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**COVER:** Shrimp grow to maturity, are harvested and sent to market without ever seeing the open ocean. These experimental raceways are operated by the Environmental Research Laboratory of the University of Arizona and the University of Sonora and are located at Puerto Peñasco, Mexico. See p. 76. (Photo: Mickey Prim/Ray Manley Studios)

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# LETTERS

## The useful man

I read your article on the specialization of colleges (SN: 12/31/77, p. 422). If the "public" has an interest in the education of a particular college graduate, this interest requires that the public possess the basic intelligence to investigate that education. No sensible person in this decade assumes that an engineering graduate from MIT will take the same courses that a divinity student at William and Mary might take.

The devotion of two-and-one-half years of the Carnegie Foundation's time and money to uncover the "surprising findings" that all college students are not taking the same courses is difficult to believe.

The only disaster area in education is at the foot of the mountain that higher education has, for the last 100 years, so savagely fought to conquer.

At the present level of population increase and unemployment in the United States, we owe a great debt of gratitude to the universities and technical institutions for producing graduates that can go into the world with a skill and possibly improve the American way of life. An aerospace engineer did not need Beethoven or Mozart to get to the moon. Dr. Salk scarcely needed Giotto and Raphael to save millions of lives.

Let us, once and for all, bury the "total man" concept and aid our institutions of higher learning in creating the *useful man*.

Joe Harrison  
Memphis, Tenn.

## Why bother?

The article on microbial pesticides (SN: 1/7/78, p. 14) had some interesting facts in it but never got around to mentioning "why bother" with microbials.

The fact that an insect pathogen can be chosen that will be lethal to only the target species is very important. This means that a farmer needs to know just what is eating his crops. Another implication is that the cost of pest control using biologicals will be considerably less than for chemicals. In fact, the biologicals could be manufactured in a garage.

The prospects of pest control without environmental damage are the biggest reasons to look at biological controls in general and microbials in particular.

Ron Whitehurst  
Indianapolis, Ind.

## A third interpretation

I should like to suggest a third interpretation of Dr. Ginsberg's kin selection data (SN: 11/26/77, p. 358), namely that the test questions do not test what the researchers wish them to in chil-

dren under nine. Piaget calls the child under six or seven pre-operational or *pre-logical*. Such a child has difficulty with cause and effect relationships, handling more than one parameter of a problem at once, exclusionary and inclusionary thinking, etc. To such a child the "inescapable" situation does not exist yet, because his logical thought processes are not sufficiently developed to perceive it.

The "shift" noted by Dr. Ginsberg from random, patternless answers to significant ones coincides neatly with the approximate age at which most children pass from pre-logical to concrete-logical thought, according to Piaget. Some of these children may be slower than others in making the transition — and the 14 percent of 6 eight-year-olds apparently sacrificing their mommies may instead represent 50 percent of those children still answering illogically, and thus randomly.

Thus, until Dr. Ginsberg pre-screens his subjects for their logical thinking development, no believer in Piaget's theories can accept either interpretation offered in the article. In short, a believer in Piaget would not draw any conclusions on kin devotion based on a pre-logical child's answer to a logic-dependent question.

Marion P. Harris  
Sudbury, Mass.

## Vitamin deficiency

"Mother-to-be's Anxiety Linked to Autism" (SN: 12/3/77, p. 374) caused me to look up articles I had read on the role of Vitamin B<sub>6</sub> (pyridoxine) in depression, and infantile convulsions. An article in the August 31, 1974 LANCET states that the depression caused by birth control pills is directly related to the vitamin B<sub>6</sub> deficiency produced by the pills and that doses of the vitamin have cured the depression. Pfeiffer, in "Mental and Elemental Nutrients," explains how important B<sub>6</sub> is to the body's enzyme systems including chemical reactions in the brain. Infants born to mothers inadequately supplied with B<sub>6</sub> during pregnancy also have a B<sub>6</sub> deficiency and may have convulsions. It is suggested that pregnant women may need supplements of the vitamin because of an increased need in pregnancy. (Processing of wheat removes the B<sub>6</sub>.) Certain individuals because of their particular body chemistry may need vastly larger amounts of B<sub>6</sub>.

A double-blind study on autistic children using vitamin B<sub>6</sub> was conducted by Bernard Rimland, director of the Institute for Child Behavior Research, San Diego, Calif. The improvement in the behavior of the children was considered significant. Perhaps the greater number of autistic children born to the mothers who are not too well put together mentally is due to a genetic defect in the biochemistry of the brain requiring the mothers and their children to take very large supplements of certain dietary elements in order to function on a level equal to "normal" people.

Sylvia J. Magerman  
Philadelphia, Pa.

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