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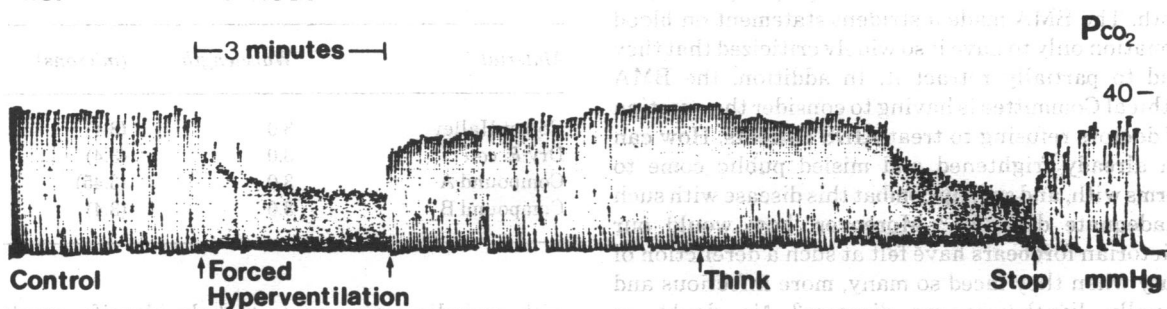


Figure 1. Continuous record from a man aged 28 years of the partial pressure of carbon dioxide in the expired air (P_{CO}₂). The forced hyperventilation test was carried out after a control period. At 'Think' he was asked to close his eyes and invited to think about admission to a Coronary Care Unit with chest pain nine months earlier. The P_{CO}₂ level fell from normal to 14 mmHg, an extremely low level that might have triggered another attack if he had been alone and frightened

We are pleased to use the cognitive feedback method advocated by Dr Ryle in a strong attempt to induce a remission. The team provides a closely supportive attachment, and enables the patient to become aware of the disorders of sleep, arousal, breathing, effort and self-esteem that must be overcome before the body's self-regulating systems can recover a healthy level of order and stability¹. Success depends upon overcoming denial: cognitive feedback has no value where the thoughts that provoke exacerbations cannot be admitted and discussed.

Fortunately we can make use of the fact that the denying patient commonly hyperventilates as a displacement activity² when he is upset by thoughts of coping failure and unpleasant experiences³. This hyperventilation is undesirable because it can increase emotional arousal, encourage arrhythmia⁴, reduce the availability of oxygen to the heart⁵, and promote coronary vasoconstriction and spasm⁶. We therefore employ a capnograph^{3,4} to demonstrate to the patient the fact that there are thoughts which do exert a powerful effect upon his body (Figure 1) and use the instrument as a feedback device for training him to give up this thinking-hyperventilating reflex.

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Admission to medical school: from audit to action

Sir, In responding to Grace (February *JRSM*, p 127), Horton draws attention to the 'rather alarming evidence' of Collier and Burke¹ on the racial and sexual discrimination which they concluded was operating in London medical schools in 1977-79. Collier and Burke, however, attempted to assess the admission policies of those schools by guessing the sex and race of the students admitted there at those times from the names of students taking final MB London in June 1982-4. They failed to appreciate that the finalists of each year comprised not only some of the students selected by the respective schools five years earlier, but also some of those selected by them six years earlier (who had taken an intercalated BSc or for some other reason delayed taking finals), all students admitted from (and selected by) Oxford, most of those admitted from Cambridge and those from overseas admitted to take Conjoint².

The study gave ample evidence of the authors' concern with race and gender but no indication of the admission policy of the London schools in 1977-79, or since. Nonetheless, publication of such alarmist and ill-founded reports is itself a reason for the 'monitoring of student admissions to medical schools' which Horton advocates.

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References

- 1 Collier J, Burke A. Racial and sexual discrimination in the selection of students for London medical schools. *Med Educ* 1986;20:86-90
- 2 Ellis J. Racial and sexual discrimination in the selection of students for London medical schools. *Med Educ* 1986;20:539-40

Personality assessment of future doctors

Sir, The inadequacy of exam results as the sole means of selection of future doctors has long been acknowledged. But the questions raised in Professor Walton's paper (January *JRSM*, p 27) seem even more apposite than ever. For doctors now need not only humanity but ever increasing worldly wisdom and abilities, as the acquired immune deficiency syndrome (AIDS) and the media push the profession into the headlines.

