do not do them. Some women would also be expected to entertain their husband's business colleagues.

My annual expenditure on costs incurred only because of my professional work amounts to £1980, made up as follows: car (£500 less mileage allowance), £300; domestic help (five hours daily at £1 an hour), £1250; extra help in school holidays (student help at £8 a week), £80; extra clothes (jeans and jumpers are unsuitable, even today, for consultants), £150; subscriptions to professional associations and journals and cost of books and conferences, £200.

Except for the B.M.A., most professional associations do not have earnings-related subscription rates at consultant level. Conference fees are paid pro rata to sessions worked, leaving a substantial sum to come from my pocket. My list of items of expenditure takes no account of hidden extras—for example, more easily prepared and therefore more expensive food; inability to shop round for bargains; no time to make clothes; hire of car or taxi when car out of action; and so on. My total annual take-home pay for 53 hours professional work a week and eventually a pension is £3600, leaving a net income of £1620.

If one-third or so of British-trained women doctors have to face these expenses in order to pursue their chosen career is it surprising that they drop out? This problem has not been adequately considered publicly. Of all hospital registrars 56% were born overseas. As you say, Sir, "international trends may cut off the supply." Can a solution be found to the problems of women doctors that would enable a large work force, eager to use their skills provided they are adequately paid, to return to work?—I am, etc.,

DORA BLACK

Fainting and Anaesthesia

SIR,—When a simple uncomplicated local dental anaesthetic is followed by "fainting" hypoxaemia may be the cause. This is due to the nervous and apprehensive patient involuntarily overbreathing in the interval before treatment and this being increased because of the sights and sensations related to the actual injection. When this type of faint occurs the lowering of the ionic calcium fraction consequent upon the hypoxaemia causes a tetanic contraction, particularly of the hands, followed by generalized clonic contractions. On recovery the patient complains of muscle pains, again particularly in the arms.

The use of a general anaesthetic for such a dental patient may be indicated because of the nervousness and apprehension. Thus even in the absence of an overt faint the respiratory drive of carbon dioxide may be greatly reduced and to this is added the respiratory depression of the particular drug used.

An effective premedication, as is given to the general hospital population prior to surgery, prevents overbreathing and its omission may be the reason why a general anaesthetic, as currently given for dental procedures, poses unique difficulties with, rarely, tragic results.—I am, etc.,

BARRY HEMPHILL

London W.1

Unexplained Fever

SIR,—In his article on unexplained fever (16 November, p. 397) Dr. A. M. Geddes states: "Benign tertian malaria can usually be treated successfully by a standard course of chloroquine. . . ." However, it should be noted that most patients with a *Plasmodium vivax* infection will relapse if treated with chloroquine alone, owing to the maturation of secondary exoerythrocytic schizonts in the liver and the subsequent invasion of erythrocytes. The 4-aminoquinoline group of drugs such as chloroquine acts only on the blood stages of *P. vivax*, having a potent schizonticidal effect on the asexual parasites and a lesser effect on gametocytes.

Eradication of tissue schizonts and the prevention of relapse are best achieved by a course of an 8-aminoquinoline drug such as primaquine. Usually, the standard course of primaquine (7.5 mg base twice daily for 14 days in an adult) will deal effectively with most strains of *P. vivax* imported into Britain, but people infected in some south-east Asian and western Pacific countries may require 7.5 mg primaquine base three or four times a day to clear all tissue schizonts. Since April 1973 11 such patients out of 367 with fully documented histories of treatment have come to the attention of the Malaria Reference Laboratory. These remarks on the need for primaquine treatment of *P. vivax* tissue stages apply equally to infections with *P. malariae* and *P. ovale*.

