extend to the epithelium of the outer part of the external auditory meatus at some distance from the temporal bone. In such a situation, the mechanism of tumour induction is not clear: perhaps some migration of the epithelial tissue occurs during growth and development, or the uptake and retention of strontium-90 or its decay product yttrium-90 in other tissues, such as the adjacent cartilage of the pinna, may be concerned.

It is perhaps significant that in the weanling rabbits a number of the ear tumours occurred in animals that had survived longer than others of the same series in which bone tumours had developed, and it may be that the development of malignant change in epithelial tissues adjacent to bone takes longer than in bone itself. In this connexion, it is interesting to note that 2 of the 3 epidermoid carcinomas of nasal accessory sinuses reported by Aub *et al.*[4] in human radium poisoning developed as long as 33 years after exposure to radium, while periods of 15–18 years were concerned with the 6 bone sarcomas reported in the same series.

The retention of strontium-90 and yttrium-90 in the temporal bone and the cartilage of the pinna is being studied further.

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Incorporation of Tritiated Uridine into Amphibian Eggs

The incorporation of labelled precursors into amphibian embryos is limited by the presence of a coat which covers the embryo and which renders the embryo impermeable to a large number of substances. One of them is uridine. However, we found that embryonic cells the coat of which has been disintegrated by placing them in a medium totally devoided of calcium incorporate tritiated uridine very rapidly, while the control embryos do not. Using this procedure, we have been able to follow the incorporation of this substance into dissociated embryonic cells at different stages of development.

Eggs removed at the desired stages were decapsulated. These eggs, still in their vitelline membrane, were cultivated in the following medium: sodium chloride (17 per cent), 20 ml.; potassium chloride (0·5 per cent), 10 ml.; *tris*, 560 mgm.; water, 966 ml.; *N* hydrochloric acid, 4 ml.; citrate, 5 gm.

In this medium, the embryos disaggregate into a mass of dissociated cells surrounded by the vitelline membrane.

After dissociation, the cells were replaced in the same medium without calcium, but deprived of citrate. The incorporation of uridine was followed by the autoradiographic technique of A. Ficq[1], after fixation by freeze-substitution.

At the blastula and young gastrula stages, the incorporation of tritiated uridine is exclusively nuclear. Treatment of the sections with deoxyribonuclease before application of the photographic emulsion completely removes the radioactivity: on the other hand, treatment of the sections with water or ribonuclease has no effect on the radioactivity. Therefore, uridine seems to be incorporated into deoxyribonucleic acid. This incorporation probably occurs at the level of the pyrimidine bases of deoxyribonucleic acid, because hydrolysis of the sections with *N* hydrochloric acid for 5 min. at 60° has no effect on the radioactivity. During gastrulation and neurulation, nuclear activity remains intense. A greater heterogeneity in the distribution of radio activity among the embryonic nuclei is observed. At the same time, radioactivity becomes conspicuous in the cytoplasm. Cytochemical tests indicate a change in the nature of the substances incorporating uridine. The nuclei, in slides treated with ribonuclease or *N* hydrochloric acid at 60°, now lose about half their radioactivity. After incubation of the sections in the presence of deoxyribonuclease, 30–40 per cent of the radioactivity remains in the nuclei. It should be mentioned that all the cells do not behave in exactly the same manner when they are submitted to this treatment. At the onset of segmentation of the egg, the importance of the coat is still such that penetration of the precursor is impossible even in the presence of citrate. Unsegmented eggs incubated in the presence of uridine and citrate for about 20 hr. exhibit nuclear incorporation in the daughter cells. At this stage, the localization of the tracks is either nuclear or chromosomal.

In summary, until the neurula stage, nuclear incorporation predominates over cytoplasmic incorporation. Uridine incorporation occurs principally into deoxyribonucleic acid during segmentation. After gastrulation, there is an incorporation of uridine into ribonucleic acid (both nuclear and cytoplasmic) as well.

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