she gave a four-month history of feeling depressed and anxious with loss of appetite and energy. Two months previously, while on a shopping trip with her sister, she had started to grimace and make growling noises in a supermarket. She continued to make barking and growling noises, frequently on buses and in shops, until, finally, she was admitted for assessment.

While on the ward it became evident that her barking was partly under voluntary control: she was able to reduce its frequency, but not abolish it altogether, upon being asked to do so. She was agitated, but showed no clear evidence that she was suffering from a depressive illness. She was treated with diazepam (2 mg t.i.d.), and over the course of a month her agitation progressively resolved. She stopped grimacing and making growling or barking sounds and was discharged.

I wonder if others have observed this symptom which, even in the diplomatic service, would seem likely to confer some disadvantage.

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Ofloxacin-induced Psychosis

SIR: The new quinolone derivatives, also known as gyrase inhibitors and widely used as potent chemotherapeutic agents, have frequently been implicated in causing central nervous system side-effects (Blomer *et al*, 1986; Cohen *et al*, 1984; Gleckman *et al*, 1979). Until now, only a few patients who have developed central nervous system side-effects have been seen by psychiatrists. We present two such cases, both induced by the latest gyrase inhibitor, ofloxacin (presently under clinical evaluation in the UK and US).

Case Reports: (i) A 28-year-old woman was given ofloxacin (200 mg po b.i.d.) over a course of 5 days for recurrent scalp infections. On the night of day one, she experienced a decreased need for sleep, and on the following day progressed to a hypomanic state with an overly cheerful mood, increased social and physical activity, restlessness, racing thoughts, and loss of appetite. Her condition did not change until day 4, when she appeared to enter a kind of intermediate stage with predominant depressive features, lasting until day 10 (ofloxacin was discontinued on day 5): she was dysphoric and irritable , with labile affect, complained of fatigue, loss of energy, indecisiveness, and lack of concentration. At the same time, she still experienced racing of thoughts, insomnia, loss of appetite, and a 10% loss of weight. During this time she also had four panic attacks. From day 10 to day 18 she progressed to a marked depressive syndrome with loss of energy, depressive mood, loss of interest in all usual activities, continued lack of appetite, and insomnia. After day 18, she improved rapidly; 25 days after the onset of symptoms she was back to normal. Our patient had no relevant psychiatric or family history and had not received any medication in the four weeks preceding her illness. Medical examination, EEG, CT-scan, and laboratory studies were normal, except for an elevated TSH (21.1 U/ml).

(ii) A 64-year-old woman had been treated with ofloxacin (200 mg po b.i.d.) for a complicated urinary tract infection. The drug was discontinued on day three, when she progressed acutely to a catatonic state with rapidly alternating episodes of stupor and excitement: short periods of mutism, catatonic posturing, and waxy flexibility changed within minutes to states of excitement with perplexity, screaming, verbigeration, and stereotypies. Her thinking became incoherent, with marked loosening of associations. At times she was perplexed, and partly disoriented in time and situation. She had religious delusions, auditory hallucinations, and recurrent optical illusions; all symptoms were present on days one and two after ofloxacin was discontinued. She was given chlormethiazol on days three and four, and improved within hours: she was oriented, and her thinking was coherent. She still complained of pressure of thoughts and distractibility. During the following 10 days she improved steadily and was almost back to normal on day 14, with partial amnesia for the duration of the psychosis.

This patient had had a psychiatric history with a poorly defined depressive episode in full remission, 15 years previously. Prior to admission, she had been given several spasmolytic and analgesic medications for urolithiasis, and had a history of compensated hyperthyroidism (TSH 0.98 U/ml, T3 75 g%, T4 8.37 g%). Medical examinations and other laboratory investigations were normal, and CT scan and EEG were negative.

