

into the dermis in our patients should indicate a good long term prognosis.

We thank Mr J N Thomas, consultant ear, nose, and throat surgeon, King's College Hospital, for allowing us to report case 6.

## References

- <sup>1</sup> Bayliss RIS. The medical check-up. *Br Med J* 1981;283:631-4.
- <sup>2</sup> Douglass BE. Examining healthy patients—how and how often? *Mayo Clin Proc* 1981;56:57-60.
- <sup>3</sup> du Vivier A. Spotting the malignant melanoma. *Br Med J* 1982;285:670-1.

- <sup>4</sup> Jensen OM, Bolander AM. Trends in malignant melanoma of the skin. *World Health Stat Rep* 1950;33:2-26.
- <sup>5</sup> Elwood JM, Lee JAH. Recent data on the epidemiology of malignant melanoma. In: *Human malignant melanoma. Clinical oncology monographs*. New York: Grune and Stratton, 1979:261-72.
- <sup>6</sup> Schreiber MM, Bollo PD, Moon TE. Malignant melanoma in Southern Arizona. Increasing incidence and sunlight as an etiological factor. *Arch Dermatol* 1981;117:6-11.
- <sup>7</sup> Wanebo HJ, Woodruff J, Fortner JG. Malignant melanoma of the extremities. A clinicopathologic study using levels of invasion (micro stage). *Cancer* 1975;36:666-76.
- <sup>8</sup> Clark WH, From L, Bernardino EA, Mihm MC. The histogenesis and biological behaviour of human malignant melanoma of the skin. *Cancer Res* 1969;29:705-26.

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# Letter from . . . Chicago

## Science and the egg

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Sir Thomas Browne, musing about the thousand doors that lead to death, could hardly have foreseen that someday the roads to being born would become almost as diverse. Nor could he have reckoned with the progress of science when, as a young man, he vainly wished we might procreate like trees, without conjunction. An imaginative man, he might have found nothing surprising about maintaining seemingly inanimate people alive with bellows blowing air into their lungs—though he might have questioned why on earth one would go on for so long. He might have also wondered at the size of these modern bellows, the flashing lights and buzzing sounds, and the confusing mathematical formulations and mysterious acronyms. But not in his wildest dreams might he have foreseen that a body thus maintained on a respirator could be delivered of a live baby, that in fact the uterus would be used as an incubator. Yet within the past two years two babies were delivered by caesarean section from women declared legally brain dead but kept "alive" for up to 64 days. The babies turned out to be healthy, weighing about 1500 g each, and left at least one of the fathers with mixed feelings at "having lost a wife but gained a son."

Even more amazing to the good doctor would have been in vitro fertilisation, first developed in England in 1978. Already the 4 year old Louise Brown is the head of a clan of almost 200 test tube babies, including five sets of twins, the first born in Melbourne in 1971. This year the first American set arrived in Sea Cliff, New Jersey, and now the test tube stork has brought happiness and twins to a couple in the Chicago area after nine lean sterile years. Some 20% of American couples are considered to be infertile, often because of blocked ovarian tubes or low sperm counts, and some 5% of these may well be helped by fertilisation in glass. As each attempt to fertilise an ovum carries only a 10% chance of success, this procedure is costly, time consuming, and disruptive for couples having to move near a specialised centre. It is also fraught with potential legal problems and ethical dilemmas. In the past the waiting lists have been long, sometimes up to two years, but now more centres capable of carrying out the procedure are being estab-

lished, including two in Chicago. Further hope comes from the recent Australian attempt to freeze embryos in liquid nitrogen, so that a second embryo may be implanted should the first be rejected.

The other technique, though less dramatic, might still have pleased the young Thomas Browne, though seemingly adapted from the veterinary sciences rather than from botany and the study of trees. Yet straight artificial insemination of foster mothers, so-called "rent a womb," has also given rise to considerable ethical and legal problems, especially since the intrusion of the profit motive and commercialism. Several agencies now advertise, offer colourful albums of pretty potential mothers, and charge some \$25 000—of which the surrogate mother keeps \$10 000 and the rest goes for medical expenses plus profit. Some 70 surrogate births have taken place in the past eight years, and demand is increasing because abortion and contraceptives have reduced the number of babies for adoption. Yet surrogate motherhood has remained an essentially unregulated trade, and I have already reported earlier (23 January 1982, p 260) such problems as a mother wanting to keep the baby.

