

## Revisiting Al-Qa`ida's Anthrax Program

By René Pita and Rohan Gunaratna

SINCE NOVEMBER 2008, a number of developments have occurred concerning al-Qa`ida's biological weapons (BW) program. On November 24, the Malaysian government released from jail Yazid Sufaat, previously responsible for al-Qa`ida's anthrax program in Afghanistan. On February 2, 2009, Abdallah al-Nafisi, identified as a Kuwaiti "professor," appeared on al-Jazira television promoting an anthrax attack against the United States. "There is no need for airplanes, conspiracies, timings, and so on," al-Nafisi reportedly said. "One person, with the courage to carry four pounds of anthrax, will go to the White House lawn, and will spread this 'confetti' all over them, and then will do these cries of joy. It will turn into a real 'celebration.'"<sup>1</sup> Compounding matters, the police chief of Pakistan's North-West Frontier Province (NWFP) stated that some al-Qa`ida and Taliban militants had "expertise in making biochemical weapons,"<sup>2</sup> and in April 2009 the Islamic State of Iraq said that the mujahidin are "in great need" of chemical and biological warfare agents.<sup>3</sup> These developments have raised concern about a possible reactivation of al-Qa`ida's anthrax program and demonstrate the importance of understanding the terrorist group's prior attempts to obtain a BW capability.<sup>4</sup>

1 Al-Nafisi said that "four pounds of anthrax—in a suitcase this big—carried by a fighter through tunnels from Mexico into the U.S., are guaranteed to kill 330,000 Americans within a single hour, if it is properly spread in population centers there." The transcript can be read at [www.memritv.org/clip\\_transcript/en/2027.htm](http://www.memritv.org/clip_transcript/en/2027.htm).

2 Muhammad Bilal, "Qaeda, Taliban Planning 9/11-like Attacks in US, Europe: NWFP IG," *Daily Times*, March 31, 2009.

3 The transcript can be read at [www.memri.org/bin/articles.cgi?Page=archives&Area=sd&ID=SP232009](http://www.memri.org/bin/articles.cgi?Page=archives&Area=sd&ID=SP232009).

4 See, for example, Mark Hosenball and Michael Isikoff, "A Germ Warfare Guru Goes Free: Why did Malaysia Release Al Qaeda's Bioweapons Expert?" *Newsweek*, December 17, 2008. Also, members of the al-Wafa "charity" organization linked to the anthrax program have been released recently from Guantanamo Bay. See Thomas Joscelyn, "Al-Qaeda's Anthrax Scientist," *Weekly Standard*, December 12, 2008; William Glaberson, "U.S. Decides to Release Detainee at Guantánamo," *New York Times*, March 31, 2009.

This article outlines al-Qa`ida's justifications for using weapons of mass destruction (WMD), provides background information on the first and second phases of al-Qa`ida's anthrax-based BW program, and then assesses whether it could begin a third phase.

### WMD Justifications

Since Usama bin Ladin declared in 1998 that the acquisition of WMD was a "religious duty," there have been numerous statements indicating that jihadists are not restricted from using these weapons.<sup>5</sup> In fact, they have argued that it is justified as retaliation for what they consider use of WMD by the United States and its allies in Afghanistan.<sup>6</sup> Moreover, the al-Qa`ida structure that was formalized in the early 1990s included a WMD Committee, a subcommittee under its Military Committee, led by Ali Sayyid Muhammad Mustafa al-Bakri (also known as Abdul Aziz al-Masri).

### First Phase

After the beginning of U.S.-led military operations in Afghanistan, one of the main discoveries that provided information on al-Qa`ida's BW program was made by journalist Alan Cullison of the *Wall Street Journal*.<sup>7</sup> He purchased two computers in Kabul that the seller claimed had been stolen from the office of Muhammad `Atif (also known as Abu Hafs al-Masri), the head of al-Qa`ida's Military Committee. `Atif was killed by a U.S. Predator airstrike in November 2001 in Afghanistan. The computer contained documents that described al-Qa`ida's attempts at starting a chemical and biological weapons program,

5 For an analysis of these statements, see René Pita, "Assessing al-Qaeda's Chemical Threat," *Athena Intelligence Journal* 2:2 (2007): pp. 34-45; Sammy Salama and Edith Bursac, "Jihadist Capabilities and the Diffusion of Knowledge," in Gary Ackerman and Jeremy Tamsett eds., *Jihadists and Weapons of Mass Destruction* (Boca Raton, FL: CRC Press, 2009), pp. 101-128.

