committee has endeavoured to be exhaustive in reviewing the evidence of concealment of crime in the past, and places its emphasis on the likely frustration of a would-be murderer. The committee does not give enough weight to the consideration that a calculating family killer may decide that there is more than an equal chance that his crime could go undetected in the case where he can rely upon the susceptibilities of a single certifying doctor. To our mind, the possibility of successful premeditated murder in a variety of ways still remains.

Having stated that we are opposed to the abolition of the second certificate (Form C) and the post of medical referee, we would have thought that proposals to abolish such safeguards would have included the setting up of a proper pilot scheme in agreed areas of the country so that it could be demonstrated that the safeguards could be relaxed with impunity. In our view, it would show that the possibility of inaccurate certification and the concealment of crime would still remain.

The last paragraph, No. 14, of the conclusion of the Brodrick report is worthy of emphasis—namely, that “goodwill and co-operation between the individuals and the interests involved are essential” if necessary improvements are to be achieved. But this will not come about by abolition of existing safeguards.—We are, etc.,

WILFRID H. PARRY
KENNETH D. MASON
MARGARET W. SEYMOUR

Health Services,
City of Nottingham

¹ Home Office, *Reprt of the Committee on Death Certification and Coroners*, Cmnd. 4710. London, H.M.S.O., 1971.

Typhoid Fever in Young Children

SIR,—I read with interest Mr. T. O. Mulligan's article on typhoid fever in young children (11 December 1971, p. 665). We have recently reviewed 265 African patients with typhoid fever who were admitted to Harari Hospital, Salisbury.¹ I would like to comment on a number of points arising from his paper.

Mr. Mulligan states that, especially in endemic typhoid areas, the disease predominantly affects the younger section of the community. This was certainly so in our series, where the average age (excluding a group of 22 children under the age of 3 years) was 20 years. The usefulness of the white cell count in our experience has been of limited value. Of our adult patients 46% presented with a leucopenia (less than 5,000 cells/mm³), but unfortunately this is common here in pyrexial patients who may be suffering from malaria, tuberculosis, or viral infections. More significant was the fact that only 8% of the adult patients had a leucocytosis (greater than 10,000/mm³), and this was usually associated with a complication of the disease. Of the 22 patients under the age of 3 years eight had a white cell count in excess of 10,000, and four of these had a white cell count in excess of 20,000. It would seem that leucocytosis is much more marked in children than in adults.

I was particularly interested to note that Mr. Mulligan found the diazo reaction a useful and effective simple screening procedure. Huckstep² strongly advocated the value of this test in 1962, but little mention has been made of it in the literature since

then. Renny,³ working in Harari Hospital, Salisbury, examined the urine of 20 proven cases of typhoid fever and found a positive diazo reaction in 30%. However, when the test was carried out between the fifth and fourteenth day of the illness, as suggested by Huckstep, the positivity reached 100%.¹ We have been further evaluating the usefulness of this procedure, and preliminary results suggest that it is an effective and simple test which should be especially valuable in district medical hospitals where laboratory facilities are usually limited.

It is interesting that the peak incidence of the disease in Africa appears to vary from country to country. In Rhodesia the majority of cases occur at the beginning and in the middle of the rainy season,¹ whereas in East Africa² the incidence drops dramatically with the onset of the rainy season. In Ghana⁴ most cases occur after the rains have finished.—I am, etc.,

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Department of Medicine,
University of Rhodesia,
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¹ Wicks, A. C. B., Holmes, G. S., and Davidson, L., *Quarterly Journal of Medicine*, 1971, **40**, 341.

² Huckstep, R. L., *Typhoid Fever and other Salmonella Infections*. Edinburgh, Livingstone, 1962.

³ Renny, H., Personal Communication, 1969.

⁴ Archampong, E. Q., *British Medical Journal*, 1969, **3**, 273.

Use of Amphetamines by Drivers

SIR,—Sir Ronald Tunbridge (5 February, p. 373) is right to emphasize the risks of prescribing amphetamines to combat fatigue in night driving.

