

# Does your shift-work ruin your sleep?

In the *New England Journal of Medicine* for 4 August there is an account of the use of the central nervous stimulant drug modafinil in the treatment of sleep disorder brought about by shift-working.

It is claimed that 20 per cent of workers in industrialised nations work either at night or on rotating shifts. This situation brings about a disorder either of insomnia or of a temporary excessive sleepiness occurring during the period of the habitual sleep phase.

The incidence of sleep disorder is said to affect as many as 10 per cent of shift workers. These individuals also appear to be at increased risk of peptic ulcer disease, coronary heart disease, insulin resistance and the metabolic syndrome. Among less serious effects,

depression, sleepiness-related accidents, and curtailed family and social activities have been described. A high proportion of those affected work in the health care and transport industries.

An investigation into possible ways of combating the sleepiness associated with shift-work was carried out by a group of doctors belonging to a sleep disorder study group in the US. Their study involved 204 subjects with shift work sleep disorder who were randomly assigned to either a three-month trial of modafinil 200mg daily or a placebo, given before each night shift.

Other primary sleep disorders such as obstructive sleep apnoea were excluded from the study.

There were 153 subjects who completed the study. The use of modafinil produced significant improvement in measurements of night-time sleepiness and vigilance, compared with the placebo. The drug probably enhances wakefulness by interacting with adrenergic and dopaminergic systems. Improvements in performance and vigilance during morning hours following continuous wakefulness for more than 40 hours in normal adults have been found to occur both with modafinil 200mg and caffeine 600mg.

Modafinil did not produce any measurable effects on circadian rhythm. However, it did increase insomnia compared with the placebo, which is a disadvantage. It has shown a reasonable safety profile to date.

## New role found for an ancient folk remedy

I was intrigued to note that the humble butterbur is proving useful in relieving sufferers from allergic rhinitis, according to trials carried out in Germany and Switzerland (*PJ*, 27 August, p246). Constituents of butterbur (*Petasites hybridus*) are reported to inhibit production of leukotrienes, which are associated with spasmolysis and type-1 hypersensitivity, and also to promote prostaglandin synthesis.

This plant has an ancient reputation as a folk-remedy, its root being powdered and administered with wine to counteract the plague and other fevers. In the 16th century it was used as a heart stimulant and a diuretic, and for alleviating asthma, colds and urinary disorders. Powdered root was applied to ulcers of the skin, and a cream prepared from it was commonly applied to disfiguring spots. Curiously enough, children in Lancashire have regarded the butterbur leaves and flowers as a nasty poison.

The unusual size of the plant's leaves gave rise to its name petasites, derived from the old Greek term petasos, which was a shepherd's floppy felt hat. The leaves were at one time used to wrap butter to protect it from the heat of the day, hence butterbur.

The flowers of butterbur appear before the leaves. When they first emerge from the soil



the flowering shoots resemble button mushrooms, giving rise to one vernacular name of "early mushroom". The delay between the appearance of flowers and leaves is responsible for its other popular name, "lagwort".

## How religious and ethnic rivalry creates fear in the world

Vicious civil strife has been fuelled by religious conflict and is being carried out through acts of terrorism and ethnic cleansing. An article by a neuroscientist published in *Science* for 29 July states that we sorely need a scientific understanding of the emotional background of intergroup conflicts. We need to understand how different attitudes are built up between ethnic groups.

It appears that fear plays an important role in the development of attitudes to other groups. Fear not only produces fright in response to a specific stimulus, it prompts an attempt to escape a situation rather than evaluate the real danger. It creates anticipated fear as well as physically felt fear.

The unknown is a powerful factor. Doubts regarding strangers and a readiness to distrust them promote close group cohesion and an aggressive attitude towards other groups.

Fear conditioning, which is a feature of some learning, can result in violent responses to unfamiliar human faces. Fear conditioning is believed to result automatically from associating a neutral stimulus with an aversive one. It does not require conscious mediation. Negative emotional responses to other races are indeed so independent of conscious processes as to make them almost immune to rational persuasion.

We can counteract these processes by encouraging interracial exposure and social contact. By understanding the ease with which negative emotions may become associated with features characterising a foreign group we may help to antagonise the development within ourselves of stereotypes of unfamiliar cultures. Such stereotypes can be charged with emotion and are therefore antisocial and dangerous.

**And I quote . . .**  
**The proper study of mankind**  
 "Failure to know ourselves can be a serious moral fault. And one reason why it is a fault is that it blocks our understanding of other people. The sort of basic sympathy and empathy that we need in order to understand others does not work unless we are attentive to our own motives and reactions as well. Unless we ask critically how we ourselves are behaving to them, we can't hope to understand how they are

behaving to us." — Mary Midgley: *Science and Poetry* (2001).

**Take your choice — magic or medicine**  
 "Formerly, when religion was strong and science weak, men mistook magic for medicine; now, when science is strong and religion weak, men mistake medicine for magic." — Thomas Szasz: 'The second sin' (1973).