increases of activity in the sensitized group, attributable to the greater weight of the tissues.

These experiments thus demonstrate what appears to be immune elimination of allogeneic lymphoid cells (or immune elution of the chromium label) from the lymph nodes and spleens of mice presensitized to their antigens. They establish its specificity and show that the extent of elimination is related to the state of immunity in the recipients. The phenomenon may offer a useful method of measuring homograft sensitivity and is being further investigated.

Note added in proof. The paper of Najarian and Feldman (*J. Exp. Med.*, 121, 521; 1965), which appeared while this communication was in the press, substantially confirms these findings.

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PATHOLOGY

Smell Threshold in Diabetes Mellitus

An elevated taste threshold for dextrose in diabetic patients without evidence of demonstrable diabetic neuropathy has recently been demonstrated[1]. Although it is unlikely that this was due to a non-specific decrease in gustatory acuity, those patients having normal thresholds for sodium chloride, further investigation of this possibility was indicated. The closely related olfactory threshold was, therefore, measured in 56 diabetic patients and 56 control patients, of the same age and sex. The method used was a modification of that of Elsberg and Levy[2], in which increasing quantities of an air–coffee mixture were released into the nose until the subject recognized an odour to be present (minimal perceptible odour). The modifications (to be described elsewhere) were designed to diminish important variables inherent in the original technique. The determination was carried out at the same time of day for each patient in a pair.

When the results were subjected to statistical analysis, the distribution of age and sex was unbalanced. A random sample, therefore, of two male and two female pairs were taken from each age group 20–29 . . . 60–69, and analysis of variance conducted on this sample. No significant difference was found between diabetic and control patients (Table 1). The only significant difference in both sets of patients ($P < 0{\cdot}05$) was between age groups, although there was no obvious relationship between increasing age and threshold. However, thresholds of more than 30 ml. were not found under the age of 45 years, while thresholds of patients more than 60 years old varied from 5 to more than 80 ml.

Table 1. Mean of Olfactory Thresholds in 20 Pairs of Diabetic and Control Patients Randomly Selected from 56 Pairs according to Age and Sex

	Diabetic	Control	*d*	*S.E.* of *d*
Mean threshold (ml.)	14·7	16·9	2·2	3·6

This demonstration of normal olfactory thresholds in diabetic patients and the fact that their taste threshold for sodium chloride is normal[1] are against a non-specific decrease in gustatory-olfactory acuity in this disease. A second hypothesis to account for their abnormal taste threshold for dextrose would implicate tolerance to a raised level of blood glucose. This is unlikely, however, in view of the negative correlation which has been found between blood glucose-levels and taste threshold[1,3]. A third possible explanation which requires further investigation is that diabetic patients have an inborn defect of taste for dextrose.

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RADIOBIOLOGY

Uptake of Plutonium by the Lobster *Homarus vulgaris*

Because of its long effective half-life and its decay characteristics, and since it is deposited in bone, man-made plutonium is one of the more hazardous of the radioelements. It is released in exceedingly small amounts from nuclear fuel reprocessing plants and in nuclear weapons tests, and, like the long-lived fission products evolved in this way, it may be detected at low concentrations in the marine environment. The concentration of plutonium by marine organisms is, therefore, of some interest. The total α-content of the edible seaweed *Porphyra umbilicalis* and of fillets of the plaice *Pleuronectes platessa*, collected near Windscale Works, are given by Dunster *et al.*[1]. Some data on the contemporary plutonium content of Pacific Ocean sea water and the concentration factors in certain marine plants and animals collected near the southern California coast are given by Pillai *et al.*[2]. The concentration factor is the ratio of the amount of plutonium per g of tissue (wet weight) to the plutonium in the same weight of sea water.

Experiments on the uptake of plutonium-239 from aerated filtered sea water by lobsters were carried out in partitioned glass tanks in a room with a constant temperature of 9–12° C. Every few days the lobsters were transferred to fresh tanks of sea water containing $6{\cdot}5 \times 10^{-2}$ μc./l. of plutonium-239, until the initial rapid uptake of the isotope was completed, when the water was changed less frequently. During the experiment, the lobsters were fed on uncontaminated mussels.

All samples were dried at 110° C to a constant dry weight and ashed at 500° C for 16 h. Weighed amounts of the ashed sample were dissolved in 10 N nitric acid, and the plutonium extracted in the presence of ferric ion into 20 per cent tributyl phosphate/carbon tetrachloride. An aliquot of this extract was slowly evaporated on a large counting tray and its plutonium content determined on an α-scintillation counting unit.

The results show that when a lobster casts its shell, the soft shell, gills, hepatopancreas and flesh contain relatively less plutonium-239 than the normal animal, whereas the content of the cast shell is approximately twice that of the shell of the intermoult lobster (Fig. 1). The plutonium-239 in the cast shell was analysed, following ecdysis, 100 days after a lobster had been placed in the radioactive