As a general practitioner, I am not infrequently asked to prescribe “something” for anxious patients who are about to take their driving test. Any tranquillizer that is strong enough to be effective in such a situation would be likely to make the driver a potential menace on the road and could, in theory, render the patient liable to be charged with driving a motor vehicle while under the influence of drugs.

In my opinion, those who cannot drive a car without a sedative or pep pill ought not to be driving at all.—I am, etc.,

STUART CARNE

London W.12

Measuring Placental Function

SIR,—Your leading article (22 January, p. 193) harps aright the fear of many obstetricians that modern placental function tests have proved of little value in clinical practice. In fact, the condition of the fetus during labour can be monitored very effectively indeed¹ and it is only with regard to the monitoring of the fetus during pregnancy that one is entitled to feel disappointed.

In labour it is direct fetal parameters that are measured—fetal heart rate and fetal pH. In pregnancy the only direct parameter of fetal well-being measured is the important one of growth, yet your leading article sandwiches the assessment of fetal growth between tests on the liquor and tests conducted on the maternal blood and urine. Are our research workers also in danger of losing sight of the wood for the trees? Is not the proper study of the fetus the fetus?

In my practice at Sheppey General Hos-

pital and All Saints' Hospital, Chatham, fetal activity as reported by the mother has been studied in all high risk pregnancies and many others for three years. One of the two major reasons why toxæmic patients are not sedated² is the fear that the sedation may mask any naturally occurring change in the spontaneous activity of the fetus. To date there have been nine stillbirths and two neonatal deaths resulting from chronic intra-uterine hypoxia where fetal activity had been recorded weekly prior to death. In six cases death was preceded by a period of one to eight weeks in which fetal activity had been markedly reduced while the fetal heart remained audible with the Doptone fetal pulse detector. Low biweekly oestriol excretion values³ were obtained in only one of these cases (a neonatal death). All the fetuses were judged to be small for dates. In the remaining five cases fetal activity was reported to be vigorous up to the day of death or delivery. In none of these cases was the small for dates syndrome suspected antenatally, but one birth weight was below the 10th percentile for the particular gestation, parity, and sex.⁴

No firm conclusion can yet be reached but these results suggest that the small for dates fetus at risk of dying from chronic intra-uterine hypoxia is much more likely to reduce its activity for a clinically useful time prior to such death than the fetus which has grown more normally ($\chi^2=4.2$; $P<0.05$). Both diminished growth and diminished activity can be seen as fetal adjustments to the threat of a negative energy balance.

Dawes has recently made an authoritative plea for more study of fetal movements as an index of fetal well-being.⁵ This letter is written in support of that plea.—I am, etc.,

D. D. MATHEWS

Sheppey General Hospital,
Sheppey, Kent

¹ Sheppey General Hospital, *Abrideed Maternity Hospital Report*, Medway and Gravesend Hospital Management Committee, 1970.

² Mathews, D. D., Patel, I. R., and Sengupta, S. M., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1971, **78**, 610.

³ Brombacher, P. J., Gijzen, A. H. J., and Verheesen, P. E., *Clinica Chimica Acta*, 1968, **20**, 360.

⁴ Thomson, A. M., Billewicz, W. Z., and Hytten, F. E., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1968, **75**, 903.

⁵ Clayton, S., and Beard, R., eds. *Symposium on Methods of Monitoring the Foetus in Pregnancy and in Labour*, London, Royal College of Obstetricians and Gynaecologists, 1971.

Continuous Fetal Heart Rate

SIR,—Your leading article (25 December, p. 764) invites comment. The term “fetal distress” was avoided and “fetal asphyxia” chosen in preference. If “fetal distress” is to be considered an obsolete term surely it would be more accurate to replace it by “fetal hypoxia.”

The third paragraph states that Hon has shown that early decelerations are associated with cord compression. This is untrue. Hon describes early decelerations—type I dips—as due to head compression, and variable decelerations—type O dips—as due to cord compression.¹

The fourth paragraph is also misleading. In our paper on “dip area,”² Shelley and I demonstrated a significant relationship between “dip area” and one minute Apgar score over the whole range of scores. Dip area is not chiefly a measure of amplitude of dips but a measure of duration, frequency, and amplitude. It was never suggested that

dip area was the only significant sign of fetal hypoxia, but was the most important single factor. I have now analysed 255 consecutive fetal heart rate records and have yet to see small type II dips alone associated with a depressed baby at birth.

