Chapter 9 People

A. Introduction

This chapter presents Biographical Sketches of people that I have met, known, or with whom I have worked. It is quite a hodgepodge. Many very well know persons are simply mentioned. Dr. Lew Howarski is given a long writeup as he is not well known in this Country and Canada and yet many people may be interested in the story of his life.

The sketches are mostly my personal contacts; and they are not to be taken as serious evaluations of the persons or complete Biographies. The details and length of the sketches have no relationship to the person's importance. I lost contact with many of the persons mentioned after World War II and almost all the rest of my retirement.

B. Resume

Walter Badger was one of the older Chemical Engineering Professors at the University of Michigan. While he taught Unit Operations, about all that he did was to tell stories. While these were interesting, they did not tell us much about Chemical Engineering or how to make Chemical Engineering calculations.

Alfred Baldwin was sent to Aberdeen Proving Ground in August of 1940. I left Aberdeen in September to return to the University of Arkansas to teach. When I returned to Aberdeen in July 1941, I assigned Major Baldwin as Personnel Supervisor. He had held a similar position at the National Biscuit Company in Niagra Falls. He fulfilled the Aberdeen position very well; and he and Major Johnson relieved me of essentially all personnel and facilities responsibility. Later, he returned to the National Biscuit Company and became Vice President. He claimed that the experience at Aberdeen taught him how to get things done. All I did was to give them the assignment and forget him and personnel problems. Everyone knew I would back him up in an argument.

George Grainger Brown was a Professor of Chemical Engineering of the University of Michigan and a Consultant in the Petroleum Industry. Apparently, he was very well known. While he could present an excellent lecture, he seldom spent any time preparing one. Thus, he was a very poor teacher even though his stories were interesting.

Russell Carr. Russell became Director of the Small Arms Division at Aberdeen Proving Ground during World War II. We worked together some, played tennis at times, and were neighbors. After the War, he and Madeline returned to Elmira, New York, where he became, I believe, Superintendent of Schools. They were literally washed out of their house, furniture and all, in the flood caused by the hurricane in the summer of 1972.

John Cave. Colonel Cave was a Regular Army Officer. He was Chief of the Arms and Ammunition Division at Aberdeen Proving Ground until he was transferred in 1944. I lost track of him. While very capable, he was difficult to work with as he did not understand the differences between production, research, and development; and why you treat people

differently in the three fields of endeavor. I always assumed that people doing Research and Development work were sufficiently interested in their work that they needed no prodding. If they were not that interested, they got transferred promptly. It is always difficult to explain to a person that he is in the wrong type of work - particularly research and development work. Sometimes you have to be hardboiled for the good of the persons working for you in order to get them into work that they are suited to do and that they will enjoy, be happy, and successful in doing. This subject should be given greater study and consideration. People should be transferred from job to job frequently. What do you do with Professional People like Lawyers, Doctors, Dentists, etc.? Can they change if they are unhappy? They should. If you are unhappy, walk out. You will soon find an interesting job. This applies to laborers and farmers as well as specialists such as medical people, lawyers, scientists, and engineers. But what can a lawyer do with no scientific or mathematical background? A Medical Doctor has more ways to turn. (See George Eddy).

Floyd Culler was a Section Chief in the Chemical Separations Branch at Oak Ridge National Laboratory. He became Division Director, Assistant Laboratory Director, and later Director of the Laboratory. He is now President of the Nuclear Power Utilities Research Project (not the correct name) in Los Angeles
(1950).

Kenneth Davis. Kenneth Davis worked for California Research and Development Corporation in San Francisco (a part of Standard Oil of California). This included working on the MTA, or Materials Testing Accelerator. When I left Washington, Dr. Hafstad asked Ken to move to the AEC to take my place. When Larry left, Ken took his place as Director of the Division of Reactor Development. Ken later became Vice President of Bechtel, a design and construction company in San Francisco. He was a Chemical Engineer with a Doctor's Degree.

Paul Deckard was Personnel Officer at Aberdeen Proving Ground. He worked directly for General Harris. On retirement, long after World War II, Paul moved to Lafayette, Indiana, bought a farm, and lived near me in Lafayette. He also attended the same Church. So we got together a few times. He stated that, "The two of us together won the war". He also stated that each of us was too modest to admit that he could have done it alone.

George Eddy was Director of Aberdeen Proving Ground. General Eddy was a regular Army Officer who had gone to West Point after taking a Bachelor's Degree in Chemical Engineering at MIT, I believe. (1) While I worked for Colonel John Cave and Colonel Cave worked for General Eddy, I had frequent contacts with General Eddy. I always thought that he did not like Colonel Cave. General Eddy and I became friends. He did an excellent job as Commander of Aberdeen Proving Ground during World War II. While we lived next door to him for a couple of years, we had no social contact with him except our Formal Call when we moved on the Post. This was due, I think, to Mrs. Eddy. Apparently, she wanted no contact with lowly Reserve Officers' Families. In my opinion, Winnie was far above her in education, interest in others, experience as a High School Teacher, and as a Registered Nurse, and overall intelligence. Winnie never looked down on anyone.

