to introduce correspondence columns but, I am sorry to say, without success. In this connexion I feel it is also not without significance that often noteworthy contributions first appear in general medical journals in the correspondence columns before they appear in specialist journals as articles. This method of publicizing progress also has the advantage that its brevity allows it to be read by a wider circle.—I am, etc.,

G. T. WATTS

The General Hospital,
Birmingham

Price of a Consultation

SIR,—Dr. G. B. Carter (3 August, p. 350) does right in calling attention to the fact that, presuming we see our patients only five times a year, we actually earn 50p per consultation. That this has been missing from the evidence of the Joint Evidence Committee I for one find most depressing, and I feel that this, the proper basis for the remuneration of doctors, has become obscured by the fragmentation of our pay into various allowances and bonuses. These are obviously manipulative.—I am, etc.,

ARCHIE MUIR

Blackpool

E.C.T. and Cardiac Arrhythmia

SIR,—Dr. J. L. Barton's letter (10 August, p. 409), discussing death after E.C.T., mentions sympathetic stimulation producing cardiac arrhythmia and the difficulty of using standard anxiolytics as these have anticonvulsant properties.

I have just completed a trial using a β -adrenergic blocker—oxprenolol—and have found a significant reduction in the mean pulse rate before treatment, after the anaesthetic is administered, and after the convulsion. I hope to publish these results soon, but in the meantime would suggest considering the use of a β -adrenergic blocker before E.C.T.—I am, etc.,

S. M. CANNICOTT

Wells, Somerset

Complications of Carbenoxolone Therapy

SIR,—I read with interest the article on complications of carbenoxolone therapy (10 August, p. 400). As was rightly pointed out, with a good history and a high index of suspicion carbenoxolone overdose should not be missed. However, in my limited experience I have come across a number of other pitfalls for the unwary, and I feel a few further points should be made.

(1) The invariable presentation is congestive cardiac failure and the temptation is to treat this with a diuretic, further exacerbating the dangerous hypokalaemia. The best policy is to stop the drug immediately and refer the patient back to hospital casualty or outpatient clinic. (2) Muscle enzyme levels in the serum are raised and with congestive failure these can be mistaken for cardiac enzymes. However, with hypokalaemia and no E.C.G. evidence of acute infarction one should think again. (3) Intracellular potassium depletion and

electrolyte disturbance can precipitate carpopedal spasm, which can be treated with intravenous calcium. (4) Patients have presented as an acute surgical emergency with ileus or acute retention. (5) Even with the suspected diagnosis, before treatment is begun at least a haemoglobin estimation, plasma electrolyte levels, E.C.G., and muscle and cardiac enzymes should be estimated to rule out other causes of congestive failure and when potassium supplements are introduced their infusion should be strictly supervised.

It seems that there is a good case for carbenoxolone to be combined or given with an aldosterone antagonist-like diuretic agent.—I am, etc.,

A. N. KINGSNORTH

Royal Free Hospital,
London W.C.1

Rubella-specific IgM and a New Inhibitor

SIR,—Employing serum fractionation on sucrose density gradients rubella-specific IgM may be detected for about four to six weeks after naturally acquired infection.^{1,2} This test is of particular value when considerable time has elapsed between exposure to or development of rubella-like illnesses in pregnancy and presentation for virological studies, or when the results of haemagglutination inhibition or complement fixation tests are equivocal.³ The sensitivity of rubella haemagglutination-inhibition tests may be enhanced by prolonged incubation of serum and antigen at 4°C.⁴ Overnight incubation of serum fractions and antigen has enabled us to detect rubella-specific IgM at higher titres and for periods commonly extending up to six months and occasionally a year after both naturally acquired and vaccine-induced infection (table).

