INVERTEBRATES

SELF ABSORPTION - RONGELAP

Self absorption correction factors for counts of invertebrates, and plankton, ~~and fish~~ as herein reported were determined on September 30, 1954 using ground portions of a sample of soil (7501) obtained March 26, 1954 at Labaredj I. It was mixed with non-radioactive soil, likewise ground, collected in 1950 from Japtan I., Eniwetok Atoll. Again, in May 1958 self absorption was redetermined using the top inch of soil at Profile 4, Kabelle I. At this time the average energy was found to have increased slightly. For example, the correction factor for a plate with 100 mg of ash had decreased by about 10%, and for 1 g, by about 8%.

The use of overall self absorption correction factors in evaluating disintegration rate of samples of diverse nature constitutes an approximation which can be avoided only by determining the energies for individual samples. As time proceeds, and the isotopic composition of samples changes due to decay and other factors, different self absorption factors may be needed in order to obtain sufficiently accurate estimates of the true disintegration rate. For example, Fe^{55}, an isotope that has been found in samples of certain fish and plankton, would be practically undetected using the Nucleometer and methane-flow counter. Similarly, Zn^{65}, also found in certain fish and plankton, if present in appreciable quantities would require a higher self-absorption correction factor than was used for the present counting.

