our estimate of 1000 times Krakatoa for the impact event, although Toba did not produce extinctions. This consideration may make it possible to place a lower limit on the size of extinction-producing events, and we note that if objects substantially smaller than the one we postulate were capable of producing mass extinctions, these would occur more frequently, because of the steep decrease of numbers of asteroids with increasing size. We are prepared to abandon our "darkness hypothesis" when and if some other proposed killing mechanism is shown to fit the geological record better than it does. But we feel our major theoretical conclusion—that the worldwide boundary layer contains the remnants of a large asteroid that somehow triggered the extinction—now rests on a very solid experimental base.

To apologize to Brown and to others who are better proofreaders than we are, we have all stayed after school and written on the blackboard 100 times, "Mt. Hood is in Oregon."

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References

1. L. W. Alvarez, W. Alvarez, F. Asaro, H. V. Michel, *Univ. Calif. Lawrence Berkeley Lab. Rep. LBL-9666* (1979).
2. S. Gartner and J. Keany, *Geology* **6**, 708 (1978); S. Gartner and J. P. McGuirk, *Science* **206**, 1272 (1979).
3. R. Ganapathy, *Science* **209**, 921 (1980).
4. F. Asaro, H. V. Michel, L. W. Alvarez, W. Alvarez, *Univ. Calif. Lawrence Berkeley Lab. Rep. LBL-11613* (1980).
5. C. Emiliani, *Eos* **61**, 505 (1980).

Erratum: In the report "Mutagenicity of fly ash particles in *Paramecium*" by J. Smith-Sonneborn *et al.* (9 Jan., p. 180), Tables 1 and 2 are printed incorrectly. Significance lines are missing from both tables and "uninduced" should read "induced" in the sixth, eighth, and ninth entries of the first column in Table 1. The tables are reprinted below as they should have appeared.

Table 1. Mutagenic effect of fly ash and heat-treated fly ash in *Paramecium*. Values not connected by the same line are significantly different from each other (Wilcoxon matched-pairs signed-ranks test, $\alpha = .05$). The data from six experiments were pooled since the control values for autogamous progeny were not significantly different. Cerophyl is the ryegrass extract used for cultivation of *Paramecium*. Induced S-9 is the Ames liver microsome fraction from rats receiving Arochlor 1254 (polychlorinated biphenyl) to activate the enzymes for conversion of promutagens to mutagenic form; uninduced S-9 is from rats receiving corn oil only (the vehicle for the Arochlor). Glass beads (1 to 3 μm) suspended in either induced or uninduced S-9 were used as a negative control for nonnutritive particles. Kaolinite was also used in one experiment, and the results were the same as those for the glass beads. Benzo[*a*]pyrene was the positive control for mutagenicity requiring induced S-9. The initial concentration of suspended fly ash was 535 μg/ml. The average number of affected progeny from treated parent cells was 20 percent higher than the average number of affected control progeny. Since one mutation would theoretically yield only 4 affected progeny in 16 autogamous progeny from a treated parent cell (*6*), the percentages, though low, reflect significant damage.

Substance	Lethal and detrimental cells (%)	Number of progeny examined
Cerophyl	1.01 ± 0.21	1568
Glass beads + uninduced S-9	1.36 ± 0.33	1904
Glass beads + induced S-9	1.41 ± 0.42	1888
Benzo[*a*]pyrene + uninduced S-9	3.2 ± 0.39	1440
Fly ash + uninduced S-9	3.7 ± 0.69	2992
Heated fly ash + induced S-9	3.9 ± 1.6	1728
Heated fly ash + uninduced S-9	4.6 ± 1.3	1280
Fly ash + induced S-9	9.3 ± 1.7	1296
Benzo[*a*]pyrene + induced S-9	12.5 ± 5.8	1664

Table 2. Mutagenicity of heat-treated fly ash extracted with HCl or DMSO. Values not connected by the same line are significantly different from each other (pairwise comparisons of proportions, $P < .05$). The concentration of fly ash particles suspended in uninduced S-9 was 1068 μg/ml. The higher than usual value for mutagenicity in the controls can be attributed to the considerable age of the clone used here [micronuclear damage increases with age (*12*)].

Substance	Lethal cells (%)	Number of progeny examined
Glass beads	3.14 ± 0.33	624
HCl-extracted particles	4.77 ± 1.25	960
DMSO-extracted particles	8.21 ± 2.00	656
Unextracted particles	14.09 ± 5.29	896