the better results in multigravidae in terms of serum volume and fetal weight could be due to relatively greater vascularisation and to the easier distensibility of the multigravid uterus.

Other determinants of fetal birth weight commonly discussed are environmental temperature, altitude, nutritional status, exposure to particular diseases, and smoking—all or any of which are likely to explain, at least in part, differences of average birth weight in different ethnic groups.[6] Certain diseases associated with pregnancy—notably moderate or severe pre-eclampsia occurring before term—may lead to low birth weight.

In the individual case birth weight is the result of a complex interplay between many factors. The pressing need is to identify those occasions when something can be done either by the patient or by her family doctor or obstetrician. Examples include stopping smoking, improving the mother's nutrition, and the early detection and management of antenatal complications likely to result in the premature onset of labour. This means health education and personal responsibility for health, and there can be no doubt about the need for a new impetus and new approach. There is no better example than the hazard posed by smoking in pregnancy. Despite all the publicity given to the adverse effects of smoking after the 1958 British Perinatal Mortality Study,[7] twelve years later there was no evidence to show that the smoking habits of pregnant women had changed.[8]

[1] Neligan, G A, Prudham, D, and Steiner, H, *The Formative Years. Birth, Family and Development in Newcastle upon Tyne*. London, Oxford University Press, 1974.
[2] *Size at Birth. Ciba Foundation Symposium, 27 (New Series)*. Amsterdam, Associated Scientific Publishers, 1974.
[3] Thomson, A M, Billewicz, W Z, and Hytten, F E, *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1968, **75**, 903.
[4] Camilleri, A P, and Cremona, V, *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1970, **77**, 145.
[5] Campbell, D M, and MacGillivray, I, *European Journal of Obstetrics, Gynecology and Reproductive Biology*, 1977, **7**, 17.
[6] Roberts, D F, and Thomson, A M, eds, *The Biology of Human Fetal Growth*. London, Taylor and Francis, 1976.
[7] Chamberlain, R, *British Births 1970, The First Week of Life*. London, Heinemann, 1975.
[8] Butler, N R, and Alberman, E D, *Perinatal Problems. Second Report of British Perinatal Mortality Survey*. London, Livingstone, 1969.

Sensible eating

If the only reasons for a radical change in the Western diet were medical, then the indifference of governments to the arguments might be understandable. Politicians mirror their constituents' opinions in their reluctance to alter their habits simply because they are told what would be good for them. But the case for change in what we eat and in our domestic agriculture is being supported—quite independently—by medical, economic, sociological, and agricultural considerations; and the strands have now been brought together in a readable, provocative account[1] by Colin Tudge, the science editor of *World Medicine*.

The medical case is, perhaps, the most difficult because it is multifaceted. Anthropologists are still arguing about the proportion of meat in a "natural" human diet, but few nutritionists now dispute that Western man eats too much meat, too much animal fat and dairy produce, too much refined carbohydrate, and too little dietary fibre. Epidemiological studies of heart disease suggest that some at least of the deaths in middle age from myocardial infarction could be cut by a move towards a more prudent diet—which means more cereals and vegetables and less meat and fat. There is less certainty about the value of polyunsaturated fats and the dangers of food additives and artificial sweeteners and flavours.

On economic grounds, however, the case for a partial switch from meat to cereals is much more clear cut. Kenneth Mellanby showed two years ago that Britain could feed itself if we stopped trying to support 150 million hens, 30 million sheep, and 15 million cattle in addition to the 60 million humans already packed into these islands. Fattening poultry and cattle on expensive grain so that we may all eat meat twice a day is inefficient—it takes, says Mellanby, about 30 lb of cattle feed to produce 1 lb of beef. The best converter of vegetables to animal protein is the hen; even so, the 30 lb of eggs that a hen lays in a year requires a food intake of 100 lb. At present Britain gives two-thirds of its home grown grain to livestock. Food imports are, in fact, unnecessary. Our farm land is productive enough to support 250 million people on a vegetarian diet. Yet despite the transformation of farming to a high pressure industry, farmers now find themselves the victims of external events. Changes in agricultural policy within the EEC, or a mammoth grain harvest in North America, or a bad winter in Russia may tip the financial balance so that a farmer has to switch from cattle to cereals or back or start raising pigs if he is to remain solvent. He neither enjoys freedom to farm in the way he knows is best for his land, nor does he enjoy financial security.[1]

And meanwhile, as John Loraine has just reminded us again,[3] the population bomb keeps ticking. After the changes in farming methods of the green revolution and other improvements in food production 500 million of the earth's citizens still go to bed hungry. The population of the world is 4000 million, but if the food consumption by farm animals is expressed in human terms their demands are equivalent to another 15 000 million mouths. To put it simply, the world's agricultural output is enough to support five times its present population.

A switch to a simpler diet relying more on cereals, beans, and vegetables and less on the products of intensive stock-rearing would, then, improve health and reduce economic stresses. This week Oxfam published a pamphlet, *One Crust of Bread*, criticising the "steak house mentality" in affluent societies and arguing that conversion of grain into meat is ethically as well as economically wrong. Colin Tudge argues the detailed case for a return to small-scale horticulture and mixed farming and the abandonment of repetitive farming of cash crops. The counter arguments are all pragmatic. The meat diet makes commercial sense—at least in the short term. Mass production, mass marketing, distribution through freezing plants to supermarkets: the current techniques have grown and flourished in response to laissez faire attitudes by governments. These trends will not be reversed without government intervention—which will not occur so long as governments still believe in limitless economic growth. As that fantasy crumbles it will provide the opportunity to make sense of the way we eat, and the decision by the Minister of Agriculture[4] to set up a review of present policies may be a signpost to the future.

[1] Tudge, Colin, *The Famine Business*. London, Faber and Faber, 1977, £3·95.
[2] Mellanby, Kenneth, *Can Britain Feed Itself?* London, Merlin Press, 1977.
[3] Loraine, John, *Syndromes of the Seventies*. London, Peter Owen, 1977.
[4] *The Times*, 5 July 1977.