6 This allegation is based on coalition forces using conventional weapons (e.g., missiles) that cause a large number of casualties and destruction. For this reason, some jihadists argue that these weapons could be considered WMD. See Pita, "Assessing al-Qaeda's Chemical Threat."

7 Alan Cullison and Andrew Higgins, "Files Found: A Computer in Kabul Yields a Chilling Array of al Qaeda Memos," *Wall Street Journal*, December 31, 2001; Alan Cullison, "Inside al-Qaeda's Hard Drive," *Atlantic Monthly*, September 2004.

known as "al-Zabadi" ("Yogurt"), with a budget of only \$2,000 to \$4,000. `Atif and Ayman al-Zawahiri started the program in May 1999 after studying different Western biomedical books and publications on the weapons.<sup>8</sup> An electronic message sent by al-Zawahiri to `Atif dated April 15, 1999 stated:

I have read the majority of the book...[It] is undoubtedly useful. It emphasizes a number of important facts, such as:

- a) The enemy started thinking about these weapons before WWI. Despite their extreme danger, we only became aware of them when the enemy drew our attention to them by repeatedly expressing concerns that they can be produced simply with easily available materials...
- b) The destructive power of these weapons is no less than that of nuclear weapons.
- c) A germ attack is often detected days after it occurs, which raises the number of victims.
- d) Defense against such weapons is very difficult, particularly if large quantities are used...

I would like to emphasize what we previously discussed—that looking for a specialist is the fastest, safest, and cheapest way. Simultaneously, we should conduct a search on our own... Along these lines, the book guided me to a number of references that I am attaching [articles published in *Science*, *The Journal of Immunology* and *The New England Journal of Medicine*, as well as the books *Tomorrow's Weapons*, *Peace or Pestilence* and *Chemical Warfare*]. Perhaps you can find someone to obtain them...<sup>9</sup>

According to former CIA Director George Tenet, al-Qa`ida became interested in WMD after Aum Shinrikyo's 1995 sarin attack on the Tokyo subway.<sup>10</sup> Al-Zawahiri's e-mail, however, stated

8 Ibid.

9 Quoted in Cullison, "Inside al-Qaeda's Hard Drive."

10 George Tenet, *At the Center of the Storm: My Years at the CIA* (New York: HarperCollins, 2007), p. 260.

that it was “the enemy” who brought BW to his attention, possibly by U.S. Secretary of Defense William Cohen.<sup>11</sup> In November 1997, Cohen appeared on television showing a five pound sugar package and saying that if it were to contain spores of *Bacillus anthracis*—the etiological agent of anthrax—and spread over Washington, D.C., half its population would die.<sup>12</sup> A photograph of Cohen holding the five pound sugar package was allegedly also found in Afghanistan.<sup>13</sup>

A subsequent message dated June 1999 insisted on the need to find qualified personnel for the BW program in educational institutions. This seems to be the strategy followed with the collaboration of Saud Memon (allegedly involved in Daniel Pearl’s assassination and who died in May 2007 in Pakistan) whose search for qualified microbiologists focused on Pakistani scientists. Documents retrieved from the Kabul house of a Pakistani nuclear scientist, Sultan Bashiruddin Mahmood, included diagrams of what seemed to be a plan to disseminate *B. anthracis* using helium balloons,<sup>14</sup> some results of internet searches on anthrax vaccines, articles on BW, and even an article on the Plum Island Animal Disease Center of the U.S. Department of Agriculture.<sup>15</sup>

