rifampicin, secondly, the hepatic metabolism of paracetamol might be slowed; thirdly, the supply of neutralizing sulphydryl groups might be increased; and finally, the damaging effects of the metabolites might be curbed. A treatment based on the first has not been tried but deserves consideration. Another sulphydryl compound, cysteamine, reduces the hepatotoxicity of paracetamol to mice, perhaps by supplying sulphydryl groups, but possibly by slowing the metabolism of paracetamol in the liver. 

It has, therefore, been administered intravenously in large doses to patients after paracetamol overdose; initial results were favourable with apparent prevention of liver damage. The clinical course of paracetamol poisoning, however, is variable, and the treatment causes severe vomiting, so that the results of a controlled trial are awaited with interest.

Glutathione does not enter the liver from the bloodstream, but its precursors, the sulphydryl amino-acids cysteine and methionine, do, and early administration of these compounds to patients has been suggested. The relative safety of this treatment is an advantage though if the amino-acids are given orally they might increase encephalopathy in those patients who were progressing to fulminant liver failure. Such biochemical treatment will therefore need to be restricted to the first 48 hours after ingestion of the paracetamol; it is not likely to be effective later. This use of sulphydryl amino-acids is reminiscent of experiments done 30 years ago showing that they protected against the hepatic necrosis produced by chloroform or extreme protein deprivation.

Recently Walker et al. have looked at the fourth remedy and have suggested that α-tocopherol (vitamin E) could be beneficial, for they found in rats that prior depletion of vitamin E increases the hepatotoxicity of paracetamol while pretreatment with the vitamin decreases it. Vitamin E is an antioxidant and may therefore reduce oxidation of intracellular lipids by the paracetamol metabolites; such a mechanism has been suggested for carbon tetrachloride hepatotoxicity. Laboratory rats, however, are often vitamin-E depleted, and it seems doubtful, though not impossible, that vitamin E given after paracetamol would be effective in man. Beta-blocking drugs may also be useful, but it would be rash to extrapolate too far from the apparent protective effects of single doses of drugs.

All these potential treatments, however, are limited by the inevitable delay before they can be administered to patients. McLean has therefore suggested that methionine might be incorporated into paracetamol tablets as a prophylaxis—an attractive idea. Or perhaps a small amount of amophorine in each tablet would combine in the overdose to empty the attempted suicide’s stomach? It is not yet possible to recommend a routine antidote for the many patients being seen in casualty departments who admit to taking an overdose of paracetamol, but it is unlikely to do any harm to administer 2 g of methionine four-hourly if the patient will swallow it.

Most of these patients are young and quickly regret their action. It will be a good example of the value of research to medicine if the work in animals saves some of them, though present critices of medicine may point out that this is only physicians ingeniously correcting a partly iatrogenic disease.

Cerebral Lupus

Systemic lupus erythematosus—S.L.E.—is a changing disease, or so it appears from recent surveys both from the U.S.A. and Britain. The two most noticeable recent trends have been the improved overall prognosis and the emergence of central nervous system involvement as one of its commoner and more serious manifestations.

In 1954 using life table methods Merrell and Shulman reported an estimated survival of 51% four years after the diagnosis of S.L.E. in 99 patients seen at the Johns Hopkins Hospital. Ten years later, a five-year survival figure of 69% was reported, while in 1971 the figure had increased to 76-9%, the ten-year survival rate being 59-1%. In the last series neither race, sex, nor age at onset had any effect on survival. While refinements of therapy may or may not have contributed to the improved outlook it is much more likely that the recognition of milder forms of S.L.E. has played a greater part in changing the mortality rate. This effect may become more marked with the introduction of the sensitive anti-DNA antibody assay, which provides both a diagnostic and therapeutic guide to disease activity in S.L.E.

Despite the improved survival figures, however, a hitherto poorly recognized problem now looms large in the management of S.L.E.—that of central nervous system disease. Estes and Christian found evidence of C.N.S. lesions—predominantly psychosis—in almost two thirds of the 150 patients studied; these ranked second only to renal disease in having the poorest prognosis. The C.N.S. manifestations of S.L.E. are diverse, ranging from seizures to cranial nerve defects and from chorea to arachnoiditis. For the commonest presentation is that of a psychiatric illness, ranging from a mild affective disorder to florid psychosis.

Diagnosis, treatment, and assessment of prognosis of C.N.S. lupus are still unsatisfactory. Present investigative methods are generally unhelpful. The cerebrospinal fluid is normal in over half the cases, and measurement of complement levels in the fluid has provided clinical guidance only in the more florid cases. Measurement of DNA antibody levels, while providing a useful guide to disease activity in other systems, does not seem to correlate closely with the extent of clinical C.N.S. disease. The electroencephalogram is usually abnormal and may be useful where psychological problems predominate. The results of arteriography are almost always normal, but brain scans may show abnormalities.

