

frequency of 168 calculated from the general population rates. This is accepted as a clear indication of a lower rate at Newton. But:

$$\chi^2 = \frac{(168 - 144)^2}{168} = 3.43 \text{ d.f.} = 1$$

which is not significant at the 5 per cent. level.

Thus, when a simple statistical analysis is substituted for some rather careless intuitive reasoning it appears that the right conclusion from the survey is not that the psychosis rate is lower at Newton than in the general population but, if anything, the reverse.

From these objections it appears that neither of the main conclusions drawn by Taylor and Chave concerning the incidence of mental health are valid, and their book adds little new to our knowledge of the aetiology of mental illness.

I should like to thank the University of Durham Research Fund Committee for a grant towards clerical assistance; and also those with whom I have discussed some of the points raised in this letter.

A. W. STILL.

*Department of Psychology,
University of Durham.*

DEAR SIR,

At first sight Mr. Still's criticisms appear weighty, but on examination they lack substance.

We review below the main findings of our study, the conclusions we have drawn from them, and Mr. Still's criticisms.

1. *The Sub-clinical Neurosis Syndrome*

We took three disparate communities—an old town, a new town and an out-county housing estate—and conducted a survey in each of them. We found that 31 per cent., 33 per cent. and 35 per cent. respectively, of the adults in these areas showed this syndrome, in the terms in which we had defined it. We then commented as follows (p. 50), "the striking feature here is not the difference, but the similarity in the prevalence in the three areas. The 'sub-clinical neurosis syndrome' is exhibited by about a third of the population whether they live in Newton, Outlands or Oldfield. Such a finding suggests that we are dealing here with a phenomenon in which constitutional or long-standing factors are more important than immediate environment."

We went on to show that the figure was not affected

by length of residence in the area but was definitely age and sex linked. The indicators of this syndrome enabled us to identify a group in the population who were more lonely, bored and discontented than the rest, who made fewer friends and participated less in leisure-time activities, although in terms of their income and of their contacts with their kinsfolk they did not differ from those around them.

We concluded (p. 168) that "if our findings are generally confirmed (and we must emphasize the importance of using the same techniques of estimation in each area), this means that a third of the population are born with, or develop, nervous symptoms and are more prone to neurotic illness than the remaining two-thirds. This proneness is shown by the excessive exhibition of one or more of the following symptoms—'nerves', depression, undue irritability or sleeplessness.

"Our evidence is, then, that the sub-clinical neurosis syndrome is not a product of the immediate environment. It is constitutional, in the sense that it represents a deeply embedded pattern within the nervous system."

We hold that the facts we have adduced entirely support this conclusion. The burden of proof must therefore lie with the critic who, rejecting this conclusion, suggests that further surveys in other communities would reveal a different distribution of symptoms. If the three communities which we studied had been similar in character, the criticism might be valid. But since they were as dissimilar as could be found among urban populations, the probability that further investigations conducted in the same way elsewhere would produce radically different findings is very small.

Such evidence as has come to light since the publication of our study confirms this view. Hare and Shaw (1965) compared the prevalence of mental disorders in the populations of a new housing estate and a ward in an old borough. They found no significant difference between these populations in the rates for neuroticism (both as measured by the Maudsley Personality Inventory and as assessed by interviewers), for "nervous disturbance" (whether severe, moderate or mild), for neurosis, or for such symptoms as dizziness, debility and headaches under treatment by general practitioners. They conclude: "The findings confirm previous reports that in any population there tends to be a group of persons prone to both physical and mental ill-health."

Hare and Shaw's work provides further confirmation of the hypothesis that immediate environment is less important than long-standing constitutional factors in the development of neurosis and its symptomatic precursors.

In our view Mr. Still's criticism on this point is entirely lacking in evidence to support it.

2. *The Psychoses*

Here Mr. Still is confusing the in-patient admission rate with the psychosis rate.