Perhaps Mrs. Eddy was jealous. I suspected so. And Winnie was better looking - at least to me - much better! Why West Point? Perhaps it has been upgraded to a Graduate School.

Jack Eichinger. Professor Eichinger taught General Chemistry at the University of Detroit. While very knowledgeable, he was not a dynamic lecturer. His wife, Lois, Kathryn Henderson, and Winnie became good friends. Along with the Hendersons, the six of us had frequent parties together during the two years that I taught Chemical Engineering at the University of Detroit. Frequently Mr. and Mrs. Duncombe joined us. He was my "Boss" or Department Head.

Enrico Fermi, University of Chicago. Dr. Fermi attended one meeting that I also attended. Then he mainly wanted to discuss the Experimental Fast Reactor. So I met and talked to him only once. He was a large, quite heavy-set man nearly six feet tall, with a light complexion. He had a very pleasant almost continuous smile all the time I talked with him. He acted as a successful Farmer would at a pleasant meeting with friends on a Saturday afternoon. He spoke with a low unanimated, calm, and thoughtful voice, as if the World was a good place to be. My impression of Dr. Fermi was that at a glance he evaluated where things stood. He is one of the World's most famous men and one of the greatest.

Frank Foote was Director of the Metallurgy Division at Argonne National Laboratory. He and Mrs. Foote were very good friends. he was an excellent metallurgist.

Laurence Hafstad, Director of the Division of Reactor Development, Atomic Energy Commission, Washington, was a Physicist by training although he thought like an Engineer. Larry was of medium height, thin, always friendly, and active. I had no personal contact with him except at work. He had been a member of the John Hopkins Research team that developed the proximity fuze under Dr. Tuve during World War II. He was appointed Director of Reactor Development in 1949. Later he became Vice President and Director of Research of General Motors Corporation. He was an excellent Administrator, but not brilliant. For example, I rated him below James A. Lane, Alvin Weinberg, and Walter Zinn.

Arthur Hale. Dr. Hale was Director of the Chemistry Department of the University of Arkansas. While an excellent Director, he was quite behind the times in respect to Chemistry. We enjoyed both Dr. and Mrs. Hale.

William Hardesty. Hardesty worked on safety problems at Aberdeen, and acted as Arms and Ammunitions Division Safety Officer during most of World War II. After the War he worked for the Rocky Mountain Ordnance Depot at Denver as Safety Officer. He did not work directly for me.

General ----Harris. General Harris was Commanding General at Aberdeen Proving Ground during World War II.

One day he brought four or five visiting Brigadier, Major and Lieutenant Generals to the Main Front. That was one of the two times that I ever saw him in the area -- and he was the Commanding General! One of the tests was of a new shoulder supported recoilless weapon. The Proof Officer missed the target on the first round. So, General Harris asked, "What's wrong?" in a quite irritated voice. I turned to the group, threw up my hands, and said, "Just a pure case of stage fright, Sir. If I say anything, he never will hit the target." All the Generals smiled. On the next round the target disappeared.

How can you sit at a desk and know what is going on? When General Harris got mad, he roared loud enough to be heard in Texas -- he was a Texan by birth. I had essentially no contact with him. He paid very little attention to our work. He was the "Administration". Why? I think that he knew that if he bawled me out as he did some men, that I would ask for a transfer.

Everett Lee Henderson. Lee was Professor of Chemistry at the University of Detroit. The Hendersons and Eichingers, as noted, were very good friends. Lee took considerable interest in the Chemical Society in Detroit -- as a result, I have two talks at meetings while we lived in Detroit.

Norman Hilberry. Dr. Hilberry was Associate Director of Argonne National Laboratory. Later, I worked for him as Associate Director when he became Director. On retirement he moved to Phoenix. He lacked imagination. He was a "Jolly Good Fellow"; but never a "Director". I always assumed that the Board of Regents of the University of Chicago appointed him Director of Argonne National Laboratory, when Dr. Walter Zinn left, without any consideration except that the Board Members knew that he was a Physicist and that Nuclear Energy involves Physics even though 90 per cent of the real problems are Chemical and Engineering. If the Board of Regents had asked anyone at Argonne, "Will Dr. Hilberry make a good Director?" they would have received the obvious answer, "No". Again may I ask why have the complex Atomic Energy Commission and the Area Offices and Contractors? It's an unholy mess! Also the Area Offices and Contractors waste the Taxpayers money -- and the Scientists and Engineers time.
And worse, direct contacts between Laboratory personnel and Washington Staff are limited. The Area Offices should never have been conceived. In my opinion they have always been a total waste of the Taxpayers' money -- and they interfere with movement of information. I have held responsible positions in both systems -- Army and AEC.

