

## PROCEEDINGS OF THE NUTRITION SOCIETY

*The Three Hundred and Ninety-fourth Scientific Meeting (One Hundred and Fifty-fifth Scottish Meeting) was held in the Chemistry Building, University of Aberdeen, on 4/5 April 1984*

### SYMPOSIUM ON 'FOOD FROM UNCONVENTIONAL SOURCES'

#### Introductory remarks

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The term 'unconventional sources' in the title of this symposium has been interpreted in different ways by the six speakers. The general view is that an unconventional source is one that is currently not being used for food production at all, or is being used on only a very limited scale. Some speakers have assumed that an unconventional source will give rise to an unconventional food, which man may be reluctant to include in his diet. This assumption is not necessarily correct, since the food-processing industry is quite capable of creating conventional foods from unconventional sources. For example, the Torry Research Station here in Aberdeen can provide examples of processes by which waste fish can be re-modelled into acceptable substitutes for scampi and shrimps.

A phrase that may well recur in this symposium is that 'one man's meat is another man's poison'. What one man, or one society, consumes with enjoyment, another rejects with disgust. We have only to cross the English Channel to find an attitude to frogs and snails that is completely different from that prevailing here. In some countries rhubarb is regarded as a food plant, in others as a toxic plant. In the final paper of the symposium, Dr Miller points out how we in Britain have come to like a wide range of previously novel foods from other countries. Travel is claimed to broaden several human characteristics, and it undoubtedly broadens the diet. Yet those who must exist on diets restricted in both quantity and quality, and have most to gain from novel foods, have least opportunity to experiment.

Why do we need food from unconventional sources? The most obvious answer is that conventional sources cannot supply enough. A closely-related answer is that the resources on which we depend for present food production, especially fuel, fertilizers and other chemicals, are expected to become scarce and expensive in the future (a topic to be explored by Professor Howat). The need for unconventional

sources of food is greatest in the developing countries, yet the technology required to exploit new sources is strongest in the developed countries, especially the technology required to turn crude materials into appetizing foods. Too frequently this technology is used frivolously, to provide so-called new products to titillate the jaded palates of the over-fed.

Where should we seek the unconventional? Most of us are aware of the plants we already use for food, and Mr Guenault will introduce us to a few of the much greater number of species that we do not utilize. The range of plants contributing food for man can be extended by processing. Leaf-protein extraction is a process with a long history but a poor record of application. One reason for this may be the competition provided by animals, especially the ruminants, as very effective converters of plant material into human food. But as Professor Engelhardt will point out, there are many ruminant species that we have yet to exploit as plant processors. When man domesticated ruminants he also domesticated micro-organisms as food processors. In Britain, rumen micro-organisms synthesize more than three million tonnes of protein annually, which is more than twice as much as the protein requirements of the human population. As it happens, we waste much of this protein by converting it into meat and milk, and as a result we provide only about half our own protein requirements from ruminant products. Dr Kirsop will tell us how we might make more direct use of micro-organisms.

In the British Isles generally, and in North-east Scotland particularly, we have in the past taken fish for granted, but now have to share our resources with others. Dr Whittle will be viewing realistically our prospects of obtaining more food from the waters of the world, and perhaps emphasizing our need to use all that we catch. Avoiding waste is one of the less exciting means of improving food supplies, although it may generate a little more excitement if given the name of re-cycling.

This symposium promises to achieve one of the constant aims of the Nutrition Society, which is to bring human and animal nutritionists into the same debate.