problem. The use of phenothiazines quite often does not make for easier management because of the side-effects encountered with their use.

With oxypertine in doses of 60–100 mg per day, I have found that good control can be obtained in most cases whilst avoiding the side-effects commonly encountered with phenothiazines. This may well be due to the different mode of action of oxypertine compared with the phenothiazines (Van Praag and Korf, 1975). Oxypertine does not block reception sites of catacholamines but depletes presynaptic stores of those transmitters and within a certain dose range, has a predilection for nor-adrenaline (NA) stores having little influence on dopamine or serotonin. It could be argued that the behaviour disturbances of fear, flight and flight type met with in dementia could be due to an imbalance of neurotransmitter substances, in that NA systems became more prominent. If this were so then this could explain the apparent differences in results when using oxypertine as against the phenothiazines.

L. G. Measey

The Central Hospital,
Hatton, Warwick CV35 7EE

Reference

Van Praag, H. M. & Korf, J. (1975) Biochemical research in psychosis. *Acta Psychiatrica Scandinavica*, **51**, 268–84.

THE ABUSE OF ANTI-CHOLINERGIC DRUGS IN ADOLESCENTS

Dear Sir,

Mental disturbances resulting from the use of anti-cholinergic drugs are widely recognized and well documented (1). Their potential for abuse, however, is still not widely appreciated. In 1967 Stephens (2) reported the misuse of benzhexol among adolescents, and there have been more recent reports describing abuse of anti-Parkinson drugs, taken for their exciting and euphoriant properties (3). Rubenstein (4) has described a case in which extrapyramidal symptoms were feigned in order to obtain such medication.

I would like to report further the case of a 19-year-old male who was referred to psychiatric out-patients because of his explosive outbursts and threatened self-harm. He had been prescribed a depot flupenthixol injection by his general practitioner, presumably for its anxiolytic and anti-depressant properties. He was also given a supply of benzhexol (5 mg) tablets, which he found induced euphoria and excitement. He returned to his GP for more tablets and took five or six at a time. On one occasion he reported developing a painless, swollen abdomen which only subsided after several hours. A friend to whom he introduced the drug also obtained a supply by stealing a sheet from his general practitioner's prescription pad whilst he was out of the room. He also reported developing a swollen, painless abdomen on one occasion, together with similar psychological effects of excitement and euphoria.

The extent of abuse of anti-cholinergic drugs is still probably quite small, but I report these cases in order to draw attention to its existence. Their psychotropic effects may also account for the reluctance some patients have in discontinuing them. We are aware of the association of these drugs with the onset of tardive dyskinesia, and their effects on plasma levels of phenothiazines, and now the potential for abuse further strengthens the case for using them more cautiously. The possibility of abuse should also be borne in mind when, in a casualty department, an adolescent presents with a picture of pseudo-obstruction of the colon.

Glynn Harrison

Department of Mental Health,
University of Bristol,
39/41 St Michael's Hill,
Bristol BS2 8DZ

References

(1) Porteous, H. B. & Ross, D. N. (1956) Mental symptoms in Parkinsonism following benzhexol hydrochloride therapy. *British Medical Journal*, *ii*, 138–40.

(2) Stephens, D. A. (1967) Psychotoxic effects of benzhexol HCl. *British Journal of Psychiatry*, **113**, 213–18.

(3) Marriott, P. (1976) Dependence on anti-Parkinson drugs. *British Medical Journal*, *i*, 152.

(4) Rubenstein, J. S. (1978) Feigning of extrapyramidal symptoms to obtain trihexyphenidyl. *Journal of the American Medical Association*, **239**, 2365.

THE DISABILITIES OF CHRONIC SCHIZOPHRENIA

Dear Sir,

We thank Dr Watt (*Journal*, July, 1980, **137**, 102) and Drs Cheng and Cristoveanu (*Journal*, August, 1980, **137**, 197) for their interest in our paper (*Journal*, April, 1980, **136**, 384–395). We hope that the following information will answer their queries. The various assessments were carried out as follows:

Cognitive testing (Withers and Hinton)—ECJ; Neurological—DGCO; Mental State (Karwiecka *et al*—ECJ and DGCO independently; Current Behavioural Schedule—ECJ and DGCO independently; all were tested on the same day.

The Current Behavioural Schedule is a means of recording nurses' descriptions of their patients' behaviour in a standardized way. The inter-rater