This year the baby of a surrogate mother, born microcephalic and possibly mentally deficient, ended up unclaimed in a foster home as both parents refused to accept it. At the time, the analogy to what in the business world would be termed "damaged goods" did not go unnoticed. The newspapers further reported that the father had refused consent for giving antibiotics, or at least for lumbar puncture, and later also denied being the father and refused to pay the \$10 000. As the story unfolded we learnt that this New York man had arranged through a Kentucky attorney to have a Michigan woman bear his child, apparently to strengthen his own marriage. Indeed his wife had picked the surrogate mother from an album. Considerable publicity surrounded the case as the surrogate mother maintained that she had been examined by a doctor before the insemination and told she was not pregnant. Moreover, she said that she and her husband had abstained from intercourse for the prescribed 30 days before the insemination. But the blood tests then showed that the baby had blood group O and the New York man was AB, which was just as well for the man because by that time his marriage had broken up anyway. Further tests showed that the real father was indeed the surrogate mother's husband. The baby, which was doing

fine, was eventually "accepted" into the family, but there was talk of suing the doctor who had said the woman was not pregnant already.

### Righteousness and wind

So much for the artificial insemination of human eggs. Meanwhile we note great advances in our understanding of the culinary alchemy of chicken eggs, with many principles of physics and chemistry having practical applications in the kitchen.<sup>1</sup> The catastrophe of eggs cracking while being boiled, a consequence of "thermal shock", may be prevented by starting the egg at room temperature rather than throwing it into boiling water, so that all parts of the shell can expand uniformly. The traditional advice of adding salt to the boiling water is seemingly based on its ability to coagulate the egg-white, thus preventing the formation of ugly streamers. In boiling eggs an equilibrium prevails between the production of air and its escape through the pores of the shell, and, as these pores are of different sizes in different eggs, cracking may be prevented by heating the egg slowly. Making a pinhole in the large end of the egg achieves the same aim, and adds the extra aesthetic bonus of preventing an expanding air pocket from compressing the eggwhite—so that the egg will look beautifully ovoid rather than flattened like a boxer's nose. Rinsing a cooked egg in cold water prevents the formation of an ugly green deposit of iron sulphide on the surface of the yolk—by arresting the formation of hydrogen sulphide in the eggwhite and its subsequent inward diffusion and reaction with the iron contained in the yolk. And an understanding of the principles of kinetic energy accounts for hard boiled eggs spinning faster than uncooked ones, which may help telling them apart if stored in the same container.<sup>1</sup>

All this leads more or less naturally to a discussion of air or gases in the gastrointestinal tract, though I must admit that most of the clippings in my file are somewhat dated. Yet hoping that at least some readers have accumulated vast piles of unopened journals in their garages, I venture to explain that most of the air in the gut comes not from being swallowed but from being produced by bacteria. Flatologists have found that the gas is mainly hydrogen, methane, and carbon dioxide—and it is odourless, though it may be explosive during electrocautery of the colon.<sup>2</sup> Vegetables tend to fill one with righteousness and wind, hence the wisdom of cutting down on the intake of lactose, legumes, fibres, and wheat in cases of excessive flatulence. Little is known about the odoriferous gases, but a dog's olfactory system is said to be much more sensitive than gas chromatography, hence the possibility of using bloodhounds to diagnose fetor hepaticus from hepatic coma.<sup>2</sup>

Those with an ear for the language, who prefer the short to the long and the Saxon to the Romance, will consider replacing the medical term "passing flatus" with flatus advanced by rectal transport, or an acronym thereof.<sup>3</sup> They may also consider Dr Eibel's New Year's resolutions and stop confusing "mitigate" with "militate," avoid saying "ambulate" when they mean "walk," cut out redundancies such as "tumor mass," and avoid hackneyed clichés such as "team work," "burning your bridges," "treating the patient and not the x ray," "six of one and half a dozen of the other," or being "damned if you do and damned if you don't" order a certain test.<sup>4</sup> To which I might add some personal aversions, the tautological "normocephalic head," the growing use of "prior to" instead of "before," and also the prevailing tendency to replace "leg oedema" by "pedal oedema," which might be useful, however, to differentiate dipedal oedema in man from centipedal oedema in the respective insect.

