

Comments and Communications

Dramamine and Motion Sickness

I should like to comment on the two articles on motion sickness by Gay and Carliner and Strickland and Hahn that appeared in your April 8th issue (*Science*, 1949, 109, 359).

Gay and Carliner's procedure of dividing the subjects into control and medication groups on the basis of the ship's compartments they occupied may be expeditious from an administrative standpoint but is hazardous experimentally. The various compartments of a ship are not subjected to the same degree and kind of motion. It is, therefore, difficult to ascribe the differences in sickness rates found in the several compartments solely to the medication employed. It is quite possible, for instance, that compartment 3-F was more conducive to causing seasickness than compartment 3-E. To have controlled this adequately, the investigators should have randomly divided the men in each compartment into the various experimental groups.

The procedure of using sick men in a placebo group to test the efficacy of a remedy in curing the already sick can be safely done only if a like number of sick men in the same group remain untreated or continue to receive placebos. Drs. Gay and Carliner, by neglecting this, left themselves without adequate controls and therefore one cannot determine with certainty to what extent the remission of symptoms was due to medication (Dramamine), change in weather and sea conditions, or to the phenomenon of adaptation. The latter is of great importance.

Studies of the efficacy of a remedy must be made under a variety of sickness rates and the results should be expressed as the percent protected for a given sickness rate. At placebo rates of between 20 and 30 percent—the rate apparently found in the Gay and Carliner experiment—it is not uncommon for medication such as hyoscine, or even certain barbiturates, to give high protection. With such moderate sickness rates in the controls this writer has, on occasion, found 0.6 mg hyoscine to give 80 to 90 percent protection. Therefore, on the basis of the single experiment reported, no convincing evidence is presented to indicate that Dramamine is any more effective than 0.6 mg hyoscine in preventing motion sickness. This is further borne out by the paper of Strickland and Hahn in which they report an experiment where 55.6 percent of the placebo group became sick. Under this moderately high sickness rate, 28.7 percent of a like number receiving Dramamine became sick, indicating that the medication gave protection to about 50 percent. With such sickness rates in the controls, 0.6 mg hyoscine has been shown to give similar protection (*Amer. J. Physiol.*, 1946, 146, 458). Incidentally, this dosage of hyoscine has been demonstrated to be without any harmful side effects on the efficiency of combat men.

Therefore, until Dramamine, or any other proposed remedy, is tested under adequately controlled conditions, against hyoscine as well as a placebo, and under conditions of a variety of sickness rates in the controls, any claims as to its superiority as a preventive are apt to be premature.

Finally, the statement in the opening paragraph of the paper by Strickland and Hahn, "Investigations on motion sickness in the past have shown a paucity of controlled studies carried out on shipboard or on aircraft," leave many of us who were connected in one way or another with the Subcommittee on Motion Sickness of the Committee on Medical Research a little dismayed, to put it politely. An enormous amount of time and energy had been spent on this problem during the war and much was accomplished. Also, many had the satisfaction of seeing or hearing of the results of their studies being successfully applied in landing operations. These studies, sponsored by the CMR, were the subject of numerous reports to the Surgeon General. They are also to be found in many easily available scientific and medical journals. I and, I am sure, any of the members of the wartime Subcommittee on Motion Sickness of the OSRDemr, would be glad to enlighten the Surgeon General's office on this matter.

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In Criticism of Chisholm's "Social Responsibility"

If no workable plan for peace can be based on the anomalous idea that social processes are the outcome of individual attitudes and decisions, then a retort seems badly needed to the endorsement (*Science*, 1949, 109, 264) of the Chisholm article "Social Responsibility" (*Science*, 1949, 109, 27). This fallacious individualism leads to *der Fuehrerprinzip*—the belief that personal leadership by "mature" or "socially minded" persons is the basis of an orderly human society.

Much more space than this note can command should be given to serious refutation of such an idea. In a world in which "the poor always ye have with you," individual responsibility is a preoccupation with keeping the wolf from one's own door. If our social setup is working badly it is because the rules of the game are badly designed to encourage and reward this acceptance of personal responsibility for one's own welfare (see "Individualism; True and False," chapter in F. A. Hayek's *Individualism and the economic order*, 1948).

The spreading of the idea that science is an "endless frontier" which can provide for any number of *Homo sapiens*, all of whom can survive as winners in the game of life if we can develop a race of "brother keepers," obviously begets anything but good sportsmanship in the