Argonne lost its vitality. It became just another place to work. It should have been closed years ago - including the Accelerator at Argonne and the "Monstrosity" (my name for the National Accelerator west of Chicago). Neither of these two "waste-of-money widgets" should ever have been built. They are essentially Physicists play-things. They may tell us someday how the Universe was formed and from what; and what is space. Of course, there were many good people at Argonne and good work has been done. This has continued. Argonne was centrally located in respect to use of the Accelerator. But the Accelerator should have had independent management. The basic objectives of Argonne as a National Laboratory and the Accelerator are different. No one can be both.

Ernest Huff. Ernest worked mostly on special assignments at Aberdeen Proving Ground. After the War he returned to Batavia, New York, to teach. He and Doris are now living near Naples, Florida (written prior to 1980).

Harold Kolb. Harold had graduated as a Mechanical Engineer from Purdue University. When the War started, he was working for Caterpillar Tractor Company. After the War he returned to Peoria when he quickly became Head of Research and Development of the Company. He and Maxine believed me about housing and on arrival at Aberdeen, they immediately contracted for construction of a house in Aberdeen. We wrote at Christmas for many years. Harold, I believe, credited his rapid advancement after the War partially to his Aberdeen experience. He did an excellent job there. I believe he became Vice President of the Company.

Lew Kowarski. Over the years, in the Army, in the Atomic Energy Commission work, and at Purdue University, I have met many widely known foreign nuclear scientists and engineers. I have not made an effort to attend any of the International Conferences except the Ann Arbor Conference. (2)

We became close friends with Kowarski and his wife, Kathryn or Kate. She, Winnie, and our secretary, Irene Backus, were very interested in Nature studies; so they became friends.

During World War II Lew worked in England and later at Chalk River, Canada. There he designed and built the first heavy water Critical Experiment for a Nuclear Reactor. Later, he returned to Europe; and still later, he became Head of the Mathemtics Department and Computer Division in Geneva, Switzerland.

In 1963, Dr. Kowarski decided to take a Sabbatical leave and visit the United States. Since he knew Dr. Alvin Weinberg of Oak Ridge National Laboratory, he wrote to him and requested help in locating a position at a University for the School year 1963-64. So Alvin wrote to various poeple, including Dr. Philip Powers at Purdue University (Phil had just become Head of the Nuclear Engineering Department; and I had moved over to the Laboratory).

When Phil got the letter, he called me. When I arrived at his office, he read Alvin's letter to me. I recommended that Phil check with Dean George Hawkins and immediately call Lew in Paris, and not delay by writing. This he did; and Lew accepted the assignment on the phone as Visiting Professor of Nuclear Engineering at Purdue University for one year. It is always a question how valuable contacts with well known experts by students become. It does give students confidence as well as background and a look at their possible future.

So that Fall, Lew came to Lafayette. Later, he spent another year and still later he made several short visits. Stephen Gage, then one of our graduate students, and since a Professor of Nuclear Engineering at the University of Texas arranged for Lew to visit Austin for three or four extended visits and lecture periods.

Soon after getting settled in Lafayette, Lew and Kate asked the Powers and Winnie and me to dinner. Kate served the typical European dinner, including three kinds of wine, flam, etc. Flam is similar to very thick Pancakes. It is equipped with something to make it fluffy; and it is cooked with a filling. It is perhaps two inches thick and the outside is crispy. It is also quite edible.

I did not know Lew's background; so I asked him to tell us about Kate and himself. This is what Winnie and I remembered of what he said.

Lew said little about the area in which he was born. it was perhaps 125 miles east of Moscow, Russia. By the time he was ten, he was a waif living in the streets of Moscow. Apparently he had lost all contact with his family.

At ten he went to Vilna and at about eighteen he went to Cannes, and later to Brussels. Just when he decided to get the equivalent of our High School education, I don't know; but at about eighteen or twenty, he went to the University of Lyons and took a degree in Chemical Engineering. Later, he apparently went to the University of Paris, although I am not sure, and became interested in Nuclear Physics. Just when he received his Doctorate, I don't know. How he financed these moves was not mentioned. Anyway, he began to work for Joliot, in Paris, just before World War II started.

Kathryn, his wife, was born in Berlin. I don't know her family name nor much about her education. She was a beautiful woman in looks and in character. She was intensely interested in flowers, trees, etc., as were Winnie and our secretary, Irene Backus. The three became close friends.

At a dinner, we asked Lew about Joliot. Most of this is what he told us - as I wrote it down later in the evening with Winnie's help - she dictated part of it. And part of this was given later at a lecture at Purdue University.

Eve Sladowski, when she came to Paris to work for Professor Curie, whom she married, turned out not to be exceptionally talented as a scientist in spite of the fact that it was she who has been given the credit for the discovery of radium. She worked hard and deserves credit. However, in Kowarski's opinion, Professor Curie was a much more talented scientist; and he should have been given most of the credit for the discovery of radium. He also stated that, of the Curie daughters, Irene was extremely talented, and much more so than her mother. Eve had no real scientific talent and became the Family Historian. Irene did not get along well with her mother in respect to her proposed marriage to Joliot. So, her decision to marry him apparently led to considerable friction between the two. Kowarski stated that Joliot's background was not of the bourgeois.

