

# Israel Biological Chronology

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*Last update: August 2008*

**As of May 2010, this chronology is no longer being updated.  
For current developments, please see the Israel Biological Overview.**

*This annotated chronology is based on the data sources that follow each entry. Public sources often provide conflicting information on classified military programs. In some cases we are unable to resolve these discrepancies, in others we have deliberately refrained from doing so to highlight the potential influence of false or misleading information as it appeared over time. In many cases, we are unable to independently verify claims. Hence in reviewing this chronology, readers should take into account the credibility of the sources employed here.*

*Inclusion in this chronology does not necessarily indicate that a particular development is of direct or indirect proliferation significance. Some entries provide international or domestic context for technological development and national policymaking. Moreover, some entries may refer to developments with positive consequences for nonproliferation.*

## 2008-2004

### 6-10 April 2008

The Israeli government "Rahel" (National Emergency Authority) in cooperation with the Israel Defense Forces (IDF) Home Front Command, local authorities, different governmental offices, security and rescue teams and the educational system conducts a comprehensive national training exercise. The purpose of the exercise is to prepare for various emergency situations, primarily of a war-related nature including scenarios involving attacks against Israel employing chemical-biological weapons. The exercise, which includes a test of the national alert system, is described as the largest such exercise in Israel's history.

—"National Home Front Training Exercise for Israeli Security and Rescue Forces," Israel Defense Forces, 14 April 2008, <http://dover.idf.il>.

### 25 February 2008

Human medical experimentation may no longer be conducted in the Israel Defense Forces without Health Ministry supervision and the observance of "informed consent" guidelines similar to those relevant to clinical experiments in the civilian population. This is a change in the approach of the Israeli military resulting from pressure applied by an NGO, the Physicians for Human Rights-Israel. Pressure for this policy change began following revelations that the military had been testing experimental vaccines and treatments on Israeli soldiers for several years.

—Judy Siegel, "Health Ministry to supervise IDF medical experimentation," *Jerusalem Post*, 25 February 2008, p. 3.

### 10-14 December 2007

An Israeli delegation attends the Biological Weapons Convention Meeting of States Parties in Geneva, Switzerland.

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As the delegation represents a state that is neither a party nor a signatory to the Convention the Israeli delegation is admitted as an observer only.

—"Draft Report of the Meeting of States Parties", 14 December 2007, p. 3, [www.opbw.org](http://www.opbw.org).

#### **20-24 August 2007**

Two Israeli representatives attend the Biological Weapons Convention Meeting of Experts in Geneva, Switzerland. As representatives of a state that is neither a party nor a signatory to the Convention the Israeli delegation is admitted as an observer only.

—"List of Participants BWC/MSP/2007/MX/INF.3", 24 August 2007, p. 43, [www.opbw.org](http://www.opbw.org).

#### **9 August 2007**

A special steering committee established by the Israeli government releases a draft report entitled "Biotechnological Research in an Era of Bioterrorism." A major focus of the report is the inadequacy of Israeli biosecurity measures including the absence of appropriate legislation or adequate supervision of the activities of private research laboratories.

—Yosi Melman, "Keeping a Lid on Bioterrorism," *Haaretz*, 9 August 2007, [www.haaretz.com](http://www.haaretz.com).

#### **15 May 2007**

Giora Martinovich, former chief medical officer for the Israeli military, publicly acknowledges that Israel developed its own version of a U.S. anthrax vaccine using over 700 soldiers for top-secret experiments that, in four cases, caused permanent side effects. Martinovich tells Israel Radio that the experiments took place in the late 1990s. The program had been ordered amid fears of an anthrax attack by Iraq under Saddam Hussein, and because foreign-made vaccines were not available. 'It seemed clear that the Iraqis would use it (anthrax) against us,' he said. 'It is not possible to buy, abroad, a large quantity of vaccine, which exists only in the United States or in England. Therefore the state of Israel had to develop its own vaccine.'

—Israel developed own anthrax vaccine, Agence France Presse, 15 May 2007; Dan Williams, "Israel developed version of anthrax vaccine," *The China Post*, 16 May 07, [www.chinapost.com.tw](http://www.chinapost.com.tw).

#### **19 September 2006**

A high-ranking IDF officer reveals that following the conclusion of the Lebanon War the Home Front Command (HFC) is investing most of its efforts in confronting the threat of non-conventional weapons of mass destruction (WMD). The HFC is developing new technological means to deal with chemical and biological threats including mobile air-purification containers that could be brought to areas infected by chemical or biological weapons and purify the air.

