazard* (Random House, 1998).

¹⁷ *Ibid*, p. 275.

In a June 1999 interview, Alibek explained that the Cubans had, since 1988, been after them (the Soviets) for help in building the microbiology plant with a huge reactor. His boss, Kalinin, was aware that Cuba's investment in biotechnology was beyond the means of the country's economy and suspected the plant was actually intended for developing biological weapons in industrial volumes. In a previous trip to Havana, Kalinin had reported encountering severe security measures and secret, closed off, areas -just as in the Soviet offensive biological program. And, in his 1990 visit to Cuba, Kalinin saw the sophisticated equipment Cubans had purchased, a requirement for the development of military biological material. Alibek claimed that their suspicions of a Cuban biowarfare program had begun in 1987; by 1991 they were seeing "irrefutable signs of biowarfare production."¹⁸

According to Alibek, the Soviet Union had helped Cuba develop its biotechnology program after a February 1981 trip by Castro to the Soviet Union, then under Brezhnev. He writes: "Within a few years, Cuba had one of the most sophisticated genetic engineering labs in the world --capable of the kind of advanced weapons research we were doing in our own."¹⁹ In *Biohazard* he revealed how, for many years, the Soviets had organized courses in genetic engineering and molecular biology for scientists from Eastern Europe, Cuba, Libya, India, Iran and Iraq among others. Some forty foreign scientists were trained annually.²⁰ He later elaborated that Cuba had sent dozens of students to Moscow's State University for studies in microbiology and biotechnology.²¹ Most recently, he's regretted having helped train Cubans in this technology, which helped "Castro develop biological weapons."²²

Already in 1988, the United Nations Security Council had been informed of use of toxic weapons by Soviet-supported Cuba in Angola.²³ Belgian toxicologists²⁴ had certified that residue of chemical weapons – including sarin and VX gas- had been found in plants, water and soil where Cuban troops were alleged to have used chemicals against Savimbi's troops. Additional tests had provided evidence that other substances – such as napalm and sarin- were used against civilian populations supporting Savimbi.^{25/26} Allegations had

¹⁸ Roberto Fabricio, "Las instalaciones cubanas de biotecnología 'están llenas de zonas cerradas y secretas,'" *El Nuevo Herald*, June 20, 1999.

¹⁹ Ken Alibek, *Biohazard: The chilling true story of the largest covert biological weapons program in the world* (Random House, 2000), pp. 273-277.

²⁰"Many of them now head biotechnology programs in their own countries. Some have recruited the services of their former classmates." (Ibid.)

²¹ R. Fabricio, op. cit.

²²Ike Seamans Report: *Cuba's Biological Weapons Industry*, NBC 6, October 10, 2001. <http://www.msnbc.com/local/wtvj/nbc6e201fsc.asp>

²³ The use of chemical and bacteriological agents in war is forbidden by the 1925 Geneva Protocol (Protocol for the Prohibition of the use in war of asphyxiating, poisonous or other gases, and bacteriological methods of warfare) which entered into force on February 8, 1928.

²⁴ The team was led by Dr. Aubin Heyndrickx, chief United Nations consultant on chemical warfare, a world-renowned Belgian toxicologist and professor at the State University of Ghent, Belgium. (Rowland Evans and Robert Novak, "Cuban troops in Angola said to use poison gas," Syndicated Column Mid-January 1988, *FortFreedom.com*, February 6, 1989, <http://www.fortfreedom.org/y19.htm>; Ariel Remos, "Las armas bacteriológicas colocan a Castro en el Bioterrorismo," *Diario Las Américas*, July 13, 1999.)

²⁵ A. Remos, op. cit.

been made previously that Cuba had used chemical weapons in Angola in 1984 and 1986.²⁷

In the United States, an Evans & Novak column of mid-1988 had criticized the Reagan Administration for turning away from evidence that Soviet-sponsored Cuban troops were using poison gas against the U.S.-backed freedom fighters. It argued that the very serious charges were being ignored to avoid compromising "the cozy new relationship" with Gorbachev and, perhaps, to also keep from stirring the pot after the recent agreement between South Africa and Angola.²⁸ Evans & Novak asserted that the charges had been "scrupulously documented" by Dr. Aubin Heyndrickx, the senior United Nations consultant on chemical warfare, and cited his recent response to an inquiry from Democratic Senator DeConcini about the rumors: "There is no doubt anymore that the Cubans were using nerve gases against the troops of Mr. Jonas Savimbi." Heyndrickx was also reported to have warned the United States that "if Soviet-Cuban managers in Angola used gas in the past, they could use it in the future."²⁹

Evidence of an offensive chemical program re-surfaced in 1998.³⁰ In July it was reported that Wouter Basson, former head of South Africa's covert chemical weapons program,³¹ had given a sworn statement with serious allegations against Cuba. He declared that South Africa had been forced to begin its chemical weapons' program after Cuba had used chemical warfare on South African troops fighting in Angola. At the time they had been caught unprepared and defenseless. (South African troops fought in Angola until 1990.)³² In fact, the highest-ranking military officer to ever defect from Cuba, Air Force Brigadier General Rafael del Pino, has reported that since the 1970's war in Angola, the

²⁶The now defunct *Voix d'Afrique* is said to have published (2/6/90) photos of people allegedly deformed by chemical weapons used by Cuba against men, women and children in Angola in the 1980's. (Jonathan T. Stride, "Who will check out Fidel Castro's new chemical / biological weapons plant in East Havana." Miami. www.fiu.edu/~fcf/bio.chem.plnat91097.html)

²⁷ Rafael Fermoselle, "El terrorismo y la conexión cubana," *El Nuevo Herald*, October 8, 2001. (Mr. Fermoselle is retired from the U.S. Foreign Service and the author of several books.)

²⁸ Ibid. (The pact called for a staged Cuban withdrawal of its troops and an end to South African aid for Savimbi.)

²⁹ Evans & Novak, op. cit. (Heyndrickx told an African publication that in Angola chemical gases supplied by the Russians had been used by dos Santos against the Unita movement of Jonas Savimbi at least between 1986 and 1991. Idrissa Fofana, "Menaces pour la paix," *Demain, L'UNITA, Afrique Golfe Magazine*, Janvier - Février 1998. <http://www.afard-unita.asso.fr/html/revuepress/revue15.htm>).

