

istic action. When smaller quantities of the solanaceous compounds were absorbed, the subject would experience a numbed floating sensation, distortion of the perception of time and space, and depersonalization, together with a racing of the heart (such as is sometimes complained of by susceptible patients who have been medicated with atropine prior to E.C.T.) and these effects in a psychologically primed subject might well be considered the substance of unnatural flight.

The stimulant effect of drugs taken either as a potion or in a skin application could also explain the untiring dancing said to be part of ritual, and the ability to withstand the cold night air when nakedness was part of the disinhibited state.

Finally, Dr. Barnett adduces drugs as a possible basis for the firm belief of the subjects in the magical powers attributed to them. While this may well be true, such beliefs were often only declared publicly, to find their way into the official records, during the extensive judicial prosecution of witch trials. On these occasions, in terms of modern "brain washing", use was made not only of physical debilitation over long periods but also of the mass compulsive effect of the heightened emotion surrounding these trials, which produced the psychological need to atone for induced guilt.

ALEXANDER R. K. MITCHELL.

*Barrow Hospital,
Barrow Gurney,
near Bristol.*

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MOTT ON MOOD

DEAR SIR,

Finding an unexpected similarity between some of my own papers (1-4) and a number of Sir Frederick Walker Mott's pathophysiological contributions to psychology, may I draw renewed attention in particular to his lectures on Emotion. (5). These still make stimulating reading even after 57 years, and are patently relevant to much of today's Mental Health discussion. For example, Mott's classification of the displeasure (or malaise) which accompanies certain moods as being a protective mechanism like pain, prompting escape from and subsequent avoidance of its causes, highlights problems of sanitary relevance to patterns of social organization as well as individual management.

When, for instance, may it be considered beneficial and correct to inflict pain, e.g. in a good spanking, or displeasure, say, by just reproof, and in what circumstances and by whom on the other hand should pain and emotional displeasure be assuaged? By the same token bowel and bladder disturbance of emotional origin may represent a simple vestige of the preservative mechanism in question, i.e. that part which directed the organism's attention caudally in the regressive emotions (anxiety and agitation) toward the possibility of flight, and as such they may not necessarily always require treatment.

Mott also refers to mood change which is recognized by the patient to have no adequate "psychological" cause, and argues in favour of an "organic" rather than "unconscious" origin for such morbid affective tone, in vegetative disequilibrium. Seen thus the endogenous element in affective disorder has perhaps characteristics in common with "sham" rage as observed in experimental animals, although to refer to such melancholia, anxiety and elation (mania) as "sham" might lead, initially anyway, to some confusion in terminology and definition with malingering and conversion hysteria.

The pathophysiological concept of 'sham' emotion may nevertheless be of use by focusing attention on to the possible sites of abnormal nervous impulse initiation, conduction or inhibition then theoretically responsible. If such abnormality is "functional" in the sense of being either humoral or metabolic in character, it may in that case be clearly analogous with the disturbance of impulse sequence seen in the cardiac field, i.e. that which underlies auricular flutter or fibrillation and sometimes occurs in the course of thyrotoxicosis. The tonic and blocking effectiveness of psychotropic drugs would then be comparable with digitalization or the effects of quinidine.

Mott even refers to "the emotional echo awakened" in others by an individual's mood change, an infectious quality we sometimes recognize in another's elation as a characteristic to be resisted, although less often voice as a hazard to be guarded against on occasion also in the presence of rage, fear or despondency. Whether "sham" in the pathophysiological sense or otherwise endogenously morbid, however, these moods usually respond well and often enough to specific thymoleptics nowadays, to cut short the infectious element and render it less virulent. Prolonged interpersonal relationships, which are so often required in addition to drugs in endogenous affective disorder to cope with environmental repercussions, then call for less professionally acquired resistance to infection, and become less trying even of lay innate resilience.

Taken together with the beneficial effects of phenothiazines in schizophrenia, such drugs may therefore greatly reduce psychiatric hospital bed requirements in due course if properly used, much as other chemotherapy has the need for isolation hospitals and sanatoria for the physically ill, leucotomy being the equivalent of thoracoplasty in this analogy perhaps and electroplexy that of artificial pneumothorax. The speed with which this takes place will still, however, depend upon socio-psychological hygiene for the residually mentally infirm in the sense of community care of those ecological dimensions best suited to such patients' spared abilities.

J. P. CRAWFORD.

Stone House,
near Dartford,
Kent.

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INVOLUTIONAL PSYCHOSIS

DEAR SIR,

Further to my letter in the correspondence columns of the June issue of the *British Journal of Psychiatry*, I find that in that letter I discussed the case of *independent* events but I see that in my paper I referred to generically identical mutations in identical cells—and these are not independent. Therefore I am

happy to agree with Dr. Pike that if the random initiating events are generically identical in character, then for $L \gg n$, and $mt \ll 1$, Poisson's law applies.

In my paper, I should have written the following: Assume: (i) that a disease is confined to a subpopulation constituting a fraction P_0 of the general population at birth, (ii) age-specific mortality rates in the subpopulation and the general population are similar; (iii) the disease is initiated by n specific and statistically *independent* random events that are equally effective in any sequence; and (iv) the average rate of occurrence of each independent mutation is k . Then the age-specific prevalence, N_t , of individuals at age t with at least one of each of the n independent events is given by: $N_t = P_0 (1 - e^{-kt})^n$.

The observed conformity of age-specific and sex-specific initiation-rates for involutional psychosis to the equation:

$$dN/dt = 3k P_0 t^3 e^{-kt^{4/4}} (1 - e^{-kt^{4/4}})^2$$

is therefore consistent with the view that the disease is initiated in predisposed individuals by three independent "forbidden clones" (arising in any one of the $3!$ possible sequences) each one of which is triggered-off by a set of four dependent-type random events.

I am grateful to Dr. Pike for pointing out my misinterpretation, and I apologize, sir, for having misled your readers with respect to this important detail.

P. R. J. BURCH.

Department of Medical Physics,
University of Leeds,
The General Infirmary, Leeds, 1.