(Mrs. Rautio, Finland)

The present annex contains large families of compounds. The usefulness of monitoring methods depends on the number of compounds to be monitored and on the availability of prerecorded identification data. If the number of compounds is large, they need to be grouped into subgroups to allow monitoring with specific methods. Monitoring of known chemicals, it may be added, is very much easier and speedier than structure elucidation of unknown chemicals.

The general-purpose definition of a chemical-warfare agent - that a chemical is a chemical-warfare agent if it is used for that purpose - will be useful in securing that the convention cannot be circumvented by claiming that an unlisted chemical is not covered by it. The definition can reasonably be applied in cases of alleged use. Owing to the rarity of such occurrences, the samples can be analysed with great care and in detail although the concentrations may be low. In cases of chemicals found in military arsenals there is plenty of the chemical available to enable a thorough analysis to be made quickly. But the general-purpose definition would be unwieldy as a basis for routine inspections of chemical facilities. In those cases the analysis must be based on named compounds whose absence rather than presence is verified. In a plant producing organophosphorus compounds, for example, the samples collected during routine on-site inspections should be monitored for their contents of listed organophosphorus compounds. Without a defined list of banned compounds and prerecorded identification data, the analyst would be faced with the task of identifying all compounds containing phosphorus, including intermediates, by-products, and impurities, in order to decide whether or not they belonged to the families covered by schedule (1). Using the computerized database the identification of a named chemical takes a fraction of a second, even on-site. The structure elucidation of an unnamed chemical could require weeks of hard work.

Accordingly, at least the chemicals in schedule (1) need to be individually defined, to allow the analytical laboratory to sign a report stating that no banned chemicals are present in the samples. The analyst must know exactly what chemicals to look for. The other alternative could be that the chemical industry declares and justifies all production, including raw materials, intermediates, by-products, impurities and so on. And these data would be included in the database of the verification laboratory. While it would succeed in revealing the production of undeclared organophosphorus compounds, I am afraid that it would be unacceptably intrusive and an unwieldy exercise for the Technical Secretariat. Moreover, it would not reveal novel agents whose structural properties were completely different from compounds listed in the schedules, unless declarations and justifications were expected of the whole chemical industry.

One of the tasks of the future Organization will be to follow chemical research and identify new chemicals to be included in the lists and placed under production control. To make implementation easier in the early days of the convention, as much development of analytical methods as possible should be done beforehand. The acquired expertise would also facilitate development and testing of analytical methods for possible novel agents.