³⁰Actually, documents allegedly smuggled out of Cuba in 1997 indicated that Castro initiated a chemical-weapons program in 1981, when Soviet technicians built a plant to produce tricothecen, the main component of "yellow rain," in an underground tunnel complex at Quimonor in Matanzas province. The program was expanded some years later with the construction of another chemical-weapons facility in Pinar del Rio, where Cuban and Soviet technicians began experimenting with mixtures of germs and toxins to produce anthrax. (See (Martin Arostegui, "Fidel Castro's Deadly Secret - Five BioChem Warfare Labs," *Insight Magazine / The Washington Times*, Vol 14, No 26 July 20, 1998 and J. Stride, op. cit.).

³¹ Basso, a doctor and toxicologist, headed South Africa's 7th Medical Division. "SA's poison gas secrets sold to Libya," *Electronic Mail & Guardian*, February 7, 1997, <http://www.mg.co.za/mg/news/97feb1/7feb-poisongas.html>

³² "Cuba usó armas químicas en contra de Sudáfrica," *Reuters* (Capetown) / *El Nuevo Herald*, July 28, 1998. (Soviet-sponsored Cuban troops fought against Jonas Savimbi's anti-Communist guerrillas. When negotiations began in 1988 for a staged withdrawal, an estimated 55,000 Cuban troops were deployed in Angola.)

Cuban Armed Forces, he explained, had been bent on developing and possessing chemical weapons. Cuba's top brass had approached the Soviets to request these weapons, but the Soviets had refused.³³

Despite all of the above, it is unknown what exactly U.S. intelligence has uncovered regarding Cuba's biochemical programs. Meanwhile, U.S. government officials outside the intelligence community, while confirming that Cuba's highly advanced biotechnology industry is capable of producing biological warfare agents, have publicly discredited allegations that Cuba is manufacturing biological weapons. In 1997, for example, the U.S. State Department responded to a report of secret documents smuggled out of the island with details of Cuba's bioweapons program: "The U.S. government follows the matter of weapons of mass destruction very closely, and we can assure you that we know of no reason to be alarmed."³⁴

In 1999 there was another official response. *The Miami Herald* published a story on U.S. government reactions to Alibek's account in *Biohazard*, which had received prominent coverage in Spanish-language media in Miami, home of a large Cuban American community. State Department sources were quoted: "Cuba certainly has the know-how and capability to brew terrorism-sized batches of deadly agents," but "there has been no proof that it has methodically produced military-grade agents or munitions." Moreover, it elaborated, there was "no evidence that Cuba is stockpiling or has mass-produced any BW [biological warfare] agents," plus there was not "any sign of production facilities." Another U.S. official was cited: "We don't see any special facilities with eight-foot fences and stuff like that..." And, yet another government representative reported that intelligence from defectors and other means hadn't produced any verifiable evidence of bio-chemical weapons production.³⁵ U.S. officials, however, also acknowledged that the possibility could not be ruled out of Cuba manufacturing small quantities of biological warfare agents and containers for terrorist and sabotage actions.

After revisiting the denials issued in 1999, the Coordinator for Cuban Affairs at the State Department has recently reaffirmed: "We are not aware of anything different" that would be at odds with those statements.³⁶

Public contradictions point to a seeming discrepancy between U.S. policy and defense officials on the matter of Cuba's offensive biochemical capability. *El Nuevo Herald* -the Spanish version of *The Miami Herald*- reported in June of 1999: "Official Pentagon sources declare they are aware that Cuba has bacteriological weapons," but "we cannot

³³ A. Correa, *El Nuevo Herald*, 5/4/97, *ibid.* (Brigadier General del Pino defected in 1987. He also reported that the Cubans had attempted an experiment in a helicopter, using a chemical weapon, but it had failed.)

³⁴ Juan O. Tamayo, "U.S. downplays rumors of Cuban germ missiles," *The Miami Herald*, February 4, 1997. (News of the existence of the documents was released by a former high-ranking Air Force General, Alvaro Prendes, exiled in 1994.)

³⁵ Juan O. Tamayo, "U.S. skeptical of report on Cuban biological weapons," *The Miami Herald*, June 23, 1999.

³⁶ James Carragher, recently appointed Coordinator for Cuban Affairs, U.S. Department of State, in telephone conversation, October 23, 2001. (The author read Mr. Carragher quotes from the Herald article of 1998 attributed to U.S. government officials.)

discuss what we know because there's a political decision to not rock the boat, yet we are concerned."³⁷ Further, it cites a former high-ranking government official with access to classified reports claiming that already in 1988 the CIA had produced a long document that concluded that Cuba had biological weapons and described the island's biotechnology facilities.³⁸

The strong indication of an offensive biochemical weapons program in Cuba has, until now, received surprisingly scant media attention despite the island's highly developed biotechnology industry, its geographic proximity and the open hostility of the Castro regime towards the United States.³⁹ Tragically, since recent events have made the threat of biological and chemical terrorist attacks a reality, there seems to be a gradual -albeit faint- turn of attention to Cuba as a potential source of biological weapons. An October 15, 2001 *Reuters* report read: "According to the U.S. Department of Defense and the Arms Control and Disarmament Agency, China, Cuba, Egypt, Iran, Iraq, Israel, Libya, North Korea, Russia, Syria and Taiwan all have developed potential biological weapons, including with anthrax. Such governments could sponsor an attack, or sell an anthrax weapon to the right bidder."⁴⁰

In mid-October 2001, *The Miami Herald* featured a story on a visit by Senator Bob Graham, D-Florida to its Editorial Board, focused on his comments that Cuba "clearly has the capability of producing chemical and biological ingredients that could become weapons of mass destruction. (...) "Nobody, at least nobody that I'm aware of in the United States, feels that we know what Cuba's doing." Graham, however, reported it was not known if Cuban scientists are actually facilitating such efforts, partly because international inspection agencies have not been given access to facilities.⁴¹ Two days later, the *Herald* followed up with an editorial favoring keeping Cuba on the State Department's list of state sponsors of terrorism and citing, among other reasons, the lack of access to inspect for bio-chemical weapons.⁴²

Also in mid-October, an *NBC/MSNBC* story raised concerns over Cuba's alleged sales of biotechnology to the Iranians, claiming the Soviets had helped Castro build one of the world's most sophisticated biotechnology industries, which could "also be used to build weapons of mass destruction."⁴³ General Charles Wilhelm, a former Southcom

³⁷Roberto Fabricio, "Agencias del gobierno pugnan sobre armas bacteriológicas," *El Nuevo Herald*, June 23, 1999.

