

## EDITORIAL

It is a pleasure to welcome the birth of our companion Journal *Nutrition Research Reviews*. There has long been a gap for critical and comprehensive reviews of specialist aspects of the nutrition sciences, that can be assimilated more easily than those of such heroic proportions in *Annual Review of Nutrition* or *World Review of Nutrition and Dietetics*.

The first crop in volume 1, 1988, illustrates well the range and scope of nutrition science and its interdependence on other disciplines: immunology, biochemistry, physiology, endocrinology and psychology. This is a theme touched upon in the January 1989 Editorial and which the writer considers crucial to the development of the subject. A full range of human and animal nutrition topics is covered and although reviews such as Campbell's 'Nutritional constraints to lean tissue accretion in farm animals' (p. 233) and Cowey's 'The nutrition of fish: the developing scene' (p. 255) are clearly devoted primarily to animal production, there can surely be few readers working in the fields of human nutrition and dietetics who will not find relevance to their own interests, in terms of nutritional concepts, in these pages.

Of particular interest to the writer were the contributions by Fairweather-Tait ('Zinc in human nutrition', p. 23) and Chesters & Arthur ('Early biochemical defects caused by dietary trace element deficiencies', p. 39). Dietary advice, whether in the form of recommendations to individuals or the general population for regimens that may be helpful in avoiding cardiovascular disease, or more general advice for 'healthy eating' issued by government-sponsored agencies, medical organizations or the media, tends to be concentrated on the avoidance of excess. 'Reduce fat and saturated fatty acids'; 'avoid too much sugar, salt, alcohol'; 'adjust energy intake to suit energy expenditure and avoid obesity' are familiar exhortations. While for many, this advice is not without its merits, it represents an over-simplification not least because it focuses almost entirely on dietary excesses and gives little consideration to possible dietary deficiencies. As Johnson & Fenwick (1989) point out, there is a trend towards reduced energy consumption in the West. The risk of specific nutrient deficiencies is, therefore, possible particularly among groups such as slimmers and the elderly whose dietary behaviour can put them at special risk.

The reviews of Fairweather-Tait and Chesters & Arthur illustrate the wide range of functions that can be affected by less than optimal Zn status. This is an element that was shown to be a dietary essential as recently as 1934 and for which human deficiency diseases were not demonstrated until the 1960s. Interest in Zn nutrition was aroused 25 years ago when Zn deficiency, related primarily to diet, was shown to be the cause of dwarfism and hypogonadism among adolescents from the lowest social classes in Egypt and Iran (Prasad, 1984). Although widespread deficiency with overt clinical symptoms is now well recognized in several Middle-Eastern countries, Fairweather-Tait cites evidence that even in many affluent countries that regard their citizens as well-nourished, marginal Zn deficiency may be a significant problem. Prasad himself has stated that '...zinc deficiency in human subjects is fairly prevalent throughout the world' (Prasad, 1986), while Hambidge *et al.* (1986) have suggested that '...mild nutritional zinc-deficiency may occur quite commonly as a single nutrient deficiency in North America'.

In stark contrast to these views, Passmore & Eastwood (1986) are able to state quite categorically in a well-respected standard British textbook of nutrition and dietetics that '... Zinc deficiency does not arise in healthy persons living on any of the diets commonly consumed in any country'. The authors have presumably reviewed the same published literature as others in coming to this conclusion and as long as students seek their information widely, rather than by consulting a single source, they will quickly learn that in this young and rapidly developing science, there is room for extreme differences of interpretation of the same published information. It will indeed be interesting to learn the view of this matter expressed by the next edition of *Davidson & Passmore's Human Nutrition & Dietetics*, now being revised under new editors.

One reason why such problems may arise, is that marginal Zn deficiency is so difficult to confirm because of a lack of suitable methods for the assessment of Zn status. Plasma concentrations should be treated with extreme caution and Chesters & Arthur's review stresses the increasing importance of studying the element's functional role and its interrelation with related elements in a diversity of metabolic pathways. The authors also point out that a depletion may need to occur for only a few days in early life for long-lasting effects to be observed. The mechanisms by which these far-reaching changes occur can clearly only be resolved by careful metabolic studies in animal models.

Human Zn requirements and recommended daily amounts (RDAs) are controversial issues. The USA is one of the few countries that publishes an RDA for Zn. It is quite likely that the omission of Zn from the British list of RDAs will be rectified after the current exhaustive review of UK RDAs, discussed by Dr Whitehead in our last Editorial, has been completed. From the nutrition scientist's point of view, the revision of RDAs will be important in giving a more comprehensive guide to dietitians and practical nutritionists. However, Black (1988) is right to ask whether RDAs as presently defined do not create as many problems as they solve. Perhaps, as she says, we need to rethink our definition and use of RDAs and present them as a range of acceptable intakes. If the scientific thinking behind the new revision is fully published, the exercise will also serve as an indicator of areas of ignorance that are crying out for careful research.

The revision of the RDAs will undoubtedly highlight the need for precise measurements of many facets of nutrient metabolism to establish the basis for more accurately assessing requirements. Science is all about measurement and nutrition science is no exception. Measurement, be it ever so precise, is not enough, however. Coward and colleagues, in their review of 'Body composition measurements for nutrition research' (p. 115 of *Nutrition Research Reviews*) argue that '...the imprecision of the methods is limited more by the inadequacies of the model rather than analytical errors incurred in making the basic measurements. It follows, therefore, that improvements in techniques will emerge only from a fuller consideration of the models and what ought to be measured rather than by pursuing new methods for making (the) traditional measurements...'

The funding of nutrition research is currently under much scrutiny. The Medical Research Council is reassessing its role and future contribution to nutrition research and the Ministry of Agriculture, Fisheries and Food has established a Food Safety and Applied Nutrition Research Consultative Committee to advise it on priorities. It is frequently implied and sometimes overtly stated that nutrition research is not given high priority because of a paucity of good research proposals. To overcome this handicap, whether justified or not, nutrition science needs to graduate from the 'feed 'em and weigh 'em' mentality to a position where new concepts abound and testable hypotheses are generated. The *British Journal of Nutrition* will be happy to receive the resulting papers.

MICHAEL I. GURR

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