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**COVER:** An aerial view of a grid of test plots shows 12 varieties of potato 35 days after they were inoculated with the potato blight fungus. With infra-red photography, healthy plants appear red and dead plants or bare soil appear green. A Cornell breeding line with high resistance is seen in the second and fourth columns of the second row from the bottom. William E. Fry of Cornell University suggests that less fungicide be used with resistant lines. See story p. 268. (Photo: Fry, Cornell University)

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# LETTERS

**Reactor history**

"Breeding in light water" (SN: 9/10/77, p. 164) brings to mind the interesting history of the two basic fuel cycles which generate more energy than is in our limited supply of U-235—the only naturally occurring fissionable element. Recent focus has been on the U-238 to Pu-239 cycle (fast breeder), but the Th-232 to U-233 cycle (thermal breeder), which the article is about, was the first reactor in the world to generate electricity (on December 20, 1951). Unfortunately, it was a homogeneous reactor in which the fuel and coolant were mixed. The resulting corrosion and local overheating were so troublesome that experiments were dropped in favor of continued research on the fast breeder. No one at that time foresaw the problem of plutonium as a simple bomb material.

If the light-water breeder is a success and becomes a relatively safe reactor for export, a fair share of the credit should go to Alvin M. Weinberg who, during all those early years as director of the Oak Ridge National Laboratory, continued to support further research on the U-233 thermal breeder against the unfortunate decision to focus on the fast breeder.

Those interested in an historical view might want to see SCIENTIFIC AMERICAN: December 1954, January 1960, May 1967, February 1968, and October 1975. Also of interest is BULLETIN OF ATOMIC SCIENTISTS, December 1976, "The Plutonium Economy."

*Richard D. Mathews  
Philomath, Ore.*

**IQ and adoption**

The article "IQ, culture and adopted children" (SN: 9/3/77, p. 150) reports on a study that provides much-needed data on determinants of intelligence. Scarr should be commended for this valuable work. However, the conclusions that were presented may be somewhat oversimplified.

The fact that the adoptees were born into "severely deprived and disadvantaged environments before being put up for adoption" may imply deficiencies in pre-natal and post-natal care, especially nutrition, which may account for some of the "genetic component" in intelligence. It is well-known that malnutri-

tion at very early ages, even before birth, can retard brain development permanently. I hope future studies will address this factor as well as the post-natal environment. As the study reported, "Black and interracial adoptees scored slightly higher IQ readings than the white adoptees," so whites may have some true genetic disadvantages under the conditions of an adverse early environment.

*James E. Justiss  
Rancho Palos Verdes, Calif.*

**Two quick comments**

In the Broussard study of mothers' predictions of their children's future mental health (SN: 10/1/77, p. 213), did the researchers consider the possibility that the prophecy might not have influenced the children's welfare but that mothers might actually be remarkably sensitive to the inherent instability of their offspring?

Also, the statement that LMCX-1 is in the Large Magellanic Cloud and is 20 parsecs from us (SN: 10/1/77, p. 216) must contain a misprint. Twenty parsecs is about 65 light years, the distance, for example, to the star Aldebaran. Probably 20 thousand parsecs was meant, although most texts give a distance of 50 thousand parsecs to the Cloud. Apparently the statement that LMCX-1 is "a supernova explosion that happened 4,200 years ago" refers to the time that the light from the explosion reached the Earth.

*Charles E. Long  
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North Hennepin Community College  
Minneapolis, Minn.*

**To see or not to see**

I can not agree with Mr. Hill's letter (SN: 9/3/77, p. 147) that the Crab nebula is "definitely not visible in less than a 6-inch telescope." Under good sky conditions, I have detected it many times even in my 2-inch finder scope. However, I do agree with Mr. Hill that the nebula is far below naked eye visibility.

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New Salisbury, Ind.*

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