

# reviews

## Nutrition and the developing brain

John Dobbing

*Malnutrition and Intellectual Development.* Edited by J. D. Lloyd-Still. Pp. 194. (MTP: Lancaster, 1976.) £8.95.

A SMALL epidemic of recent books on or around this topic imposes a special need to justify the addition of any new one to the bookshelves. Dr Lloyd-Still's is an edited volume of six reviews or essays, dealing in turn with: effects of undernutrition on the growth of the physical brain and on "mental competence"; techniques of psychological testing in this context; some studies of the subsequent physical and intellectual development of children inevitably malnourished in the course of certain clinical conditions in affluent society compared with eleven major studies from the underprivileged world; and finally the "social ecology" of malnutrition in childhood. It is nicely produced, and there is certainly enough excellence to justify its place alongside other recent books (for review, see *Nature*, 262, 521, 1976).

After a very thoughtful introductory chapter by the editor in which he gives a very balanced description of the whole subject, there is a disappointing second chapter by Peter Chase on the physical effects of undernutrition on the growing brain. I think my dissatisfaction with it largely derives from Chase's total lack of humility before the amazing complexity of the developing brain. Where the rest of us use curves of brain weight, cell number, myelin lipid and so forth as crude indicators of the timing of developmental events so as to identify hypothesised periods of enhanced vulnerability. Chase seems to think of such parameters as of specific significance in themselves. They are, of course, merely the things we can conveniently measure. Some of his graphs of their accumulation in whole brain are misleadingly wrong in places. And who is interested in whole brain quantities anyway, except in the limited sense mentioned above?

The third chapter by epidemiologists Zena Stein and Mervyn Susser draws heavily on their fascinating study of the effects on fetal growth and 19-yr-old achievement following the Dutch wartime famine during the winter of 1944-45. This is a beautifully

written, distilled account of their findings, cleverly described in the setting of many other epidemiological studies, including some in which there is experimental nutritional intervention. The book deserves to be bought for this chapter alone.

The Hurwitz chapter on psychological testing in studies of malnutrition is very useful in a different way. Assuming his descriptions of the test methodology are reliable (and I cannot judge that), I was most impressed with his account of the limitations of such tests in the present context. The problems of cross-cultural validity together with the difficulties of drawing "growth-curves" against age in longitudinal studies, seem even more formidable than one had imagined, to say nothing of the hazards in using infant tests as predictors of long term performance.

Lloyd-Still returns in Chapter 6 to discuss "Clinical Studies", by which he means direct studies on children. His tabulated condensation of 13 major studies includes 11 of socioeconomic or cultural malnutrition and two in which malnutrition was secondary to clinical

conditions in our own privileged communities. The breadth of his discussion is impressive and partly derives from his conspicuously profound experience as a children's doctor. One day, however, we shall have to abandon discussion of some of the earliest field studies since it is now too easy and somewhat redundant to criticise them. Their place is in historical introductions to these.

The last chapter on the social ecology of childhood malnutrition unfortunately returns to the rather lower standard of the second. It may well be true that the "Soviet Union, which was able to purchase . . . grain with devalued dollars at prices subsidised by the United States Government, realised further profit, both economic and political, by selling, lending and granting of American grain to other countries"; but such statements are below the generally very high standards of objectivity in the remainder of this book. □

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## Electrons in liquid ammonia

*Electrons in Liquid Ammonia.* By J. C. Thompson. Pp. xii+297. (Clarendon: Oxford; Oxford University: London, 1976.) £14.50.

THIS book is a gold mine of information for anyone working in any area of electrons in fluids. It is written by a person who has contributed to all of the many areas represented in this monograph. Professor Thompson has not only collected all of the major experimental and theoretical work on the subject but has presented it in a very critical but very fair manner. After reading this book everyone should have a better feeling for our present state of understanding as well as the remaining problems.

The major topics include "metal-ammonia solutions as liquid metals", "metal-ammonia solutions as electrolytes", "the metal-nonmetal transition", "liquid-liquid phase separations", "solutions of alkaline earth and rare Earth metals", "solid metal-ammonia compounds", and "solutions in other

solvents". Each chapter contains material which will prove useful to even the most well informed reader on the present status of each topic. The presentations are remarkably up to date and inclusive.

The strongest single point of this book is its emphasis on those areas in which our understanding of experimental data is very incomplete. In this regard one might mention spin pairing and the "metal-nonmetal" or conductivity transition. In these cases the author has made a special effort to quote all of the essential experimental facts as well as to make the strongest possible case for all of the alternative theoretical models (pointing out in addition that all fail on some other points).

This book is so vital that any researcher in any related field would be negligent if this book were not actively used as part of his routine research. Neil R. Kestner

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