³⁸ *Ibid.*

³⁹ One notable exception of media coverage was a 1998 story in *The Washington Times* of documents smuggled out of Cuba on the island's biological weapons facilities. (M. Arostegui, op. cit.) Aside from this, the little coverage has been, up to now, almost exclusively limited to the *El Nuevo Herald*, the Spanish daily counterpart of *The Miami Herald*, which is published in South Florida, home to a large Cuban American and Cuban exile community. (Refer to bibliography for some examples.)

⁴⁰ Maggie Fox, "Anthrax available from many sources," Washington, *Reuters*, October 15, 2001.

⁴¹ Nancy San Martin, "Cuba forced to sell technology," *The Miami Herald*, October 10, 2001.

⁴² "Terror's Servant," Editorial, *The Miami Herald*, October 12, 2001.

⁴³ In May of 2001 Castro went on a tour of Iran, Syria, Algeria and Malaysia. In Tehran he declared that Cuba and Iran could together "bring the United States to its knees." Stating that the United States was weaker than ever, he called for Iran-Cuba cooperation to contribute to the downfall of the "imperialist king." ("Castro pronostica en Irán el hundimiento de EU," *Associated Press*, Tehran, May 13, 2001.)

Commander affirms: "The indications we have is that they have the capability to produce those type of substances." The report also cites a 1996 Canadian Security Intelligence Service report that "Cuba has been a supply source (to terrorist groups) for toxin and chemical weapons" and a 1995 U.S. Senate report that included Cuba as one of 17 countries believed to have biological weapons. In addition, it recounted Cuba's use of biological weapons to kill rebels opposed to the Marxist government during the Angolan Civil War.⁴⁴

How an offensive program of this nature might be kept secret is not difficult to imagine. The 1999 *Herald* story included Mr. Alibek's reaction to refutations by U.S. government officials: "You have to understand that bio-weapons is one of the most sensitive topics in the world. No one shares this type of information, even with best friends. But in my personal opinion, I have no question Cuba is involved."⁴⁵

Despite the involvement of many thousands of people, only a few top scientists and a small circle of the Kremlin leadership understood the full scope of the Soviet Union's huge biowarfare program *Biopreparat*. Over forty facilities dispersed over the country and a vast amount of acreage were used in the program, yet it was kept under wraps thanks to tight security, elaborate cover operations and legitimate civilian work (which, according to Alibek, actually never accounted for more than 15% of the research and development activities).⁴⁶ Its former top scientist has stated: "To the outside world, *Biopreparat* was a state-owned pharmaceutical complex that developed drugs and vaccines for the civilian market. In reality, it was an elaborate front for a military-funded program code-named *Fermenty* (the Russian word for enzymes) which aimed to develop a new generation of superlethal biological weapons."⁴⁷

A high-ranking Cuban sociologist, former member of Cuba's Communist Party and head of an important Sociological Research Center in Cuba, has explained that, although she had no knowledge of biochemical weapons programs in Cuba, she did have the suspicion. According to Dr. Maida Donate-Armada,⁴⁸ the biotechnology center was under the strictest military control despite the appearance of civilian activity. "Civilian scientists and other professionals are the face to the world, but their military counterparts, who come and go as they please within the structure, have access to all the scientific work produced by civilians. In turn, they don't have an institutional identification, nobody knows what they are working on and they do not share the results of their work."⁴⁹

⁴⁴ Ike Seaman's Report, NBC 6, 10/10/01.

⁴⁵ J.O. Tamayo, "U.S. skeptical," op. cit.

⁴⁶ *Biopreparat* consisted of forty research-and-production facilities, some of them enormous; around half of its employees are said to have worked developing weapons while the other half made medicines. In the late 1980s and early 1990s, over 60,000 people were involved in the research, development, and production of biological weapons. The total production capacity of all of the facilities involved was many hundreds of tons of various agents annually –including anthrax, smallpox, and plague. (Sources as in footnote 15.)

⁴⁷ J. Tucker, *Scourge*, p. 145.

⁴⁸ Dr. Donate-Armada, a historian-psychologist-sociologist trained in Cuba, was a specialist in living conditions with the Cuban Institute of Internal Demand Management (Instituto Cubano de Investigaciones y Orientación de la Demanda Interna (ICIODI)). She defected in Spain in 1993 while attending a conference.

⁴⁹ Maida Donate Armada, e-mail to the author, September 3, 1998.

José de la Fuente, who from 1990-98 was Director of Research and Development at the Center for Genetic Engineering and Biotechnology (CIGB) in Havana, has attested to the frustration of witnessing “institutional paralysis” as a result of the impossibility for the biotechnology centers to decide on internal policy “even for small things.” “All decisions, he reports, were made by the Secretary of the State Council, José M. Miyar Barrueco (“Chomi”) at Castro’s personal insistence.” What’s worse, Miyar -known to be a very close protégé of Raúl Castro- was, according to de la Fuente, “incapable of deciding scientific matters, because of his background.”⁵⁰

Mr. Alibek has provided detailed accounts of the lengths to which the Soviet Union went to keep its huge bioweapons program secret and the West’s scientific and intelligence communities under the impression that it was honoring the Biological and Toxin Weapons Convention, which it had signed in 1972. These efforts were entirely successful. “There was a commonly held belief among many American scientists, supported by the strong, even passionate views of a handful of experts in biological weapons, that the Soviet Union was not violating the treaty.”⁵¹ In fact, the public was kept in the dark until early 1998. After his defection to the United States in 1992, Alibek had briefed U.S. intelligence and scientific experts for almost a year, but until 1998 only the national security community had access to the information he brought.⁵²

The accounts of Cuban defectors

For several years now, a number of top Cuban defectors and exiles -scientists and former high-ranking Cuban officials and members of the military- have been reporting of first hand or circumstantial knowledge of Cuba’s biological and chemical weapons programs.