The "index" of fetal welfare³ based upon dip area, basal heart rate, and the passage of meconium by the fetus does give a good correlation between Apgar score and umbilical venous blood pH. Although Apgar score and measurement of umbilical venous blood pH are not direct measurements of the severity of hypoxia, it is reasonable to assume that there is a relationship between hypoxia and pH and Apgar score.

Your article suggests that fetal blood sampling is a more reliable estimate of fetal hypoxia. Fetal pH changes are largely the result of changes in PCO₂ which are the result of circulatory disturbances. The fact that 30% of high-risk fetuses developed some fetal heart rate abnormality while only 10% became acidemic⁴ is in favour of using fetal heart rate as an early warning sign of fetal hypoxia showing the need for continued vigilance.

Undoubtedly fetal scalp sampling is a valuable method of assessing fetal condition, but interpretation of fetal pH is difficult. Advocates of fetal blood sampling have indicated the success of the technique in predicting the condition of the fetus at birth. Results of four series⁵⁻⁸ showed correct predictions in 62-82% of cases. On the other hand, and of greater importance 31-85% of babies depressed at birth had normal fetal blood pH and 31-84% of fetuses with low pH values were vigorous at birth.

Fetal heart rate monitoring in labour is valuable and because it is continuous is at present the method of choice. Interpretation of fetal heart rate patterns is not easy and confusion has resulted from the present complex classification of dips. This classification is dependent on the temporal relationship of dips to uterine activity. In Sheffield we have shown that it is the dip area² which is important and more recently that the temporal relationship is not significant.⁹ The suggested aetiological mechanism of dips is hypothetical and evidence is now accumulating to show that all types of dip may be seen with cord compression¹⁰ and placental insufficiency.¹¹—I am, etc.,

R. H. TIPTON

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Sheffield, Yorks

- 1 Hon. E. H., and Paul, R. H., in *A Primer of Fetal Heart Rate Patterns*, Connecticut, Hartly Press, 1970, p. 41 and p. 43.
- 2 Shelley, T., Tipton, R. H., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1971, 78, 694.
- 3 Tipton, R. H., and Shelley, T., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1971, 78, 702.
- 4 Beard, R. W., Brudenell, J. M., Feroze, R. M., and Clayton, S. G., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1971, 78, 882.
- 5 Beard, R. W., Morris, E. D., and Clayton, S. G., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1967, 74, 812.
- 6 Paul, W. M., Gare, D. J., and Whetham, J. C., *American Journal of Obstetrics and Gynecology*, 1967, 99, 745.
- 7 Hon. E. H., Khazin, A. F., and Paul, R. H., *Obstetrics and Gynecology*, 1969, 33, 237.
- 8 Bowe, E. T., Beard, R. W., Finster, M., Poppers, P. J., Adamsons, K., and James, L. S., *American Journal of Obstetrics and Gynecology*, 1970, 107, 279.
- 9 Tipton, R. H., and Finch, A. K., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1972, In press.
- 10 Tipton, R. H., and Chang, A. M., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1971, 78, 901.
- 11 Aladiem, S., Kahn, K., Dinofelder, J., Holzeimer, R., Cummins, R., and Michailov, D., *Obstetrics and Gynecology*, 1971, 38, 671.

Doctors and Overpopulation

SIR,—“Doctors and Overpopulation” (8 January, p. 108) is signed by an impressive list of 52 doctors and contains some well-known and intimidating names. I feel that I must voice some thoughts that this letter gives rise to, if only in an attempt to clear my own thoughts. Their fourth paragraph begins “What can we *as doctors* do to combat the British disease of overpopulation?” The italics are mine and seem to bespeak the heart of the problem, especially as the letter is written to the *British Medical Journal* by a large group of doctors who are advocating combined action by doctors.

