but equally important in the long run, the system must not be wasteful of space or expensive to maintain.

Roger Smith, in his excellent *Guide to the literature of the zoological sciences* (Burgess Publishing Co., 1943), gives an account of methods which are in common use. He points out the objection to filing in boxes or folders arranged by author or subject, namely, the great opportunity for waste of space. In particular he disapproves of filing by author as having the additional disadvantage that the name of the author must be the key to locating any one separate. He advocates the filing of reprints numerically in order of receipt and without regard to author or subject. In this method, a card index must be maintained for the location of any reprint by author or by subject. This system is unnatural. An additional and unnecessary complication is achieved by the introduction of filing under an artificial set of numbers which are completely unrelated to the matter in the system. A reprint is as frequently sought by author as by title, and neither of these directions can be followed in this method without reference to a card index. In fact, to make the system work adequately, it is found in general practice that card indexes must be maintained for both authors and titles.

It is obvious that a collection of reprints will rapidly outgrow any single-entry system such as filing solely by author or solely by subject, and the minimum satisfactory system is one containing a cross index. Accordingly, two files must be set up. Obviously, there is no limit to a subject group. A file under entomology could grow to astronomical proportions. On the other hand, the work of an author is definitely limited, although a Cope or a Sars would tax any system. In setting up a cross index it is logical that we should file the smaller items in the subject group and the larger in the author group. A cross index for reprints must mean an index of cards on the one hand and an index of reprints on the other. By indexing the cards by subject, large groups can be handled in a minimum of space, and in actual practice such groups can be submitted to any desired degree of breakdown. Reprints, the larger objects, should be filed in the naturally limited author groups.

The writer has employed such a system for nearly 15 years without breakdown in any part of the system or the development of cumbersome groups requiring extended search. All reprints are filed by author. The work of each author is held in an open-ended heavy manila envelope, 10 inches wide by 13 inches long. The author's name is printed by hand boldly across the end of the envelope close to the margin. The envelopes are filed alphabetically on edge on an ordinary shelf with the closed end and author's name outwards. The mouths of the envelopes are to the back of the shelf, and in this way the reprints are kept clean and away from light. Any reprint can be located directly by author and as readily returned to its proper position.

One card is prepared for each reprint. The card carries the ordinary reference data and is filed by subject groups along with all other references to literature. I have found it valuable to employ code signs in the upper right-hand corner of each card, indicating whether the reference is to a work included in the reprint collection, to a paper in a journal in my possession, or to a work not in my possession.

The system is capable of infinite expansion on either side. It works equally well with a small or large collection of reprints. It can be readily organized and is inexpensive. The cost of heavy manila envelopes is far less than for boxes or folders and a cabinet file. The system is not wasteful of space, little more space being occupied than for the reprints themselves, and reprints of all ordinary sizes can be conveniently held in the system. Reprints can be located readily by subject, the aggregation of cards in subject groups enabling this to be done without search.

Obituary

Louis A. Slotin
1912-1946

All who watch for cyclotron beam current, all who count tracer activity, mourn the loss of Louis A. Slotin, who died on 30 May 1946 from the effects of radiation from an accidental chain reaction of plutonium. He was, in a way, the chief atomic armorer of the United States, but he had been eager to return to peacetime work. The possession of unique skills obligated him to continue work at Los Alamos and at Bikini until the Navy tests were completed. He had planned to accept an assistant professorship at the Institute of Biophysics and Radiobiology at the University of Chicago in the fall.

Though quiet and unassuming, Slotin had led an unusual life. He received a B.Sc. degree in geology from the University of Manitoba in 1932, a M.Sc. degree in 1933, and a Ph.D. degree in physical chemistry from the University of London in 1936. Slotin was a modern adventurer and was drawn to every center of activity where there was promise of excitement. At one time he trained to fly a fighter plane with the RAF, until the discovery was made that he wore glasses. Earlier, he was visiting a friend in Barcelona when the Spanish civil war began; he

joined the Loyalists, for whom he operated an anti-aircraft gun.

While passing through Chicago on his way back to his home at Winnipeg in 1937, a chance conversation led Slotin to accept a job to help construct the new cyclotron at the University of Chicago. This served as his introduction to nuclear physics. He contributed to a number of papers in radiobiology before beginning to work in the Metallurgical Laboratory of the Manhattan District Project when it was centralized in Chicago in 1942. Always following the center of activity, Slotin went to Oak Ridge to help with the Clinton pile development there. There he worked to start the first power-producing pile. When the problems of plutonium production were solved, Slotin moved to Los Alamos to assist in the critical problem of fabricating a bomb.

It was Slotin who was responsible for assembly and delivery of the first atomic bomb to the Army for the "Trinity" test in the desert. The receipt which he received when he turned this, the first atomic bomb, over to the Army was one of his most prized possessions, since it represented the culmination of the whole $2,000,000,000 effort of the Manhattan District. Slotin had wanted very much to go to Tinian, the launching point of the Hiroshima and the Nagasaki bombs, in the summer of 1945. He was still a Canadian citizen, several weeks short of his final American papers, and the legal delay which resulted kept him at Los Alamos until the end of the war. He had been scheduled to go to Tinian for the third bomb.

Slotin was well aware of the danger of his work at Los Alamos. One of his co-workers, Harry Daghlian, died last September from exposure in a similar accident, and Slotin had stayed at his side during the weeks until Daghlian's death. He felt obliged, however, to continue the work until another physicist could be trained to take the responsibility. The accident of 21 May occurred while he was instructing his replacement in the touchy techniques of critical assembly, no less needed in peace than in war.

Physics, and especially the difficult and specialized field of nuclear physics in its application to biology, will suffer from Slotin's loss. He had an intimate and a rich experience with the techniques of both chemistry and nuclear physics few others enjoyed and preferred often to help others rather than to work on his own ideas. He was undeterred by big undertakings and great responsibility. He was the man in the laboratory who was always willing to take the time and lend his skill to make real any promising idea that came up. Those of us who worked with Slotin loved him for his selflessness, his modesty, and his sure and quiet competence.

Nine days after the exposure Slotin died. His death, like his life, was quiet, brave, and clear.

H. L. ANDERSON and A. NOVICK
University of Chicago

P. MORRISON
Los Alamos Laboratory

News and Notes

About People

Alexander Craig Aitken, a native of Dunedin, New Zealand, has been appointed to the chair of mathematics, University of Edinburgh.

Anton J. Carlson was nominated at the San Francisco session of the American Medical Association to receive the citation and Distinguished Service Medal of the Association. Dr. Carlson received the B.S. and A.M. degrees from Augustana College and the Ph.D. from Stanford University. After serving as research assistant in physiology at Stanford, he became associated with the Carnegie Institution and from 1905 to 1907 worked as an instructor in the Woods Hole laboratories. He was appointed assistant professor and then professor of physiology at the University of Chicago, and in 1929 became Frank P. Hixon distinguished service professor. He retired in 1940 with the title emeritus.

William H. Feldman, the Mayo Foundation for Medical Education and Research, was awarded the Alvarenga Prize for this year on 14 July by the College of Physicians (Philadelphia), in recognition of his studies upon chemotherapy in tuberculosis. The prize was established by the will of Pedro Francisco daCosta Alvarenga, of Lisbon, Portugal, an associate fellow of the College, to be awarded annually on the anniversary of his death, 14 July 1883. The recipient is invited to deliver an Alvarenga Lecture before the College.