Dr. Geddes advises: "If there is any possibility of chloroquine resistance the patients must be treated with quinine." This needs qualification. Certain south-east Asian and central American strains of chloroquine-resistant *P. falciparum* have been shown to exhibit grade R-1 resistance to quinine, and we feel that such patients should be treated in hospital by a physician experienced in tropical diseases who has the facilities available for regular monitoring of parasitaemia together with experience of the other agents available for the treatment of multidrug-resistant *P. falciparum* infections. Further, there have been several proved cases of transplacental transmission of malaria in the U.K., and febrile illnesses in young children who have never left Britain may require careful history-taking of the mother's movements as well as blood-film examinations on mother and child.

It is also necessary to emphasize that, contrary to the implication of the last paragraph on malaria in Dr. L. Roodyn's article on immunization and other prophylactic measures against imported infections (14 December, p. 648), chloroquine resistance is not yet known from Africa.—We are, etc.,

B. A. SOUTHGATE
W. H. R. LUMSDEN
D. J. BRADLEY
D. M. MACKAY

Ross Institute of Tropical Hygiene and
Department of Medical Protozoology,
London School of Hygiene and Tropical Medicine,
London W.C.1

Erythema Infectiosum

SIR,—The B.M.J. of 23 November contained a leading article called "Fourth, Fifth, and Sixth" (p. 429) and also a letter from Dr. C. A. H. Watts (p. 466) reporting two cases of fifth disease, or erythema in-

fectiosum, occurring in close friends. I was interested at the time since, because I qualified fairly recently (1965) and despite having worked for three years in a fever hospital, I had never heard of the condition at all.

I am writing now because it may be of interest that over the past few weeks I have observed the same clinical picture, exactly as described in your leading article, in my own three children, aged 9, 6, and 2 years. They have had only minor constitutional upset but a brilliant red rash confined to their cheeks and a duller rash, variable and pleomorphic, on their limbs and trunks, lasting on and off for just over one week. Moreover, since being alerted to the condition I have so far seen at least three other children in High Wycombe with an identical illness, so presumably we are in the middle of a small local epidemic of this supposedly rare disease. I have so far been unable to find whether any definite viral cause for the illness has been established, or whether an increased incidence is being noted elsewhere in the country.—I am, etc.,

A. W. J. MEDHURST

High Wycombe, Bucks

Alpha-adrenoceptor-blocking Drugs in Asthma

SIR,—We have read with interest the paper by Professor S. Bianco and others on the prevention of exercise-induced asthma by indoramin (5 October, p. 18) and the letter from Dr. K. N. V. Palmer and others (16 November, p. 409) on the increased effect of salbutamol after intravenous administration of indoramin and thymoxamine.

We have drawn similar conclusions about the role of alpha-receptors from our studies with guinea-pig trachea and human bronchus in vitro. The tracheal chains of normal and egg-protein-sensitized guinea-pigs or spirals of human bronchus obtained during pulmonary operations were used in Krebs' bathing fluid perfused with carbogen. Several combinations of alpha-blockers and beta-mimetics were studied. The alpha-blockers dihydroergocristine, Hydergine (a combination of dihydroergotoxines), phenoxylbenzamine, phentolamine, and thymoxamine and the beta-mimetics salbutamol, terbutaline, isoprenaline, and ephedrine were used.

Small concentrations (10 $\mu\text{mol/l}$) of each of the alpha-blockers potentiated (to about double) the effects of beta-mimetics, though these doses of alpha-blockers alone did not show any effect. Concentrations over 10 $\mu\text{mol/l}$ were less effective. Egg-protein sensitization and the use of egg protein in the bathing fluid did not significantly change the potentiation. The degree of potentiation in human bronchus preparations was of the same order as in guinea-pig tracheal preparations. On the other hand, when alpha-blockers were combined with the same beta-mimetics in preparations of rat atria no potentiation of the beta-mimetics was observed.

Though the tracheobronchial alpha-receptors seem to be almost "silent," they seem to decrease the therapeutic effects of beta-mimetics to a considerable degree. The fact that the same is not true of the heart is additionally favourable for the combination of an alpha-blocker with a beta-