Joliot's grandfather was apparently a merchant of some sort who made quite a lot of money. His father apparently spent his time spending the money he inherited - an occupation many of us would enjoy. His chief fame was that of writing tunes for fifes for fox hunts - which seems to me to be quite a talent!

When Joliot was a young boy, a school was opened for the common people to train them for such positions as technicians. Joliot entered the school and graduated. Early in life he did not obtain a University technical education. As I remember the story, later he did. I am not certain. Several years after leaving school, someone at the Radium Institute asked the Technical School to recommend some people as technicians. Joliot was recommended and joined the Radium Institute as a technician. He soon recognized that he was a much better scientists than any of the other people working at the Institute. This seemed to have led to considerable friction. He was never accepted by the bourgeois because he was a member of the lower class. Apparently, his marriage with Irene did not help; and he continued to be quite largely rejected - at least socially.

At the beginning of World War II, Halbin, who was a Swiss, and Kowarski were working with Joliot, who was by then Director of the Institute, as his assistants. Both Halbin and Kowarski had just taken out French citizenship papers. At the institute the main interest was to determine if fission occurred in uranium; and after this was verified by several Laboratories, the French group turned to measurment of the number of neutrons released per fission. "Fission" was suspected since analyses of the residues resulted in the identification of barium.

They soon determined that they needed a better moderator than light water; so they turned their attention to heavy water.(3) They were able to obtain almost all of the World's supply of separated heavy water from Norway in spite of the Germans since the heavy water plant was owned by a French Banking Company - those astute Frenchmen! I do not know how it was shipped, probably by a small boat, perhaps a fishing boat. The 182 kilograms (about 400 lbs) of heavy water arrived at Paris just before the Germans broke through the Maginot Line. Halbin and Kowarski along with Joliot went south and started to set up their laboratory in a prison. Then, it became obvious that the Germans were going to continue farther south. Kowarski stated that the French previously had thought that the Germans had stopped just outside of Paris in order not to arouse the enmity of the rest of the World.

When it became apparent that the German Army was moving on south, Halbin and Kowarski took their heavy water and uranium and drove to Bordeaux as the Bordeaux Port was still under French Control. Joliot elected to remain in France. Kowarski states that on the night before he left for Bordeaux, Joliot reviewed his prognosis of the War. He stated that he believed the Germans would stop at Paris and not overrun all Paris at that time because that would arouse the enmity of the rest of the World. Next, there would be a stalemate which would finally be broken by Russia and America entering the War with the complete destruction of Germany. Poor Poland, Czechoslovakia, Austria, Bulgaria, and East Germany! And also let's pity the Russian people. All are enslaved to the Russian Communists. And Germany itself! War is Hell! And the consequences of War may be worse. But Germany followed Adolph Hitler, and the German people must carry most of the blame for World War II and Communism -- as well as World War I and possibly World War III.

As it is given in the public record, after the Germans took over Paris, Joliot turned more and more to the Left; and after the War, he became an outright Communist. (4) Kowarski's explanation for this was that Joliot had always been rejected by the people with whom he was working; and he was never accepted on the basis of his scientific accomplishments. Kowarski stated that he believed Joliot would have been much better off to have left France with him and Halbin as all three of them would have been accepted in Great Britain, Canada, and the United States. Most Americans don't appreciate their freedoms, or even recognize them as such -- they simply take them for granted -- as they should as they will defend them when necessary. Just try to tell any American or Canadian what he must do!

On arrival at Bordeaux, Halbin and Kowarski found the Port to cross to England still open. Also they found that a very eccentric British Nobleman had commandeered an old hulk of a British ship in the harbor and was loading the ship for a run to England. The Germans were dive bombing everything that crossed to England. Lew stated that the Britisher had no real authority nevertheless, since he assumed command, everyone followed his orders. He apparently had good sense. So they loaded the heavy water and uranium on the ship. There was also a barrel of industrial diamonds rescued or stolen from Belgium. Anyway, the old ship took off for England. German dive bombers flew over it. Apparently the German Pilots considered that their bombs were worth more than the ship; so it was not attacked. Probably Hitler had specified the targets.

On arrival in England Halbin and Kowarski soon found friends. Both quickly became important Scientists in the nuclear development program. I do not know how Kate got to England; so I assume that she was on the same ship as Lew. She was a beautiful woman.

Later, Lew and Kate transferred to Chalk River, Canada, where he supervised design and construction of the Chalk River Heavy Water Reactor, the World's first. I don't know when he returned to Europe. Later, he was in charge of the computer calculations at CEAN. They were living in Geneva in 1970.

May I insert a story about their life in Chalk River? The Chalk River houses were heated with bituminous coal fueled furnaces. Of course, the men fired the furnaces and carried out the ashes daily. But in France, it was women's work and I assume that it still is to do such chores as fire furnaces and carry out ashes. In accordance with Canadian customs, Kate refused to do the job at Chalk River. And of course, it was beneath Lew's dignity as a Frenchman! So no ashes were carried out of the house all the winter that they lived at Chalk River. As it was told to me at Chalk River,there was hardly room to get to the furnace when the Kowarskis left. I supposed Kate fired the furnace and removed the ashes from the furnace. It does get cold in Chalk River - it was -28 F when I was there one February day.

