Chemical and Biological Warfare

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A COMPREHENSIVE SURVEY FOR THE CONCERNED CITIZEN

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WITH CLARISA PEREZ-ARMENDARIZ AND JOHN HART

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Preface

As these lines are being written, firemen, police officers, and a host of other rescue workers are still trying to save victims of the terrorist attacks on the World Trade Center and the Pentagon. Even without precise counts of the dead and wounded in Pennsylvania, Virginia, and New York, we can already conclude that this attack was a signal event of mass destruction, with the outcome certain to make it the deadliest single terrorist act ever committed against United States citizens. The number who died in the attacks and the 100-minute aftermath will almost certainly exceed the number of American armed forces killed at Pearl Harbor, or on D-Day. But these victims of terror were, by and large, civilians, people going about their business. And the instruments of their death, the murder weapons, were not, until yesterday, considered weapons at all.

It is always hard, but especially under these circumstances, to talk about weaponry, the tools of war and terror. What can these new weapons be compared to? How can they be described? The US Department of Defense categorizes the most deadly kinds of armaments as "weapons of mass destruction," or WMDs, and defines them as "capable of a high order of destruction . . . of being used in such a manner as to destroy large numbers of people."* This does not tell us much. How does one define "a high order of destruction" and "large numbers of people"? Timothy McVeigh, who was responsible for bombing the Alfred P. Murrah Federal Building in Oklahoma City in 1995, was indicted on US federal charges for using a WMD, a truckload of improvised explosives. In the blast, 168 people were killed—again overwhelmingly civilians, men, women, and children going about their business.

Was McVeigh charged with using a WMD because 168 is a large enough number? Is this or a number near it the dividing line between an ordinary act of savagery and one in which we call the killers' implements weapons of mass

* Department of Defense, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: Joint Chiefs of Staff/US Government Printing Office, Joint Pub 1-02: March 23, 1994): p. 412.

destruction? Chemical and biological armaments have the potential to kill huge numbers of people, many times the number killed by McVeigh's bomb. And certainly it seems to make sense that the US Department of Defense categorizes them as WMDs. But is it not true that almost any weapon, even the machetes used in Rwanda in 1994, can be used to perpetrate horrors on an unspeakable scale?

The term "weapons of mass destruction"—probably coined in 1956 by the Soviet Red Army Marshal Georgi Konstantinovich Zhukov (known as "the hero of Stalingrad")—has, like any defining or categorizing word, its shortcomings. It explains some things, but goes only so far. The arms expert Ken Alibek, whom we shall meet later in this book, suggests that a better name for biological armaments might be "mass casualty weapons," since their object is to inflict human injury but not to destroy buildings or property. Distinctions like these are grim—but they are also useful. They help us refine and sharpen our sense of things. They help us face up to and describe in words what otherwise may be overwhelming, confusing, frightening. And of course trying to face up to facts and describe events—no matter how horrible they may be—is the first step toward understanding.

My wish is that readers will take up this book in that spirit. Studying weaponry and warfare and disarmament isn't just a challenging and stimulating intellectual discipline for its own sake. The stakes are much too high for that. Its aim instead is to help us understand a long-standing aspect of human behavior, a force in human history, that seems capable of devising new tools of destruction that we may have to face at times and in places where we least expect them—in a pair of towers above a great harbor, in offices at the heart of our vast and powerful military establishment, and in a quiet country field in southwestern Pennsylvania.

Eric Croddy
Monterey, California
October 23, 2001

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Any errors, committed or otherwise, are solely my responsibility.

Introduction

Why study chemical and biological warfare (CBW)? At the very lowest level, the topic lends itself to morbid curiosity. The scale on which "bugs and gas" can be used to kill people, and the way in which they cause death, can make for gruesome reading. Then there is the matter that these weapons are considered, rightly or wrongly, to be abominable, and those who wish to confirm that opinion will find in studying CBW plenty to abhor. Readers in these two categories are likely to be disappointed by what they will find in this book.

Fear is another motive for study. One can hardly read the paper or listen to the news today and not, sooner rather than later, hear reports about the belligerent nations, repressive regimes, and terrorist organizations that have access to, or are working on the development of, these weapons. The mere existence of CBW armaments, we are told, poses a significant threat to the stability of international order. Even if one believes that the nuclear stand-off between superpowers—the Balance of Terror that characterized the Cold War—is a thing of the past, we now have a whole new cast of characters to worry about. They are less well understood than our old adversary the Soviet Union, and less predictable. They operate as states (or sometimes "rogue states"), but also in the shadows, in league with networks of terrorists, global criminal enterprises, and splinter groups representing every conceivable type of fanaticism. And they will, it is almost certain, push us into a whole new kind of decades-long war. For readers arriving with this point of view, I hope this book will serve as a kind of corrective.

It is not my belief that CBW armaments are benign, or that states and substate organizations are not wishing for or even planning chemical or biological attacks against the United States and the rest of the industrialized world. I am not someone who places great faith in the good will and sober judgment of, say, Saddam Hussein. In fact, if I were a betting man, I would put my money on the likelihood that we *will* see chemical or biological weapons attacks in the not-too-distant future. But where this book perhaps differs from some more popular discussions of the topic is in its argument, in its underlying theme, that biological and especially chemical attacks of any magnitude are extremely difficult to plan, develop, execute, and fund. Certainly it is true that a fanatical cult

could release nerve agent on a crowded subway car, as happened in Tokyo in March 1995. And the ultimate splinter group, a single deranged individual, may be perfectly capable of killing, injuring, or incapacitating large numbers of individuals in any number of ways chemical or biological. If you add to these all the belligerent major powers, rogue states, and oppressive regimes worldwide (and factor in their client terrorist organizations as well), you can imagine no end of mischief—gas attacks, reservoir poisonings, anthrax outbreaks, and so forth. But what we have to do is dwell less on nightmare scenarios and try to learn—as calmly and clearly as possible—what CBW agents are, how they work, who has used them in the past, and what is being done to limit their proliferation. Fear may be a good motivator, but it is not, as far as I can tell, an aid to understanding.

How This Book Is Organized

This book is divided into three major parts. In Part I, "Gas, Bugs, and Common Sense," there is a brief introduction to and definition of CBW (Chapter 1), including descriptions of why and how nation-states and "sub-states" (for example, terrorist organizations) develop chemical and biological weapons. Chapter 2 then lists, in a fairly straightforward manner, the nations that have CBW capabilities, along with brief descriptions of the particular agents they possess. In Chapter 3, we take a look at some of the threats we're likely and unlikely to face.

Part II is focused on chemical weapons. In Chapter 4, there are rather extensive descriptions and discussions of more than fifty of the best-known CW agents. Chapter 5 is a history of chemical warfare from ancient times to the present. And Chapter 6 discusses in detail the workings of the 1992 Chemical Weapons Convention (CWC), by all accounts one of the most effective international treaties written. (But not, as the chapter makes clear, without its limitations.) Included in the chapter is a lengthy discussion of the extremely difficult matter of verification, and the highs and lows of the international community's relationship with Iraq, an unwilling signer of the accord.

Part III, which more or less mirrors Part II, focuses on biological agents and weapons, with Chapter 7 describing more than forty biological agents in detail. Chapter 8 focuses on BW armaments in history, again covering a broad span. Chapter 9 covers the Biological Weapons and Toxins Convention of 1972 (BWTC), a work of the best intentions but not much good effect. (The success of the CWC and the comparative ineffectiveness of the BWTC are discussed in some detail.) Finally, a whole chapter (Chapter 10) is devoted to the issue of vaccinations and biological warfare.