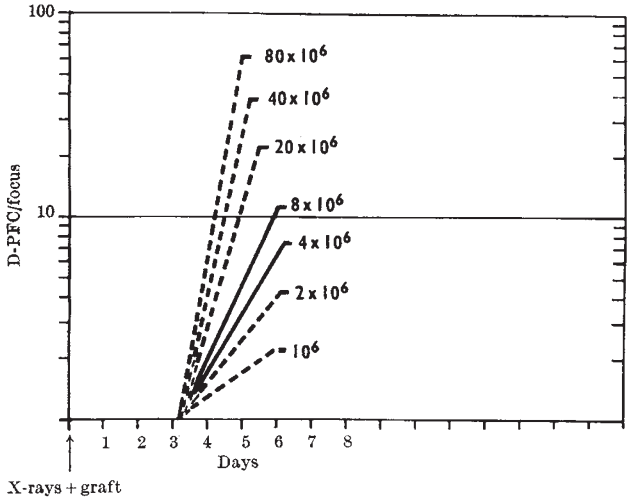

Fig. 3. Increase of peak PFC population per focus with graft size. Solid line, based on measured PFC and FFC; interrupted line, based on measured PFC or FFC and the extrapolated values of Fig. 2.

ated host; (2) between FFC themselves; (3) between FFC and another population of cells present in the injected spleen suspension; or some combination of these possibilities. In the first case, the increased enhancement observed with increasing numbers of spleen cells transplanted would have to depend on some factor such as increased concentration of FFC in the same splenic environment. Contrary to this hypothesis, however, is our finding that the total nucleated cell population in the spleen increases with increasing graft size at the onset of the PFC response. Furthermore, preliminary experiments indicate that, although the direct PFC response increases with increasing grafts of bone marrow cells, a corresponding enhancement is not observed (unpublished observations of C. J. Gregory). This suggests that FFC do not directly affect the proliferative capacity of each other, at least in the primary response[20]. Thus we favour the view that the number and rate of divisions in the production of a PFC population are related to the degree of interaction which takes place between FFC and a second population of radiosensitive cells, usually present in the spleen, and hence in our graft (but absent from bone marrow), which do not themselves give rise to antibody-forming cells. It is tempting to equate this second population with the recently described[3,7,8] "antigen-reactive" cells of thymic derivation.

We thank Mrs Carol A. Whitehead for technical assistance. C. J. G. is a scholar of the Medical Research Council of Canada.

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Received April 11, 1968.

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Discrimination between Heavy Water and Water by the Mouse

THE note[1] on discrimination between heavy water and water by the mouse dealt with data on two mice (litter mates). Although the inferences may eventually be proved correct it seems unwarranted for the author to make the statements: (1) "The experiment described here indicates that mice are able to discriminate between D_2O and H_2O", (2) "It is clear from the results of Table 1 that *Mus musculus* can distinguish ($P \ll 0{\cdot}001$) between H_2O and D_2O".

Because this experiment could have been replicated many times without undue cost in terms of time and materials, even a preliminary report on such limited data is surprising. Ironically, this example will prove instructive in the teaching of biometrics.

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Received March 11, 1968.

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Effect of Nitrous Oxide on the Auditory Evoked Response in Man

IN human pharmacology there are few objective indicators of sedative drug action. Consequently, the development of neurophysiological measures sensitive to such drugs would give this aspect of psychopharmacology a firmer quantitative basis. A powerful neurophysiological technique in man is that of evoking electroencephalographic responses which can be recorded from the scalp by using recent computer techniques which perform the necessary averaging computations. The wave-form obtained by visual, auditory or somato-sensory stimulation has been regarded as divisible into components of short latency arising from the "specific" cortical receiving areas and "non-specific" potentials of longer latency. The latter are widely distributed, being detectable over much of the scalp including the vertex[1].

Several studies have shown that some components of the averaged evoked responses are altered by sedative drugs. With moderate dosage, barbiturates such as quinalbarbitone, and benzodiazepines such as diazepam and oxazepam produced a diminution in some later components of evoked responses[2–4]. With larger doses, inducing sleep and anaesthesia, complex changes in these potentials have been noted[5,6]. Little systematic and quantitative research, however, has been carried out in this area.

Nitrous oxide has the advantages of being conveniently and accurately administrable by inhalation; it equili-