Total mental hospital admissions from Newton for each of the three years 1957 to 1959 were significantly lower than the expected figures based on those for England and Wales; indeed, when taken together the difference is significant at the 0.1 per cent. level.

Nearly two-thirds of the cases admitted from Newton were psychotic, and about one-third were neurotic. This proportion of neurotic admissions is twice the national figure.

During the three-year period, 42 patients were admitted for treatment to ten special psychiatric units. As we reported (Table 77, p. 151), most of these were neurosis cases, although there were three psychotics. While the inclusion of these 42 patients can be used, as we have shown (p. 146), to raise the *in-patient admission rate*, the inclusion of the three psychotic patients makes practically no difference to the *psychosis rate*.

It follows then that, as we claim (p. 146), the rate for psychoses admitted for treatment from Newton "must be even more markedly below the national figures than the overall figures (for admissions) would suggest." And this is incontrovertible.

However, as the mental hospital serving Newton is 40 miles away, we considered whether distance might be acting as a deterrent to the willingness of patients to be admitted there. If this were so, it seemed to us that more pressure would have been put on the psychiatric services which were available locally. In other words fewer in-patients might result in more out-patients. An analysis of the records of the psychiatric out-patient department at the local general hospital showed that this was not so, but that somewhat fewer patients were being referred there than would have been expected from the national usage of these services at that time.

If it is true, as we suggest would seem likely (p. 147), that the majority of patients suffering from serious mental illness—and particularly from psychosis—are brought for treatment to the specialist psychiatric services which are now available, then our findings clearly show that the incidence of such cases in Newton was low. And this finding remains valid when all reasonable corrections, for example for sex and age, have been applied.

3. *Psychiatric case-load in general practice*

Mr. Still refers, finally, to our study of the psychiatric case-load of the general practices in Newton.

In a sample of about 2,800 adult patients, 16 cases of psychosis were reported by the G.P.s. This gave a rate of 5.7 per 1,000, which was higher than that found by Logan and Cushion in the general population. From our discussions with the doctors there was no evidence whatever of any hesitation on their part about referring their psychotic patients for specialist advice and treatment. Indeed, during the year 11 of the 16 patients were so referred.

We therefore concluded (p. 147) that this figure, based as it is on a small number in a *sample* population, was a *less* reliable guide to the amount of psychotic disorder present in Newton than the figures obtained through the specialist services covering three years and based on the *total* population of the town, which in 1959 was nearly 40,000.

Our confidence in the conclusions presented in our book therefore remains undisturbed.

TAYLOR.

SIDNEY CHAVE.

*Memorial University of Newfoundland, and
London School of Hygiene and Tropical Medicine*

REFERENCE

HARE, E. H., and SHAW, G. K. (1965). *Mental Health on a New Housing Estate* (Maudsley Monographs, No. 12), Oxford.

VITAMIN B₁₂ AND FOLATE DEFICIENCIES

DEAR SIR,

May I comment on some of the issues raised by the very interesting studies of Dr. Shulman (*Journal*, March, 1967, p. 252) of vitamin B₁₂ and folate deficiency in an elderly psychiatric population.

1. Dr. Shulman's is the third recent report of a very high incidence of folate deficiency in geriatric patients. He has referred to the findings of Read, Gough, Pardoe and Nicholas (1965), whose study revealed an incidence of folate deficiency identical to his own figure of 80 per cent. More recently Hurdle and Picton Williams (1966) reported an incidence of 67 per cent. in those admissions to a geriatric unit with mental disorders. Even allowing for the possibilities of (1) an unduly high normal range for serum folate quoted in the studies of Shulman and those of Read *et al.*, and (2) a fall of serum folate with age, there does indeed seem to be a remarkably high incidence of folate deficiency in geriatric patients with mental symptoms. Although there are difficulties in establishing a diagnosis of nutritional folate deficiency (as discussed by Hurdle and Picton Williams) it has been concluded that this is the cause of the folate deficiency