

I am aware that losses of the order of 40-50 per cent can be achieved, and in agreement with the Cambridge workers I myself have obtained figures as low as 20 per cent. The bulk of the evidence seems to show, however, that, in general, losses of vitamin C are very high.

Dr. Booth and his colleagues will receive the thanks of all workers in nutrition for their figures for carotene in carrots. Anyone who has occasion to use published tables of carotene values knows the bewilderment of choosing from a confusion of figures often differing many fold. But while the position of vegetables as sources of carotene and hence of vitamin A available to the body has not yet been completely elucidated, the standing of green vegetables as a source of vitamin C is beyond dispute. As Miss Olliver and Mr. Adam truly state<sup>3</sup> they "can adequately supply the full daily requirement of the vitamin". This they do, I cannot help believing, only after the bulk of the vitamin supplied by bountiful Nature has been lost. Can we afford to lose so much in present times?

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AGNUS PYKE.

<sup>1</sup> NATURE, 147, 711 (1941).

<sup>2</sup> Pyke, M., NATURE, 147, 513 (1941).

<sup>3</sup> NATURE, 147, 711 (1941).

Whilst it is an accepted fact that there may be considerable wastage of vitamin C when vegetables are cooked, any statement which tends to underestimate the antiscorbutic value of cooked vegetables is to be deprecated.

Dr. Pyke's original article tends to give this impression, and it is unfortunate that such an impression should be confirmed by the choice in the above letter of figures separated from their context.

M. OLLIVER.

### Science and Society

HITHERTO most apologists for science have done little more than stress the potential value of aspects of technology, such as would provide new foods, weapons and other *things*. Until recently this was the only non-cultural justification of science, but to maintain it now is out of date.

Our society may be likened to a badly run office, the directors of which are ready to call in a tradesman to stop a leak obvious to the senses, but have no idea of using intelligence and skill of another order to put a stop to ineffective methods in the running of the office itself. Let not men of science put themselves in the position of forming only a works and repairs department of the office, with no concern except to press for more and better plumbing, or to suggest that it need not be confined to repairs.

The politician, a victim of his education, is unaware of common scientific concepts such as limiting values and the elementary theory of errors. It appears that his notions of equilibria are represented by arithmetical averages in a static two-phase system, and that he can conceive of no interactions more complex than those of a game of chess—in which one piece is moved at a time. The chances are even that subjective decisions will be wrong; nor is any test of their validity possible.

As a result of work in the field of mathematical statistics, our generation is the first to have the power of applying objective tests to many social

problems. To this ability is added the practicability of assessing the validity of the results. Scientific thought applied to such matters as the black-out and evacuation could have avoided their anomalies and lessened the harm done to our national effort. Unfortunately, it was not officially realized that such problems were amenable to objective methods.

The new discipline has been developed primarily in Britain and secondarily in the United States. It is little known on the Continent and is not used at all in Germany or Italy. I suggest that its incorporation into our social methods might well be our answer to the apparent German monopoly of positive ideas.

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### Infestation of Manufactured Food by Insects

DR. D. N. ROY's letter in NATURE of June 14, p. 746, suggests that the special problem to which he refers is something apart from the problems which I described in my report to the Department of Scientific and Industrial Research. In fact, it is the kind of problem to which I directed attention.

Some years ago, considerable time and study was given in my department to the cause of infestation of a manufactured commodity similar to, if not identical with, that referred to by Dr. Roy. The conclusion reached was that as precautions had been taken to ensure bottling of the commodity under sterile conditions the method of sealing was at fault. In the course of the investigation, evidence was obtained that infestation might occur at almost any point in the marketing of the commodity, and that a most likely point or focus of infestation was the Indian go-downs in which, according to reports I received, the beetles *Silvanus* and *Tribolium* were abundant.

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### "Plankton as a Source of Food"

THERE is one point which I should like to add to Prof. Hardy's article on "Plankton as a Source of Food"<sup>1</sup>. He is concerned chiefly, and rightly so, with marine plankton. Would it not be possible to make use also of the freshwater plankton from our lakes and reservoirs? In this connexion I may refer to a statement by (the late) C. H. H. Harold<sup>2</sup>, that a certain reservoir was estimated to contain 10,800 tons (wet weight) of algæ; and even allowing that that estimate is somewhat of an exaggeration, an appreciable quantity must have been present, for he goes on to say that 90 tons were removed daily by filtration. More recently, Gardiner<sup>3</sup> speaks of a reservoir having, at the spring maximum, a crop of *Fragilaria crotonensis* estimated at a dry weight of 110 tons. It would seem, therefore, that here, at least, is ample material for investigation.

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<sup>1</sup> NATURE, 147, 695 (1941).

<sup>2</sup> Proc. Second Inter. Congress for Microbiology (London, 1936), p. 212.

<sup>3</sup> Ann. App. Biol., Proc. Assoc. of Applied Biologists, 26, 165 (1939).