Most important in understanding the first stage of the *B. anthracis* BW program, however, were the documents found in a laboratory under construction near Kandahar and in a nearby al-Qa`ida

training camp.<sup>16</sup> These documents included letters addressed to al-Zawahiri from a person who was later identified as a Pakistani doctor in microbiology, Abdur Rauf Ahmed. Rauf worked in the Pakistan Council of Scientific and Industrial Research (PCSIR).<sup>17</sup> The first letter was written in Europe in 1999. In it, Rauf claimed to have attended or obtained information on a conference on biological agents that took place in Europe and to have visited a biosafety level three laboratory (apparently in the United Kingdom) where efforts were being made to obtain a pathogenic strain of *B. anthracis* and anthrax vaccines.<sup>18</sup> Finally, he assessed the expenditure required to purchase the material for a laboratory and complained about the scarce financial resources available to him.

In a second letter (whose pages have the Society for Applied Microbiology letterhead), Rauf explained his scant achievements in the start-up of the program with *B. anthracis*. He claimed to have been unable to obtain neither the pathogenic strain nor the vaccines, although he intended to continue trying in another country, for which he requested more money.<sup>19</sup> Also included was a set of basic laboratory sketches with the staff and material required, explaining that a cover-up for the program would be needed, such as by setting up an NGO, private company, teaching institute or medical laboratory. As a result of these letters, the report of the U.S. WMD Commission dated March 31, 2005 concluded that al-Qa`ida’s BW program was further ahead than what the intelligence community had initially estimated.<sup>20</sup>

16 Several books and scientific journal articles on BW were also found. Leitenberg, *The Problem of Biological Weapons*, pp. 133–135; Leitenberg, *Assessing the Biological Weapons and Bioterrorism Threat*, pp. 28–31; James B. Petro and David A. Relman, “Understanding Threats to Scientific Openness,” *Science* 302:5652 (2003): p. 1,899.

17 This information is based on the authors’ interviews with members of the intelligence service involved in the arrest and debriefing of Rauf.

18 For a detailed analysis of the letters, see Leitenberg, *The Problem of Biological Weapons*, pp. 133–135; Leitenberg, *Assessing the Biological Weapons and Bioterrorism Threat*, pp. 28–31.

19 Ibid.

20 Leitenberg, *Assessing the Biological Weapons and Bioterrorism Threat*, pp. 36–37.

## Second Phase

Rauf’s letters indicate that he was incapable of obtaining the pathogenic strain of *B. anthracis* or the anthrax vaccines, and that he did not have adequate financial resources. In 2000, al-Zawahiri, unhappy with Rauf’s results and attitude, dispensed with his services,<sup>21</sup> thereby initiating the second stage of al-Qa`ida’s BW program. As part of this stage, al-Qa`ida attempted to benefit from its relationship with Jemaah Islamiya (JI), a terrorist organization in Southeast Asia with which al-Qa`ida’s leaders in Afghanistan stayed in contact by means of Khalid Shaykh Muhammad (KSM), the mastermind of the 9/11 attacks.<sup>22</sup> KSM declared before a military court at Guantanamo Bay on March 10, 2007 that he was involved in al-Qa`ida’s BW program after Muhammad `Atif’s death.<sup>23</sup> KSM was arrested on March 1, 2003 in Rawalpindi at the house of Pakistani microbiologist Abdul Quddoos Khan, and in subsequent interrogation sessions explained that there was a *B. anthracis* program for which Yazid Sufaat, a member of JI and of Kumpulan Militan Malaysia (KMM), was responsible.<sup>24</sup>

Sufaat’s nomination as the person responsible for the program was made after KSM’s request to Riduan Isamuddin (also known as Hambali), operational leader of JI and an Indonesian cleric, to find a person to continue the anthrax program.<sup>25</sup> Sufaat was a former captain

21 This information is based on the authors’ interviews with members of the intelligence service involved in the arrest and debriefing of Rauf. Rauf was later arrested by Pakistan’s Inter-Services Intelligence in December 2001, only to be released in 2003 due to insufficient evidence that he supported al-Qa`ida.

22 Al-Qa`ida’s close collaboration with JI started in 1998. For details, see *The 9/11 Commission Report* (New York: W. W. Norton & Co., 2004), pp. 150–152.

