(8 cc. of eschatin per day for 3 days), however, gave only negative results.

In the case of one normal control subject the ingestion of 15 gm. of NaCl every 6 hours caused an increase in blood pressure from 115/80 to 148/100 mm. of mercury, when the subject was on the simple, relatively-low-potassium diet given to the 3 diabetic children, but little or no change when he was taking an ordinary mixed diet containing liberal amounts of vegetables and meats. The possible effect on the carbohydrate metabolism of this subject was not determined.

Further studies are being made on (1) the specific effects of the different ions, (2) changes in blood volume with variations in salt intake and (3) effects, if any, of salt ingestion on the respiratory quotient.

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Effects of Radiation on Tissue Cultures of Lymph Node.

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Cultures of the mesenteric lymph node of adult rabbits were exposed to the type of radiation usually used for treatment of lymph nodes. The high voltage therapy machine at the University Hospital was utilized.

The water cooled X-ray tube was run with a current of 30 milliamperes at 200 K.V. A focus-surface distance of 50 cm. was used. The filter used in the preliminary experiments consisted of ¼ mm. copper plus 4.6 mm. aluminum (the aluminum in the ionization chamber).

The preliminary experiments consisted of cultures radiated with 1, 2, 4 and 8 erythema doses (800, 1600, 3200 and 6400 roentgens).

It became evident that higher doses were required to get the effects desired on the most resistant cells present.

The distance could not conveniently be reduced since it was desired to keep the cultures in a thermostat. In order to cut down the time of exposure the copper was removed from the filter, leaving the 4.6 mm. aluminum. The radiation was continued for 145 min. The absorption in the glass vessels was about 5%. With this taken

into account the dose reaching the cultures is about 19 erythema doses or 15,000 roentgens, given at rate of 103 roentgens per min. The half value layer was found to be 0.395 mm. of copper. Under these conditions the radiation is quite inhomogeneous but quite comparable to that used during treatment of patients.

The data discussed here were derived from cultures radiated at this higher dose. The discussion is limited to the cells migrating from the explant as seen in the living preparation.

Cultures were radiated at 37.0°C. Maximow slides and Carrel flasks were used. The culture medium was composed of 1 part heparinized plasma and 2 to 3 parts Tyrode extract of 6-day chick embryo. The study covers a period from immediately after radiation to 32 days. Controls were kept in the thermostat while the radiation was in progress. They were protected with lead.

The rapid dense migration of lymphoid cells seen around the controls is practically abolished at this dose. Usually a narrow rim composed of a small number of cells is seen in the radiated cultures. These cells are usually not ameboid when seen at the end of the radiation. Presumably they migrated early in the radiation period. Rarely there are some cells that show ameboid form for a few hours. These are usually the larger forms. The migration zone does not widen appreciably after the radiation period.

The large reticular macrophages appear at some variable later time in both experimental and control preparations. In the living preparation there is no striking difference early. At about 48 hours these cells become less ameboid and cease migration in the radiated cultures. They are not killed. They do not proliferate. In the controls migration and proliferation continue. In the later stages many giant cells form.

The fibrocytes are least influenced by the treatment. The response is variable. In some cultures luxuriant growth takes place, in others practically none. The cultures showing good growth may not show any qualitative change. Those showing marked inhibition also show, in many instances, unusual cells. Cells may show excessive branching and abnormal shapes. Cells may be found in unusual arrangement. In many there are multiple nuclei. Many cultures show micro forms.

The observations made on the living cultures suggest that these clearly defined cell families show marked differences in sensitivity to radiation under the conditions of the experiment.

The fixed and stained material will be described in the final publication.