—Yaakov Katz, *Jerusalem Post*, 19 September 2006, p. 1.

#### **20 November – 8 December 2006**

Two Israeli representatives attend the Sixth Review Conference of the Biological and Toxin Weapons Convention (BWC) in Geneva, Switzerland. As representatives of a state that is neither a party nor a signatory to the Convention the Israeli delegation is admitted as an observer only.

—*List of Participants BWC/CONF.VI/INF.8*, 7 December 2007, p. 43, [www.opbw.org](http://www.opbw.org).

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#### **25 June 2006**

The Al-Aqsa Matyr's Brigade releases a statement in which they claim that they "have managed to produce more than 20 kinds of chemical and biological weapons following a three-year effort." The statement also claims that the weapons "will be carried by our long-range rockets to shell Israeli settlements in the event Israel invades the Gaza Strip".

—*The CBW Conventions Bulletin*, No. 72+73 (September 2006), p. 37.

#### **December 2005**

The Swedish Defense Research Agency releases a report addressing the issue of Israeli WMD programs and capabilities. In regard to biological warfare the report states: "Israel does not stockpile or produce BW in large scale today. However we assess that Israel has a breakout capability for biological weapons ...i.e. the knowledge needed to implement theoretical knowledge into the practical management of production and deployment of CBW. The knowledge base would be the one that was built during the 1950s and 1960s where today's advanced research can be used to upgrade potential BW...agents and their behaviour in the environment. We have not found any conclusive evidence that Israel's offensive programs still remain active today."

—Magnus Normark, Anders Lindblad, Anders Norqvist, Bjorn Sandstrom and Louise Waldenstrom, *Israel and WMD: Incentives and Capabilities* (Stockholm: Swedish Defense Research Agency, 2005).

#### **9-11 January 2005**

The Israeli Defense Forces (IDF) and civilian first responders conduct a joint exercise in Israel's south that simulates a terrorist attack using chemical or biological agents to create mass casualties.

—Amir Rapaport, "Syringes against non-conventional weapons to be distributed to policemen," *Tel Aviv Ma'ariv* (in Hebrew), 12 January 2005, p. 8, translation provided by FBIS as *Israel: Policemen to Be Equipped with Antidotes Against Chemical Weapons*, 12 January 2005, FBIS document GMP20050112000217, [www.fbis.gov](http://www.fbis.gov).

#### **29 December 2004**

Researchers at the Technion-Israel's Institute of Technology-have succeeded in developing an innovative antibiotic agent that simultaneously attacks anthrax bacteria and the toxins that they release into the bloodstream of an infected individual. Unlike existing anthrax vaccines, the Israeli vaccine can be administered in one injection

—David Hayoun, "Technion researches develop antibiotic for anthrax," *Globes Online*, 29 December 2004, [www.globes.co.il](http://www.globes.co.il); Transcription provided by FBIS as *Israeli Technion researchers develop antibiotic capable of neutralizing Anthrax*, FBIS document GMP20041229000183, [www.fbis.gov](http://www.fbis.gov).

#### **6-10 December 2004**

Israeli representatives attend the Second Meeting of the States Parties to the BWC in Geneva as a non-signatory observer state. The meeting is part of the preparations for the Sixth BWC Review Conference which is to be held in 2006.

—*The CBW Conventions Bulletin*, No. 66 (December 2004), p. 23.

#### **11 October 2004**

At the 59th session of the First Committee of the UN General Assembly, Israel issues a statement citing concern

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over WMD proliferation and the limited effectiveness of traditional mechanisms to ensure compliance and verification, particularly in the Middle East. Israel supports international nonproliferation efforts and supports UN Security Council Resolution 1540, but also emphasizes that individual states must strengthen international decisions with corresponding domestic actions. Israel has done so by adopting a new Export and Import Control Order, in March 2004, which will strengthen regulation controls over chemical, biological and nuclear materials. —First Committee – UNGA – 59th session, Statement of the Delegation of Israel, [www.reachingcriticalwill.org](http://www.reachingcriticalwill.org).