John Landis. John worked for Peterson in the Atomic energy Commission. Later he went to Babcock and Wilcox to head their laboratory work; and finally he became President of Gulf Shell Atomics in San Diego.

James A. Lane. Lane was a Physical Chemist. I think that he had been working for du Pont. When du Pont started Oak Ridge National Laboratory, Lane was sent there. After World War II, he returned to Wilmington. Then about January 1948, he left du Pont and went back to Oak Ridge National Laboratory as a regular Oak Ridge employee.

He was on leave as Technical Advisor on the "Alsos Project" in Germany after the end of the War. Later he worked with Marvin Mann on the Materials Testing Reactor, and still later he was transferred to the Atomic Energy Commission as a Branch Chief, in Washington. Lane worked on evaluation of reactors for the Commission as directed by Dr. Laurence Hafstad, Director of the Reactor Development Division. The Lanes stayed the one year that we lived in Washington.

I honored Lane and I have always had very great respect for him as he is one of the best all around Scientist-Engineers that I ever met. He is a very brilliant man. He has never held a position that taxed his intelligence. In my opinion, Lane and Weinberg should have been reversed on the Oak Ridge Organization Chart. Lane had superior judgment than Dr. Weinberg; and, I think, a broader knowledge of Nuclear Plants. But Weinberg was a better salesman; and he was an excellent Nuclear Physicist. He sought and got publicity; Lane did not. Ninety eight percent of the problems are engineering.

Stephen Lawroski was Director of the Chemical Engineering Division and later Associate Laboratory Director, of Argonne National Laboratory. After we moved to Washington, Steve and Helen bought and lived in the Frank Lloyd Wright house that we owned in Naperville, Illinois. (5)

Miles Leverett. Because of the Commission's decision in 1948 to move the Reactor Development work to Argonne, Dr. Miles Leverett, Director of the Technical Division at Oak Ridge resigned. I believe that he returned to his prewartime position with Humble Oil Company. He had been "on loan" to the nuclear program during World War II. I do not know what his previous position had been. He was an excellent Chemical Engineer. Poor Miles, after a few months at Humble, he gave up as he couldn"t stand the lack of excitement; so he returned to the Nuclear Energy field.

Donald Lockridge. Don was Associate Director of the Reactor Development Division under Dr. Hafstad. Later he became Dean of Engineering of Northwestern University. I took his place for a few days before resigning from the AEC. There was never any need for the position of Associate Director of the Division. Later, at Lochridge's request, I taught a four-hour Saturday class at Northwestern University for two school years on the general subject of Nuclear Power.

---Losco. Lieutenant Losco was unmarried. I don't know where he lived. I think it was Pittsburgh -- at least he returned to Pittsburgh after the War. He worked at Westinghouse in the nuclear field for a time. After a couple of years at Aberdeen he became assistant to Chester Johnson.

Marvin Mann. Marvin Mann was a member of the Physics Division of Oak Ridge. He worked on physics calculations and critical mass measurements of the High Flux Reactor, later named the Materials Testing Reactor. He became a member of the Materials Testing Reactor five man Steering Committee, representing Oak Ridge along with Alvin Weinberg. Later, he transferred to the Atomic Energy Commission where he was for at least 20 years.

George C. Marshall, General of the United States Army. General Marshall spent a half day at Aberdeen. We demonstrated many weapons for him. I did not personnally talk with him - I believe that I was only introduced. The only incident that I remember occurred as one of the Proof Officers was demonstrating automatic fire of the M1 Rifle. We had set up a cardboard silhouette perhaps thirty yards down range. The Officer would say something about the rifle, and then shoot a round. At the end he fired, I think five rounds automatic, or using the rifle as a machine gun that fired as rapidly as it automatically reloaded. To have hit the target during target practice would have been no great thing; but to just aim and fire casually as you are discussing a weapon is something else. At the end of the demonstration General Marshall walked to the target and counted the holes - they were all there and well bunched. Again, I was amused - and perhaps lucky.

Curtis Nelson. He was a U.S. Representative at Chalk River, and later AEC Area Manager at Savannah River.

The organization established for the Hydrogen Bomb Project was quite complex in some respects and simple in others. The Atomic Energy Commission gave the du Pont Company broad authority, then restricted the Company by establishing all sorts of checks and controls. (6) Curtis Nelson, however, was helpful. He did not interfere with technical matters as the Idaho operations Office did. As indicated, the du Pont Company accepted the contract on condition of no profits. (7) That gave them extra leverage, I think, in arguments with the AEC. The duPont Company estimated heavy losses due to the load of their technical people. While this was true, they may have gained in experienced people. (8)

Peter Peterson. Peterson worked directly for Dr. Hafstad on special projects. Later, he went to Cleveland to work for a Steel Company and still later to Chicago.