23 This information is found in the verbatim transcript of the combatant status review tribunal hearing for ISN 10024, p. 17.

24 Barton Gellman, “Al Qaeda Near Biological, Chemical Arms Production,” *Washington Post*, March 23, 2003; Judith Miller, “U.S. has New Concerns about Anthrax Readiness,” *New York Times*, December 28, 2003; Maria A. Ressa, *Seeds of Terror: An Eyewitness Account of Al Qaeda’s Newest Center of Operations in Southeast Asia* (New York: Free Press, 2003), pp. 78–80; *U.S.A. v. Zacarias Moussaoui*, Eastern District of Virginia, 2006.

25 KSM contacted Hambali at the request of Muhammad `Atif. Hambali had started collaborating with KSM in 1994. After 1998, he also started dealing with `Atif. See

11 Milton Leitenberg, *The Problem of Biological Weapons* (Stockholm: Swedish National Defence College, 2004), pp. 41, 123–124; Milton Leitenberg, *Assessing the Biological Weapons and Bioterrorism Threat* (Carlisle, PA: Strategic Studies Institute, 2005), p. 35.

12 William S. Cohen, “This Week with Sam Donaldson and Cokie Roberts,” ABC News, November 16, 1997.

13 This allegation can be found in Leitenberg’s *The Problem of Biological Weapons*, p. 124.

14 These were similar to the Japanese “balloon bombs” designed to use winds crossing the Pacific Ocean to attack the United States in World War II.

15 Mahmood resigned from Pakistan’s Atomic Energy Commission (PAEC) in 1999 and in 2000 founded Ummah Tameer-e-Nau (UTN), a relief organization in Afghanistan. The house in Kabul where the documents were found served as the headquarters of the organization. See Chris Stephen, “Kabul House of Anthrax Secrets,” *Evening Standard*, November 22, 2001; “Al Qaeda Runs for the Hills,” *Newsweek*, December 17, 2001.

of the Malaysian Army Medical Corps who received a Bachelor of Science degree at California State University in Sacramento in the 1980s.<sup>26</sup> In addition to providing his apartment to two of the 9/11 hijackers and facilitating planning meetings in Kuala Lumpur, he provided protection, funding, and facilitated the entry of Zacarias Moussaoui, an al-Qa`ida suicide pilot, to the United States.<sup>27</sup> Before traveling to Afghanistan, Sufaat participated in Project Natal, the JI operation to bomb multiple churches in Indonesia on December 24, 2000. In Afghanistan, Hambali introduced Sufaat to al-Zawahiri as the “man who was capable of leading al-Qa`ida’s biological weapons program.”<sup>28</sup> After relocating to Kandahar, Sufaat continued the work of Abdul Rauf at a laboratory at the Haji Habash hospital.<sup>29</sup> Anthrax is an endemic disease in cattle in Afghanistan and it could have been possible for a microbiologist (Sufaat only had a BS degree) to isolate a pathogenic strain of *B. anthracis* from infected animals.<sup>30</sup>

With the U.S.-led coalition’s intervention in Afghanistan in October 2001, however, al-Qa`ida was forced

to abandon its laboratory in Kandahar and the BW program fell into temporary disarray. Sufaat moved to Karachi and, upon the advice of Hambali, relocated to Bogor in Indonesia.<sup>31</sup> Sufaat approached a relative of Hambali at the microbiology division of an Indonesian institute to restart the anthrax program.<sup>32</sup> He refused to cooperate, however.<sup>33</sup> Sufaat was finally arrested in December 2001 by the Malaysian Special Branch (MSB), but was released in November 2008. Malaysian authorities stated that “he had shown remorse and repentance after almost seven years of rehabilitation.”<sup>34</sup>

### A Third Phase?

A terrorist group that decides to start a program with *B. anthracis* spores must be capable of: obtaining a pathogenic strain of the agent; producing spores on a large scale (an act that in the first instance could seem easy once the procurement stage is completed, but which has proven to be a difficult task even in military BW programs);<sup>35</sup> refining the spores and storing them appropriately; and disseminating them in an efficient way (if the objective is to cause a large number of casualties).<sup>36</sup> All these stages require the terrorist group to be capable of recruiting

a multidisciplinary team with the adequate level of expertise, apart from having facilities to handle the agent safely. Even BW programs in the United States and the former Soviet Union had remarkable multidisciplinary teams; nonetheless, they still encountered significant issues that in many cases entailed the failure of some lines of research. Al-Qa`ida would need strong support from other affiliate groups or sponsors that would enable it to acquire the required materials and personnel for a successful BW program.

