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COVER: Recombinant DNA technology is moving rapidly from the laboratory to the marketplace and investors already are lining up to cash in on the dollars and cents they hope to see bubbling out of biologists' test tubes. See p. 202.

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LETTERS

A mammoth from a mouse

Your March 8 issue had two articles that might be fertilely mated. In one ("Found: Tooth making genes in chickens", p. 149), Kollar and Fisher claimed to activate an otherwise silent chicken's tooth gene by implantation in a mouse embryo in an immunologically nude mouse. In the other ("A mammoth Soviet clone?" p. 151) Mikhelson proposed to activate a long-frozen mammoth nucleus by implantation in an elephant oocyte in an elephant's uterus. Of course, mammalian nucleus transplantation remains to be demonstrated.

Another issue for mammoth renewal will be to avoid immune rejection. Implantation in a nude mouse offers an elegant solution, and the chicken's tooth experiment demonstrated its ability to span the genetic distance. This raises the unique possibility of a mouse giving birth to an embryonic mammoth.

Arthur R. Zingher
Valhalla, N.Y.

Champion sperm: Deceitful game

Graham's venture "at producing a strain of extremely intelligent children" (SN: 3/8/80, p. 150) is genetically untenable. Even Nobel laureate (1946), ardent eugenicist Hermann Joseph Muller (1890-1967), would have scoffed. There is a marked difference between minimizing deleterious genes and breeding for intelligence.

Intelligence is a polygenetic trait: Environment plays a larger role than any contributing gene; the probability of attaining progeny with an identical gene combination as in the sperm donor is essentially zero. Without considering mutations and cross-over recombinations, each donor produces via meiosis $(2)^{23}$ different chromosomal segregation combinations (8,388,608 sperm genotypes). Add the age factor that you mentioned, the ova combinations in the recipient, and you can surmise, as I do, why the donors are neither geneticists nor intelligent.

A. Leon Pines, Ph.D.
Farmington, Maine

Unbelievable, the vanity of man. Or should I say certain men. A sperm bank for smart men? William Shockley should stick to physics and Mr. Graham find some other hobby.

I especially like your closing statement about the uncertainties of sperm from 70-year-old men. I think it would be a good idea if all sperm samples were checked for big heads!

John S. Fasoldt
Haddonfield, N.J.

No blow up

The article by Joel Greenberg "Human Error: The Stakes Are Raised" was well taken (SN: 2/23/80, p. 122). The tendency for any systems designer is to make that system "idiot proof" and self-correcting. On simple systems, this may be possible. I cannot foresee it ever being possible on systems as complex as a nuclear power plant.

My real point in writing is to lament the erroneous implication in the final sentence of the opening paragraph of that article, to wit, that pressurized water reactors such as that at TMI are capable of "blowing up" via uncontrolled nuclear fission. A great deal of educational effort has been made in an attempt to allay such ungrounded concerns. Such a statement in a publication as highly regarded as yours is a serious misstep and a tremendous disservice to an energy short country.

John Rhoads
Wichita Falls, Tex.

Acid clarification

Let me compliment you on your informative articles on acid rain (SN: 2/2/80, p. 76; 2/16/80, p. 106). You have covered the recent history very well.

However, your reference that acid rain "was not detected until the late 1950s and early 1960s by English and Scandinavian researchers" is not quite accurate. . . . [A]cid rain was referred to as early as 1938 by Ernst in Germany. My measurements in Washington, D. C., and near Boston in the late 1940s and early 1950s showed that acid rain was certainly quite frequent then. Even then it was not clear whether the acidifying substances were of natural or anthropogenic origin.

H.E. Landsberg
College Park, Md.

(Acid rain was indeed detected much earlier than the 1950s, but it was not associated with human activities until that time. According to Norman Glass of the Environmental Protection Agency, the earliest known direct measurement of precipitation acidity in the United States was taken in 1939 by H.G. Houghton during a single storm at Brooklin, Maine. Landsberg's measurements, reported in 1954, were the first published values for precipitation acidity in the United States. He found a value of pH 4.2 (about 50 times more acid than expected) for a 1949 Washington, D.C., storm and an average of pH 4.0 for 83 storms near Boston in 1952 and 1953. — Ed.)

The article on the high acid content of our rain water by Susan West was very frank, informative and even frightening. Thanks to the fine research your writers provide, it reminds me ever so much that my investment in starting a subscription to SCIENCE NEWS wasn't a waste.

Walter R. Briggs
Alexandria, La.