Melvin Peterson. While I worked at Oak Ridge for Dr. Peterson for a short time, I never knew him well. He was a Chemist, I believe. We had little contact as each of us ran our own programs; while he was my Boss, he kept out of my way.

James Pickard. Jim worked for John Landis. He left the AEC about the time I left. He started consulting in Washington. Since then, he has been a member of Pickard-Warren-Lowe. They have done very well with Nuclear Utility Services, or NUB. They tried to get me to join them; but that meant living in the Washington area. What is life for? Winnie was very unhappy in Washington. Later, she stated that we should have remained in Washington. I think the boys were better off in Illinois, including the Morton Arboretum

classes and the personal contacts made at the Arboretum. Winnie and I were happier in Illinois.

What is life for? Just to make money? But the Atomic Energy development program might have been different.

Richard Patter. He worked in our group at Aberdeen Proving Ground during the War as my assistant. I believe that after the War he obtained a Doctor's Degree in Engineering at Purdue University.

_____Ramsey. Ramsey along with Sporazzo was one of the ten civilian engineers who worked in my group most of World War II. He also did special projects.

Leonard Reichli. Len was Dr. Hafstad's assistant and handled the financial part of the work. Later, he went to EBASCO Services in New York where he headed up their Nuclear Department, as Vice President.

Louis Rhein. Mr. Rhein had been an Officer in World War I. He had been assigned as a Proof Officer at Sandy Hook Proving Ground. When Aberdeen Proving Ground was opened in 1917 or 1918, he was transferred there. And he remained as a Proof Officer as a civilian through World War II. I don't know when he was retired. Lou knew the answers to most of the questions that I knew enough to ask; and I always suspected that he knew the answers to many questions that I was too ignorant to ask. He never had much to say. He did a very efficient job of such things as Range firing.

For half of World War II, I kept him near me; his desk was pushed against and faced mine. I frequently sought and took his advice. Rhein should have been given a gold medal for his work.

Hyman Rickover. Admiral Rickover was the Naval Officer in charge of the Naval Reactors Branch. I know very little about his background. He held the same position until he retired. His first wife was a lawyer and wrote many things for him. She died some time ago; and he remarried. While I knew his first wife only slightly, my impression of her was excellent, as she was a very brilliant woman. Rickover should be given great credit for pushing the Nuclear Submarine to a success. Such devices have made World Wars unthinkable. We are back to the Roman Era when all people in a conquered area were enslaved or killed. Now we do it in a few minutes. How great has been our progress!

Louis Roddis. Lou was Rickover's assistant and a Naval Officer. When Laurence Hafstad left, Kenneth Davis took over as Director of the Division, and he asked Lou to be his assistant. Later, Lou became President of Consolidated Edison Company.

Walton Rodger. Walton was Associate Director of the Chemical Engineering Division at Argonne. He became General Manager of the West Valley Fuels Recovery Plant. Later, he did consulting in Rock Springs. We worked together as partners along with Joseph Thie for a short time.

Franklin D. Roosevelt. President Roosevelt came to Aberdeen and was driven around one afternoon in an open car. While I was introduced to him, I did not talk to him personally. We simply did a limited number of weapon firings for him. He smoked cigarettes almost continuously with a cigarette holder, a foot long. He looked bored. Perhaps he was tired. I was unimpressed as he was not interested in our work.

Probably he had "got talked" into the visit. His thoughts were elsewhere - as they should have been. People are funny! So again, I was a bit amused. I never had any respect for him.

____Rucker. Mr. Rucker was assigned by Carbide as Director of Oak Ridge National Laboratory. He had an assistant whose name I do not remember; but for whom I had considerable regard and who, in my opinion, actually "ran the Laboratory". He told me one day that he did not like the personnel problems nor the publicity --nor did I. He was a much keener man than Mr. Rucker. Frequently, he would come to my office for an hour's discussion. These talks were never recorded nor discussed with any one else. They did cover such topics as: Programs, Organization of the Laboratory, Personnel, and Morale. I never knew Mr. Rucker well.

Arthur Schultz. Art worked for Dr. Huffman on design of the MTR. He died at middle age as a result of a heart attack, which it was stated, was brought on by a minor automobile collison. As mentioned elsewhere, he should have cussed the other driver out to have relieved both of their tensions. Get mad and you'll feel better. The damage is done. Why worry about it? Or have a good laugh at how dumb you both are and discuss what Insurance Company to hang the damages on.

James Schumar was Associate Director of the Metallurgy Division at Argonne National Laboratory. He was an excellent man and a good friend.

Henry Smyth was a consultant at Aberdeen Proving Ground during World War II. During the War, we had few personal contacts as he spent most of the time that he was at Aberdeen at the Ballistic Research Laboratory. Later, he became a member of the Atomic Energy Commission. While I was on the Commission Staff in Washington, we met and talked a few times. He was a tall, thin man with a continuous smile, most pleasant. He seemed to be at peace with the World. My only real contact came in a Commission Meeting relative to higher power levels at Hanford and Savannah River. We talked for perhaps a half-hour about what could be done to increase the Production at Hanford. Finally, he suggested to the rest of the Commission Members that I be sent to Hanford. In summary, he justified his position.

