waiting time for transfer is usually less than two weeks.) Is this then the evidence of change? . . . Most general physicians, and Dr Leonard may be an exception, are only too glad for geriatricians to look after the elderly patient with multifactorial problems—it is not that they are incapable; it is just that they do not see the benefits of appropriate investigation and treatment in many of these elderly patients, despite the fact that about 70 out of 100 patients admitted will go home in three months. . . .

I wish Dr Leonard was right, but experience shows differently; the failure of general physicians in the proper assessment of elderly patients, the failure to accept the need for a multidisciplinary team approach to illness in the elderly, the neglect of the “uninteresting patient,” and the failure to accept responsibility for the “longer-stay” patient have been rampant. I see no evidence of a change of attitude by the majority of general physicians and therefore I must wholly disagree with the theme of his paper.

A C D CAYLEY

Geriatric Department,
Central Middlesex Hospital,
London NW10

Breast-feeding: the immunological argument

SIR,—No article advocating breast-feeding for babies can be totally bad, and your leading article (15 May, p 1167) giving the immunological case makes some valid points, but aspects of it are so unbalanced and potentially misleading that comment is essential in view of the importance of the subject.

The assertion that “non-specific factors are of minor importance compared with the neutralising properties of specific IgA” shows a fundamental lack of understanding of immunology. Antibody has little effect on bacteria without activating a non-specific mechanism, and it is likely that the antibacterial effects of milk are the more important ones. Bullen *et al*¹ have shown that IgA antibody and lactoferrin have an extremely powerful synergistic action and I understand that they now have an extremely elegant explanation of this phenomenon which is still unpublished. To think of the two separately and say that one is important and the other is not is therefore unsound and also important, since, if Bullen is right, addition of iron will largely inactivate the IgA system.

Omission of any mention of the relevance of the buffering power of milk feeds so elegantly studied by Mrs Bullen² is another example of lack of appreciation of the really important work, since some children will undoubtedly be artificially fed and there is little doubt that the damaging effect would be far less if these factors were taken into account in the design of artificial infant feeds.

The fascinating work of Barlow *et al*³ is quoted, but their more recent demonstration⁴ that live cells in rat milk contribute to the protection mechanism contrasts with your discussion of cells only as a possible cause of disease. This has important implications for planning milk banks (standard heat treatment would inactivate many of the other despised non-specific factors as well as the cells).

You describe our prospective study, already confirmed elsewhere, of transient IgA deficiency preceding hypersensitivity diseases as “still largely hypothetical.” This is far more true of most of the other work you quote, and

attempts to establish the usefulness of these ideas are already encouraging.⁵ It is supported by the demonstration that there are already at least five genetically determined systems of variation of immunity function within the normal range, and that a low level of one of these is associated with defective antigen handling or with allergy and infection.⁶ The neonatal period is the most critical part of life from the immunological point of view, since the immune response is initiated following establishment of the intestinal flora. The important implication of this work is that management which may be appropriate for 80% of children may well not be appropriate for the remaining 20%. In this period, when immunity function is really stretched, a considerable minority may be vulnerable to damage.

The account of the vast and heterogeneous picture of cows' milk allergy is strangely selective, and I shall require further conviction that there are not problems of polio immunisation in the breast-fed.

These are only a few aspects of a vast subject of established short-term and probable long-term importance for the health of the child—and the adult. It deserves a more accurate and balanced account.

J F SOOTHILL

Department of Immunology,
Institute of Child Health,
London WC1

¹ Bullen, J. J., *et al*, *British Medical Journal*, 1972, **1**, 69.
² Bullen, C. L., *et al*, *British Medical Journal*, 1971, **3**, 338.

³ Barlow, B., *et al*, *Journal of Pediatric Surgery*, 1974, **9**, 587.

⁴ Pitt, J., *et al*, *Pediatric Research*, 1976, **8**, 384.

⁵ Taylor, B., *et al*, *Lancet*, 1973, **2**, 111.

⁶ Soothill, J. F., *Proceedings of the Royal Society of Medicine*, In press.

