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partum". We observed³ that the increase in cardiac output characteristic of pregnancy reached a plateau during gestation weeks 12–28, then gradually fell, so that by term it is at or below the pre-pregnancy level. Our observations were viewed with disbelief for several years, but two or three studies being done elsewhere are confirming them. Perhaps, if MacLennan's hypothesis is to be substantiated, it will be necessary to analyse data on maternal deaths from acid-aspiration with reference to the gestational age at the time of the event.

The outcome in the series reported by Mendelson⁴ has long puzzled many of us. Of the 66 mothers referred to, 5 (of whom 2 died) aspirated solid material, 21 were subsequently diagnosed as having aspirated (and there is no further discussion of these), and 40 were recorded as having aspirated liquid material during the period of anaesthesia. All these 40 mothers had what Mendelson characterised as "asthmatic-like reactions", with signs and symptoms which we would now consider as pathognomonic of the acid-aspiration syndrome. All had a stormy course for 36–48 h and all survived. The features to which attention is drawn were as follows: 29 women were delivered spontaneously, 23 were delivered vaginally with the aid of instruments, and only 14 were delivered by caesarean section (there is no indication how many from each of these groups fell into each category of "aspiration"); none received antacid prophylaxis; most, if not all, took food and drink during labour; few, if any, received ergometrine (a bronchoconstrictor and pulmonary vasoconstrictor); all received ether (a bronchodilator) via a face-mask; 9 had been in labour for 30 h or longer. I doubt that any had been given an intravenous infusion. Surveying Mendelson's figures and bearing in mind the pattern of related events during the past few decades, I can conclude only that "you pay your money and you take your choice". MacLennan has added an interesting strand to that pattern.

May I add a final provocative comment? Is it not intriguing that, in England and Wales, the number of maternal deaths from acid-aspiration apparently rose only after the appearance of Parker's⁵ paper led to severe dietary restriction in labour, amounting in most units to starvation?

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SIGNIFICANCE OF CRYPTOSPORIDIUM AND OTHER ENTERIC PATHOGENS IN DEVELOPING COUNTRIES

SIR,—The studies by Dr Mathan and colleagues (Nov 23, p 1172) and by Dr Taylor and Dr Echeverria (Feb 8, p 320) on the role of cryptosporidium in acute diarrhoea in children in India and Thailand, respectively, have stirred up controversy over whether this protozoon is causally related to diarrhoea in developing countries. Other pathogens are also involved in similar controversies.¹ Controversy arises because the pathogen in question has been isolated from a high proportion of controls without diarrhoea or has been isolated with other possible pathogens from the same patients.

In industrialised countries the isolation of a pathogen may be all that is required to establish a causal role in diarrhoea. However, the situation is more complex in developing countries where personal and environmental hygiene are primitive, and where individuals are constantly exposed to faecal microorganisms. Apparently normal people in these areas have a very high intestinal carriage rate of pathogens,^{2–4} which is unusual in industrialised countries. This might be explained by immunity against symptomatic infection. In infancy, immunity is provided by maternal antibodies transferred across the placenta in the prenatal period and through breast milk

(which in developing countries has very high antibody levels) in the postnatal period. Further, exposure to pathogens during infancy primes the immune system for active immunity, and through repeated encounters with the pathogens immunity is constantly boosted. This will explain why these children possess higher amounts of serum antibodies to these pathogens than their counterparts in industrialised countries.⁵

A more thorough approach may be required to resolve the controversy. Quantitative studies on the pathogens are needed because they are most often the predominant faecal flora during the acute stage of the diarrhoeal disease,⁶ whereas in symptomless carriers they are present only in small numbers; repeat stool examination should be done to demonstrate any difference in excretion pattern between patients and controls (in symptom-free subjects carriage of the pathogen may be transient); and acute and convalescent sera should be tested to demonstrate a rise in antibody to the suspected pathogen(s). Further, laboratory tests for pathogenicity should be carried out since in certain instances organisms lacking in virulence properties have been isolated from symptomless subjects.⁷

Microbial synergism could be at work in mixed infections. Some animal studies have been done to examine the pathogenesis of mixed microbial infections.⁸ Similar studies should be extended to include various permutations and combinations of pathogens.

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DOES LAMBSWOOL PROMOTE GROWTH IN PRETERM INFANTS?

SIR,—Reports that low birthweight (LBW) infants nursed on lambswool gain weight faster than those nursed on sheets^{1,2} may have encouraged paediatric departments to adopt this procedure. However, these studies have been challenged³ because the difference in weight gain between the two groups was not significant if the data were expressed as rates per kg body weight rather than as absolute rates. In view of this controversy we have assessed the potential of lambswool to increase nutrient accretion, by investigating possible mechanisms for such an effect.

Since energy intake equals energy expenditure plus energy deposition plus energy losses in stools and urine, an increase in energy deposition must be accompanied by a reduction in energy expenditure provided that milk intake and absorption are constant. An increase in protein deposition would also be associated with a reduction in energy expenditure (as a result of decreased protein oxidation) and might alter respiratory quotient (RQ). Therefore, we have used open-circuit, indirect calorimetry to test the hypothesis that lambswool reduces energy expenditure (through changes in physical activity or stress),^{1,2} thereby increasing the availability of nutrients for deposition. Measurement of weight gain is a less precise method for predicting differences in rates of nutrient accretion and may provide misleading results if small numbers of babies are investigated.