In 1997, former Cuban Air Force Commander Alvaro Prendes,⁵³ exiled in 1994, appeared on Spanish-language radio stations in Miami reading from documents he claimed

⁵⁰José de la Fuente, “Wine into vinegar—the fall of Cuba’s biotechnology,” *Nature Biotechnology*, October 2001. (De la Fuente fled Cuba by boat in 1999 and is now on the faculty of Oklahoma State University.)

⁵¹R. Preston, “The bioweaponers,” *op. cit.* On this issue, also see J. Tucker, *Scourge*, *op. cit.*

⁵²In October 1989, a *Biopreparat* scientist, Dr. Vladimir Pasechnik, had defected to Great Britain while on an official visit to France. His briefings stunned the British and U.S. governments, which delivered a formal diplomatic protest to Soviet leader Mikhail Gorbachev. Gorbachev denied the allegations and invited inspection teams. The Soviets, under Alibek’s direction, prepared their cover for months; the inspection team, however, left with strong suspicions that the Soviets were hiding the truth. Mr. Alibek, then, led the Soviet team that reciprocated with visits to U.S. facilities they had requested to inspect. This visit was what prompted Mr. Alibek’s reckoning and later defection. (J. Tucker, *op.cit.*, pp. 159-162.)

⁵³Prendes had trained as a fighter pilot in the U.S. Fidel Castro, upon assuming power, asked him to head Cuba’s Air Force, later promoting him to Commandant (highest rank in Cuba’s Armed Forces, equivalent to full General). During his long career, he faced numerous setbacks and demotions, including three court martials, for “political discrepancies” with superiors, but was sent for special air force training at the Soviet Union and received assignments such as Commanding Officer of the San Antonio de los Baños Air Base, home of the Central Air Command (where he received orders directly from Fidel Castro), Commander and Tactical Operations Chief of all MIG squadrons and Second in Command of the International Directorate of Cuba’s Armed Forces. He became an increasingly vocal opponent to the Castro government, calling for a national dialogue, free speech and economic reform in the presence of the foreign

had been prepared by dissident Cuban military officers and scientists and smuggled out of Cuba. They described in great detail biotechnology facilities serving as fronts for military operations producing bioweapons such as anthrax and bubonic plague.⁵⁴

In mid-1998 *The Washington Times's Insight* magazine featured an investigative report citing the Prendes documents and other underground sources from Cuba.⁵⁵ It provided extensive description of five chemical and biological weapons facilities said to be operating throughout the island, and details such as how some of the plants were constructed, security arrangements, the purchase overseas and shipping of sophisticated lab equipment, and names of the scientists and engineers from military establishment who ran the operations.⁵⁶ The *Times* further reported that "the credibility of the smuggled documents is enhanced by a recent classified Pentagon analysis." In addition, it cited from a classified annex to a Pentagon report to Congress: "According to sources within Cuba, at least one research site is run and funded by the Cuban military to work on the development of offensive and defensive biological weapons."

According to Ernesto Betancourt, a former Radio Marti Director who had security clearance, classified CIA reports dating back to 1989 already described Cuban efforts to acquire technology and equipment to manufacture biological weapons.⁵⁷ The Prendes documents, in fact, related how a biochemist and Politburo member of Castro's presidential staff made, in the early 1990s, numerous trips to Europe, the Middle East and the former Soviet Union to arrange purchases for a new microbiology plant. A centrifugal reactor capable of 10,000 revolutions per minute - to separate biological microorganisms from solid and liquid substances- was acquired through Comicondor, an Italian company near Milan which also supplies technology to Libya for Qaddafi's biological-weapons experiments. After arrival of the lab equipment, the plant was slowly equipped and finally inaugurated on December 2, 1993 -Armed Forces Day. The centrifugal reactor is said to be crucial to the development of other biological microorganisms for use in warfare.⁵⁸

media (1992) and writing a letter calling on Fidel Castro to resign. Facing a Court Martial and severe persecution, he was granted political asylum by the U.S. government and left for the U.S. via Spain in 1994. Prendes is now the Miami-based spokesman for the *Union of Free Soldiers and Officers*, composed of former Cuban military in exile and clandestine pro-democracy acquaintances within Cuba's military and security services. (Telephone conversations, e-mail exchanges and documents sent by Col. Prendes to the author, October 2001.)

⁵⁴ Juan O. Tamayo, "U.S. downplays..." *The Miami Herald*, 2/4/97, op. cit.

⁵⁵ M. Arostegui, op. cit. (Prendes also made part of the documents available to the author.)

⁵⁶ For details on these biochemical facilities, see M. Arostegui, *ibid*, and Jonathan T. Stride, "Who Will Check Out Fidel Castro's New Chemical / Biological Weapons Plant in East Havana," Miami. Mr. Stride also held lengthy interviews with Prendes and had access to the documents sent from Cuba (as related by Mr. Prendes to the author). In 1999 Miami media also reported of another defector, Ernesto Prida, who worked at the Bureau of Scientific Research of the Cuban Armed Forces, essentially confirming some of the information in the Prendes documents. (A. Remos, *Diario Las Américas*, 7/13/99.)

⁵⁷ Radio Marti is a Voice of America project. Dr. Betancourt is cited in *The Washington Times* article (M. Arostegui, op. cit.) and has confirmed this and other related information in conversations with the author over several years.

⁵⁸The report also provides details of the ship that transported the reactor to Cuba, leased by front companies operated by Cuban military intelligence and with a crew carefully selected or employed by the Office of State Security, MININT. Accounting records for the lab's construction were said to have been meticulously covered up through authorized funding for extensions to existing medical facilities and the remodeling of Havana's historical El Morro Fortress. (In M. Arostegui and J. Stride, op. cit.)