#### **17 June 2004**

The *Journal of Antimicrobial Chemotherapy* publishes an article by six Israeli researchers detailing the results of a study undertaken by them to determine the potential ability of 18 different antibiotics to induce antimicrobial resistance when used to treat exposure to *Bacillus anthracis*. The study concludes that there is a demonstrated potential for development of resistance in *B. anthracis* to antibiotics recommended for prophylaxis and treatment of anthrax. The publication of the study is somewhat controversial as the character of the work is suggestive of past efforts by foreign BW programs to develop antibiotic resistant disease organisms for military use.

—A. Athamna, M. Athamna, N. Abu-Rashed, B. Medlej, D. J. Bast and E. Rubinstein, "Selection of *Bacillus anthracis* isolates resistant to antibiotics," *Journal of Antimicrobial Chemotherapy*, 2004 54(2), p. 424-428, <http://jac.oxfordjournals.org>.

#### **22 April 2004**

An anti-terrorism technology center is established by the Yissum Research Development Company of the Hebrew University, which envisions that the center will become a world leader in developing anti-terrorism warfare technology, especially relating to chemical and biological anti-terrorism. Hebrew University has received around \$10 million annually from US government agencies in grants for infrastructure and applied research.

—Batya Feldman, "Hebrew U. company sets up anti-terror technology unit," *Globes*, 22 April 2004, <http://globes.co.il>.

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## **2003-1940**

#### **20 December 2003**

Ahmad Abu-Zayd, Chairman of Egypt's People's Assemble Arab Affairs Committee urges Israel and all Mideast countries to follow Libya's example and dismantle their WMD programs.

—"Egyptian official urges Israel to dismantle nuclear, chemical Weapons," BBC Monitoring, 20 December 2003.

#### **18-19 September 2003**

At the Moscow International Proliferation Conference, Iran's Deputy Director General of International Political Affairs Ali Asghar Soltanieh states that Israel has developed chemical and biological weapons and the means to deliver them.

—"The Proliferation Problem According to Iran," *Carnegie Endowment for International Peace*, 7 October 2003, [www.ceip.org](http://www.ceip.org), 11 October 2003.

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### **3 August 2003**

The U.S. company Sundstran agrees to pay a \$171,500 civil penalty because it sold centrifugal pumps to Israel. According to the source, the pumps can be beneficial to a chemical or biological weapons program. [Note: Re centrifuges: pumps relate to CW, separators relate to BW]

—"US Company Fined for Exporting Chemical Weapon Components to Israel and Saudi Arabia," *MENA Business Reports*, 3 August 2003.

### **22 May 2003**

Egyptian biologist, Dr. Wajdi Abd-al-Fattah Sawahil, professor of micro-genetic engineering in Cairo, claims that Israel uses Palestinian detainees as guinea pigs and are "producing new types of diseases, viruses, bacteria, and some genetically modified substances that specifically attack body cells contain a Palestinian hereditary substance."

—Jamal al-Majaydah, "Egyptian Scientist: Israel produces viruses that attack Palestinians only," FBIS GMP20030522000144, 22 May 2003.

### **14 October 2001**

Yehuda Barukh, a senior Israeli Health Ministry official, states that Israel is "better prepared than any other country regarding the possibility of a biological attack, and that Israel has sufficient medication to counter the anthrax."

—"Israel Claims Well-Prepared for Anthrax Attack," Xinhua News Agency, 14 October 2001.

### **14 October 2001**

Israeli postal authorities send six envelopes suspected of containing *Bacillus anthracis* spores to the Israeli Institute for Biological Research (IIBR) for testing.

—Ohad Gozani "Israel Tests Suspect Letters for Bacteria," *The Daily Telegraph*, 15 October 2001, p. 6.

### **2001**

The Israeli Institute of Biological Research (IIBR) announces that it has developed a anthrax vaccine that can be administered in a single shot.

—Ohad Gozani "Israel Tests Suspect Letters for Bacteria," *The Daily Telegraph*, 15 October 2001, p. 6.

### **2 February 2000**

During a Knesset debate about Israel's nuclear weapons program, Arab legislator Issam Makhul states that Israel's "stockpile of atomic, chemical, and biological weapons jeopardize the country's security."

—"Debate About Israel's Nuclear Weapons," *Bulletin of the Atomic Scientists*, 4 February 2000, [www.thebulletin.org](http://www.thebulletin.org), 11 October 2003.

