Table 1. Chlorinated dioxin content of soil. Detection limits are given in parentheses.

City	Sample set	Approximate distance (feet)	Apparent source	Apparent dioxin concentration, pg/g (ppt)			
				TCDD	HCDD	H_7CDD	OCDD
Chicago	1	100 NE	Incinerator	N.D. (20)	N.D. (30)	140	410
Chicago	1	200 NE	Incinerator	N.D. (10)	30 (30)	240	1000
Chicago	1	400 NE	Incinerator	30	310	3300	22000
Chicago	1	1000 NE	Incinerator	N.D. (20)	120 (40)	1400	8500
Chicago	2	100 NE	Incinerator	6 (3)	140	850	3200
Chicago	2	200 NE	Incinerator	5 (5)	40 (30)	360	1400
Chicago	2	400 NE	Incinerator	5 (5)	90 (50)	960	6000
Chicago	2	1000 NE	Incinerator	N.D. (6)	20 (20)	100	350
Lansing	3	600 ENE	Powerhouse	N.D. (10)	1200	1600	2000
Lansing	3	900 ENE	Powerhouse	N.D. (10)	N.D. (40)	230	960

concentration in their combustion feedstock or on PCDD isomer distribution profiles (*3*, *5*) which would support this conclusion. In fact, the work of Buser *et al.* (*3*) indicates that the majority of the PCDD isomers observed in the fly ash of a municipal incinerator and an industrial heating facility could be accounted for by the pyrolysis of the three most commonly used and environmentally widespread commercial polychlorophenols.

In summary, the route or routes by which observed PCDD is formed has not been established. Consequently, the conclusions of Bumb *et al.* that the ubiquity of the PCDD is due to "natural phenomena" must be reevaluated.

ROBERT E. CARLSON
Gray Freshwater Biological Institute, University of Minnesota, Navarre 55392

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It would be great if a meaningful materials balance experiment could be devised that would be reasonable to perform. However, at the trace levels (parts per billion or less) of PCDD's it is generally considered impracticable at present.

The data that Kriebel suggests would provide "circumstantial evidence of combustion as a source of chlorinated dioxins" were included in the original manuscript, but the table was condensed at the request of reviewers and editors. Some of these data are summarized in Table 1.

These data have been treated by Townsend (*1*), who was able to show a relation between ratios of isomer groups and distance from the source. As would be expected, the concentration of the various dioxins appears to attain a maximum around 300 to 600 feet. Not enough data are available to draw firm conclusions, however.

As a result of our investigation, it was clear that PCDD's were coming from combustion sources of which Dow has several. This was the point of the article.

As part of a continuing program to protect the environment from chemical contamination, the manufacturing plants are monitored for possible leaks. The data from this monitoring, together with new, specially acquired data, were accumulated and restudied to determine if leaks had possibly occurred. None were detected. This was described in a 1978 report (*2*); however, it is not germane to a discussion of combustion phenomena.

Carlson's proposed routes for the formation of PCDD's were previously presented and thoroughly discussed by Lustenhouwer *et al.* (*3*). The fact that a hypothesis such as the "trace chemistries of fire" cannot be proved is common knowledge. Hypotheses are meant to be tested in every conceivable way. Until they are proved false, they are useful in guiding experimentation.

WARREN B. CRUMMETT
Analytical Laboratories, Dow Chemical U.S.A., Michigan Division, Midland 48640

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Abortion, Science, and the Law

As a lawyer with many years' experience at the interface of law and science, I am heartened to read so perceptively sound a statement of the roles of the two disciplines at that interface as that made by B. G. Zack (Editorial, 17 July, p. 291).

The taking of "life," even of human life, however defined, is not now and never has been absolutely illegal in the United States. The broad term denoting the killing of a person is "homicide," literally "man killing." A homicide in American law and custom may be an act which in certain circumstances merits society's highest approval, but in other circumstances, its deepest repugnance. The unacceptability of a homicide varies not only with the conduct of the killer, but also with the quality of the killed. In every culture most homicide has been forbidden, but in varying cultures, varying homicides have been not only tolerated but customary. Examples are sacrifices to the Aztec gods, defeated enemies by cannibal savages, the senile and near senile among some Eskimos, and unwanted infants in the Athens of classic antiquity. Thus, in all cultures, the culpability of homicide depends upon the cultural definitions of approved killers and their approved victims.

As Zack states, thus reinforcing the views of Hickman, Boving, and Libet (Letters, 10 July, p. 154), a human zygote, (or equally ovum or sperm), or fetus are all incontrovertibly living and human. Science, having told us this, has nothing more to add to the question of whether any of them is to be considered legally the potential subject of culpable homicide if killed. That question is for moralists, legislators, lawyers, and the democratic process.

W. BROWN MORTON, JR.
Route 1, Box 586, Warsaw, Virginia 22572

New Location for Memphis?

After looking at the map accompanying the article on the Tennessee-Tombigbee waterway (News and Comment, 14 Aug., p. 741), I see more clearly the reason for its high cost. It must include moving Memphis from its traditional location on the Mississippi River to the head of the waterway near Savannah, Tennessee.

G. H. HICKOX
9310 Allwood Court, Alexandria, Virginia 22309

The map was indeed in error.

—EDITOR

Erratum: In the report entitled "The posterior pituitary: Regulation of anterior pituitary prolactin secretion," by L. L. Peters *et al.* (7 Aug., p. 659), an error occurred in the legend to Fig. 2. In the description of Fig. 2B, the solid line should have referred to the solvent vehicle and the broken line to dopamine.