Editorial

Once again, we have a wide variety of nutritional topics in this issue. First, a core topic in human nutrition, 'The effect of calcium on iron absorption'. Lynch warns that as Ca interferes with Fe absorption, the recommended increase in Ca intake to prevent osteoporosis raises fears of Fe deficiency. However, initial reports from single-meal studies of large declines in Fe absorption with increases in Ca intake have since been balanced as it has been realised that long-term studies did not show there to be a significant problem. It is often the case that initial studies in a new subject area show spectacular results but when longer experiments are performed there is little or no effect. Sometimes the first results are publicised prematurely; on the other hand, scientists need to explain their work to the world and judging just when to 'go public' is often difficult.

Moy's review of 'Iron fortification of infant formula' is again 'classical' human nutrition, which demonstrates strength in the amount of data used rather than sophistication of experimentation; it is none the less valuable for that. It seems as if US recommendations tend to be on the high side and, while the excess Fe is not harmful, the danger of its effect in reducing the availability of some trace elements must not be ignored. It is better to use a more modest level of Fe supplementation in infant formulas for general use and to take steps to present problems in groups especially at risk. So, we have two reviews dealing with interactions between minerals in human nutrition.

Moy's paper is developed from a report prepared by the author for the Royal College of Paediatrics and Child Health. Such reports are a fruitful source of review material as long as the sponsoring institution is consulted and agrees to publication. In many cases it will be necessary to edit the text, perhaps giving a fuller introduction for the benefit of a more general nutritional audience than the one for which it was originally intended. There will be more reviews based on sponsored reports in future issues of *Nutrition Research Reviews*.

And now we have a 'sexy' subject, dietary effects on sex hormone levels and metabolism in men, by Allen & Key. They present evidence that fat and/or fibre in the diet affect sex hormones in men. However, in contrast to Lynch's report on Ca and Fe absorption, in this case it is only long-term epidemiological studies that suggest the Western diet lowers testosterone levels; no effects can be seen in short-term experiments. The authors propose that, as testosterone concentration in blood is controlled by feed-back mechanisms, it will be more fruitful to look at those mechanisms in future, and at sex-steroid metabolism within target tissues.

Livesey provides us with a very detailed search of the literature leading to an hypothesis to explain why stearic acid absorption is influenced by fibre in the diet. As stearic acid is the major fatty acid in terms of contribution to energy supply in typical diets, a significant reduction in absorption could cause energy malnutrition. This review is unusual in that the author is not publishing primary research himself in this field but has taken an independent view of the literature and come up with valuable ideas.

Steer *et al*. survey the role of the human gut microflora and discuss the effects of pro- and prebiotics; that is, microbes included in the diet and changes in dietary composition designed to enhance microbial activity respectively, for the benefit of the host animal. In particular, they point to exciting prospects for the use of molecular biology techniques to track changes in microflora due to diet, including pro- and prebiotics.

On a rather different microbiological theme, Barton surveys the use of antibiotics in animal feed and puts into perspective the dangers, actual and potential, of development of antibiotic resistance in disease-causing micro-organisms. She concludes that antibiotics should not be used routinely as growth promoters in animal feeds, even though the over-prescription of antibiotics in human and animal medicine is probably a more dangerous threat.

Finally, Selle *et al*. discuss the actions of phytase in releasing P from phytates, in which form most P is tied up in the seeds which form the basis of diets for pigs and poultry, not to mention man. They focus on the additional benefits of increased protein availability due to phytase and discuss ways in which phytate might interfere with protein digestion and absorption. The major commercial use of exogenous phytase enzymes, produced by genetically-modified fungi, is to release P from plant materials in animal feeds, especially for laying hens. Not only does this increase the P supply to the bird, but it also reduces the output of P into the environment, where it is an important pollutant (Bedford & Schulze, 1998). Phytase is thus of benefit to all concerned: the manufacturer, the farmer, livestock and the environment.

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Reference

Bedford MR & Schulze H (1998) Exogenous enzymes for pigs and poultry. *Nutrition Research Reviews* **11**, 91–114.

https://doi.org/10.1079/095442200108729034 Published online by Cambridge University Press