Conservation and Engineering

III. Food Problems

It may seem absurd to write of food shortages when we read so much about the enormous farm surpluses and the staggering costs of maintaining and enlarging them. However, in the perspective of the population growth predicted for the next fifty years and beyond, these surpluses vanish. They are a drop in the bucket compared to world needs now; they are little more than our own present annual needs.

Supplying food for the burgeoning populations expected is a serious problem, and the prospect of its solution through science and technology is not very promising. Diversions of land may be made, as discussed in a previous editorial, but the increased acreage is small relative to our needs. Improvements may be made through cooperation among soil scientists, ecologists, and technologists in the development of better fertilizers and machinery, but such alleviation is minor.

The land available for food production in this country is plainly limited and is probably insufficient for the population to be expected unless we can increase the productivity of that land. Our production of food per acre is about half that of Western Europe and about one-fifth that of Japan. Obviously, then, we can increase our productivity but probably only in the way the West Europeans and Japanese have done. They have largely avoided the principal waste in which we indulge—the grazing of animals, particularly beef cattle. An ox consumes in a lifetime as many calories as do six and one-half men, but on butchering it yields only enough calories to keep one man going for 8 months. It is unhappily true that the best contribution we as engineers can make to this problem is the same as that to be made by housewives, lawyers, and politicians—all of us will have to learn to eat less meat.

There are, of course, some revolutionary proposals for the growth of foodstuff on our rooftops, in special factories, and in the ocean, and some real "advances" have been made here. Algae can be grown with high productivity per acre, and it is quite rich in protein. This observer must confess, however, a certain lack of zeal for this prospect. Rare, medium, or well-done, with or without A-1 sauce, even in the convivial company of one's best friends, "algae" steak is peculiarly uninviting. To paraphrase an old poem,

> Algy met a bear;
> The bear was bulgy.
> The bulge was not algae.

Wholly synthetic foods are, of course, possible, and it would seem essential that some scientific effort should be directed toward developing them. This, at least, has the potentiality (as in the case of fibers) of yielding vastly more "food" per acre than conventional methods or than algae culture. According to a perhaps apocryphal tale, the Germans during the last war found that although synthetic fats could be stored in the body, they were incapable of release, and so fattened animals could starve to death. If science could find out how synthetic "foods" could be made digestible, then such would appear to be a more promising approach than algae culture because of the highly effective productivity of factories and because such "food" could hardly be less attractive than algae.

These unhappy prospects are real, and they must be faced in time. Perhaps a little population control would be preferable.

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