* * * There is in fact little basic disagreement between the opinions expressed in our leading article and those raised in Professor Soothill's letter; many of the apparent differences can be attributed to the terseness unavoidable in an article of limited length. The first point concerns the relative importance of specific and non-specific antimicrobial factors transferred in human breast milk. The importance of the latter was fully recognised in our article, despite its emphasis on “the immunological argument.” Of course, antibody does not operate in isolation. Nevertheless, there is some precedent in the history of immunology for believing that specific antibody is of critical importance in host defence against infections.

The work of Mrs Catherine Bullen and her colleagues on the buffering power of human milk is well known but was not cited because the article was not designed to be exhaustive but to deal primarily with immunological mechanisms. We await with interest the publication of the as yet unpublished work to which Professor Soothill alludes.

A balanced leading article tries to take into account primarily those findings which have been adequately documented and discussed in published work. The more recent work of Barlow and her colleagues has been published only in abstract form and is therefore as yet impossible to assess. If this criterion for inclusion had been strictly applied it would have been inadmissible to make adequate comments about the work of Professor Soothill and his colleagues, who claim that transient IgA deficiency precedes hypersensitivity diseases. Little of this has been published since the first paper by Taylor *et al* appeared in 1973. Nevertheless, this is a

concept of such fundamental importance and originality that it was mandatory to discuss it, albeit with the proviso that it must be considered hypothetical until firmer evidence is available. The paper to which Professor Soothill refers and which is still in the press may strengthen his argument.

We drew attention to manifestations of milk allergy which are admittedly unusual; as space did not permit any exhaustive list it seemed appropriate to indicate the wide range of disorders which may follow unwise feeding in infancy, something to which Professor Soothill surely cannot object. Finally, we simply stated that there is no conclusive evidence one way or the other that breast-feeding interferes with polio immunisation, a feeling with which Professor Soothill concurs.—ED, *BMJ*.

Establishment of lactation

SIR,—Dr E Eastham (and his colleagues (7 February, p 305)) provide useful information on the educational approaches needed to allow mothers to reach the right decision regarding breast-feeding their infants. In their sample 17 out of the 100 mothers who breast-fed their babies initially had ceased to do so by the time they went home from hospital. Figures were given regarding the 63 primiparae in the sample who initially breast-fed and the conclusion was drawn that “clearly those who were better informed [about breast-feeding] were more likely still to be breast-feeding at the time of discharge [from hospital].” A 3×2 contingency table can be drawn up using these data. A χ^2 test indicates that no significant difference is apparent between those mothers who were “well informed,” “uninformed,” or “intermediate” ($\chi^2 = 1.590$ at 2 degrees of freedom). Clumping of the data into a 2×2 table still gives no significant difference. Perhaps another factor is more important.

The interviewers in this study assessed the reasons why 14 of the primiparae ceased breast-feeding before leaving hospital. In eight cases the interviewers thought this was due to either nipple damage, the baby's behaviour, or insufficient milk. In other words, over half these early lactation failures were blamed on anatomy, physiology, or the baby. Can this really be so? Cracked nipple is hardly ever a contraindication to breast-feeding¹; the milk normally takes a day or two and sometimes longer to come down²; and how does a newborn baby indicate that it prefers the bottle to the breast?

Perhaps the statement that “breast-fed babies were given complementary feeds when their behaviour indicated it” provides a clue as to one of the reasons why breast-feeding stopped while some sample mothers were still in hospital. Stimulation of the nipple and areolar tissue and suckling trigger the let-down and prolactin reflexes,² the establishment and maintenance of which are essential for successful lactation.³ Consequently anything that inhibits early attempts by the newborn to suckle will reduce the chances of successful breast-feeding being established. The administration of prelacteal or complementary feeds in hospital is such an inhibitor to suckling. Its effect will be compounded when the mother interprets it as a judgment by the nursing staff that she cannot provide adequate milk for her newborn child.

Double-blind studies to investigate the influence of prelacteal feeding in hospital on subsequent lactation performance and growth

of the baby are impossible to carry out. Nevertheless, all the indications are that the practice is nearly always, in hot countries or cold, unnecessary and undesirable. Newborn babies often need frequent body contact and always require abundant opportunities to suckle. Their mothers, no less, need support and encouragement, as is recommended by the authors of the study.

