mentioned and the efficiency of the light-gathering was found to be about 0.20 percent, therefore the true counting efficiency was (20±5) percent for the gamma-rays from Co^{60}. But the counting efficiency of a scintillation counter is generally increased as the gain of the amplifier used. In our case the noise of each counter was observed to be about 20 sec^{-1}.

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7. The Extraction of Some Radioisotopes: P^{32} and I^{128}

Kiichi KIMURA, Masakatsu SAKISAKA, Sukeaki YAMASHITA,
Kōzō MIYAKE and Isao KUMABE

(K. Kimura Laboratory)

Radioactive phosphorus P^{32} was produced by the S^{32}(n,p) P^{32} reaction, through the bombardment of CS_2 with the Li-D neutrons from the high voltage machine of Cockcroft-Walton type, and radioactive phosphorus so yielded was extracted by electrolysis.

Copper electrodes supplied with various voltages were immersed in irradiated CS_2, and then P^{32} adsorbed on the electrodes were dissolved in hot dilute hydrochloric acid.

Table 1. Activities of various extracts yielded P^{32}.

Supplied field (V/cm)	125	100	75	50	25
Anode Counts	1034	980	1052	1280	1186
Cathode Counts	98	100	112	134	174

As can be seen in Table 1 the optimum voltage was 50 volts/cm., and the time required for the separation was four hours. This method of separation is very simple and needs no carrier. And the rate of separation seemed to be very satisfactory. But CS_2 to be used must be chemically pure, and if there exsists any impurity, the process of separation may meet with various disturbances.

When we used platinum electrodes instead of copper ones in the above procedure, there occurred no adsorption of P^{32} on either the anode or the cathode.

Further, we produced radiooctive iodine I^{128} by irradiating on C_2H_5I with the slow neutrons, and attempted to separate I^{128} by the Szilard-Chalmers' method from the target, but the yield of radioisotope was not sufficient.