

type" reasons for disliking chemical weapons. "Among other things, a ship is one massive, self-containing, ventilation system; the minute any of that stuff gets released accidentally, you'd just have to abandon ship. Its too dangerous."

On the other hand, 85 percent of the chemical officers voted that there will be a future need for herbicides. This was explained by several sources as doing just what comes naturally. Chemical weapons are the Corps' *raison d'être*, or, as one official said, more baldly, "Its their meat and potatoes. Asking the Chemical Corps to vote against future use of herbicides is like asking it to cut its own throat."

Although the ESSG report reveals these intraservice factions, the study itself, according to a number of accounts, was the product of a larger scale factionalization within DOD. Allegedly, in mid-1971 when the report was commissioned, the Joint Chiefs of Staff (JCS) favored use of herbicides, while the Office of the Secretary of Defense (OSD) opposed it. The office of Defense Research and Engineering (DR & E), which commissioned the report, tended to side with the pro-herbicide JCS. "DR & E was at loggerheads with OSD on whether you need them," said a source. Another official outside the defense department who followed the ESSG study commented: "I remember being surprised that this was handed to ESSG and not to systems analysis [an office in OSD]. But possibly that was because systems analysis had already established a track record of taking a dim view of it [the herbicide program]".

An official who was involved in the genesis of the report, explained why ESSG was chosen. "Systems analysis really doesn't do that sort of thing. Weapons systems evaluation group might have done it. ESSG was chosen because of the large background of information they had of the geology, climatology, and flora of the area. They have made a number of very good surveys of the country so they would understand the problem, and they could also look into the wargaming type of problems."

A non-DOD official explained that one reason the military has always favored herbicides in the past was because the JCS, which coordinates the activities of the Army, Navy, and Air Force, was always willing to "go along with" Army leaders' backing of

### Correction

An article in the 18 August issue of *Science* stated that, in his 1960 congressional testimony relating to the use of diethylstilbestrol, Thomas P. Carney, the then vice president for research at Eli Lilly, ignored the fact that human cancers may have a long latency period. This is incorrect, in that Carney's testimony cited a history of the use of DES extending over more than 20 years.

The same article stated that the chairman of the Food Protection Committee of the National Academy of Sciences is William J. Darby. Dr. Darby resigned as chairman in July 1971. The present chairman is Lloyd J. Filer of the University of Iowa College of Medicine. These errors are regretted—N.W.

the Chemical Corps' enthusiasm for these weapons. Now that the ESSG study has come out, however, the official speculated on what would happen. "One thing it would be interesting to know is just how actively the Department of the Army and the JCS are willing to lobby for the Chemical Corps."

The relative weakness of the ESSG study's endorsement of herbicides, in the eyes of some, could pull the rug out from under the DOD and the Nixon Administration's interpretation of the Geneva Protocol as exempting herbicides from its ban. As the Wheeler-Swyter review says:

The data in the Engineer Report strongly supports a position that the incremental military effectiveness secured by retaining the option to use herbicides is outweighed by the costs of retaining the option.

"Among these costs . . . are . . . retardation of further arms limitation agreements, as is currently the case with the Geneva Protocol.

One of the experts who has testified before Congress on the Protocol, George Bunn, dean of the University of Wisconsin Law School, does not take a position on whether herbicides legally are included under its ban. However, Bunn does think that the issue of their military effectiveness or ineffectiveness is relevant to U.S. arms control policy. Bunn gave *Science* the following statement:

If the legal question is not clear, that is, if the Protocol does not clearly prohibit herbicides, then the United States should consider from a policy point of

view whether it wants to have them prohibited or not.

Then, certainly, you should consider their military effectiveness and if they're not very effective from the military point of view, and they raise serious diplomatic and arms control problems, then that's good reason why they should be prohibited, that is, included under the Protocol.

One former White House staffer who recalls the President's historic 1969 decision to seek ratification of the Protocol says that some military inputs to the White House were overruled when the decision was made. "I always had the feeling they [the White House] had their eyes on the Russians more than anyone. This was one of the gestures made in courting the Soviets. The CBW decision was a first step toward SALT." Now that a SALT agreement has been reached, and the DOD's staunch support for herbicides seems to be wilting, perhaps the obstacles to fuller U.S. participation in international CBW agreements will be fewer.—DEBORAH SHAPLEY

## RECENT DEATHS

**William Antopol**, 69; director of laboratories and research, Beth Israel Medical Center; 19 June.

**Edward B. Bunn**, 76; chancellor and former president, Georgetown University; 18 June.

**Farrington Daniels**, 83; professor emeritus of chemistry, University of Wisconsin; 23 June.

**H. Claire Lawler**, 49; biochemist and research associate, psychiatry department, Columbia University College of Physicians and Surgeons; 7 July.

**J. Holmes Sturdivant**, 66; professor of chemistry, California Institute of Technology; 21 April.

**Joseph L. Sutton**, 48; former president, Indiana University; 28 April.

**William M. Whyburn**, 70; professor emeritus of mathematics and former vice president, University of North Carolina; 5 May.

**Griffith W. Williams**, 75; professor emeritus of psychology, Rutgers University; 22 April.

*Erratum:* In the report "Rostroconchia: A new class of bivalved mollusks" by J. Pojeta, Jr., *et al.* (21 July, p. 264), the second sentence in the second paragraph on page 264 should read "As in other motile bivalved animals in which the midsagittal plane passes between the valves, the fused junction (*hinge*) of the valves is regarded as dorsal and the margin opposite the hinge ventral."