average fat and are much less inclined to strenuous exercise.² This kind of variation is obscured by all indices which combine only height and weight.

I am indebted to Sir John Mott, who some years ago recorded blood pressure and somatotype measurements on men over the age of 50 in his general practice. The proportion with diastolic pressures over 100 mm Hg in various body builds was as follows: linear (n=42) 14%; muscular (n=48) 31%; and fat (n=74) 49%. In middle-aged men the concentration of cases of coronary thrombosis among endomorphic mesomorphs and mesomorphic endomorphs, where musculature and fat are both above average, is remarkable.³ In such, rational treatment for both prevention and rehabilitation would be by a combination of weight reduction and graduated physical training. This should improve an individual's cardiovascular reserve by increasing his power:weight ratio—that is, by increasing his muscular or “active” weight and reducing the burden of fat and other inactive tissue weight that has to be carried. Proportionately less benefit could be expected from this treatment in men of linear build, but they are much less disposed to such illness, partly because they gain much less weight in the process of aging. The greatest weight gains in aging are experienced by those who have more than the average weight at the age of 20, and it follows in a sedentary occupation that, with the combination of less physical exercise and the gain in “inactive” tissue weight, such people must suffer the greatest loss in power:weight ratio prior to the onset of degenerative disorder. The nature of a bus driver's occupation could well diminish his power:weight ratio more than that of his bus conductor colleague. To a mesomorph progressive loss of ability to do what he has habitually been accustomed to may be as frustrating as baulking the psychological drive of an ambitious man. To a more obese woman who has always been less inclined to strenuous activity the sense of loss may be less severe and she may in any case find fulfilment in less competitive ways.

I welcome your suggestion of a prospective population survey which would include subcutaneous fat measurements with the other variables that you mention, in particular smoking. A follow-up study of the thousands of university students appropriately measured some 20-25 years ago or of the large sample of American Air Force men whose relevant measurements taken in 1967 were computerised⁴ could form the basis for such a study of morbidity and mortality. Life insurance companies and their clients too could benefit if measurements of fat could be included in the initial medical examination.

R W PARNELL

Sutton Coldfield,
W Midlands

¹ Behnke, A R, *et al*, *The Relationship of Specific Gravity to Body Build in a Group of Healthy Men*. Bethesda, Maryland, Naval Medical Research Institute, 1950.

² Parnell, R W, *Behaviour and Physique*. London, Edward Arnold, 1958.

³ Gertler, M M, *et al*, *Coronary Heart Disease in Young Adults*. Boston, Harvard University Press, 1954.

⁴ Laubach, L L, and Marshall, M E, *Journal of Sports Medicine and Physical Fitness*, 1970, **10**, 217.

Localised airway obstruction

SIR,—I agree entirely with the main message of Dr I W B Grant's letter on the importance of bronchoscopy for obstructive lesions of the

trachea and larynx (30 April, p 1157), but it is not necessarily true that flow volume loops “can have contributed very little in practical terms to their diagnosis and management.”

Concerning diagnosis, the point is that not every patient referred to a lung function laboratory is previously examined by a chest physician, and indeed I do not think the excellent manoeuvre he described to accentuate stridor is widely known, though I hope his neighbours may be persuaded to include it in their next edition.¹ Therefore a simple respiratory test which will alert the laboratory staff to the need for further history and examination is in fact useful. As for management, flow volume loops can easily be repeated at frequent intervals² whereas bronchoscopy cannot.

Dr Grant describes the apparatus required to obtain flow volume loops as “fairly sophisticated,” and, while I am never sure what “sophisticated” means these days, I imagine he may mean “complicated and expensive.” It is true that for the most pernickety research the loops must be obtained by plethysmography, but for clinical purposes all that is required is a fast-response spirometer with an output that can be differentiated electrically. Surely these are likely to be available outside “major teaching centres.”

These things aside, Dr Grant is absolutely right. If obstruction at tracheal or laryngeal levels is suspected clinically, have a look.