In the case of local autonomous cells without links to each other, the probability of establishing these multidisciplinary teams with the explicit and tacit knowledge of producing *B. anthracis* spores is much lower. As for jihadist manuals available on the internet, these publications virtually fail to cover biological agents and focus on toxic chemicals and useless procedures to obtain some toxins, basically ricin and botulinum toxin.<sup>37</sup> Autonomous cells would be virtually limited to the possibility of having access to an already-produced agent, either by means of some biological defense program, or through states with offensive programs.<sup>38</sup> In this case, the possibility exists of having a proliferating state sponsor the terrorist organization. The main restriction for a state when sponsoring a terrorist group by supplying it a biological warfare agent is that it would face the risk of massive retaliation by or on behalf of the threatened or attacked state (if the sponsorship is discovered). Until now,

*The 9/11 Commission Report*, pp. 149-152.

26 Leitenberg, *Assessing the Biological Weapons and Bioterrorism Threat*, p. 33.

27 *The 9/11 Commission Report*, pp. 151, 490.

28 Tenet, p. 278.

29 The U.S. Department of Defense presented a centrifuge and an “oven” as the equipment that al-Qa`ida had reserved for the production of BW. For more, see Judith Miller, “Threats and Responses: Terrorist Weapons, Lab Suggests Qaeda Planned to Build Arms, Officials Say,” *New York Times*, September 14, 2002; Michael R. Gordon, “U.S. Says it Found Qaeda Lab being Built to Produce Anthrax,” *New York Times*, March 23, 2002.

30 A non-pathogenic strain, used in the production of vaccines, was available in Kabul at a facility supported by the Food and Agriculture Organization of the United Nations (FAO). See, for example, Kathy Gannon, “Taliban Showed Interest in Anthrax Research Lab,” *Boston Globe*, November 22, 2001. This article, however, shows some confusion when differentiating between pathogenic *B. anthracis* strains and non-pathogenic strains used in the production of animal vaccines. In accordance with a January 2007 Agence France-Presse report, Nangarhar’s governor had stated that in the dwelling where Taliban spokesman Muhammad Hanif had been arrested, “packets of anthrax powder” had been found. See “Taliban Official Said Found With Anthrax,” *Global Security Newswire*, January 17, 2007. This information does not seem too credible and no other media organization has reported on the said “packets” or on how Afghan authorities determined that they contained *B. anthracis*.

31 This information is based on the authors’ interviews with members of the intelligence service involved in the arrests and debriefings of Sufaat and Hambali.

32 Ibid.

33 Ibid.

34 Lourdes Charles, “Suspected JI Terrorists Released from ISA,” *Star* [Kuala Lumpur], December 10, 2008.

35 A U.S. General Accounting Office (GAO) 2002 report states that production of *B. anthracis* spores is “not an exact science. The yield and quality of each batch is variable even when produced legitimately in a highly sophisticated facility.” See *Diffuse Security Threats: Information on U.S. Domestic Anthrax Attacks*, U.S. General Accounting Office (GAO), December 10, 2002, p. 4. Also, adequate drying and milling methods are needed to obtain particles with appropriate size so that spores are retained by the lower respiratory tract, giving way to infection. For example, Iraq unsuccessfully tried to obtain a spray dryer between 1989 and 1990 by attempting to import and adapt dryers available in Iraq and even manufacturing its own. See Charles Duelfer’s report to the director of the U.S. Central Intelligence Agency on Iraq’s WMD, *Comprehensive Report, Volume 3: Biological Warfare*, September 30, 2004, pp. 9, 20. Also see United Nations Monitoring, Verification and Inspection Commission (UNMOVIC), “The Biological Weapons Program,” in *Compendium of Iraq’s Proscribed Weapons Programs in the Chemical, Biological and Missile Areas*, June 2007, p. 879.