### **2 April 1999**

The United Kingdom partially lifts a ban that did not allow Israeli nuclear scientists and those associated with the development of chemical and biological weapons to enter the U.K. for professional conferences or to visit research institutes.

—"Britain Suspends Ban on Israeli Nuclear Scientists," Xinhua News Agency, 2 April 1999.

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**13 March 1999**

At a conference on security and cooperation in the Mediterranean, Palestine National Council member Abdullah Abdullah accuses Israel of manufacturing chemical weapons at the IIBR.

—"PNC Member Accuses Israel of Making Non-conventional Arms," *Jerusalem Post*, 14 March 1999, p. 3.

**1999**

Palestinian physician Dr. Salman Abu Sitta states before the British House of Commons that during the 1948 War "bacteriological warfare was used by poisoning wells and infecting drinking water with malaria and typhus. This was the case in the summer of 1948, as Ben-Gurion admitted in his diary."

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 32.

**15 November 1998**

The *Sunday Times* of London publishes a story that states that Israel is working on a genetically-targeted biological weapon. The article cites Israeli military officials and western intelligence officials as sources for the report. The biological weapon is to be used to kill Arabs (mostly Iraqis) based on their genetic make-up. An unidentified scientist working on the project is quoted as saying that Israeli scientists have "succeeded in pinpointing a particular characteristic in the genetic profile of certain Arab communities, particularly the Iraqi people." The program is allegedly being worked on at the Israel Institute for Biological Research (IIBR).

—"Israel's Diabolical Genetic Weapons Target Arabs," *Multimedia*, 1-15 December 1998, [www.muslimmedia.com](http://www.muslimmedia.com), 10/11/03; Mahnaimi, Uzi and Marie Colvin, "Israel Planning 'Ethnic' Bomb as Saddam Caves in," *Sunday Times*, 15 November 1998.

**6 October 1998**

Egyptian President Hosni Mubarak states that Israel is "in the process of arming themselves with nuclear, biological, and chemical weapons."

—"Egypt Concerned by Israeli Arsenal, Wants Balance of Forces," *Agence France Presse*, 6 October 1998.

**4 October 1998**

A report published in the *Sunday Times* of London states that Israeli F-16's have the capability to perform missions with chemical and biological weapons that were produced at the Israel Institute for Biological Research (IIBR). According to the report, crews have been trained to load such munitions onto the planes within a matter of minutes. The article cites "military sources" as the sources for the report.

—Cordesman, Anthony H., "Weapons of Mass Destruction in the Middle East," *Center for Strategic and International Studies*, 15 April 2003; Mahnaimi, Uzi, "Israeli Jets Equipped for Chemical Warfare," *Sunday Times*, 4 October 1998.

**24 September 1998**

The Israeli Supreme Court accepts a complaint filed by the mayor of Ness Ziona, calling for a halt to the expansion of the Israel Institute of Biological Research based on environmental concerns.

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—"Crashed Jet Held Nerve-gas Chemical Dutch in Uproar Over Israeli Cargo." *The Toronto Star*, 2 October 1998, p. A12.

### **23 September 1998**

Israeli citizens living near the Israel Institute of Biological Research file an appeal to the Israeli Supreme Court to prevent the expansion of the institute.

—"Israelis File to Suit to Block Chemical Weapons Plant Expansion," Agence France Presse, 23 September 1998.

### **Middle September 1998**

Avraham Marcus Klingsberg is released from prison due to his poor health. He is released on the condition that he employ two male housekeepers approved by the Israeli General Security Service (GSS). The two male housekeepers are to listen to all of his conversations and ensure that he talk only to family members and friends approved by the GSS.

—"Oy Vey? No Way. Ex-spy Kilngberg Barred from Speaking Yiddish," *The Jerusalem Post*, 22 January 1999, p. 5.

### **3 September 1998**

An Israeli court agrees to the release of Avraham Marcus Klingsberg in fifteen days because of his poor health.

—"Israeli Court Paroles Spy for Soviet Union," Agence France Presse, 3 September 1998.

### **19 August 1998**

The British magazine *Foreign Report* reports the four workers have been killed and 25 injured at the Israel Institute of Biological Research in recent years due to separate accidents. It also reports that the authorities ordered the evacuation of the surrounding area following one of the accidents.

—Davis, Douglas, "Report: 4 Killed, 25 Hurt, at Secret Institute," *Jerusalem Post*, 20 August 1998, p. 2.