The essential feature of case (i) was a bipolar mood disturbance, and our diagnosis according to DSM–III was organic affective syndrome. Using these criteria in case (ii), we diagnosed both an atypical organic brain syndrome and an organic delusional syndrome. According to ICD-9, our diagnosis in both cases was subacute organic psychosis.

Ofloxacin seems to be potent enough to produce different yet well-defined psychiatric syndromes. We have received an increasing number of reports on ofloxacin-induced psychoses. Further research should focus on ofloxacin's ability to generate model psychoses.

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Oxymethalone and Aggression

SIR: An 18 year-old male, treated with oxymethalone for idiopathic aplastic anaemia, developed a temporary increase in aggression. I believe this to be the first report of such an association with anabolic steroids prescribed for therapeutic reasons and there have been no reports to the Committee on Safety of Medicines of similar cases. However, hypomania (Freinhar & Alvarez, 1985) and depression (Sheffer *et al*, 1979) have been described as a result of this class of drug. The use of anabolic steroids in sport has led to reports of increased aggression (Strauss *et al*, 1984). Doses, however, were idiosyncratic, excessive, not medically indicated, and often involved illicit drugs which purported to contain mixtures of somatotropin, a substance called "rhesus growth factor", and various anabolic steroids. They were usually taken in large quantities, far exceeding manufacturers' recommended therapeutic ranges. Overall, 35–80% of users reported an increase in aggression; of these, 75% found this to be a desirable effect.

Case Report: Within three weeks of commencing treatment with oxymethalone (150 mg daily), the patient had broken the nose of an acquaintance, smashed two expensive guitars and considerably strained the patience of his girlfriend. He was an intelligent, insightful young man, weighing 70 kg, who was studying for his 'A' levels, and who had every chance of gaining a place at university. He stated that his temper just 'snapped' following little or no provocation. Previously he had been a placid individual, and reports from his college tutor bore this out.

He was referred to psychiatric services after he had visited his GP, as he was worried either that his parents would eject him from the family home, or that he would end up in serious legal trouble, as a consequence of his actions. He was a modest drinker of alcohol (one pint of beer per week), and denied any other drug usage. His hobbies were unremarkable, and included listening to "heavy metal" music, of a variety which explored a rich seam of mysticism. He espoused philosophical ideals of peace and harmony. Exploration of his attitudes to his physical condition (which was responding well to treatment) revealed no major difficulties. There was similarly no evidence to suggest prior familial or other areas of interpersonal conflict. Previous medical history was unremarkable; there was no history of head injury. There was no family history of aggression or epilepsy. Mental state examination revealed no major abnormality other than the presenting complaint as described. Overall, he was an extremely pleasant young man.

The patient's haematologist confirmed that increased aggression had been reported within weeks of commencement of treatment. It was also felt that it was essential to continue the therapy for the next few months, depending on the haematological response.

In view of this, a cognitive/behavioural treatment plan was commenced. Within a fortnight, aggressive thoughts had diminished considerably, with only three being recorded, and no violent action had been taken on any of them. Pre-treatment levels were considerably higher than this, with daily aggressive thoughts, and perhaps weekly aggressive, remorse-inducing deeds having been reported. One month after starting this management the dose of oxymethalone was reduced by one-third.

This case indicates that in therapeutic doses anabolic steroids may induce aggression. It also shows that cognitive/behavioural techniques can serve to modify such anger and aggression. Finally, given the widely-reported illicit, uncontrolled usage of such substances by athletes and body-builders, the forensic implications of these observations may be considerable.

I am grateful to Dr Alan King for permission to report this case.

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CORRIGENDA

Journal, June 1987, **150**, 737–751 (C. V. R. Blacker & A. W. Clare). The penultimate sentence in the first column of page 747 should read as follows: (In addition, the reported gain over the drugs-only group was lost at three months, suggesting that the benefits. . . .

Journal, June 1987, **150**, 880. Letter by Jee. In paragraph 2, ". . . remitted after a 17-day course of amantidine" should read ". . . relapsed after . . .".