KENNETH B SAUNDERS

Department of Medicine,
Middlesex Hospital,
London W1

¹ Crofton, J, and Douglas, A, *Respiratory Diseases*, 2nd edn. Oxford, Blackwell Scientific, 1975.

² Harrison, B D W, *Quarterly Journal of Medicine*, 1976, **45**, 625.

SIR,—I agree with Dr I W B Grant (30 April, p 1157) that flow volume loops are for research rather than diagnosis, but suggest that he goes too far in seeming to exclude physiological tests in the differential diagnosis of chronic asthma and main airway obstruction. If the latter is suspected clinically physiological information can be obtained, before subjecting the patient to endoscopy for anatomical and pathological diagnosis, by a battery of indices from simple tests: increases in FEV₁/FIV₁,^{1,2} and FEV₁/PEFR,³ a lack of correlation of FEV₁/FIV₁ with FEV₁/VC,⁴ and a low FIV₁/FVC.⁵

J J SEGALL

London NW2

¹ Engstrom, H, Grimby, G, and Soderholm, B, *Acta Medica Scandinavica*, 1964, **176**, 329.

² Simonsson, B G, and Malmberg, R, *Thorax*, 1964, **19**, 416.

³ Empey, D W, *British Medical Journal*, 1972, **3**, 503.

⁴ Segall, J J, *British Journal of Diseases of the Chest*, 1972, **66**, 85.

⁵ Al-Bazzaz, F, Grillo, H, and Kazemi, H, *American Review of Respiratory Diseases*, 1975, **111**, 631.

Diet and coronary heart disease

SIR,—Professor A G Shaper and Jean W Marr's recommendations on diet and coronary heart disease (2 April, p 867) are strongly supported by yet another report, that of the US Senate Select Committee on Nutrition and Human Needs under the chairmanship of Senator George McGovern.¹ It is therefore even more surprising that Sir John McMichael

(30 April, p 1155) continues to dismiss the growing body of evidence which relates to coronary heart disease and Western diet. Now all the 17 independent expert groups which have considered the matter, including the COMA Committee, have recommended dietary changes which include a reduction of total fat by the whole community; and almost all have recommended partial substitution with polyunsaturated fat. These committees were appointed by governments, national cardiac societies, and academic bodies such as the Royal Society of New Zealand and the Australian Academy of Science and have sifted the evidence in great detail over a prolonged period. Sir John is naturally concerned to present unnecessary dietary advice being given to the public; but to suggest that all these groups of doctors and other scientists from at least 10 different countries merely followed prevailing fashion is an unreasonable slur on their integrity and impartiality.

The contrary evidence he quotes comes largely from secondary prevention trials on patients in whom the disease is already far advanced and therefore has limited relevance to national dietary policies aimed at preventing coronary heart disease. I was closely involved in two of these trials which he commends. Although the relapse rate was unaffected by diet alone, we stressed that these results could apply only to those with developed disease and not to the population as a whole. Since primary prevention trials of diet alone will never be carried out on the general population owing to the large numbers needed and the enormous costs and practical problems involved we have to make up our minds on the available evidence. If we are to wait for the kind of proof which all of us, including Sir John, would no doubt like to see no general dietary advice on this matter can ever be given.

Sir John warns us against altering the present national diet yet fails to acknowledge the vast changes which have already taken place in recent years. Consumption of unrefined carbohydrates has fallen. National fat consumption has increased from 34% to 42% of our calories since the war. We eat increasing amounts of processed or “junk” foods which are high in saturated fats and other additives and far less natural unprocessed food. The nation's food is constantly being manipulated by commercial interests. It is therefore surely right that the medical profession, which is most concerned with the nation's health, should give the best independent advice available on present evidence.

KEITH BALL

Central Middlesex Hospital,
London NW10

¹ *Lancet*, 1977, **1**, 887.

