

and a calculation from one of the Registrar General's tables (2), which gives age of mother at birth of a child in relation to the duration of her marriage, yields a correlation coefficient of 0.70.

Our results are shown in the figure, which may be compared with Figure 3 in Dr. Kreitman's paper. A comparison indicates: (a) that for extraversion (E) scores there is a broad agreement; (b) that for neuroticism (N) scores in which a spouse was neurotic there is agreement in the trend with age, but our correlation coefficients are less positive than Kreitman's and none of them is significant; (c) that for N scores in non-neurotic couples, there is disagreement on the variation with time, Kreitman's figures showing a fall in correlation and ours suggesting an increase.

Correlation
Coefficient

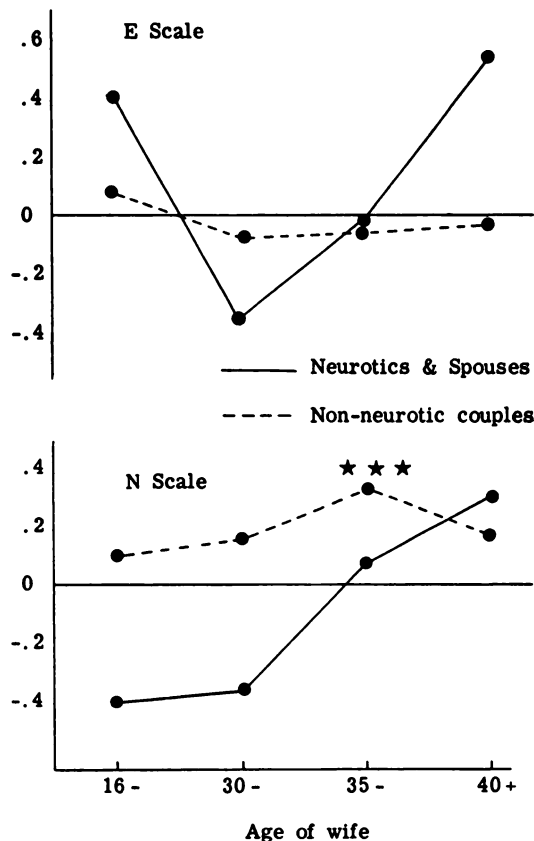


FIG.—Husband - wife correlations on MPI scores by age of wife. No. of couples for neurotics, by increasing age groups = 18, 11, 17, 18; for non-neurotics = 80, 83, 89, 113.

*** = $p < 0.01$.

In considering the possible causes of this difference, it must be noted that Dr. Kreitman's 58 patients and 79 controls were known to be closely matched for various factors. Our groups were not matched but we have shown elsewhere (3) that neurosis was not associated with social class and scarcely with age. The distribution of sex and family size were unequal in our groups but the relevance of these factors to the present issue is uncertain.

With these reservations in mind, our results suggest that the concordance between spouses for N scores increases with increasing age (or duration of marriage) independently of neurosis. A factor in this might be the decrease in mean N score with age, a decrease which in our population was more rapid in females than in males (4). Since this factor occurred equally in single and in married persons, it would be independent of either assortative mating or interaction between spouses.

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1. EYSENCK, H. J. (1958). *J. appl. Psychol.*, 42, 14.
2. REGISTRAR GENERAL. Statistical Review of England and Wales for the Year 1960, Part 11. London, 1962. Table II, page 160.
3. HARE, E. H., and SHAW, G. K. (1965). Mental Health on a New Housing Estate. Maudsley Monographs No. 12. London.
4. SHAW, G. K., and HARE, E. H. (1965). *Brit. J. Psychiat.* (in the press)

AMITRIPTYLINE IN DEPRESSIVE STATES

DEAR SIR,

Dr. Hordern and his co-authors are to be congratulated on their recent triad of papers dealing with amitriptyline in depressive states. Though this work has been well conceived and carefully executed, it is a great pity that the authors' obvious efforts to keep the size of the papers as short as possible has resulted in an apparent omission from the discussion. I refer especially to the second paper "Amitriptyline in Depressive States; Phenomenology and Prognostic Considerations", *Brit. J. Psychiat.*, 109, 815-825 (1963).

