which is regenerated with a mixture of calcium and sodium chloride.

In the present investigation, 'Dowex 50*W*–*X*12 was employed. Experiments were conducted on commercial milk to which strontium-89 was added, and on guinea pig milk containing strontium-89 diluted with cow's milk. The resin was treated with a solution of 18·0 per cent calcium chloride, 15·5 per cent potassium chloride, 6·5 per cent sodium chloride. The ratio of the cations in this solution is the same as that which exists in milk. 50 gm. of the resin was stirred for 30 min. with five successive 200-ml. portions of the salt solution. Table 1 shows the efficiency of this resin for removing strontium from milk.

Table 1. Effect of Calcium–Potassium–Sodium Resin Treatment on Removal of Strontium-89 and Cation Composition of Milk

Amount resin per 20 ml. milk (gm.)	Calcium (per cent)	Sodium (per cent)	Potassium (per cent)	Strontium-89 removed (per cent)
0	0·120	0·048	0·165	
0·25	0·127	0·051	0·165	68·5
0·50	0·125	0·049	0·161	76·8
1·00	0·128	0·050	0·161	85·7

Note.—Strontium-89 content of milk was 6·75 μc./100 ml.

Table 2. Effect of Calcium–Potassium–Sodium Resin Treatment on Removal of Cæsium from Milk

Amount of resin per 20 ml. milk (gm.)	Cæsium removed (per cent)
0·25	50·1
0·50	56·6
0·75	70·6
1·00	75·8

The analyses of milk before and after treatment are also shown in Table 1. The results indicate that no change is produced in the calcium, potassium or sodium content of the milk, and 86·0 per cent of the strontium has been removed by one treatment with resin. A taste panel could not detect any change in flavour of the milk as a result of the resin treatment.

Milk obtained from guinea pigs previously injected with strontium-89 and diluted with cow's milk was also treated in the same manner. The percentage of strontium removed was the same.

An experiment was carried out with milk to which cæsium-137 was added. The results, shown in Table 2, indicate that cæsium-137 is removable by means of the same resin which removes strontium.

The indications are that removal of strontium and cæsium from milk is feasible without altering the milk. The question remains whether the process could be placed on a commercial basis if it ever became necessary; the answer can best be obtained by co-operative effort among the organizations concerned with this matter.

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In Vitro Labelling of Antibody Globulin by Tritium Exchange

Crawhall, Hawkins and Smyth[1] have reported the preparation of tritiated antibody by biosynthesis. The report of successful labelling of lysozyme and ribonuclease by *in vitro* tritium exchange[2] suggested that antibodies might also be amenable to tritiation by the latter method, which has the advantages of simplicity, larger yields, and usually results in products of sufficiently high specific activity to permit their use as reagents in radioautographic studies.

We have found it possible to label γ_2-globulin, prepared from antisera against the Ehrlich mouse ascites carcinoma, in this manner. Specific activities varied between 1 and 10 mc./gm. of protein, depending on the time of exposure to tritium gas (one to two weeks). Labelling was carried out both in the dry state at room temperature, and in solution at 5° C.; degradation products were formed to the approximate extent of 5 per cent of the original protein in the case of the first method, and 15 per cent in the case of the second. Subfractionation of the labelled globulin by chromatography on *DEAE* cellulose revealed some changes in the distribution of combining activity between peaks; the combining activity of the whole labelled globulin, however, was unchanged, as estimated by the quantitative complement fixation test. Ultracentrifugal studies showed a tendency toward separation of the original major peak of the unlabelled material into two peaks, after labelling. Observation of the fate of the labelled material in the bloodstream of the rabbit yielded no evidence of change in the direction of antigenicity, and there was no increase of any consequence in the rate of elimination.

It is concluded that labelled antibody globulin may be prepared by *in vitro* exchange with tritium gas without loss in titre and without major changes in physical properties. It is therefore possible that tritiated antibodies may find application in localization studies using the radioautographic technique.

A detailed report of this study will appear elsewhere[3]. This research was supported by a grant from the Michigan Memorial Phoenix Project.

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BIOLOGY

An Embedding Resin Miscible with Water for Electron Microscopy

There are three embedding media commonly used at present to prepare biological specimens for thin sectioning and electron microscopy: methacrylate esters[1], 'Vestopal' polyester resin[2], and 'Araldite' epoxy resin[3]. These, although excellent for many purposes, all have the limitation that they are not miscible with water and so require the specimen to be