The documents also provide details of the work being conducted at several biochemical facilities. At the Luis Díaz Soto Naval Hospital, for example, military bio-technicians are said to experiment on cadavers, hospital patients and live animals with anthrax, brucellosis, equine encephalitis, and a variety of other bacterial agents. Experiments are reported on insects, rats and even house pets to be used as vectors. An extensive report is also given of a facility established in 1994, known as “The Little Factory.” Despite its public description as a cattle feed producer (Fábrica de Pienso Animal), entry to the facility is controlled by the Cuban Armed Forces and said to be restricted to personnel with top-secret clearance. The plant is reported to cover an area of 120 by 90 meters, bigger than a couple football fields.⁵⁹

In 1992, Carlos Wotzkow, a leading Cuban ornithologist, had been forced to leave Cuba for Switzerland for his critical work on the demise of Cuba’s ecology. In 1998, he published *Natumaleza Cubana*,⁶⁰ a detailed account of the destruction of the Cuban environment and a damning exposé of his professional experiences in Cuba. In it was a brief account of the beginnings of a biological warfare program within the Institute of Zoology, where he worked at the time, and how the scientific purposes of the institution had been militarized, its scientists purged for political purposes.

Wotzkow related how, in 1981, Fidel Castro gave orders to create within the Institute of Zoology the “Frente Biológico del Instituto” -a “biological front” to develop bioweapons against the United States by spreading infectious diseases through implantation in migratory birds. This was a joint project with the Instituto de Medicina Tropical Pedro Kourí and many scientists were involved -often indirectly or without cognizance of the purpose of the work they were instructed to conduct. Fidel Castro personally supervised many of the activities and paid personal visits to the facilities.⁶¹

During Wotzkow’s tenure at the Institute of Zoology, which ended in 1982, the preferred patogen for experimenting with migratory birds was the leptospirosis (bacteria). Later, he has been told of the development of the anthrax bacteria, but doubts “ that Castro would spend too much money on bacteria when he has native virus within the island’s bat population ... which would cause devastating damage without the possibility of treatment with antibiotics.”⁶² Wotzkow’s work and his many scientific trips over Cuba in military

⁵⁹J. Stride, op. cit.

⁶⁰Carlos, Wotzkow, *Natumaleza Cubana* (Miami: Ediciones Universal, 1998). Wotzkow fell in disfavor for presenting papers overseas on the destruction of Cuba’s environment. He was allowed out of the country after Germany filed a protest. He was granted political asylum in Switzerland, where he still lives and works for a Swiss-U.S. joint venture. (Related by e-mail to the author, October 21, 2001.)

⁶¹ Ibid, p.58. (Also see “Fidel Castro: decano del bioterrorismo,” an interview of Carlos Wotzkow by Eduardo Prida, *Bienne*, Noviembre 1999.)

⁶²Carlos Wotzkow, e-mail to the author, October 19, 2001. (Of course, Wotzkow, like most people, could not imagine then that rapidly unfolding events in the United States have already proven the effectiveness of bioterrorism with bacteria (anthrax).)

aircraft put him in contact with the highest leadership of the Cuban government, including Fidel Castro.⁶³

Woztkow also claims that in the 1970s Cuba had also experimented with chemicals, testing the effectiveness of certain powders and gases exposed to the oxygen of caves. It was thought that if the caves' entomofauna (insects) died – as resistant as it was to sudden environmental changes- no man would be able to survive them.⁶⁴

Professor Luis Roberto Hernández,⁶⁵ who defected from Cuba while attending a conference in London in 1995,⁶⁶ confirmed Woztkow's claims in late 1998. *El Nuevo Herald* published a story of Woztkow's allegations in *Natumaleza*, which included Dr. Hernández' first public account of his own experiences.⁶⁷ He related how the laboratories for the “biological front” were established within the Institute of Zoology, where he too had worked, and sought to identify and produce host viruses for migratory birds. There, only two top scientists had full access to all the “top secret” labs.

Cuba, Hernández claimed, continued the project at a farm outside Havana, where a vast nesting program had been established to study the routes and habits of migratory birds. U.S. scientists, he said, had naively collaborated in these studies with their own work on nesting. In addition, he knew that Cuba had conducted studies on the *Culex* mosquito, main vector for the encephalitis virus that is particularly resistant to certain insecticides. In fact, he reported, a Cuban scientific journal had described how, in 1998, the CDC (Center for Disease Control) in Atlanta had donated a standard strain to Cuba of the St. Louis encephalitis virus, which is similar to, but more potent than, the West Nile virus.⁶⁸

Dr. Hernández explains how the secrecy of the program was maintained: “Everything is very compartmentalized. If you work in one area or field, you don't know who's work you're complementing. But, naturally, you can infer things.” In all the centers working in the biotechnology field, he elaborates, there is very tight security; for example, “if you work on one floor, you don't have access to other floors -yet this is supposedly scientific

⁶³During his tenure at the Institute of Zoology, Woztkow made over a thousand scientific trips all over Cuba, including 72 trips to Cayo Largo in military airplanes that left from the Ciudad Libertad military base (formerly Columbia). (Carlos Woztkow, e-mail to the author, October 21, 2001.)

⁶⁴General Tomasevich related this to Woztkow in 1980 during a flight they took together to Cayo Largo. (C. Woztkow, e-mail of 10/19/01.)

⁶⁵Hernández, an entomologist, has a long and distinguished career of teaching, field work, and research in Cuba and with the foremost scientific institutions of the United States, England, Puerto Rico, Nicaragua, the Dominican Republic and others.

⁶⁶Hernández was not planning to defect, but was called by a colleague that, due to political unreliability, a plan was underway to accuse him of spying and arrest him upon his return to Cuba. He stayed in London with his wife, but they left behind a son, who was unable to leave Cuba for years. Fear for the son in Cuba delayed Hernández from coming forth with his account. (Dr. Hernández in telephone conversation of October 19, 2001, and in previous conversations with the author, who's known Hernández for several years.)

⁶⁷Pablo Alfonso, “Cuba experimenta con aves con fines de guerra bacteriológica,” *El Nuevo Herald*, October 18, 1998.