36 See, for example, *Diffuse Security Threats*, p. 4.

37 Ricin extraction procedures are discussed in René Pita et al., “Extracción de ricina por procedimientos incluidos en publicaciones paramilitares y manuales relacionados con la red terrorista al-Qaeda,” *Medicina Militar* 60:3 (2004): pp. 172-175. The procedure for the production of botulinum toxin is an absurd one that involves mixing animal meat and feces in anaerobic conditions. This procedure is taken from the cookbook titled “The Poisoner’s Handbook.” For a detailed study of electronic jihadist chemical and biological manuals, see Sammy Salama and Lydia Hansell, “Does Intent Equal Capability? Al-Qaeda and Weapons of Mass Destruction,” *Nonproliferation Review* 12:3 (2005): pp. 615-653; Anne Stenersen and Brynjar Lia, *Al-Qaida’s Online CBRN Manuals: A Real Threat?* (Kjeller: Norwegian Defence Research Establishment, 2007).

38 Acquisition through the black market should not be ruled out, as it can provide access to chemical, biological, radiological or nuclear (CBRN) materials, especially in “failed states.”

there is no evidence of any state that has supplied a BW to a terrorist group.

The apocalyptic cult Aum Shinrikyo, responsible for the sarin attacks in 1994 and 1995 in Japan, is a clear example of how difficult it is to produce a biological warfare agent and an efficient dissemination system, especially taking into account that the cult had adequate financial resources and technological means. The cult also benefited from the 1951 Religious Corporation Law that grants tax exemptions to religious organizations in Japan, and protection against possible interference of the state in their activities.<sup>39</sup> They were, however, only able to acquire a non-pathogenic strain of *B. anthracis* used for the production of vaccines. They tried to disseminate it during June and July 1993 from the top of a building in Kameido (Tokyo). Moreover, the liquid preparation had a very low concentration of spores and was too thick; therefore, drops tended to land on the ground right after they were disseminated.<sup>40</sup>

### Conclusion

Al-Qa`ida's transnational terrorism threat requires intensive international cooperation for intelligence collection that leads to counterterrorism operations that disrupt the transfer of personnel and material resources that could be used in a BW program. Cooperation between intelligence services is especially needed in countries where al-Qa`ida enjoys popular sympathy. The efforts of the international intelligence community must also be combined with increased security in facilities that work

with biological select agents and toxins (BSAT). In fact, what characterized al-Qa`ida's anthrax program were its unsuccessful attempts to recruit Pakistani and Indonesian scientists who had access to microbial culture collections. Better intelligence and biosecurity measures are essential to disrupt al-Qa`ida's future attempts to acquire pathogenic biological agents.

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<sup>39</sup> This advantageous situation allowed Aum Shinrikyo, when it started its chemical and biological weapons programs, to enjoy a position that would be similar to that within a proliferating state—where there is no need to hide these activities from the security forces because the program is integrated within government activities—rather than a terrorist organization. For more, see René Pita, *Armas químicas: la ciencia en manos del mal* (Madrid: Plaza y Valdés, 2008), pp. 438-439.

<sup>40</sup> Paul Keim et al., "Molecular Investigation of the Aum Shinrikyo Anthrax Release in Kameido, Japan," *Journal of Clinical Microbiology* 39:12 (2001): pp. 4566-4567; Hiroshi Takahashi et al., "Bacillus anthracis Incident, Kameido, Tokyo, 1993," *Emerging Infectious Diseases* 10:1 (2004): pp. 117-120; Masaaki Sugishima, "Aum Shinrikyo and the Aleph," in Richard F. Pilch and Raymond A. Zilinskas eds., *Encyclopedia of Bioterrorism Defense* (Hoboken, NJ: Wiley-Liss, 2005), pp. 45-49.