

ced by radiation alone. The combined treatment gave an immediate depression in synthesis rate though smaller than that produced by radiation or synkavit alone; this was followed by an increase above normal, which was not produced by either treatment alone.

1. *Progress in Radiobiology, Proc. of Fourth International Conference of Radiobiology, Cambridge (1955), p. 71.*

The Formation of Bile Acids from Cholesterol in the Rabbit

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Cholesterol-4-¹⁴C has been administered intravenously into rabbits with a bile fistula. More than 90 % of the activity in the bile acids was present as cholic acid, which normally constitutes only about 10 % of the total bile acids in the rabbit. The origin of deoxycholic acid — the main bile acid in intact animals — will be discussed.

Thiamine in Baker's Yeast

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During the anaerobic growth of the common industrial yeasts, thiamine added to the me-

dium is taken up by the cells and mainly esterified to cocarboxylase. During the aerobic cultivation of brewer's yeast and of *Torulopsis utilis*, however, the whole amount of thiamine lost from the medium has not been traced in the yeast cells by the thiochrome method¹.

A balance experiment on the uptake of thiamine by baker's yeast was performed on an industrial scale. The cultivation was performed in the usual way for the production of commercial baker's yeast under strongly aerobic conditions. Thiamine was added to two out of three batches. After cultivation, the thiamine content of the yeast cells was determined by the thiochrome method. Table 1 shows the result of the experiment.

The loss may depend on a transformation of thiamine into some compound which cannot be determined by the thiochrome method. It is known that as pyrophosphate ester thiamine has different functions under aerobic and under anaerobic conditions but it is assumed that it acts aerobic in some other form too. Myrbäck² suggested that thiamine or cocarboxylase may be transformed into a disulfide form.

In order to study the question baker's yeast was cultivated under aerobic conditions on a laboratory scale with the addition of ³⁵S-labelled thiamine. After the cultivation, thiamine compounds were extracted from the yeast with TCA at pH 1—2. The extract was examined by paper chromatography³. No thiamine disulfide compounds could be found in this extract. The only labelled compounds found in this extract were cocarboxylase and free thiamine.

1. Fink, H. and Just, F. *Biochem. Z.* **311** (1942) 61.
2. Myrbäck, K. and Vallin, I. *Svensk Kem. Tidskr.* **57** (1945) 72.
3. Paladini, A. C. and Leloir, L. F. *Biochem. J.* **51** (1952) 426.

Table 1. Balance experiment on the uptake of thiamine by baker's yeast during cultivation under strongly aerobic conditions.

	Thiamine in yeast, µg/g	Total amount of thiamine in yeast, g	Loss of thiamine, %
No thiamine added	2.8	23.8	
15 g thiamine added	3.5	30.3	43.3
30 g thiamine added	3.7	29.2	54.3