Tuberculosis among immigrants in Glasgow

SIR,—Although Dr K M Goel and his colleagues in their survey of immigrant children in Glasgow (12 March, p 676) may be correct in accepting the absence of a tuberculosis risk to the indigenous population, this conclusion is not supported by their data.

In interpreting the numbers of notifications for tuberculosis among immigrants as lower than in native-born children they have failed to relate numerator to denominator. Twelve notifications in an estimated total of 4500

immigrant children¹ give a rate of 2.66 per 1000 to be compared with a rate of 0.33 per 1000 from 86 notifications in 263 000 indigenous children.² Far from being lower, the incidence of tuberculosis is eight times higher.

As for tuberculin sensitivity, the annual acceptance rate for BCG protection of newborn infants in hospital, so far as our records go, has only once exceeded 70%.³ Either the 96% BCG acceptance rate for Scottish children in table V is a misprint or the group was unusually highly selected.

The authors report that 11% of "Scottish" children live at a density of over six persons per room, 38% over four persons per room, and 65% over two persons per room (table I), but the conclusion that severe overcrowding is greatest among local Scots is difficult to accept. Not only does this observation contradict the social class gradient but the 1971 census⁴ for the same part of Glasgow reported only 10.6% of houses having more than 1½ persons per room and only 0.1% (four houses) more than six. This again seems to suggest bias in the sample.

The attention attracted by Dr. Goel and his colleagues in the lay press could adversely affect response in a tuberculosis survey already planned for the autumn. It is important that their comments on this letter should be published.

WILLIAM DUCAT
M SILVER
T S WILSON
W DEREK WILSON

Division of Community Medicine,
Greater Glasgow Health Board

V M HAWTHORNE
IAIN M STEWART

University Department of
Community Medicine,
Ruchill Hospital,
Glasgow

¹ Strathclyde Education Authority, *Immigrant Children Statistics 1977* (circulated).

² Registrar General's Population Projections for 1977. Edinburgh, HMSO.

³ Annual Reports of MOH, City of Glasgow, 1968-1972.

⁴ Registrar General, *Scotland 1971 Census*. Edinburgh, HMSO.

How effective is measles immunisation?

SIR,—We have just had our first major epidemic of measles since immunisation began. Between 28 March and 12 April this year 82 cases of measles were notified from our practice area (Cambs-Beds border). The parents of eight of these claimed that their children had been previously immunised against measles and our own records confirm this. At least two more children were said to have been immunised previously outside our area, and, although we could not ourselves find documentary evidence to support this, we have no reason to disbelieve these parents. This gives a total of 10 children contracting measles who had previously received measles vaccine.

Assuming the measles immunisation rate for the children of the practice to be 50% and that non-immunised and immunised children were equally exposed, then 72 non-immunised children were exposed and caught measles and supposedly 72 immunised children were similarly exposed and 10 contracted measles—that is, 1 in 7 of children previously immunised when currently exposed contracted the disease. These are crude assumptions but

not too inaccurate, and the general validity of the conclusions remains.

While it is in itself worrying that a significant proportion of children immunised against measles will subsequently contract the disease, we have found equally worrying the difficulty in obtaining authoritative information on the efficacy of measles vaccine. We have contacted the manufacturers of the vaccine, who have referred us to the second report to the MRC by the Measles Vaccine Committee.¹ This deals with the development of the disease in immunised children only in the short term and describes studies carried out 10 years ago. We have also contacted the appropriate community physicians and the Public Health Laboratory Service. These agencies have been polite and very interested but admit to not being able to help us with definitive information on the efficacy in the long or medium term of measles vaccine.

Naturally we have ourselves been asked if we are sure that the disease was true measles. We have been in general practice 20 and 15 years respectively and are well used to old-fashioned measles epidemics. The disease was classical in its course and the children displayed Koplik's spots, although it was clear that many parents had forgotten or not realised what a miserable condition measles is and were surprised by its severity.