Employing the conventional technique, in which serum fractions and antigen are incubated at room temperature for an hour, most workers do not pretreat sera to remove non-specific inhibitors, since these are present in the lower density fractions and will therefore not interfere with the detection of specific IgM antibody. However, during evaluation of the long incubation method we have encountered a non-specific inhibitor in those fractions which may contain IgM and, if this inhibitor is not removed, it may give rise to a typical but false IgM pattern. Pretreatment of sera with heparin and manganous chloride^{5,6} before serum fractionation completely removes this inhibitor without reducing either the total or specific IgM content of sera known to contain rubella-specific IgM. Further evidence that this inhibitor does not represent true rubella-specific IgM was provided by the findings that this inhibitor was often present in persons who had been infected by rubella virus over seven years previously and that it was present in cord sera which had very low or undetectable levels of total IgM.

Persistence of Rubella-Specific IgM after Naturally Acquired and Vaccine-induced Infection

Infection	3 weeks	6 weeks	3 months	6 months	12 months
Naturally acquired	7/7	7/7	5/7	4/7	3/8
Vaccine-induced					
RA27/3 (intranasal)	5/5	4/5	3/5	3/5	1/5
RA27/3 (subcutaneous) ..	5/5	5/5	4/5	2/5	1/5
Cendehill	5/5	5/5	4/5	3/5	1/5
HPV77.DE-5	5/5	5/5	5/5	5/5	4/5
To-336	5/5	5/5	4/5	4/5	1/4
All vaccinees	25/25 (100%)	24/25 (96%)	20/25 (80%)	17/25 (68%)	8/24 (33.3%)

Furthermore, treatment of sera with 2-mercaptoethanol, which reduces IgM to its monomeric form, followed by sucrose density centrifugation did not remove this inhibitor. Overall, this inhibitor was detected in at least 50% of serum samples tested, including sera which contained no rubella antibodies. Though pretreatment of sera with heparin and manganous chloride removes low density β -lipoprotein inhibitors the inhibitor that we have detected did not produce a precipitin when reacted against anti- β -lipoprotein serum (Behringwerke) in immunodiffusion tests. Further work on the characterization of this inhibitor and detailed analysis of different immunoglobulin responses to naturally acquired and vaccine-induced infection will be published later.

Though this inhibitor is not generally detected when short incubation tests are used we have recently detected it, employing this technique, in the IgM fractions of serum of a patient who was in only indirect contact with rubella and on whom haemagglutination and complement fixation tests did not support the diagnosis of rubella. Pretreatment of her serum with heparin and manganous chloride removed the inhibitor. Though we think that the long incubation method for detecting rubella-specific IgM may be particularly useful for detecting evidence of recent infection by rubella virus during the previous 3-6 months—for example, as a result of inadvertent vaccination during pregnancy—we believe it is important to emphasize that sera should be pretreated before serum fractionation regardless of whether the short or long incubation technique is employed.—We are, etc.,

W. AL-NAKIB
JENNIFER M. BEST
J. E. BANATVALADepartment of Virology,
St. Thomas's Hospital and Medical School,
London S.E.1

- 1 Vesikari, T., and Vaheri, A., *British Medical Journal*, 1968, **1**, 221.
- 2 Best, J. M., Banatvala, J. E., and Watson, D., *Lancet*, 1969, **22**, 65.
- 3 Banatvala, J. E., et al., *British Medical Journal*, 1970, **3**, 247.
- 4 Best, J. M., and Banatvala, J. E., *Journal of General Virology*, 1970, **9**, 215.
- 5 Mann, J. J., et al., *Journal of Immunology*, 1967, **98**, 1136.
- 6 Cooper, L. Z. et al., *Journal of the American Medical Association*, 1969, **207**, 89.

Doctors' Pay

SIR,—A few correspondents have written to say that they think they are overpaid. They are fortunate and I congratulate them, but before others draw conclusions about the medical profession as a whole it would be well to remember that we do not all find ourselves in the same circumstances. Solvency depends on the balance of income and expenditure, and the latter is now overwhelmingly affected by the purchase of a house, the price of which depends on when