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Science, Technology and the CW Prohibition Regime

1. Introduction

This chapter will analyse the chemical weapons (CW) prohibition regime with a view to the impact that technological characteristics of and developments related to toxic chemicals as well as developments concerning chemical processes have on the control efforts by states parties to the regime. The analysis starts from the hypothesis that recent developments in modern biotechnology, especially the utilization of combinatorial chemistry in for example the pharmaceutical industries of developed countries pose a risk to the international regime set up for prohibiting chemical warfare agents. In order to prevent the CW prohibition regime from being undermined by these – and other – recent developments, a rethinking is needed of the inter-relation between the scientific and technological basis of the issue area and the political-legal regime structure brought in place to control the dangers emanating from known chemical warfare agents and other toxic chemicals and biochemicals that could be misused for warfare or terrorist attacks.

The chapter is divided into two substantive parts, the first of which will begin with a discussion of toxic chemicals and some of their characteristics that have made them attractive as chemical warfare agents. As the relationship between scientific and technological progress in chemistry and the military application of toxic chemicals has been a close one for some time, the second section of the first part will provide an outline of the development of chemistry and chemical technology on one side and its misuse in past CW-programmes during the 20th century on the other. The third section
will highlight technical issues in CW destruction, while the fourth section discusses dual-use aspects of toxic chemicals as they relate to the verifiability of the peaceful applications of toxic chemicals and the transboundary transfer of such chemicals. The first part concludes with an overview of trends in chemical industry at the turn of the century.

The second part will analyse the interrelation between scientific and technical issues on one side and the negotiations and the implementation of the Chemical Weapons Convention (CWC) on the other. To this end it will be subdivided in five sections dealing with (1) the scope and the schedules of the CWC, (2) chemical weapons disarmament, (3) the verification of the permitted uses of toxic chemicals, including unscheduled chemicals containing phosphor, sulphur or fluorine, also called discrete organic chemicals (DOCs), (4) controlling the transfer of scheduled chemicals to both state and non-state parties to the CWC and (5) the CWC Review Conference’s review of scientific and technological development. This latter section will take as its point of departure the CWC’s Article VIII, paragraph 22, which gives the First Review Conference a clear mandate to consider scientific and technological issues. It states that:

[t]he Conference shall no later than one year after the expiry of the fifth and the tenth year after entry into force of this Convention, and at such other times within that time as may be decided upon, convene in special sessions to undertake reviews of the operation of this Convention. Such reviews shall take into account any relevant scientific and technological developments. At intervals of five years thereafter, unless otherwise decided upon, further sessions of the Conference shall be convened with the same objective. [emphasis added]

In relation to the preparation and conduct of the Review Conference, both activities of states parties and the OPCW as well as contributions from non-governmental organizations (NGOs) will be considered. The chapter will conclude with a summary of the argument, and will point out the inadequacy of the current regime structures for preventing the malign misuse of 21st century chemistry.