I find it difficult to see that *as doctors* we have a concern with the problems of overpopulation. As responsible, thinking citizens there is no doubt that we have, or should have, great concern, but this is a sociological problem and I fail to see that under the Hippocratic code it is a medical concern. Perhaps in this late 20th century we have reached a point at which we should abandon the Hippocratic code, but so far I have not seen this put forward as a serious objective by the distinguished signatories of your letter.

When there are good medical reasons for sterilization or for abortion there can be no doubt about our duty; on that I have no reservations. I am less clear about sterilization or abortion by operation for non-medical or social reasons, and there can be no doubt that your correspondents are concerned substantially with non-medical or social reasons for population limitation. They are speaking as social reformers, not as doctors.

This matter becomes relevant in regard to the proposed liberation of vasectomy. By now we should be fully aware of the complex and difficult situation that has arisen as a result of the Abortion Act. Now we propose to chance the issue once more. The problem is rendered more difficult because the operation of vasectomy is relatively simple with little morbidity and little chance (but not no chance) of mortality. This relative benignity of the procedure tempts us as doctors to be complaisant in the matter.

I must make it clear that I have nothing against vasectomy or even abortion as a social measure if Parliament, voicing the will of the people, wishes to legalize both as social measures. I can be fully sympathetic to the decisions, provided their implementation does not fall on doctors. But I maintain that as doctors, in the words of your letter writers, the situation is different. Vasectomy done on medical grounds is fully acceptable, but on social grounds or on request should not at present be supported by doctors as doctors. It may well be that medical ethics will change totally and that we shall all feel justified in advising and performing operations on social apart from medical grounds. But so far this is not so and it is not a problem that can be just brushed aside. There will be plenty of doctors who will have no compunction about doing operations for non-medical reasons and perhaps will be contemptuous of me for raising this. Nevertheless, as I see it, a precise and definite change in our ethics as a profession is involved, and we shall have to decide if we wish to change the Hippocratic code to include a social code.

I see complicated situations arising from such a change, as we have already seen

result from our abortion adventures. It might be as well to bear in mind that at some future time someone may decide that we should also include a communist code. Perhaps your 52 eager correspondents may answer my problem and give me some assistance. I especially wonder if certain of those whose names I see on the list of signatures gave this aspect real cold thought before they signed.—I am, etc.,

BROCK

House of Lords

SIR,—There can surely be no objection to a responsible section of the community, be they doctors or anyone else, raising an urgent voice on the problem of overpopulation (8 January, p. 108). In the nature of things, politicians can take no action on their own initiative, but only when public opinion permits.

Those who believe immediate action on population control to be imperative will agree with William Petersen who, in his superb book *Population*, writes “The control of family size, no matter what means is used, demands *self-control*; and *self-control* is likely to prevail only in a society in which individuals have strong motives for imposing it.”

People convinced of the looming errors of overpopulation, casting a shadow over their declining years and threatening the very existence of their children in their prime, need no further motive; but we believe that people not so convinced require a motive to be provided.

Our situation is not so different from that of Singapore (each one of us is 10 times more expensive in terms of natural resources), where in the face of a terrifying number of births fiscal sanctions were imposed in 1966. It was enacted that no maternity leave or benefit, nor any child allowance, would be payable in respect of the fourth or subsequent pregnancy from a given date; at the same time sterilization and vasectomy were made freely available without even the usual nominal one dollar fee for medical treatment at Government hospitals. When the average Singapore Asian, as obstinate as the next man, found that his pocket was being seriously affected by the firm “no” to application for benefit, he sent his wife post-haste for sterilization; a minority chose vasectomy. The result was an immediate fall in the birth rate, which has since been maintained; those who have been to Singapore recently will be aware that the policy is now fully endorsed by the people (for example, taxi-drivers) as a whole; the pump has been primed.

The need for similar measures in Britain is urgent, not least for those communities whose birth rate is far above the national average, itself too high.—I am, etc.,

T. L. BARCLAY

Bradford, Yorks

1 Petersen, W., *Population*. 2nd edn. New York, Macmillan 1969.

Glasgow Family Planning Service

SIR,—In view of Dr. J. A. McGarry's letter (29 January, p. 315), I feel that I must reiterate some of the major points in my report.

We visit only families who wish to discuss