those parents who want information on the sex chromosomes of their infants are entitled to have it and the investigators must be entitled to provide it for them.

WAYNE H. DAVIS
School of Biological Sciences, University of Kentucky, Lexington 40506, and *Free Speech Committee, Kentucky Civil Liberties Union, 134 Breckenridge Lane, Louisville 40207*

The controversy over the ethics of identification and study of individuals of XYY karyotype is an example of our fascination for the exotic problems to the neglect of common but more serious genetic conditions, such as the XY karyotype that afflicts roughly half of the human race, including the writer.

Overwhelming statistical evidence indicates that the XY karyotype is associated with major social problems such as violent crime and war. If we are to provide medical and psychiatric assistance to XYY individuals, let us not neglect the XY's, who in aggregate present a much greater problem for the community.

MICHAEL MAGE
Laboratory of Biochemistry, National Cancer Institute, Bethesda, Maryland 20014

Protein Production

For a considerable amount of time we have been reading about the world food shortage and how the United States could be of assistance in solving the problem. Most often our agricultural methods of protein production are under attack. It has been stated that feeding grain to animals is an inefficient and wasteful means of raising protein. Moreover, it has been repeatedly expressed that we should raise more cereal for export and less for feedlot purposes. Rothschild (Letters, 6 Dec. 1974, p. 870) repeats these concepts.

Most statements regarding the conversion of grain to animal protein seem to be the result of armchair opinion, with little mention of where the protein that is responsible for our high standard of living should come from. One can only surmise that, instead of grain feeding, one would have to resort to grazing. However, the crux of the matter is overlooked. The amount of grain raised on 1 acre will feed six to eight times as many cattle as would 1 acre of grass in most places in the United States. In fact, on the intermountain plain and the high plateaus of the West, this ratio would be even higher. In addition, it takes nearly twice the amount of time to bring a calf to market weight when it is fed grass than when it is fed grain.

These are the economics of cattle raising and explain why animal protein is reasonable in price and available to most American households. Raising cattle on grass would not only increase the production cost, but would also reduce the available supply. This would result in greater price being demanded for animal protein that would be of poorer quality. Paradoxically, Rothschild's own "oxen" would be gored, and not those of the agricultural producer.

It is high time that the proposal that we not raise cattle in the feedlot be discarded as a false illusion and an unrealistic approach to solving the food shortage. Agriculture in the United States has proved to be the most efficient in the world; reverting to methods of the turn of the century will not solve the problem of hunger. A good point to consider is that a U.S. farmer can feed 61 people with his modern advanced methods, while a farmer in the Soviet Union can only feed 7 people. I agree that better education of the public with regard to nutrition is an aimable goal that deserves consideration, but also the adoption of successful U.S. agricultural methods should be seriously considered by other governments.

I know of no way other than by consuming animal protein that humans can obtain the amino acids they need, short of eating a large variety of cereals and legumes. There is simply not enough tillable land to meet this need. Only by producing sufficient animal protein can the world standard of living be raised and adequate nutrition supplied.

HORST KEHL
Route 4, Kirksville, Missouri 63501

Computer-Assisted Education

In her reply to Zelby's letter, Ruth M. Davis (Letters, 13 Dec. 1974, p. 975) says, "when computers . . . hold the questions, record the answers . . . [t]hen the real, comforting interactions can be between people." Indeed, but if the computer holds the questions, and the student is only exposed to the questions held by the computer, then a