### National Association to Aid Fat Americans

Turning now once again to the perennial subject of obesity, we read that a 32 year old man weighing 256 kg, on being

convicted of sexually assaulting a 14 year old girl, appealed that he should be released because without the necessary medical attention he would die in prison. Though suffering from respiratory problems, his appeal was denied, a decision that met with the acquiescence of the National Association to Aid Fat Americans. "We want equal treatment, not special treatment," said the association's chairman, adding that other people also had health problems, but that he would surely expect suitable facilities would be available in prison to treat them. But the chairman of the same organisation, which is "dedicated to the proposition that fat can be beautiful," was disappointed when the court rejected the appeal of a woman weighing 155 kg who had been refused a job. After consulting the insurance tables, her prospective employers had argued that her morbid obesity made her a higher health risk than they wanted to accept.

Yet the weight tables themselves are not cast in stone, and in April the Metropolitan Life Insurance Company published its first revision in 20 years, based on the records of 4.2 million people. The new weights, 5% to 15% higher than in 1959, especially for young women and tall men, were explained to be those at which people live longest, rather than so called ideal weights, and need to be considered in conjunction with other known risk factors such as diabetes or hypertension. Compared with 10 years ago, Americans are generally fatter, reported the National Center for Health Statistics, indicating that 32% of men and 63% of women were 10% above average weight and that 16% of men and 24% of women were 20% above. Another study on 2756 subjects by the Rand Corporation found that 12% of people were severely overweight and another 10% were considered moderately overweight.<sup>5</sup> Despite the well recognised hazards of extreme obesity, only 11% of such subjects were under medical care—and the authors suggested that the doctors' role might be worth expanding, provided that it can be shown that medical care helps people lose weight.<sup>5</sup> We also note that the inspectors of the Food and Drug Administration are planning to crackdown on fraudulent exercise machines that claim to allow people to lose weight without having to exercise by administering an electric shock that causes muscles to contract. Also unproved, at this time, is suction lipectomy, a technique claimed to remove redundant fat cells by sucking them out with a cannula connected to a vacuum pump. Yet if proved to be free from complications, such an approach could be a boon for the severely overweight patient.<sup>6</sup>

Being moderately overweight, however, may present a different problem, because it has not been proved to be a definite risk factor in causing chronic illness or reducing longevity. Yet the Rand Corporation investigators found that the 10% moderately overweight subjects, as well as another 19% of the population who merely perceived themselves as being overweight, manifested considerable suffering in the form of anxiety, constant attempts at dieting, and unwarranted restricted activity. Here again, doctors could help by facilitating weight reduction. Alternatively, the authors suggested, they might consider changing the strong values society places on being thin by legitimising being moderately overweight.<sup>5</sup> Not having to worry about being plump would be a great relief for many a figure conscious woman, and we look forward to a return to the happy days of those fashions that Sir Peter Paul Rubens depicted so exquisitely in his masterpieces.

### References

- Grosser AE. The culinary alchemy of eggs. *Am Sci* 1983;**71**:129-31.
- Levitt ND. Intestinal gas production—recent advances in flatology. *N Engl J Med* 1980;**302**:1474-5.
- Cohn Y. Final outburst. *N Engl J Med* 1977;**296**:761.
- Eibel P. Ten words to give up in 1982. *Can Med Assoc J* 1982;**126**:900-1.
- Stewart AL, Brook RH. Effects of being overweight. *Am J Public Health* 1983;**73**:171-8.
- Alsofrom J. Lipectomy: "magic bullet" for fat removal? *American Medical News* 1983: May 27: 15.