With the whooping cough argument still raging unabated it has now become awkward to answer anxious parents' questions on the efficacy of measles immunisation when they know that children can still get the disease despite the injection.

Can anyone tell us, therefore, "How effective is measles immunisation?"

M D COULTER
B M JONES

Potton,
Sandy, Beds

¹ MRC Measles Vaccination Committee, *British Medical Journal*, 1968, 2, 449.

Must they die?

SIR,—Amoebiasis and malaria between them cause about 10 deaths annually in England and Wales. Amoebiasis also cause considerable morbidity among those who have been wrongly diagnosed as having ulcerative colitis, Crohn's disease, neoplasm, cholecystitis, etc, but have survived the consequent mutilating surgery or treatment with steroids.

Both diseases are easy to treat and are not difficult to diagnose if the diagnosis is considered. These tragedies are a direct consequence of failure on the part of the medical profession; it is up to the medical profession to avoid these mistakes. How can this be done?

Professors B G Macgrath and L J Bruce-Chwatt have for several years been imploring doctors to take a proper history and think of malaria in a patient who has recently been abroad; but these pleas have been of little avail. Patients still die from failure to think of malaria. I have been preaching that amoebic serological tests should be done on all patients with an abdominal or hepatic condition for which no definite diagnosis has been made; patients still die or are mutilated from failure to diagnose amoebiasis.

Both these diseases are "tropical" and as such little attention is paid to them in undergraduate teaching. Even if lectures are given

the students feel that "tropical" diseases have little relevance for them. The most effective single answer lies with the qualifying examination boards. If a question on malaria or amoebiasis were likely in every qualifying examination in medicine, surgery, and pathology the level of awareness of these diseases would rise quickly and dramatically. It will be argued that the syllabus is already so wide that it would not be justifiable to give these diseases such prominence. What other diseases are there in the UK which are so easily diagnosed and so easily treated and from which patients die through failure on the part of the medical profession?

W P STAMM

Amoebiasis Unit,
St Pancras Hospital,
London NW1

Rehabilitation work frustrated

SIR,—Production work for rehabilitation of disabled people is obtained in two forms. Either local industry subcontracts jobs or more ambitiously a unit makes and markets its own product(s). In 1961 when this hospital opened, the Birmingham Regional Hospital Board (RHB) advised us to start with subcontract work and replace it gradually by developing our own products. "At the same time consideration should be given to the production of consumer articles to be used in the hospital service."

We followed this sensible advice. In 1964 we started in a very small way to pack surgical dressing packs (CSSD for short) thinking that the market for these would never dry up. Gradually methods improved, sales increased, and the enterprise flourished. Since 1970 two of our four workshops, employing about 80 patients, have done nothing but CSSD; £7000 from patients' surplus earnings have been invested in moving belts, printing machines, and three generations of heat sealers. Last year's turnover figures are typical. Patients earned £20 860 from subcontract and other jobs, while CSSD sales brought in £292 323; this figure includes the labour charge and cost of materials for about 6 million packs (sold unsterile to hospitals throughout the region and autoclaved by them on receipt).

This is now being stopped. The West Midlands Regional Health Authority has built a factory at Wolverhampton called Parkfields to supply these products. Parkfields's prices are higher than ours so we expected that many hospitals would continue to buy from us. To prevent this the RHA decided last autumn to pay hospitals a subsidy amounting to the difference between Parkfields's and our prices. Repeated protests on financial, clinical, and humanitarian grounds have failed. Our MP appealed to the Minister but he declined to intervene.

The regional administrator has given me several reasons for the RHA's policy, including the recommendations of the Cunliffe Committee, the need for "strictest quality control," a wish to standardise and centralise, and "our broader responsibilities for the treatment of other patients within our hospitals." Yet when challenged to say if any of our packs has "ever caused any kind of harm to the patients on whom they were used" he did not reply to this point.

This letter is therefore by way of warning to anyone connected with an industrial unit making CSSD products. If other regions adopt