

At the Southern Research Institute 18 microcuries of  $\text{NaHC}^{14}\text{O}_3$  were injected into mice. The approximate amount that was retained in the skeleton was 0.25 percent at the end of 24 hours, 0.03 percent at the end of one month, 0.02 at the end of 6 months, and 0.01 at the end of one year. The result is a skeletal radiation of about 0.07 roentgen equivalent physical per day for the period 0 - 24 hours and 0.008 between 2 and 4 weeks. Thus a single injection of 18 microcuries of  $\text{NaHC}^{14}\text{O}_3$  has resulted in a radiation of certain bone shaft cells which is initially greater than the maximum allowable radiation of tissue for man (0.04 rep/day). It should be recognized that these mice had received by injection a dose of  $\text{C}^{14}$  which is larger than a man should receive in any experimental work with radioactive carbon.

Workers at the Radiation Laboratory at Berkeley, California have used carbon fourteen to study biological half lives of the components of the blood in human leukemic patients. According to the radiocarbon glycine studies the life span of the red cells of the first patient studied was approximately 100 days. The turnover time of the plasma albumin radiocarbon was approximately 14 days and of the plasma globulin radiocarbon 10 days.

Scientists working on the mechanism of  $\text{CO}_2$  fixation have shown that the first product of photosynthesis is phosphoglyceric acid. The first fixed radioactive  $\text{CO}_2$  is all found in the carboxy group of this compound. It follows then that a two carbon precursor must precede the formation of the first product of photosynthesis and considerable effort is being exerted to find this compound and to elucidate the mechanism of its formation. The close relationship of glycolic acid to this compound has been suggested by a number of experimental results. The distribution of radiocarbon in glycolic acid invariably has been found to be symmetrical and to correspond to the equal alpha and beta labeling in phosphoglyceric acid obtained from short photosynthetic experiments.

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