effective therapeutic dose before adding another drug. Sometimes it is also essential to check on biochemical insults like hypocalcaemia.

Carbamazepine is probably the drug of choice today because of its effectiveness in tonic-clonic and temporal lobe seizures and its wide range of safety in long use.

P S MEHTA

Stepping Hill Hospital,
Stockport, Cheshire SK2 7JE

Biochemical testing for medical emergencies

SIR,—The value of biochemical testing in medical emergency admissions was effectively discussed in the article by Drs B T Williams and R A Dixon (19 May, p 1313).

It will always be a problem deciding whether certain tests are "cost effective," but I feel that it would be detrimental to medicine as a whole if clinicians were only allowed to use certain biochemical investigations because statistically they are cost effective. It may be that certain tests are very costly to perform in terms of time and expertise, but I feel that it should be left to the judgment of the clinician to decide whether an investigation will help his particular patient.

Perhaps it is more important to train doctors to discriminate between the value of certain investigations rather than to enforce strict rules. Teaching hospitals are obviously at fault in that they tend to overinvestigate, as shown in the study; subsequently a junior doctor continues to follow this practice when he works as a house officer, and so it is perpetuated.

DAVID COOPER

University of Manchester
Department of Medicine,
Hope Hospital,
Salford M6 8HD

Pressure on the tracheal mucosa from cuffed tubes

SIR,—I would like to comment on two important aspects of the paper by Drs J M Leigh and J P Maynard (5 May, p 1173) relating to the use of endotracheal tubes for general anaesthesia.

Firstly, the seal point of a cuff can be very difficult to determine accurately. At that point the addition of small increments of air to the cuff of a Magill red rubber tube (or any other low residual volume cuff) may lead to a steep rise in pressure on the tracheal wall. It is much easier to detect when a small leak past the cuff is occurring than to detect the point at which it has just disappeared. If this leak is just present at an airway pressure of, say, 20 mm Hg then the mean pressure on the tracheal wall must be less than that figure, on the basis of the principle of the Starling resistor.¹ Equally, for fluid to pass the cuff from above, then the pressure in the pharynx must rise above 20 mm Hg, clearly a very rare event. If an anaesthetist is using a "minimal leak" to ensure low tracheal wall pressures, then disappearance of it would alert him to a possible rise in intra-cuff pressure, which can be due to the diffusion of nitrous oxide into the cuff.² Necessary measures can then be taken.

Secondly, Drs Leigh and Maynard consider replacing all red rubber tubes with Lanz

endotracheal tubes, but quite rightly raise the question of economics. Therefore we need to study the controlled laboratory and clinical trials of this new tube that clearly demonstrate its superiority over the original. To my knowledge, there are none and this is the same for most other new disposable endotracheal tubes. Yet if a drug company were trying to introduce a new potent analgesic we would insist on seeing the evidence of its superiority over morphine and other established drugs as shown by extensive laboratory and clinical trials. With invasive equipment the situation is different. We accept manufacturers' claims for their products, which are often extravagant and without any hard evidence of the products' being better than existing types. In fact there is work indicating that a Magill red rubber tube used correctly may be no worse than a disposable, high-residual-volume cuffed alternative.¹

Would it not be best, however, to teach people how to inflate cuffs correctly, thus eliminating the need for elaborate devices to prevent overinflation?

W G NOTCUTT

Department of Anaesthetics and Intensive
Care,
University of the West Indies,
Kingston 7, Jamaica

¹ Homi, J, et al, *British Journal of Anaesthesia*, 1978, **50**, 435.

² Revenas, B, and Lindholm, C E, *Acta Anaesthesiologica Scandinavica*, 1976, **20**, 321.

Immersion and thermoregulatory response

SIR,—We were interested to read the report by Dr M G Hayward and Professor W R Keatinge (5 May, p 1182) of an individual who showed little thermoregulatory response to immersion in cool water, but wonder whether evidence of this nature can account for unexplained diving accidents.

At a recent meeting of the Physiological Society¹ we presented data on three long-distance swimmers, obtained first during experimental immersion in a tank of cold water and then during a long-distance swim in Windermere. Two of the swimmers, who had trained in cold outdoor water, in the tank behaved like Hayward and Keatinge's subject (although the water temperature of 12°C was much colder); they showed relatively slight shivering and their deep body temperatures fell at 1.2 and 3.8°C/hour. The third, who had trained in indoor baths, showed a higher oxygen consumption and a slower rate of body cooling (0.6°C/hour). During the swim, the man who had trained in warm water cooled more rapidly than did the other two, although his oxygen consumption was still higher than theirs. He was forced to give up sooner. Our data suggest that people who have been repeatedly exposed to cold while swimming may show an advantage when tested in a similar way: they may not do so when tested immobilised in a tank of cold water. We also have unpublished data on individuals who show little metabolic response to immersion in cold water in a tank, but who cool slowly.

It seems curious to use the word acclimatisation, which usually implies improved responses, to describe a situation where heat loss on cold exposure was accelerated. It may be that testing in a more comparable situation would have shown improvement rather than

disadvantage; even if not, "disadvantageous acclimatisation" would seem likely to become apparent at an early stage, before serious hazard could arise.

We also wonder if it is the saturation diver who would be at risk since he is not usually exposed to severe cold, as Department of Environment regulations require external heat to be applied to the body in dives in excess of 50 m. Exposure to cold is commoner in the "bounce" (subsaturating) diver who dives in a dry suit to spend considerably shorter periods at working depth, and may lose heat in each of successive dives.

We have found great variation between individuals in their response to immersion in a tank of cold water. We are convinced that further study, and measurements in realistic physiological states, are needed to make predictions for the real situation.

I F G HAMPTON
DOUGLAS SMITH

Department of Physiology,
School of Medicine,
Leeds LS2 9JT

F St C GOLDEN

Institute of Naval Medicine,
Alverstoke, Hants

¹ Golden, F St C, Hampton, I F G, and Smith, D, *Journal of Physiology*, in press.

Medical representatives

SIR,—I read with interest your article (28 April, p 1134). While I agree with Drs T B Binns and Andrew Smith's enlightened comments on the subject, I would take issue on some points.

Firstly, in my company we do not discourage our representatives from "recommending someone else's product." The essence of good ethical representation (in pharmaceuticals or any other business) is to position your product to the needs of the individual. To start using a product on the recommendation of a medical representative demands trust and confidence in what the representative says—this in turn means believability. Under these circumstances if the representative, with his knowledge of his own and other competitive products, feels another product is more applicable then I would certainly expect him to refer to it.

Secondly, no doubt some medical departments will respond to Dr Binns's comments. My own experience in four major pharmaceutical companies is that medical information departments, whether they are part of the sales department or not, are totally impartial, since patients' lives may depend on their response. My previous comments regarding credibility are even more relevant in this case. Thirdly, rather than, as Dr Binns suggests, complain to the managing director of the company about representatives' misdemeanours, the clinician is likely to get a quicker response by contacting the sales manager.

Finally, we are all conscious that there is a patient at the end of all this. Unlike the commercial traveller or "quack doctor" we are not here today and gone tomorrow. The pharmaceutical industry is an integral part of community medicine and commercial development in this country and has to have, and rightly so, a "whiter than white" image at all levels.

P T HUGHES

Bristol Laboratories and Mead Johnson,
Slough, Berks SL3 6EB