⁶⁸*Revista Cubana de Medicina Tropical*, Vol. II/1996. Ibid. (Ken Alibek also reported that Soviet intelligence services obtained numerous strains of virus for the biowarfare program through covert operations –including ordering them through undercover agents posing as legitimate researchers. J. Tucker, op.cit, p. 140.)

work for which this is not required or expected. There's electric fencing surrounding the facilities, codes to get into different areas, a lot of secrecy. At the Pedro Kourí Institute, even the scientists couldn't walk around. This didn't make sense."⁶⁹

As an entomologist, Hernández became involved in the migratory birds' project and had colleagues working on it who also wondered what ultimate purpose was pursued. For example, he says, "we were instructed to look into virosis, such as parvovirus and others. I had another colleague who was asked to collect blood samples from birds. In the meantime, the Department of Ornithology was instructed to trap birds from routes that go through the United States." In conclusion, "one puts it together." Finally, he adds: "Fidel Castro, we know, called for a "biological front" to develop a biological weapons program. I cannot be 100% sure, but I'm almost sure, that Cuba has worked on developing biological weapons. There are others who feel this way, but are afraid to speak out. I'm also troubled that men I know are Cuban agents are currently working with birds in farms in Puerto Rico. What for?"⁷⁰

Both Wotzkow⁷¹ and Hernández have said that Castro believed the United States was waging biological war against Cuba and was looking for ways to respond. Hernández has recently published an article detailing how there was no scientific basis for certain allegations with which he had direct involvement due to his work.⁷² In *Biohazard*, Alibek relates how Cuba had accused the United States twelve times since 1962 of staging biological attacks on Cuban soil with anti-livestock and anti-crop agents, yet a high-level Soviet investigation found these allegations to be all "probably false." Zilinska, the Soviet in charge, had further reported that none of the Cuban scientists supported the government position on U.S. germ warfare. He had said: "They are keeping quiet. So, it makes me believe that these allegations are a pure propaganda exercise by Cuba." Furthermore, he "was worried about whether Castro could be using the charges to justify his own germ warfare program."⁷³

Most recently, José de la Fuente -who was Director of Research and Development at the Center for Genetic Engineering and Biotechnology (CIGB) in Havana from 1990 to '98'- confirms Cuba's huge investment in biotechnology and expresses concern that Cuba has placed "the prized fruits of the CIGB" in Iran's hands.⁷⁴ He discloses how, in an effort to seek hard currency after the end of massive Soviet support, between 1995 and 1998

⁶⁹L. Hernández, telephone interview, 2/19/01.

⁷⁰Ibid. Currently, Dr. Hernández is professor of entomology at a university in Puerto Rico.

⁷¹C. Wotzkow, *Natunaleza*, op. cit. , p. 179.

⁷²Dr. Hernández debunks specific allegations of biological attacks from the U.S. (Luis Roberto Hernández, "El bumerang maldito," Encuentro en la Red, Año 2, Edición 216, 18 de octubre 2001. www.cubaencuentro.com/ecologia/2001/10/18/3952.html.)

⁷³Alibek tells of an invitation Soviet General Lebedinsky had received from Castro. Together with a team of military scientists, they went to Cuba to study an epidemic of dengue fever that had broken out a few months earlier, infesting 350,000 people. Castro had been convinced it was the result of an American biological attack. The Soviet team concluded that "all the evidence pointed to a natural outbreak—the strain was Cuban, not American—but Castro was less interested in scientific process than in political expediency." (Alibek, *Biohazard*, *ibid.*)

⁷⁴J. de la Fuente, *ibid*; Nancy San Martin, "Cuba forced to sell technology," *The Miami Herald*, October 10, 2001.

Cuba sold to Iran biotechnology, which could be used to produce biochemical weapons.⁷⁵ (Iran is, like Cuba, one of seven nations on the State Department's list of states that sponsor terrorism.⁷⁶) He concludes: “There is no one who ... believes that Iran is interested in these technologies for the purpose of protecting all the children in the Middle East...” A representative of the Cuban Interest Section, in turn, acknowledged that Cuba has sold pharmaceutical products to a number of countries.⁷⁷

Indeed, Cuba’s massive investment in biotechnology cannot be explained in rational economic terms. De la Fuente, for example, reports that in 1996 the CIGB alone had 1,100 employees with more than 200 scientists in R&D working on a pipeline of 112 products, the result of an investment of more than one billion U.S. dollars since the Center’s inception in 1986.⁷⁸ Yet, the data available⁷⁹ indicates that the entire Cuban pharmaceutical-biotechnology industry was reportedly exporting a mere US\$50 million per year for the period 1995-99.⁸⁰

Recommendations

Cuba is a signatory of both the Biological Weapons⁸¹ and the Chemical Weapons Conventions⁸² -together they outlaw the possession of chemical and biological weapons of

⁷⁵De la Fuente describes a strengthening of Cuban–Iranian cooperation beginning with Cuban aid shortly after the Iranian earthquake of 1990. He writes that Cuba sold Iran recombinant protein production technologies in yeast and *Escherichia coli*, as well as the large-scale purification protocols for both soluble and insoluble proteins synthesized in or excreted by them. This technology was allegedly for civilian / medical uses, but is reportedly the same technology that could be used to produce lethal agents in biochemical weapons -- like anthrax bacteria or smallpox virus. (J. de la Fuente, op. cit. and N. San Martín, op. cit.) De la Fuente discussed this with the author in a telephone conversation of October 9, 2001, but said he does not believe Cuba had malicious intent.

⁷⁶The State Department’s Report, Patterns of Global Terrorism 2000 asserts: “Iran remained the most active state sponsor of terrorism in 2000.” (www.state.gov/s/ct/rls/pgtrpt/2000).

⁷⁷N. San Martín, op. cit.

⁷⁸He describes the inauguration of the CIGB in 1986 as the beginning of the maturation of biotechnology in Cuba and puts the initial investment at approximately US \$100 million (used to fully equip modern research in areas covering pharmaceuticals and immunodiagnosics, vaccines, animal, plant, and industrial biotechnology).

⁷⁹The latest CEPAL (ECLA - the United Nations Economic Commission on Latin America) economic report for Cuba -a foremost tool on Cuba’s economy- fails to present export data on the medical-pharmaceutical sector despite providing this information for other sectors. (See *Cuba: Evolución Económica: 2000*, Comisión Económica para América Latina y el Caribe, Naciones Unidas (CEPAL), LC/MEX/L.465 21, May 21, 2001.)

