study of five chronic schizophrenics we found that DL-α-methyltyrosine 2 g daily reinforced the antipsychotic action of phenothiazines, so that the dosage needed to control the schizophrenic symptoms was much reduced.[4] We have now seen a case in which the extrapyramidal action of haloperidol was greatly potentiated by α-methyltyrosine.

A 38-year-old woman, who had suffered for many years from severe phobia and anxiety, had been treated with chlorpromazine (up to 800 mg daily), haloperidol (up to 3 mg daily), and antidepressants of the monoamine oxidase inhibitor or tricyclic type without any extrapyramidal side effects. To try to control her symptoms she was given α-methyltyrosine (125 mg daily gradually increasing to 1 g daily) combined with haloperidol 1·5 mg daily. There was no therapeutic response or side effects. The dose of haloperidol was then gradually increased to 2·5 mg daily. About 24 hours after this dose level was reached a severe extrapyramidal syndrome developed, with general muscular rigidity, cogwheel phenomenon, coarse tremors, oral dyskinesia, and restlessness. Intravenous biperiden chloride quickly controlled the symptoms. The daily doses of α-methyltyrosine and haloperidol were reduced to 750 mg and 2 mg respectively. There was no reappearance of extrapyramidal symptoms on these doses, but they did not help the patient's phobic condition.

α-Methyltyrosine in daily doses of 2-3 g reduces the level of homovanillic acid in the cerebrospinal fluid while leaving the level of 5-hydroxyindoleacetic acid unaltered.[5,6] In our patient only 1 g of α-methyltyrosine given in combination with haloperidol induced severe extrapyramidal symptoms, yet the patient had previously taken higher doses of neuroleptic drugs alone without any side effects. These findings, together with our earlier ones referred to above, suggest that not only the antipsychotic but also the extrapyramidal action of neuroleptic drugs can be greatly potentiated by an inhibitor of catecholamine synthesis. The concept that catecholamines are involved in the cardinal actions of neuroleptic drugs thus receives additional support.—We are, etc.,

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1 Carlsson, A., Lindqvist, M., *Acta Pharmacologica et Toxicologia*. 1963, **20**. 140.
2 Carlsson, A., *Recent Advances in Parkinson's Disease* ed. F. H. McDowell and C. H. Markham. Philadelphia, Davis, 1971.
3 Ahlenius, S., and Engel, J., *European Journal of Pharmacology*. 1971, **15**, 187.
4 Carlsson, A., Persson, T., Roos, B.-E., and Wålinder, J., *Journal of Neural Transmission* 1972, **33**. 83.
5 Bunney, W. E., jun, Brodie, K. E., Murphy, D. L., and Goodwin, R. K., *American Journal of Psychiatry*, 1971, **127**. 872.
6 Sjöström, R., *Psychopharmacologia* (Berl.) 1971, **22**, 214.

Tubal Sterilization and its Reversal

SIR,—Mr. E. A. Williams (?7 January, p. 237) is right to emphasize that sterilization should be performed without "needless mutilation." Excision of the entire tubes and excision of the lateral halves are needless mutilations which I have encountered. As he rightly says, the ideal is to excise a portion of the tube and to leave the two ends so that they can, if desired, be reunited. Have we not all seen patients who have been sterilized by Pomeroy's method recanalizing themselves without any outside interference?

He is surely wrong, however, to say that tubo-tubal implantation is "in every way" superior to utero-tubal implantation. Utero-tubal implantation is the only way if there is no medial portion of tube left. There are a great many papers on this subject, and most authors claim something like a 1 in 4 to 1 in 3 success rate. I have performed the operation only 13 times, but four of the women have been delivered of five babies and a fifth is currently pregnant. I submit, therefore, that utero-tubal implantation still has a place and can be undertaken when the medial portion of the tube is absent with a reasonable hope of success.—I am, etc.,

KEITH VARTAN

London W.1

SIR,—One can forgive Mr. E. A. Williams (27 January, p. 237) for again riding his hobby horse, but surely at a time when we are doing our level best, nationally and internationally, to limit population increase, and when 156,714 abortions were carried out in England and Wales in 1972, it is nonsense to expect N.H.S. time to be taken up in carrying out tubal reanastomosis on women who previously had decided that their family was complete.—I am, etc.,

A. E. R. BUCKLE

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Afternoon Surgeries

SIR,—I have read Dr. R. B. Smith's letter (20 January, p. 177) and Drs. R. E. G. Sloan and E. M. Rosser's replies (3 February, pp. 294 and 295) with interest.