### **August 1998**

The Israeli newspaper *Yediot Achronot*, publishes a long expose in which is calls the Israeli Institute of Biological Research (IIBR) "metropolitan Tel Aviv's most severe environmental hazard" and also raises questions regarding the secrecy surrounding the institute's activities.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 36.

### **May 1998**

A statement released by the official JANA news agency in Libya states that Libya is "surprised by the United States' rush to impose sanctions on Pakistan when (Washington) won't even lift the smallest finger against the nuclear, biological, and chemical weapons which Israel has."

—Rechnagel, Charles "Middle East Ponders Consequences of First 'Islamic Bomb,'" Agence France Presse, 29 May 1998.

### **1998**

The IIBR drops plans to expand its facilities in Ness Ziona due to local pressure exerted by the major and concerned citizens over the environmental and safety hazards associated with the suspected biological activities of the

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complex.

—Lavie, Mark, "Rumors Abound About Israeli Center," Associated Press, 24 October 1998.

#### **14 November 1996**

Deputy Speaker of the Iranian Parliament, Dr. Hassan Rohani, states during his visit to Ireland that Israel, and not Iran, possesses nuclear, chemical, and biological weapons.

—MacConnell, Sean "Iranian Outlines Difficulties with Beef Trade," *The Irish Times*, 15 November 1996, p. 8.

#### **13 August 1996**

Libyan leader Muammar Qaddafi sends a telegraph to Palestinian leader Yasser Arafat calling for Arabs to take measures to confront Israel's possession of chemical and biological weapons. The telegraph states that international institutions must disarm Israel of such weapons.

—"Gaddafi Calls for Measure to Face Up to Israel's Chemical Weapons," Xinhua News Agency, 13 August 1996.

#### **9 August 1996**

The Libyan news agency JANA reports that Libya has called for an urgent meeting of the Arab League in midst of allegations that Israel is developing chemical and biological weapons. According to the report, Libya has conducted extensive consultations with Arab League members "following information that the Israeli enemy possesses chemical and bacteriological weapons, including toxic gases, developed in a factory in the Negev desert." Libya reportedly has called the meeting because of the danger these developments pose.

—"Libya Calls Arab League Talks Over Israel's Weapons Arsenal," Agence France Presse, 9 August 1996.

#### **17 April 1996**

Libyan leader Moamer Gaddafi in a speech states that Libya has the right to possess chemical weapons because Israel possesses nuclear, biological, and chemical weapons.

—"Libya is Entitled to Have Chemical Weapons, Gaddafi," Deutsche Presse-Agentur, 17 April 1996.

#### **8 March 1993**

The Arab League again rejects the Chemical Weapons Convention because it states that it cannot accept such a treaty as long as Israel still "possesses chemical, biological, and nuclear weapons."

—"Arab League Reiterates Rejection of Chemical Arms Ban Treaty," Xinhua News Agency, 8 March 1993.

#### **20 February 1993**

The Libyan Foreign Ministry releases a statement in which it criticizes the West because "Israel's development of chemical and biological weapons is overlooked."

—"Libya Accuses West of 'Psychological Terrorism,'" Xinhua News Agency, 20 February 1993.

#### **15 September 1988**

The Korean Committee for Asian-African Cooperation in Pyongyang denounces Israel for allegedly using chemical weapons and "germ warfare" in the West Bank and Gaza Strip, killing many residents in the area.

—"Pyongyang Denounces Israel for Massacre of Palestinians," Xinhua News Agency, 15 September 1988.

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### **30 August 1983**

A commentary written by Viktor Vinogradov for the Soviet Defense Ministry daily 'Krasnaya Zvezda' states that Israel and South Africa are working together on biological weapons that will target only certain ethnicities.

Research, he alleges, is being performed at a research institute operated by the South African Air Force.

—"RSA-Israeli Research on Racially Selective Mass Destruction Weapons," *BBC Summary of World Broadcasts*, 1 September 1983.

### **January 1983**

Avraham Marcus Klingberg, a researcher at the Israeli Institute of Biological Research is arrested at Ben-Gurion Airport for being a spy for the Soviet Union. It is believed that Klingsberg provided classified information about Israel's biological weapons program to the Soviets. In June he is convicted of spying and sentenced to 18 years.

—Black, Ian, "Israel Holds Scientist for Spying," *Guardian*, 26 February, 1988; Pringle, Peter, "'Missing' Israeli Scientist Was Jailed as Spy," *Independent*, 4 August 1993.