⁸⁰*The Economic Impact of U.S. Sanctions with Respect to Cuba*, International Trade Commission, USITC publication 3398, February 2001. [ftp://ftp.usitc.gov/pub/reports/studies/pub3398.pdf](http://ftp.usitc.gov/pub/reports/studies/pub3398.pdf) (The ITC report states that Cuba’s trade data precludes separating the pharmaceutical and biotechnology industries. It also states that Cuba is reported to have developed a number of original vaccines and generic pharmaceutical products. A CIGB brochure is cited as reporting that in 1996 it had 128 product registrations in 34 countries.)

⁸¹The Convention on the Prohibition of the Development, Production and Stockpiling of Biological and Toxin Weapons and on their Destruction, open for signature in Washington, London, and Moscow on April 10, 1972. Cuba was among the original signatories (1/13/93) and ratified it on April 4, 1997. (www.umn.edu/humanrts/instree/1972a.htm)

⁸²The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, signed in Paris on January 13-15, 1993. (See the Convention at www.opcw.org)

mass destruction. Yet, given the first-hand accounts and strong circumstantial evidence indicative of non-compliance, Cuba should submit to independent verification.

The Biological Weapons Convention does not incorporate compliance and verification mechanisms, but the Cuban government is on the record denying the production of biological weapons.⁸³ Cuba should, thus, have no objection to inspection. It should also be taken into account that Cuba's alleged biowarfare program is said to have been set up during its alliance with the Soviet Union. The Soviets initiated their biowarfare program a year after the USSR had signed the Convention banning the development, production and stockpiling of all offensive biological agents. Despite forceful and official denials, it was only after irrefutable testimony provided by top defectors and the actual breakdown of the USSR that the Russian Federation acknowledged its violation of the Biological Weapons Convention.⁸⁴

The Chemical Weapons Convention (CWC) has detailed provisions on compliance and verification. In fact, it established the Organization for the Prohibition of Chemical Weapons (OPCW), headquartered in The Hague, which provides mechanisms of implementation and international verification of compliance.⁸⁵ The United States should submit an immediate inspection challenge to the OPCW's Executive Committee.^{86 / 87}

Verification of Cuba's compliance with both Conventions should be conducted through inspections characterized by the "any time, any place" concept incorporated in the CWC (they are to be launched at very short notice and can be directed at declared or undeclared facilities and locations). The inspections should also take place over an indefinite period of time.

The United States government should, regardless of international efforts and without further delay, form an interagency Task Force on Cuba to study this specific issue exclusively, gathering all intelligence reports from different agencies and reassessing the

⁸³In 1998, a spokesman for the Cuban Interests Section in Washington told *The Washington Times*: "We are producing medicines, not weapons. (...) We deny the Pentagon's charges of offensive potential in our biogenetic industry." (M. Arostegui, *TWT/Insight*, op. cit.)

⁸⁴In April 1992, Boris Yeltsin admitted to the Soviet Union's violation of the Convention and issued an edict banning further offensive research and development. The Soviet program, *Biopreparat* was set up in 1973, just a year after the Soviet Union signed the Convention banning the development, use, and stockpiling of biological weapons. The October 1989 defection to Great Britain of a *Biopreparat* scientist, Dr. Vladimir Pasechnik, prompted the British and U.S. governments to deliver a formal diplomatic protest to Soviet leader Mikhail Gorbachev. Gorbachev denied the allegations and invited inspection teams in. The Soviets prepared their cover for months, but the inspection team left with strong suspicions that the Soviets were hiding the truth. (J. Tucker, *ibid*, pp. 159-162, 168 and other sources as per footnote 14.)

⁸⁵See the Convention, namely Art. VIII, and Leonard Cole, "The Specter of Biological Weapons," *Scientific American*, December 1999, pp. 60-65.

⁸⁶Cuba is a member of the Executive Committee of the OPCW for the 2000-2002 period. The Executive Council consists of 41 members, including seven states parties from Latin America and the Caribbean, designated by states located in that region. Each state party has the right, in accordance with the principle of rotation, to serve on the Executive Council; members are elected for a term of two years.

⁸⁷Under Article IX of the CWC any State Party can request the Secretariat to conduct an on-site challenge inspection anywhere in the territory of any other State Party. States Parties are not granted the right to refuse a challenge inspection, regardless of the nature of the location at which it is to take place.

potential threat to U.S. security.⁸⁸ The Task Force should also conduct a serious and thorough review of the allegations of scientists and other defectors from Cuba that, up to now, have been mostly ignored.⁸⁹

Sources

Alfonso, Pablo. "Cuba experimenta con aves con fines de guerra bacteriológica," *El Nuevo Herald*, October 18, 1998.

Alibek, Ken. "Behind the Mask: Biological Warfare," *Perspective*, Volume IX, No. 1, September-October 1998.

Alibek, Ken. *Biohazard: The Chilling true story of the largest covert biological weapons program in the world* (Random House, 2000)

Arostegui, Martin. "Fidel Castro's Deadly Secret - Five BioChem Warfare Labs," *Insight Magazine / The Washington Times*, Vol 14, No 26 July 20, 1998.

Betancourt, Ernesto. Several conversations and e-mails, October 2001, and 1998-2001.

Carragher, James. Coordinator for Cuban Affairs, U.S. Department of State, Telephone conversation, October 23, 2001.

"Castro pronostica en Irán el hundimiento de EU," *Associated Press*, Tehran, May 13, 2001.

Cereijo, Manuel. *Cuba-Iraq*, Briefing Paper, October 2001.
http://www.amigospais-guaracabuya.org/index_cereiyo.html

Cole, Leonard. "The Specter of Biological Weapons," *Scientific American*, December 1999, pp. 60-65.

Correa, Armando. "'Veneno' de Castro abre sospechas que Cuba oculta armas bacteriológicas". *El Nuevo Herald*, May 4, 1997, Sec. A. p.6.

Cuba: Evolución Económica: 2000, Comisión Económica para América Latina y el Caribe, Naciones Unidas (CEPAL), LC/MEX/L.465 21, May 21, 2001.

"Cuba usó armas químicas en contra de Sudáfrica," *Reuters* (Capetown) / *El Nuevo Herald*, July 28, 1998.

de la Fuente, José. Telephone conversation, October 9, 2001.

de la Fuente, José. "Wine into vinegar—the fall of Cuba's biotechnology," *Nature Biotechnology*, October 2001. de la Fuente fled Cuba by boat in 1999 and is now on the faculty of Oklahoma State University.