Moving into a health centre in 1965 my colleagues and I were obliged to observe the local authority's work schedule for secretaries and therefore had to have morning and afternoon consulting sessions. We have had very few complaints about this from patients. On the contrary, mothers and the elderly are grateful for daylight attendance and off-peak travelling. Fewer than 1% have been inconvenienced.

For efficiency, for availability to consultant and executive colleagues and friends, who are also on the "nine-to-five" run, for the benefit to mothers, children, old age pensioners, the convalescent, and the shift workers, I would commend Dr. R. B. Smith's executive council to have a re-think on the changing pattern of our civilization. How could I establish rapport with my younger patients if I knew not Tom and Jerry? To think that once upon a time I had a surgery when Basil Brush was on!—I am, etc.,

E. T. GRIFFITHS

Risca, Mon

SIR,—I really cannot allow the opinion of Dr. R. E. G. Sloan (3 February, p. 294) to pass unchallenged. Why ever should a general practitioner owe a duty to his patients to see them outside their working hours? If I seek the services of any professional man—lawyer, accountant, banker—I am obliged to see him during the course of the conventional working day. The services of tradesmen are similarly limited to the hours of the conventional working day, or heavy surcharges are made for work done outside those hours. Why, pray, should patients be treated preferentially?

No, Sir; if my routine services are required they may be sought at the customary hour (emergencies naturally excepted). I have every sympathy with Dr. R. B. Smith (20 January, p. 177) and none with his executive council. The general practitioner must provide necessary services, but as a supposedly independent contractor he should be free to provide them as and when he sees fit. If Dr. Sloan wishes to work later in the evening he should be as free to do so as should Dr. Smith be free to work early in the afternoon.

What is so remiss about Dr. Smith's desire to depart from conventional hours? If Dr. Sloan really claims the support of the medical establishment, then I can only aver a preference for disestablishmentarianism.—I am, etc.,

R. N. PALMER

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Vitamins in Illness

SIR,—The timely short review by Dr. G. F. Taylor (3 February, p. 292) of the question "whether vitamins should be given in acute illness or at other times" refers mainly to quite recent investigations, most of which were carried out on elderly people and mainly concerned their vitamin C status.

About 25 years ago the widespread vitamin deficiency then prevailing—often without overt symptoms and signs—became more and more noticeable.[1] Geriatric hospitals hardly existed at that time and, as most elderly and long-term inpatients were to be found in large mental hospitals, nutritional studies were carried out in 1951-4 at Claybury Hospital, where the average population numbered about 2,300. The most widespread vitamin deficiency was that of vitamin C. Thus during the spring of 1952 among 239 patients examined 42 presented clinical and laboratory evidence of florid scurvy, but many more showed perifollicular haemorrhages, mainly over the gluteal area. In addition to dietary measures, we introduced the daily administration of 50 mg of ascorbic acid to the entire hospital population,[2] and according to my recollection this recommendation was accepted by the Ministry of Health for several years. Thus routine administration of vitamin C in hospitals in this country has been known for over 20 years.

Vitamin B deficiencies were numerically somewhat less frequent, but we found a large number of patients to be suffering from carotene and vitamin A deficiencies.[3-5]—I am, etc.,

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1 Leitner, Z.A., *British Medical Journal*, 1948, **1**, 917.
2 Leitner, Z. A., and Church, I. C., *Lancet*, 1956, **1**, 565.
3 Leitner, Z. A., Moore, T., and Sharman, I. M., *British Journal of Nutrition*, 1952, **6**, X.
4 Leitner, Z. A., Moore, T., and Sharman, I. M., *Proceedings of the Nutrition Society*, 1954, **13**, XI.
5 Sharman, I. M., Moore, T., and Leitner, Z. A., in *Proceedings of the 6th International Congress of Nutrition, Edinburgh, 1963*. Edinburgh, Livingstone, 1964.

School Eye Clinics

SIR,—Several valuable points arise from Dr. R. M. Ingram's article (3 February, p. 278).