Doctors are required to give both public and private leads as never before, yet only recently the

profession has shown itself to be palpably failing in both. The BMA made a strident statement on blood donation only to have it so widely criticized that they had to partially retract it. In addition, the BMA Ethical Committee is having to consider the question of doctors refusing to treat AIDS patients. How can an already frightened and misled public come to terms with, and so help combat this disease with such inadequate direction? Moreover, how would our Victorian forebears have felt at such a dereliction of duty when they faced so many, more infectious and equally life-threatening diseases? No doubt as bemused and ashamed as I, particularly in the light of the Royal College of Nursing's positive stand threatening deregistration to any nurses refusing to look after such patients. I would suggest that those who do not like patients should not be practising front-line medicine.

This sort of attitude may in part be due to inadequate medical and ethical education, but is surely predominantly a state of mind reflecting the inadequacies of our selection systems. There is no easy solution, but perhaps a month spent on the wards in a nursing capacity as a period of prior assessment for both prospective medical students and those in selection would be beneficial. It would surely weed out the more unsuitable of those currently gaining entry to medical school. This may seem unworkable and – the greatest sin of the 1980s – expensive, but if it were to exclude only 5 unsuitable candidates a year, it would, in terms of the costs of medical education, be a considerable saving.

Without doubt if we do not act soon, we are in considerable danger of losing the standing in society that we now enjoy, courtesy of our more humane, if less well-informed, forebears.

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Communication in medical practice

Sir, I was very pleased to read the recent paper by Sir John Badenoch (October 1986 *JRSM*, p 565). There has been a great lack in the history of medicine in which physicians, regardless of specialty, are unacquainted with borderline hearing losses in patients and are unable to communicate appropriately. They recognize the 'deaf patient' but they do not recognize so frequently people with borderline marginal hearing losses, who actually pose more of a problem in communication than do profoundly deaf patients.

We who teach medical students have not done as much as we should in transmitting a sensitivity to the physician-to-be to look for and to deal with borderline hearing losses in so many patients, not only in the elderly but in all ages.

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Halley's Comet and astrospectroscopy

Sir, In his recent exposition in the *JRSM* (December 1986, p 691), Sir Fred Hoyle described his deductions from infrared spectra in regard to the nature of the organic material being expelled from Halley's Comet. These deductions were based on features in the region of 3–3.5 microns (Table 1) in the spectra. Having been an industrial consultant for some years

Table 1. Infrared features of several materials

Material	Wavelength	(microns)
Comet Halley	3.0	(3.4)
Dry <i>E. coli</i>	3.0	(3.4)
Compound A	3.0	(3.45)
Compound B	3.0	(3.4)

with periodic assignments to help identify constituents in competitors' products, I was surprised that infrared spectra in the 3–3.5 micron region could be so diagnostic.

A brief perusal through a standard atlas of such spectra¹ disclosed dozens of substances with features similar to those of *E. coli*. Two examples, designated A and B, are listed in Table 1. Compound A is silica, B is ethanol. Following Dr Hoyle's argument, I conclude that the original source of these two substances on earth is really Halley's Comet. Furthermore, it is intriguing to consider the possibility that they exist in the interior of the Comet as the compound ethyl silicate (C₂H₅O) SiO (also known as 'Sandy Scotch') which on exposure to water vapour during ejection from the Comet is hydrolyzed to produce silica and ethanol.

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Reference

- 1 *Sadtler Standard Spectra*. Philadelphia: Sadtler Research Laboratories

Journals of psychological medicine

Sir, I greatly enjoyed Professor Michael Shepherd's scholarly paper 'Psychological medicine *redivivus*: concept and communication' (November 1986 *JRSM*, p 639). It is in the interests of scholarship, however, that I venture to correct a minor mistake. Volume 1 of the official organ of the Association of Medical Officers of Asylums and Hospitals for the insane first appeared in 1853 under the title of *The Asylum Journal*. It was not until 1856 (Volume 2) that the title was changed to *The Asylum Journal of Mental Science*.

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Treatment of giant cell tumour of the femoral head and neck

Sir, With reference to the paper by Tibrewal on this subject (July 1986 *JRSM*, p 401), it should be noted that these tumours undergo malignant change in about 6% of cases, unrelated to treatment¹. Shifrin² reported 7 of 19 irradiated cases: one developed a sarcoma 24 years later and one was suspected of a sarcoma 34 years later, but the site was not biopsied.

Cruz *et al.*³ and Cahan *et al.*⁴ recommended criteria, later modified by Arlen *et al.*⁵, for determining radiation-induced sarcomas: (1) microscopic or X-ray evidence of a previous non-malignant lesion; (2) tumour must have developed in the irradiated area; (3) a long asymptomatic period of 3–4 years must