sleep-wake cycle has also been shown to have some antidepressant effect, thus also elevating mood from depression to normal (Wehr *et al*, 1979).

It is now well known that sleep deprivation elevates mood (Pflug, 1978). A deprivation of a night's sleep may result in a slight increase in mood, as is often experienced by doctors after an entire night on duty. Whether such sleep deprivation is causative or is only the effect of mania ("decreased need for sleep" as indicated in DSM III) is still an open question.

Tricyclic antidepressants (TCA) are not so far known to affect the circadian rhythm, but increase mood in depression. It has also been said that they might induce mania (Bunney, 1978), but this has recently been contradicted (Lewis, 1982).

Flying west prolongs the 24 hour day, and delays the circadian cycle. In Jauher and Weller's material, all eight of the depressed patients who had flown along circles of latitude had flown westwards. There is no published evidence that flying west might reduce mania, although one of my patients indicated such an effect. One manic patient, with mania resistant to pharmacotherapy (neuroleptics and lithium) recovered after a journey westwards.

No reports have shown that sleep induction or increased sleep may reduce mania. Another of my patients with recurrent mania or hypomanic attacks after not sleeping for 3–7 days cut his attacks by drinking himself to sleep after a period of 10–15 days. The possibility that sleep might affect mania should be investigated further.

Lithium is well known to reduce mania. It also affects the circadian rhythm (increasing the time cycle) both in plants and in man (Engelmann 1973; Johnsson *et al*, 1980).

TABLE

Variable	Night duration	Mood
Fly east	—	+
Sleep deprivation	—	+
TCA	?	+
Fly west	+	—
Sleep	+	?
Lithium	+	—

Mood changes (+ = elevation, *i.e.* development of mania or recovery from depression — = lowering) related to changes in night duration (+ = increase; — = decrease) after east/west flights, sleep deprivation sleep, and drugs used in affective disorders (Tricyclic antidepressants/lithium).

The information available today is compiled in Table I. Rather congruent findings indicate that the affective disorders involve a disturbance in the circadian rhythm system. It has earlier been suggested that abnormalities of sleep patterns in some types of depression are due to abnormal internal phase relationships of circadian rhythms (Wehr *et al*, 1979). It is fair to suppose that this also includes manic states. In the future, this might also have further implications for the treatment of affective disorders.

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TREATMENT OF COMPULSIVE GAMBLING

DEAR SIR,

The article by Drs Greenberg and Rankin (*Journal*, April 1982, **140**, 364–66) prompts me to question whether the cautious and limited use of apomorphine as an aversive agent might not reasonably be reconsidered.

Several years ago I used a short course of apomorphine injections with apparent success in the treatment of a young man whose addiction to fruit machines had landed him in trouble with the law and threatened the breakdown of his marriage. With the co-operation of a local licensee, the patient was taken twice a week to a nearby public-house during afternoon closing hours, given an injection of apomor-

phine and then handed four or five sixpences to feed into the pub's fruit machine at about one minute's interval, until acute nausea supervened; a towel-covered bowl having been brought with us by the accompanying male nurse. (Normally I would never lend money to a patient, but on those treatment sessions I provided the coins, so that I should have had no qualms about pocketing any winnings. Alas he didn't win the jackpot!).

In the past four months I have had three patients for attempted treatment of addictive gambling on horses, two of them through the courts, for repeated stealing, and the third of them following a serious suicidal attempt after his wife deserted him and before the court hearing for his dishonesty linked with debts of nearly £6,000.

The technique tried was to give the patient an intramuscular injection of three milligrams of apomorphine and then ask him to imagine that he had £20 or £30 to gamble and to pick from the racing page of his favourite daily paper the horses he would have chosen to back. Acute nausea developed by the time he had made the last of his selections. Treatment was given once or twice a week to a maximum of six treatments, on an in-patient basis.

Such induced nausea is much more readily applied to compulsive gambling on horses than any system of minor electric shocks as attempted by Barker and Miller in 1968, and is far less time-consuming than the accompanied outings undertaken by Greenberg and Rankin.

The aim of the apomorphine programme was not to have a saturational assault day and night to condition the patient's responses, as was at one time attempted with alcoholics, but more a sort of token treatment to help extinguish the element of pleasurably exciting anticipation and to add some physical reinforcement to the awakening awareness of the patient that his compulsive gambling is a 'sick habit'.

It would, of course, be wildly optimistic and unscientific to claim only weeks later that such a patient has been 'cured'—as was very misleadingly claimed in a reporter's contribution to the Sunday Mirror on May 16—but preliminary responses could at least be cautiously claimed to have been encouraging.

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BENZHEXOL (ARTANE) ABUSE

DEAR SIR,

We were interested to read the paper from Israel by Kaminer *et al* (*Journal*, May 1982, **140**, 473–4) reporting widespread abuse of Artane (trihexyphenidyl, benzhexol) among their out-patients. For some time we have been concerned by similar developments locally, and by informal contacts have identified over 40 regular abusers. Patterns, familiar from the abuse of better known drugs, are becoming apparent; the recognized price is £1 for one to three 5 mg tablets, and meeting places for making sales are well known. Perhaps most worrying is that we have unconfirmed reports of Artane abuse by youths who are not psychiatric patients.

We would endorse Kaminer's observations that knowledge of Artane abuse is often limited among prescribing doctors who are, of course, the sole source of supply.

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INTRA-UTERINE EXPOSURE TO PSYCHOTROPIC DRUGS

DEAR SIR,

It is well known that uncontrolled diabetes during pregnancy leads to compensatory hypertrophy and hyperplasia of pancreatic islet cells and insulin oversecretion in the foetus. Removal from the hyperglycaemic environment at parturition produces a hypoglycaemic state in the infant (Marble *et al*, 1971).

Using this as a model, it may be the case that maternal ingestion of drugs which, for example, antagonise dopamine and are known to cross the placental barrier, such as chlorpromazine and flupenthixol, may in some similar fashion produce increased activity of the dopaminergic system in the foetus and consequent predisposition to psychosis in later life. This phenomenon might be most likely to occur in a group already at high risk for genetic reasons.

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ANTIDEPRESSANTS FOR PHOBIC AND OBSESSIVE-COMPULSIVE DISORDERS

DEAR SIR,

In their article on clomipramine in phobic patients (*Journal*, May 1982, **140**, 484–90), Pecknold *et al* slightly misquote Marks *et al*, 1980 (*Journal*, **136**, 1–25). We did not hypothesize that phobics respond to antidepressants because they have either an