At present the standard treatment for neurological manifestations of S.L.E. is corticosteroid therapy, and many instances of dramatic improvement have been noted. A much more difficult therapeutic decision lies in the management of the psychosis. In the past psychosis may have been wrongly
ascribed to corticosteroid therapy: indeed many such cases—possibly the majority—respond to an increase in steroid therapy. Dubois et al.2 analysed the duration of disease and causes of death in 249 cases of S.L.E. and claimed a fall in the percentage of patients dying of C.N.S. disease since the routine use of high-dose steroid regimens. However, the side effects of such aggressive therapy may be too high a price to pay in this particular condition,3 especially in view of the known possibility of spontaneous remission.

Few guidelines to prognosis have been found for C.N.S. lupus. Some idea of the size of the problem was shown in a recent study from Dallas.4 Thirty women with S.L.E. were divided into those with and without definite renal biopsy abnormalities and their subsequent progress followed. After 8·3 years mortality in the "non renal" group exceeded that in the renal group; and major C.N.S. disease was eventually noted in every patient without kidney disease.

The pathogenesis of C.N.S. lupus is poorly understood, and cerebral vasculitis alone may not account for the clinical or the pathological findings.11 Recently, evidence has accumulated suggesting that C.N.S. deposition of immune complexes might play a role in pathogenesis. The choroid plexus bears many structural similarities to the renal glomerulus,12 and IgG and complement have been observed in the choroid plexus both in human lupus15 and its animal model, the New Zealand mouse.17

The finding of lowered complement in the cerebrospinal fluid of some patients with C.N.S. lupus further supports an immune-complex pathogenesis.15 Many antigens may be implicated, though using the DNase digestion technique Keefe and his colleagues showed the presence of DNA—antiDNA antibody complexes in the C.S.F. of a 14-year-old girl with lupus meningitis.19 The recognition that the brain is not immunologically privileged, while providing a thorny clinical problem in S.L.E., may have implications for the pathogenesis of other neurological diseases.

What People Want to Know

Penguin Books and "Mind" have just launched a joint series of paperbacks called Mind Specials to "look at some of the most urgent questions in the field of mental health." So we have Depression by A. R. K. Mitchell, a psychiatrist from Cambridge; Adolescent Disturbance and Breakdown by Moses Lauffer, a lay psychoanalyst from Hampstead; and Parents and Mentally Handicapped Children by Charles Hannan, an educationist from Bristol. Mr. Hannan himself has a mongol son, and he has asked a number of parents about the difficulties they experienced because of their backward children. The result is a book which goes right beyond its title in describing some of the difficulties parents have in understanding doctors and in making use of medical and social work services. It is full of suggestions to health and care administrators at all levels, professional and voluntary, on how to help families with disabled children. If only there were more books like this—an articulate lay sufferer showing us how unknowingly we fail to communicate with patients, and how we could do better.

The other two books are less original, have smaller aims. Mr. Lauffer is concerned to impress on us the need for adolescents who are not developing in a usual way to have psychoanalytic treatment. Dr. Mitchell paints a simple picture of the causes and treatments of adult depressive upsets. The publishers say these books are for students, practitioners and non-specialists, but it is doubtful whether they would be sufficient meat for medical students. They would have been better books if they had given a little space to the limitations of the treatments they advocate. The non-specialist is often over-optimistic in his expectations of treatment and tends to be unaware of the blank areas of knowledge and technique and of the organizational deficiencies of the psychiatric services.

Authors of books of popularization face two big problems. One is to keep control of their own prejudices. They have to write what the generality of their specialist colleagues believe and either keep their personal disagreement out of it or explain that it is personal, and why. Unless this is done the book will set its readers at cross-purposes with the subject, really misinforming them, arousing false expectations or creating unnecessary hard feelings. Such a result is particularly easy in the mental health field, where psychoanalysts, general psychiatrists, psychopharmacologists, and social psychiatrists may hold narrow, conflicting views. True to his psychoanalytic background, Mr. Lauffer describes E.C.T. as "most unsuitable for adolescents, no matter how disturbed or ill they are." However, there are clinical situations where most psychiatrists believe E.C.T. to be suitable and use it with effect; he ought to say this, too, otherwise he is writing propaganda not popularization.

The second problem is the much more general one of being clear about whom the book is addressed to. Mr. Hannan reminds us that doctors all too often forget when talking to patients that patients are not medical students. It requires an effort to put oneself in the hearer's or reader's place, to imagine what he already knows, what his particular fears and beliefs are, and what his questions are going to be. Dr. Mitchell writes well enough on depression, but it is a simple account, not addressed to anyone in particular. The educated layman might be expecting a book of popular science such as Pelicans have produced in the past, often a work of some academic standing. The relative of a depressed person might be looking for advice on how to get along with the sufferer, when to suspect suicidal intent, what it is like inside a mental hospital or a psychiatric ward. The social worker wants guidance on how depression creates social problems and how to go about tackling them, and what the limitations of psychiatric services are.

Popularization means communication with non-specialists at many levels—psychopharmacology for psychoanalysts (and vice-versa), pharmacology for general practitioners, drugs for nurses and social workers, drugs for the clergy, medicines for the public, and so on. The Annual Review of Medicine is popularization, so are the special articles in the B.M.J. on