### **December 1957**

Ludwig Fleck, a microbiologist and philosopher of science who recently emigrated from Poland, is appointed director of experimental pathology at the Israeli Institute of Biological Research (IIBR).

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 34.

### **Mid 1950's**

The Israeli Institute of Biological Research is tasked with developing a polio vaccine.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 34.

### **1955**

Prime Minister David Ben-Gurion launches a project to develop a "cheap non-conventional capability." Ben-Gurion orders that this capability be operational as soon as possible and before a war with Egypt.

—Benn, Aluf, "The Project That Preceded the Nuclear Option," *Ha'aretz*, 2 March 1995; Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, p. 40.

### **1954**

Defense Minister Pinchas Lavon is rumored to advocate the use of biological weapons for certain special operations.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 40.

### **1952**

HEMED becomes part of a group of Ministry of Defense (MOD) sponsored civilian research centers that are known as "Machons." Through this, Professor Ernst David Bergmann, a member of a group of scientists who pressured Prime Minister David Ben-Gurion to establish a chemical and biological weapons program, establishes both the

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Israeli Atomic Energy Commission (IAEC) and the Israeli Institute of Biological Research (IIBR).

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 33.

#### **Late 1948**

Following the 1948 war, HEMED BEIT moves its headquarters to a permanent location in the town of Ness Ziona.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 30.

#### **22 July 1948**

The Palestinian Arab High Commission submits a 13 page memorandum in which it accuses "Palestinian Jews" of various war crimes, including "bacteriological warfare." According to the memorandum, there is evidence, though inconclusive that "Zionists" were responsible for the outbreak of cholera in Egypt in November 1947 and in a Syrian village near the Syrian-Palestinian border in February 1948.

—Hamilton, Thomas J., "Arab Assails the Idea of Minority Shifts," *New York Times*, 24 July 1948; Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 32.

#### **23 May 1948**

Egyptian soldiers in Gaza catch four Israeli soldiers near a water well with a liquid that according to Egyptian officials contains *Shigella dysenteriae* and *Salmonella typhi*.

—Hamilton, Thomas J., "Arab Assails the Idea of Minority Shifts," *New York Times*, 24 July 1948; Leibovitz-Dar, "Haydakim Besheret Hamedinah," [Microbes in State Service], *Hadashot*, 13 August 1993 pp. 6-10; Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, p. 31.

#### **17 May 1948**

Israeli forces are suspected of introducing a typhoid epidemic to the Arab town of Acre, after an outbreak of typhoid.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 31.

#### **May 1948**

Ephraim Katachalsky, a member of a group of scientists who pressured Prime Minister David Ben-Gurion to establish a chemical and biological weapons program, is appointed commander of HEMED.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 30.

#### **April 1948**

David Ben-Gurion writes a letter to Ehud Avriel, a Jewish Agency operative in Europe, telling him to seek out and recruit East European Jewish scientists who can "either increase the capacity to kill masses or to cure masses."

—Keren, Michael, *Ben-Gurion and the Intellectuals: Power, Knowledge, and Charisma*, Northern Illinois Univ. Press,

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May 1984, p. 32; Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, p. 27.

#### **18 February 1948**

General Yigal Yadin orders the establishment in Jaffa of a unit within HEMED that is dedicated to biological warfare and is referred by the acronym HEMED BEIT. Alexander Keynan is put in charge of the unit.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 30.

#### **Early 1948**

Hebrew University microbiology student Alexander Keynan pushes for Israeli General Yigal Yadin and Prime Minister Ben-Gurion to set up a new biological warfare unit within HEMED.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 30.

#### **1948**

During the 1948 War Israeli forces are suspected of "poisoning" the water supplies of Arab villages that are conquered in order to prevent its inhabitants from returning. No agent is identified.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 31.

#### **1948**

The Science Corps within the Israeli Defense Forces (IDF) is formed and is known by the acronym HEMED.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Fall-Winter 2001, Vol. 8, No. 3, p. 30.

#### **Mid 1940's**

A small scientific department is founded within the Jewish *Haganah*.

—Avner Cohen, "Israel and Chemical/Biological Weapons: History, Deterrence, and Arms Control," *The Nonproliferation Review*, Vol. 8, No.3, Fall-Winter 2001, p. 30.

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