Joseph Sporazzo. Joe was a very bright young man. He did special development programs such as the 105-mm Howitzer range problem all during the War. I lost track of him after the War.

Lombard Squires. Lom was a Division Director at du Pont. He was in general charge of the development and design of both the Hanford and Savannah River Projects. He was an excellent Administrator as well as an excellent engineer. Great credit is due to him, see Appendix re: "Lom and the Bomb". I did not know him well.

George Stocker was Dean of the Engineering College of the University of Arkansas when we were there. He was a gentlemanly, quiet, excellent administrator. He was retired years ago. Both he and Mrs. Stocker became close friends of ours.

Samuel Untermyer. Sam was a Special Assistant to Dr. Zinn. He worked as a "free lance". Then, he left to work for General Electric at Vallicitos. Still later, he was a member of a consulting group, National Nuclear, in Palo Alto. Basically Sam is an inventor and an idea man. He is one of the most brilliant people that I have ever knew. He married Joan Strauss. They lived near us in Downers Grove, Illinois. Unfortunately, Joan died of cancer years ago. We had no social contact with them.

Sam invented the Boiling Water Reactor which is in use in the United States, which is being built in large numbers here, in France, and elsewhere. He should have been awarded a Doctor's Degree by the University of Chicago for his work and a Nobel Prize for his inventions. Certainly, he and Dr. Zinn were both far greater men than many others who have been awarded Nobel Prizes. He helped in the production of the materials for the Hydrogen Bomb. This may have helped World peace or put off the date of World War III. Today, as I have noted, War is unthinkable! Maybe so? We can only hope. Everyone would be a loser. I believe Russia is moving toward a Democracy as more efficient than Communism.

Alvin Weinberg was Director of Oak Ridge National Laboratory. My contacts with Dr. Weinberg were very limited during the year that I worked at Oak Ridge. At that time, we were both on the Administration Committee of the Division Directors. I was not suppoosed to be on that Committee as Dr. Merlin Pesterson was Division Director. He insisted that I attend the Committee meetings. I became the Secretary of the Committee as I was the only one, apparently, that dictated notes of what took place. And, as usual for me, I did most of the talking. (9) Later Dr. Weinberg was on the Materials Testing Reactor Steering Committee. Even then, I had little contact with him. My evaluation of Dr. Weinberg was that he was brilliant; but he lacked the imagination and the Engineering skills of Dr. Zinn and Dr. Fermi. All three were superior Physicists. When I went to Oak Ridge, Alvin was Director of the Physics Division. In January, 1973, he took leave of absence for six months. He returned to the position of Laboratory Director. Like Dr. Hilberry, he was never a broad view-point director as Dr. Zinn was. Neither Dr. Weinberg or Dr. Hilberry, should have been appointed to that position.

Dr. Weinberg sometimes gave me the impression that his opinions, even in respect to Engineering problems, should be given more weight than those of the Engineers, or of any others. He did not intend nor did he realize this. He was just very interested in the work. James A. Lane was a very much better man except in Nuclear Physics. I believe Lane

would have made a better Laboratory Director due to his broader knowledge. He certainly was a better all around Engineer - Physicist.

Charles Wende worked for Lombard Squires. He also composed the famous song, "Lom and the Bomb". He was an excellent engineer.

Alfred H. White. Professor White was Head of the Department of Chemical Engineering of the University of Michigan for many years. He was one of the first Chemical Engineers in the Profession. While very interesting, he was not up to date. He gave the Lectures in the beginning general course in Engineering
Materials, which he should not have done even though he was an excellent teacher.

David Williams. Dave worked for me at Aberdeen Proving Ground for about two years in Administration. He moved to Headquarters where again he worked for me when I became Division Director. He just kept things working smoothly.

Alfred Wilson. Al and his wife rented an apartment near us in Havre de Grace. We visited back and forth frequently. He was with an aircraft company in Indianapolis for years. Al's wife and Winnie were very good friends.

Kenneth Winkleblack worked as my assistant on the Materials Testing Reactor at Argonne. Later he worked at Atomics International. He worked primarily in administration.

Charles Winters. Charles was in charge of a portion of the Chemical Engineering Laboratory at Oak Ridge National Laboratory. Later he was transferred to the Rayon Division of Carbide and Carbon Chemicals Company. I believe that he became a Vice President of the Carbide Company.

Walter H. Zinn. Dr. Zinn was a Physicist who had been with the Columbia University Group working under Dr. Enrico Fermi. He was brilliant. Just after I returned from Washington, he resigned to form a Reactor Design Group at Dunedin, Florida. Later, this Company was purchased by Combustion Engineering Company; and Dr. Zinn moved to Hartford, Connecticut. Later, he retired as Vice President of Combustion Engineering Company and moved to Florida. Mrs. Zinn, or Jean, died several years ago. Wally later remarried.