⁸⁸This is particularly important in the wake of the September 21st, 2001 arrest of Ana Montes, the Defense Intelligence Agency's top Cuba specialist, for spying for Cuba. Reportedly, she could have had a very influential role in downplaying the threat posed by Cuba to the United States. (See John J. Miller, "Under In Castro's Service: The untold story of Cuba's spying, and terror," *National Review*, Vol. LIII, No. 21, November 5, 2001 and Christopher Marquis, "Labels of analyst vary, but spy came as a surprise," *The New York Times*, September 30, 2001.)

⁸⁹The author understands that all of the Cuban defectors interviewed for this paper have not been debriefed by U.S. intelligence or government representatives.

- DOD response to the staff report of the House Government Reform's Subcommittee on National Security, Veterans Affairs and International Relations entitled "The Department of Defense Anthrax Vaccine Immunization Program: Unproven Force Protection," February 29, 2000.
- Donate Armada, Maida. E-mail, September 3, 1998.
- Evans, Rowland and Robert Novak. "Cuban troops in Angola said to use poison gas," Syndicated Column Mid-January 1988, *FortFreedom.com*, February 6, 1989, <http://www.fortfreedom.org/y19.htm>
- Fabricio, Roberto. "Agencias del gobierno pugnan sobre armas bacteriológicas," *El Nuevo Herald*, June 23, 1999.
- Fabricio, Roberto. "Las instalaciones cubanas de biotecnología 'están llenas de zonas cerradas y secretas,'" *El Nuevo Herald*, June 20, 1999.
- Fernández-Zayas, Marcelo. Intelligence Report, October 25, 2001.
http://www.amigospais-guaracabuya.org/index_mfz.html
- Fermoselle, Rafael. "El terrorismo y la conexión cubana," *El Nuevo Herald*, October 8, 2001.
- "Fidel inaugura nueva escuela de formación de trabajadores sociales," *Granma Internacional Digital*, 18 de Octubre de 2001. <http://www.granma.cu/espanol/octu3/43escuela-e.html>
- Fofana, Idrissa. "Menaces pour la paix," *Demain, L'UNITA, Afrique Golfe Magazine*, Janvier - Février 1998. <http://www.afard-unita.asso.fr/html/revuepress/revue15.htm>
- Fox, Maggie. "Anthrax available from many sources," Washington, *Reuters*, October 15, 2001.
- Hearing of the House Intelligence Terrorism and Homeland Security Subcommittee, October 11, 2001.
- Hernández, Luis Roberto. "El bumerang maldito," *Encuentro en la red*, Año 2, Edición 216, 18 de octubre del 2001. <http://www.cubaencuentro.com/ecologia/2001/10/18/3952.html>
- Hernández, Luis Roberto. Telephone conversation, October 19, 2001.
- Ike Seamans Report: *Cuba's Biological Weapons Industry*, NBC 6, October 10, 2001.
<http://www.msnbc.com/local/wtvj/nbc6e201fsc.asp>
- Osterholm, Michael T. and John Schwartz. *Living Terrors* (New York: Delta Publishing, 2000).
- Patterns of Global Terrorism - 2000*," U.S. Department of State. <http://www.state.gov/s/ct/rls/pgtrpt/2000/>
- PrenDES, Alvaro. Telephone conversations and e-mail exchanges, October 2001.
- Preston, Richard. "The bioweaponeers," *The New Yorker*, March 9, 1998.
- Preston, Richard. "The demon in the freezer," *The New Yorker*, July 12, 1999, pp. 44-61.
- Protocol for the Prohibition of the use in war of asphyxiating, poisonous or other gases, and bacteriological methods of warfare.
- Remos, Ariel. "Las armas bacteriológicas colocan a Castro en el Bioterrorismo," *Diario Las Américas*, July 13, 1999.

- San Martin, Nancy. "Cuba forced to sell technology," *The Miami Herald*, October 10, 2001.
- "SA's poison gas secrets sold to Libya," *Electronic Mail & Guardian*, February 7, 1997.
<http://www.mg.co.za/mg/news/97feb1/7feb-poisongas.html>
- Skorneck, Carolyn. "Anthrax Dangerous, Difficult Weapon," Washington, *Associated Press*, October 11, 2001.
- Stride, Jonathan T. "Who Will Check Out Fidel Castro's New Chemical / Biological Weapons Plant in East Havana," Miami. <http://www.fiu.edu/~fcf/bio.chem.plant91097.html>
- Tamayo, Juan O. "U.S. downplays rumors of Cuban germ missiles," *The Miami Herald*, February 4, 1997.
- Tamayo, Juan O. "U.S. skeptical of report on Cuban biological weapons," *The Miami Herald*, June 23, 1999.
- "Terror's Servant," Editorial, *The Miami Herald*, October 12, 2001.
- The Convention on the Prohibition of the Development, Production and Stockpiling of Biological and Toxin Weapons and on their Destruction. <http://www1.umn.edu/humanrts/instreet/1972a.htm>
- The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction. www.opcw.org
- The Cuban Threat to U.S. National Security*, Report Submitted to Congress by Secretary of Defense, William Cohen, 1998 and *Transmittal Letter* of May 6, 1998 from the Secretary of Defense to The Honorable Strom Thurmond. Chairman, Senate Armed Services Committee.
<http://www.defenselink.mil/pubs/cubarpt.htm>
- The Economic Impact of U.S. Sanctions with Respect to Cuba*, International Trade Commission, USITC publication 3398, February 2001. <ftp://ftp.usitc.gov/pub/reports/studies/pub3398.pdf>
- Tucker, Jonthan B. *Scourge: The once and future threat of smallpox* (New York: Atlantic Monthly Press, 2001).
- Woztkow, Carlos. E-mails, October 19, 2001 and October 21, 2001.
- Woztkow, Carlos. Interview by Eduardo Prida, "Fidel Castro: decano del bioterrorismo," *Bienne*, Noviembre 1999.
- Woztkow, Carlos. *Naturaleza Cubana* (Miami: Ediciones Universal, 1998).