ments provide evidence for the presence of an enzymatic aspartic acid decarboxylase, yielding *beta*-alanine, in several species of microorganisms. The data also show that this enzyme is not widely distributed among bacterial species, and when present exhibits a relatively low activity. If aspartic acid decarboxylase is concerned only with the maintenance of an adequate amount of *beta*-alanine for the synthesis of pantothenic acid, the low activity is in keeping with the small amount of this vitamin usually necessary for optimal growth. Further, the enzyme may be present only in those organisms which synthesize *beta*-alanine, and conversely failure to synthesize *beta*-alanine or pantothenic acid may be an indication of the absence of aspartic acid decarboxylase. In order to test this hypothesis the pantothenic acid requirements of the organisms employed here were studied by employing chemically defined media. It may be seen (Table I) that in keeping with this hypothesis all of the organisms exhibiting positive aspartic acid decarboxylase activity are capable of growing in synthetic media without added *beta*-alanine or pantothenic acid suggesting that they are able to synthesize their own supply. On the other hand, 2 of the 9 strains exhibiting negative activity with respect to aspartic acid decarboxylase, namely *A. aerogenes* and *S. aureus*, are capable of growing in a medium devoid of pantothenic acid. It appears therefore that the correlation between ability to synthesize pantothenic acid and the presence of an aspartic acid decarboxylase is not without exception.

Summary. Of 16 strains of microorganisms studied, 7 exhibited positive aspartic acid decarboxylase activity. Employing *Rh. trifolii* this enzyme was found to be stable to vacuum drying, and active cell-free juices could be prepared.

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Effectiveness of Various Drugs in Prevention of Airsickness. (17633)

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The effectiveness of β-dimethylaminoethyl benzohydryl ether 8-chlorotheophyllinate (Dramamine) in preventing sea(1,2) and airsickness(3) has focused attention on other drugs with similar chemical or pharmacological properties. Since Dramamine is the 8-chlorotheophylline salt of β-dimethylaminoethyl benzohydryl ether (Benadryl) the question immediately arises whether the effectiveness resides in either component or only in the combined form. We have investigated this problem in the airplane, using the simulated turbulence technic of Strickland and Hahn(3). Benadryl and 8-chlorotheophylline were each given in 50 mg doses one hour before take-off.

Table I shows that Benadryl possesses marked protective action against airsickness. There was no significant difference between the protection afforded with Benadryl and

TABLE I.
Effect of Preflight Medication on Airsickness.

Preflight medication	Subjects	Airsick (vomited) No.	%
Placebo	75	40	53.3
Benadryl	75	23	30.7
Placebo	78	52	66.7
8-Chlorotheophylline	78	39	50.0
Placebo*	108	60	55.6
Dramamine* (100 mg)	108	31	28.7

* Data from Strickland and Hahn(3).

1. Gay, L. N., and Carliner, P. E., *Bull. Johns Hopkins Hosp.*, 1949, v84, 470.
2. Gay, L. N., and Carliner, P. E., *Science*, 1949, v109, 359.
3. Strickland, B. A., and Hahn, G. L., *Science*, 1949, v109, 359.

TABLE II.
Comparison of Hyoscine-Benadryl Mixture with Hyoscine Alone.

Preflight medication	Subjects	Airsick (vomited) No.	%
Hyoscine	135	26	19.3
Hyoscine-Benadryl	135	14	10.3

that with Dramamine. Slight protection was given by 8-chlorotheophylline. It is interesting to note that in those instances where Benadryl was unable to prevent vomiting the time of onset was nevertheless delayed over that of the placebo group (34.2 to 29.0 minutes).

Hyoscine hydrobromide has long been the drug of choice in airsickness(4). Because of the difference in pharmacological action of hyoscine and Benadryl, it was thought that a combination of these compounds might be more effective than either alone. Therefore, one hour before flight hyoscine hydrobromide alone was given to one group of subjects in 0.65 mg doses, while a mixture of 0.65 mg hyoscine hydrobromide and 50 mg Benadryl was given to a second group.

Table II indicates the superiority of the mixture. Only 10.3% of the subjects in this group became sick, compared with 19.3% with hyoscine alone, approximately 30% with Benadryl or Dramamine and over 50% with placebos. In every instance significance has been determined between the control and experimental groups by means of a sequential test of hypothesis. The 8-chlorotheophylline series was truncated after 13 flights so that the level of significance is probably between 7 and 10%. In all other cases truncation was not necessary and the difference between the groups was significant at the 5% level. The incidence of vasomotor disturbances and nausea not leading to vomiting was similarly decreased among those subjects receiving hyoscine-Benadryl. The average time of onset of vomiting was delayed from 29.0 minutes with hyoscine alone to 42.0 minutes with the hyoscine-Benadryl combination. Drowsiness and dryness of the mouth were the chief complaints of those receiving the mixture.

Experiments are under way to test smaller doses and other antihistaminics purported to have fewer side effects.

Summary. No significant difference was found between Benadryl (50 mg) and Dramamine (100 mg) in protecting subjects from airsickness during a turbulent flight in an airplane. 8-Chlorotheophylline (50 mg) gave only slight protection as compared with placebos. A combination of hyoscine hydrobromide (0.65 mg) and Benadryl (50 mg) was found to be more effective than either of these drugs alone.

4. Smith, P. K., USAF Sch. Aviat. Med. Res. Proj. 468, Rep. No. 1, June 14, 1946.

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Occurrence and Distribution of an Inhibitor for Desoxyribonuclease in Animal Tissues.* (17634)

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The presence of a specific inhibitor for desoxyribonuclease in the crop gland of brooding pigeons has recently been described(1). The purpose of the present work was to investigate the distribution of the inhibitor in

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