On page 816, the authors use the ultimate need for ECT as the index for success or failure of treatment and they conclude that overall amitriptyline was better than imipramine and that this difference was highly significant statistically ($P = 0.002$).

In an analysis of this kind, it is essential that the two groups of patients be similar at the start and

any factor which is known to influence response to therapy should either be equally divided between the two drug groups or eliminated. On page 817, the authors discuss the significance of delusions and they point out that patients who are frankly deluded do badly on imipramine and they also offer evidence that these patients will probably respond less well to amitriptyline. The initial efforts to ensure that relevant factors were distributed equally between the two drug groups were both rigorous and reasonable and it was indeed very bad luck that "chance" was so unfair as to place seventeen of the frankly depressively deluded patients into the imipramine group and only six into the other.

Since delusions in a depressed patient foretell a poor response to treatment with imipramine (and possibly amitriptyline) this particular study was loaded against imipramine from the start unless one excludes the deluded patients. If one does this, the results would read:

	No ECT	ECT	Total
Imipramine	37	14	51
Amitriptyline	54	9	63
Total	91	23	114

Chi-square now becomes 3.0332 and $P > 0.05$, no longer statistically significant.

It would seem, therefore, that the statistical superiority of amitriptyline over imipramine in this study appears to be due to the fortuitous distribution of deluded patients in the two treatment groups.

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DEAR SIR,

On behalf of myself and my colleagues, I should like to reply to the comments made by Dr. Domenet of the Geigy Pharmaceutical Company.

It is quite true, as you could personally confirm, that for the purpose of publication in the *British Journal of Psychiatry*, we had to shorten the second paper describing our investigation. However, a lengthier, more detailed account will soon be available as part of a monograph, "Depressive States: A Pharmacotherapeutic Study." Written by myself in collaboration with Dr. Burt and Mr. Holt, this book is shortly to be published by Charles Thomas, of Springfield, Illinois.

Dr. Domenet correctly points out that in our second paper we used the ultimate need for ECT as the index for the success or failure of treatment. We concluded that the overall results of the in-patient

phase of the trial strongly favoured amitriptyline, to which 81 per cent. of patients responded, rather than imipramine, to which only 54 per cent. responded. Dr. Domenet, however, believes that our conclusion is invalid, since chance, he thinks, unluckily resulted in a disproportionately large number of deluded patients entering the imipramine group; this, he alleges, "loaded the study against imipramine from the start unless one excludes the deluded patients."

I am sure that this was not so and that Dr. Domenet is mistaken in his assumption. In the first place, the results given in our second paper were obtained by combining the findings of two consecutive yet independent in-patient phases of the investigation. In 73 patients in the first phase, which we described in our first paper (*J. Ment. Sci.*, 1962, 108, 711-730), the response rates were: amitriptyline 78 per cent., imipramine 58 per cent. In 64 patients in the second phase, the corresponding rates were: amitriptyline 84 per cent., imipramine 50 per cent. These results correspond quite closely. If chance, as Dr. Domenet believes, has been responsible for placing a disproportionately large number of deluded patients in the imipramine group, the similarity of these results would imply that the same disproportionate allocation of such patients to imipramine occurred by chance in each of the two quite separate in-patient phases of the trial, a rather unlikely occurrence. Further, in our monograph we provide evidence that the samples of patients in the two drug groups who, after stratification by age and severity of illness, were blindly and randomly allocated to one or other drug, did not differ significantly in socio-economic or psychiatric background. The two samples were similar in age. They were initially almost identical in total "pathology scores" on the Hamilton scale for depression (amitriptyline group, $n=69$, mean score 48.82; imipramine group, $n=68$, mean score 48.68) and they did not differ significantly in the initial severity of any of the 17 Hamilton scale symptoms, some of which in their most extreme form actually correspond to unequivocal delusions. In view of these considerations and the fact that, as page 822 of our second paper observes, our results are in line with those obtained by other investigators using imipramine in severely depressed patients, it is straining credulity to suppose that our two drug groups were biased initially in regard to the inclusion of deluded patients. All the evidence points to the contrary.

Secondly, there is a likelier explanation for the disproportionate numbers of patients noted to be deluded in the groups on amitriptyline and imipramine. When the study had been in progress for some months, two of our nursing sisters pointed out that