As Director of the Laboratory, Dr. Zinn was Chairman of the five man Steering Committee on design and construction of the Materials Testing Reactor. The full committee consisted of Dr. Zinn, Dr. Alvin Weinberg, Dr. Marvin Mann, Dr. John Huffman, and me as Chairman of the working Committe. Later, when I was in charge of the development work at Argonne for the Savannah River Project under Dr. Zinn's direction, we had little contact. Once I went into his office with a large roll of the drawings for the Savannah River Reactors and suggested that he look them over, only to be told: "If you approve them, that's all I want to know". In other words, "Don't bother me with your little billion dollar projects". (Twenty billion dollars today, 1982). As noted, we pay interest by inflation. (Moral - be in debt!)

My impression of Dr. Zinn was that he had his own interests; and once he picked a man for a job, he wanted nothing more to do with the work or project. Yet he was also very friendly. I always believed that he was at peace with the World. He was interested in his own work; and he let the Argonne Division Directors run their own operations. He did assign me offices close to him. For a time, our doorways were about one foot apart. He never dropped into my office to visit, or to ask how things were going or even say "Hello". Apparently, he just assumed that things were moving along. Perhaps I was being complimented! I always thought he assigned me the Projects that he was not interested in directing. He was a very busy man.

Dr. Zinn was medium sized and light complected with almost always an intense scowl on his face. I always had very great respect, admiration, and honor for him - as did everyone else that knew him.

It is interesting that when Dr. Zinn left Argonne to form a Design Company, he took those men with him with whom he had worked with the longest time. But at the last minute, he came into my office, dropped into a chair and said, "Stew, are you going with us?" I was so taken by surprise that I just blurted out, "Golly I haven't thought about it, because..." Apparently, he was under the impression that John West, or someone else, had talked to me. But no one had done so. Dr. Zinn jumped up and walked out without another word. I was too surprised to say anything. He apparently had checked out and left the Laboratory. I never saw him again. A long time later, I tried to communicate with him without success. But at the time, I was too surprised to yell at him, or to try to follow him. I still believe that there must have been a mixup in communications.

I have always regarded Dr. Zinn as the greatest man that I ever knew. I never really knew Enrico Fermi. In summary, Dr. Zinn was a serious, intense, and very thoughtful man. He always impressed me with his knowledge and, to repeat, I always had very great respect for him.

One Aberdeen officer whose name I have forgotten, and who became head of the Design Section was unmarried. He tried to locate a room for rent without success when he arrived at Aberdeen. Finally, he stopped by one of the old large houses south of Aberdeen and rang the doorbell. An elderly lady answered. He said, "You look as if you would have a room to spare. I will be glad to help with the lawn, etc., etc." He explained that he was a very quiet, studious character. Finally, she admitted that the house was almost too quiet and too large for her alone. So she rented him a room on trial. The next week her granddaughter came to visit and stayed for six weeks. By that time the office and granddaughter were engaged and soon were married. The last I knew, they had three children. He worked for me about one year; and then he was transferred to the Design Section as Officer in Charge.

END NOTES CHAP 9

1. Every West Point Candidate should be required to have at least a Bachelor's Degree in some branch of Engineering from an accredited Engineering College. See John Cave.

2. I organized the "Ann Arbor Conference" and presented two papers. It was the forerunner of the International Nuclear Energy Conferences held at Geneva, Switzerland. Our Atomic Energy Commission ignored the Ann Arbor Conference.

3. Each deuterium atom is very roughly twice the weight of the normal hydrogen atom. Thus, "Heavy Water" has a molecular weight of near 20, rather than near 18 for ordinary water.

4. I know nothing further about him.

5. As noted elsewhere, we moved into the house of Friday; and Monday I was transferred to Washington, D.C.; so I took the Monday evening train to Washington. Winnie and the boys moved to Washington months later at the end of the School Semester. I "commuted" weekends, Friday and Sunday nights some 14 hours or so each way. My travel expenses were a part of my contract.

6. Normal Government procedure.

7. I believe the contract was $1.00 per year plus direct expenses and overhead.

8. As noted elsewhere, Curtis Nelson asked me to move to Wilmington and be his assistant and "contact man" on the du Pont Contract for the Savannah River, or Hydrogen Bomb Project. Mr. Nelson talked to Dr. Zinn and they agreed that I should stay at Argonne. so I did not go. I became the "Project Coordinator" for the Research and Development work carried out at Argonne in support of the Project as "ordered" by Dr. Zinn. He moved me into the next office to his and forgot me and the Project except when du Pont people came in. Dr. Zinn had been on vacation and Dr. Hilberry knew nothing of Dr. Zinn's plans for me.

9. Can a Professor ever stop talking? Actually, every Professor does so much talking that he thinks on his feet facing a Class; so he does get in the habit of thinking clearly and analytically as he is talking. You forget your class or audience -- only then do you become a good speaker.