among others, on the score of the small number of birds used and the great variability among them. Forbes and Park[5] in excellently controlled experiments found that germ-free chicks grew better than conventional controls and showed no response to penicillin. Forbes and co-workers[6] obtained similar results when they gave oleandomycin to germ-free turkeys. The Lobund workers also obtained no response on feeding penicillin to germ-free chicks. Recently[7] we have confirmed that germ-free chicks grow better than conventional birds and show no response to penicillin. We have also found[8] that *Cl. welchii* inoculated into germ-free chicks depressed growth and that this depression was relieved by the inclusion of penicillin in the diet. Penicillin also caused a "stimulation" of growth when *Cl. welchii* together with other intestinal organisms was inoculated into germ-free chicks.

These results confirm the bacterial theory of antibiotic growth stimulation, and it is our view that certain bacteria normally present in the gut of animals depress the growth rate of the host. This depression can be relieved by the inclusion of antibiotics in the diet. *Cl. welchii* is an example of such an organism; others may yet be discovered.—I am, etc.,

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Hazards of Drugs in Pregnancy

SIR,—In your leading article entitled "More Hazards of Drugs in Pregnancy" (January 19, p. 138) you discuss the report of Werboff and Kesner.[1] I am writing to give you a critical consideration of this paper for which you so appropriately call.

Werboff and Kesner gave meprobamate to pregnant rats during certain periods of gestation and reported that the drug may have detrimentally altered the maze learning ability of the offspring. The ability of rats to run the maze in 20 seconds or less in two out of three errorless trials was taken as the criterion of learning. It is well known that maze performance in animals is affected not only by the ability of the animals to learn but also by their physical condition. The authors, however, used animals that weighed less and were significantly less active on two separate activity measures.[2] This observation requires two comments. Firstly, animals showing motor impairment are not suitable for evaluation in a maze because their performance will be indicative of their motor disability rather than of their ability to learn. This consideration is particularly pertinent when the time to complete a run is taken as the criterion of learning as has been done by these authors. Secondly, it is known that offspring of rats given meprobamate prior to and during the whole period of pregnancy in similar or larger doses than given by Werboff and Kesner grow normally and do not weigh less than control animals and are not less active than offspring of untreated animals.[3] Thus, it is apparent that the animals used by Werboff and Kesner must have been diseased and unsuitable for comparison of their maze performance with healthy rats.

It is also of interest to note that Werboff and Kesner administered meprobamate to animals only during one single period of gestation, which was either from day 5 to 8 or from day 11 to 14 or from day 17 to 20. The authors state that it did not make any difference in which trimester of pregnancy the drug was given.[2] Since the drug is alleged to have an effect on the development of the brain, one would expect that it would have a time-defined influence limited to certain critical stages of the brain's development.

I agree that results of drug studies in animals deserve serious consideration. It is, however, necessary that they be carefully planned, properly executed, and critically evaluated.—I am, etc.,

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"Alka-seltzer" and Haematemesis

SIR,—Your correspondent Dr. A. C. Arthur does well to draw attention to the dangers of "alka-seltzer" in causing gastro-intestinal bleeding (January 26, p. 260). Possibly some doctors, and certainly most laymen, do not realize that another proprietary preparation—namely, "Beecham's powder"—contains 5 gr. (0.32 g.) of aspirin in each powder. They are "recommended" for colds, influenza, headaches, various forms of "rheumatism," etc., in doses of one powder every two or three hours "as necessary." This can obviously result in taking 60 gr. (4 g.) of aspirin unknowingly in 24 hours, with possibly disastrous results in patients sensitive to aspirin. Such products should be clearly labelled "Contains Aspirin."—I am, etc.,

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High-dose Mustine Therapy

SIR,—Dr. K. P. Goldman (February 2, p. 312) gave a "maximal sublethal dose" of mustine (0.8 to 1.0 mg./kg. body weight) in three divided doses on consecutive days to 32 patients with advanced bronchial carcinoma. There was a subjective improvement in 56% and an objective response in 43%, the average remission time being a few weeks only. Twenty-seven of the 32 patients died within six months.

After pointing out that "there is little reason to believe that mustine therapy appreciably prolongs life except in cases of superior mediastinal compression," Dr. Goldman admits that the drug given in these doses might well hasten death (in 16% of cases in this series).

Few practitioners can quarrel with Dr. Goldman's observation that "satisfactory results in lung cancer chemotherapy will probably have to await the discovery of new drugs which are less damaging to normally dividing tissues." His final conclusion that in the meantime "the best palliation can be achieved with the drugs at present available if they are given in maximal doses" rather suggests, however, that he has failed to accept the message provided so beautifully by his own clinical trial.

When used in the treatment of advanced disseminated solid tumours the anti-cancer drugs are, at best, pallia-