MICHAEL GURNEY

World Health Organisation,
Regional Office for the
Eastern Mediterranean,
Alexandria, Egypt

¹ Laupus, W E, in *Nelson Textbook of Pediatrics*, ed V C Vaughan and R J McKay. 10th edn, p 164. Philadelphia, Saunders, 1975.

² Newton, M, *American Journal of Clinical Nutrition*, 1971, 24, 987.

³ Applebaum, R M, *Pediatric Clinics of North America*, 1970, 17, 203.

Encouraging breast-feeding

SIR,—The recent papers by Dr E Eastham and others (7 February, p 305) and Drs C J Bacon and J M Wylie (p 308) have focused attention on the problem of breast-feeding, and attempts have been made to determine what influences a mother's decision to breast-feed her baby.

At Fazakerley Maternity Hospital in Liverpool (approximately 3500 deliveries a year), where many of the patients are from the lower socio-economic groups, the proportion of mothers breast-feeding had fallen to 10% in October 1975. Efforts to remedy this included a short questionnaire, designed to be answered in a "yes/no" manner, given randomly to women who had just been delivered. Only 65 usable replies were received, making detailed analysis impossible; nevertheless, a broad area of ignorance was highlighted.

The results obtained mirror those from more exhaustive surveys. When they came into hospital only 13 of the 65 mothers hoped to breast-feed their babies. Thirty-three would have liked more advice and plainly this had not been available to them from medical sources in an understandable form, if at all. Only one patient had received any instruction from her general practitioner, other sources being the antenatal clinic (6) parentcraft class (7), relaxation class (10), the patient's mother or another relative (26), or a women's magazine (10). Of the 13 patients hoping to breast-feed, 12 wanted more advice; 21 others intending to feed their babies artificially were potential "converts" had they received more advice. The need to return to work, often assumed to be a significant factor, seemed to be irrelevant, as only three mothers stated that they would be returning to a full-time paid job within three months.

Patently a great deal more could be done in the antenatal period. The opportunity to attend parentcraft classes is open to all patients, but the minority who do so seem to represent disproportionately the higher socioeconomic groups, many of whom already intend to breast-feed. At Fazakerley Hospital, finances permitting it is intended to have a continuous running audiovisual projection unit in the clinic waiting area providing breast-feeding propaganda, but at best this can only give limited information, though it is hoped that it will stimulate interest.

In a utopian obstetric service infant feeding would be discussed individually with every patient early in the pregnancy and advice would always be readily available; but in a busy clinic in reality there is not the time available. Perhaps there is a role for the paediatrician in the antenatal period at least to interview every primipara.

Fundamentally, however, the problem is one of changing irrational social attitudes to breast-feeding. Should not those concerned with infant welfare be going to the secondary schools and explaining sensible feeding practices to the potential parents (mothers and fathers) of a few years hence?

J G DAVIES

Alder Hey Children's Hospital,
Liverpool

Bottle-feeding

SIR,—Drs B A Wharton and H M Berger (29 May, p 1326) begin their article on bottle-feeding: "Whenever possible mothers should be encouraged to breast-feed their babies—even as little as two weeks is valuable." That pathetic "two weeks" aside, when is it not possible to encourage breast-feeding? Did they not mean "When there is no contra-indication"? And how often is there a contra-indication, as distinct from a culturally determined unwillingness to breast-feed, a conditioning doctors and nurses at worst take part in and at best commonly ignore? There is no mention in the article of the effect of the practice of some maternity hospitals of supplying mothers with preformulated feeds. And neither in this article nor in the preceding article by Dr D P Addy (22 May, p 1268) was there any detailed discussion of how to induce mothers to breast-feed, and this despite the many major advantages, some of them lifelong, detailed in Dr Addy's article.

The bottle-feeding article was obviously well-intentioned and most accurate; but it would need another article to comment on it adequately. I will make only four points. Firstly, sterilisation of bottles and teats by boiling: the description of this is daunting indeed. No wonder diarrhoea in bottle-fed babies is common, and in underdeveloped countries often fatal.

Secondly, making up the feed: although Drs Wharton and Berger do commend the 1974 Report of the DHSS Working Party,¹ they do not mention the fact, which seven expert members of the working party acknowledged² some months after the report appeared, that they themselves had used for the analyses quoted in their tables in the report a 1 in 8 dilution of National Dried Milk as against the 1 in 10 to 1 in 12 recommended on the NDM pack. Their report stated, as regards the making-up of feeds, "it is not only mothers who make mistakes. . . . Nurses and midwives as well as mothers were inaccurate, and all erred usually on the side of over-concentration." They could by their own admission have added "and the country's leading experts on baby feeding." In this context the working party's indication that NDM had for years contained undesirable excess of sodium and phosphate was almost an irrelevant detail.

Thirdly, Drs Wharton and Berger state that "infant formulae based on unmodified cows' milk with added vitamins and iron were used for 30 years or more before the dangers of too much vitamin D or too much sodium were fully realised." With that background and the defects of NDM as a *donnée*, might it not be advisable to proceed most cautiously with any further modification of artificial feeds? And yet we read a little later, in connection with the missing anti-infective properties of such feeds, that "possibly by genetic selection a cows' milk containing larger amounts of lactoferrin might be developed" and "experiments are already being made to produce cows' milk rich in immunoglobulins by immunising cows with appropriate organisms." As we currently have some 600 000 births a year and so could have available a plethora of human milk with all its highly beneficial qualities, why bother immunising the cows? And are they not to be given a feed with a formaldehyde-casein coating to increase the

polyunsaturated fat content of the milk, and so bring it even more into line with human milk?³

Fourthly, I found no mention anywhere in the article of the practice in underdeveloped countries, encouraged by the West, of giving up breast-feeding in favour of bottle-feeding; and yet the *BMJ* is read widely in such countries. A recent official estimate⁴ for the number of children in the world suffering from malnutrition due to the decline in breast-feeding was 200m (*sic*). I think of bottle sterilisation and scoops and of an illiterate African woman with no running water and an open fire paying one-third of her husband's wage for the milk powder, which she therefore over-dilutes with the obvious consequences; and of a Western baby, obese from his over-concentrated feeds.

The article by Drs Wharton and Berger, and indeed our whole attitude to breast- and bottle-feeding, remind me of what was said very recently about obstetric delivery today: "Experience has shown that labour is far from safe if left to the capricious whims of Nature."⁵ Substitute "infant feeding" for "labour" and the sentence seems to express exactly the sentiments of much of the Western medical establishment towards breast-feeding. If the human body cannot teach us the dangers of interfering overmuch with the capricious whims of Nature, surely what we have done in the last 30 years to the ecosphere might. But then we doctors often wear blinkers. It was not by chance that it was a layman⁶ who uttered recently what has for some time been a truism: that "The medical establishment has become a major threat to health."

JOHN S BRADSHAW

How Caple,
Hereford

¹ Department of Health and Social Security, *Present Day Practice in Infant Feeding*, Reports on Health and Social Subjects No 9. London, HMSO, 1974.

² Arneil, G C, *et al*, *Lancet*, 1975, 1, 450.

³ *Lancet*, 1975, 2, 960.

⁴ Food and Agriculture Organization of the United Nations: *The State of Food and Agriculture 1974*. Rome, FAO, 1975.

⁵ Beard, R W, and Chamberlain, G, *Lancet*, 1976, 1, 904.

⁶ Illich, I, *Limits to Medicine*, p. 3. London, Marion Boyars, 1976.

Alcohol and the brain

SIR,—In your leading article on this subject (15 May, p 1168) you were kind enough to quote the air encephalographic, psychometric, and electroencephalographic study of alcoholic cerebral atrophy written by Dr Lance Perrett and myself.¹ I would like to add a few comments in the light of recent developments in the diagnosis of brain disorders.

Our own study relied on relatively simple psychometric tests such as the Wechsler Adult Intelligence Scale and the Benton Visual Retention Test. Even so there was a significant correlation ($P < 0.01$) between these tests and the degree of cortical atrophy. More accurate and informative psychometric tests are available in the shape of the Halstead-Reitan test battery,² and the advent of the EMI-Scanner means that information about the state of the cortex and ventricles can now be obtained painlessly. The delineation of the cortex by the EMI-Scanner is possibly a little less precise than that provided by air encephalography, but may well be adequate for most purposes.³ Most studies, including ours, have found the EEG to be singularly unhelpful in the diagnosis of alcoholic brain damage.

I support your view that a combination of