

THE DAYTON FLOOD TWINS

by Charles Otterbein Adams

NOTE: Image numbers are preserved for archival purposes. However, the images are missing.

Chapter I. In The Beginning.

Even my entry into this world was a surprise. I was born April 8, 1912, five minutes after my twin sister, Lois Viola Adams. Neither my mother, Viola Hicks Adams, nor my father, Charles Winfred Adams, knew they were having twins until I arrived. These were days before birthing rooms in hospitals, doctors made house calls, ultrasound had not been invented. Apparently the doctor had not checked for more than one heartbeat. We were born at home, 33 Rung Street, under a doctor's care. The Dayton Flood started March 25, 1913. Since Lois and I were born April 8, 1912, and we were just 11 months old at the time of the flood, obviously all of the events described while our family was in the floodwater were told to me by first hand observers.

My father told me that Dayton, in March, 1913, was a relatively small city of 127,000 people. He said they did have trolley cars, electric, on just the main streets. Only the main streets were paved. Our street, Rung Street, was not paved. Approximately half of the automobiles on the streets were electric. There were many different makes of internal combustion engine, gasoline powered cars. Most of these were started by hand cranks. My father worked for Charles F. Kettering, who had just electrified the starter for gasoline-powered cars. These were being put on Cadillac cars. Our home was modest, with very little yard space, like most of the homes in Dayton. The Miami-Erie Canal, the major transporter of goods between Lake Erie and the Ohio River, traversed the downtown area. There were many businesses along the banks of the canal.

The Great Miami River wound its way through the city in a huge "S" shaped course. Joining it, within the city limits, the Stillwater River came in from the north, the Mad River came in from the east, and Wolf Creek came in from the west. Twin Creek was also a tributary, joining the Great Miami just south of the city, flowing through the town of Germantown. Loramie Creek flowed into the Great Miami River well north of Dayton, above Piqua, Troy, and Tippecanoe City. I was told all of the streams frequently flooded parts of all these cities. As a result, levees had been built along the banks, primarily the Great Miami River. The height of the levees along the Great Miami, in Dayton, had recently been raised to a height of 15 feet. Most Daytonians thought that would fully protect them from flooding.

As I was growing up, I learned that Dayton was quite an industrial city. The National Cash Register Company, or NCR as we called it, was the primary manufacturing company, making cash registers for stores and businesses. It was the largest employer in the Dayton area, headed by Mr. John H. Patterson, President. It was on a knoll in the southern part of the city. Mr. Kettering had started the Dayton Engineering Laboratory Company, or Delco, in a building on East First Street, just east of the Miami and Erie Canal. There were many

businesses along the banks of the canal, as canal boats were the major transporters of goods between Lake Erie and the Ohio River. There were several car companies making automobiles. Many tool companies were in Dayton, supplying equipment for the burgeoning automobile industry and other manufacturing plants in Dayton. There were many hotels in downtown Dayton to accommodate the visitors here to do business with the manufacturing plants and the department stores downtown. My parents were married in 1910. Rung street, on which we lived, was named for the farmer, a Mr. Rung, who owned that property before it was developed for residential property. Rung Street ran west from North Main Street to Forest Avenue. From Forest Avenue west it was called Neal Avenue. Geyer Street crossed Rung Street west of Main Street, and Brightwood went north from Rung Street between Geyer and Forest Avenue. Rung Street was one block north of Great Miami Blvd, which crossed Main Street and extended to Riverside Drive, along the Great Miami River. The area south of Great Miami Blvd., bounded by North Main Street and the Great Miami River, was known as "McPherson Town". It had been platted and started by a man named Samuel McPherson, originally from Ireland. My mother's aunt, Fanny Nelson Fries, lived one block north of Rung Street, at 39 Warder Street, with her husband, Dr. W. Otterbein Fries. He was a United Brethren minister, and Sunday School Editor of the Otterbein Press, the U.B. Publishing House in Dayton. Mother's mother, my grandmother, Linnie Nelson Hicks, and Fanny Nelson Fries, were sisters. Fanny Fries was President of the Ohio Chapter of the W.C.T.U., the Womens' Christian Temperance Union. The W.C.T.U. promoted full abstinence from alcohol, to rid society of the results of its abuse. Mother also told me that her grandfather, Rev. John Kincaid Nelson, was an associate of Bishop Milton Wright in his differences with the 1889 General Conference of the U.B. Denomination regarding their Constitution. Bishop Wright was the father of the Wright Brothers, Orville and Wilbur. Wilbur did a lot of the writing for his father in connection with Bishop Wright's disassociation from the main body of the U.B. Church. Orville and Wilbur, of course, were the inventors of the first, controllable airplane. Mother told me her grandfather, Rev. Kincaid, rejoined the main body of the United Brethren Church before he died. Mother had graduated from the Dayton Normal School, a teacher training school in downtown Dayton. She taught school in Fostoria, Ohio, and met my father on a visit to her Aunt Fanny. They actually met at an ice cream social at Riverdale United Brethren Church, on North Main Street at Hersey Street, one block south of Great Miami Blvd. My father was born in Xenia, Ohio. At the time he was born, the back half of the house was a log cabin. It had been a stop on the Underground Railroad. My father, his father, my grandfather, Jonathan Ralph Adams, and my grandmother, Lottie Guizlo Adams, had recently moved from Xenia, Ohio, to Dayton. My grandmother's parents, Joseph and Mary Guizlo, had emigrated from Geneva, Switzerland. In Dayton, the Adams family were living on Hersey Street, just a few doors from Riverdale U.B. Church. My grandmother, Lottie Adams, died shortly after my parents were married in 1910.

Fashions were considerably different those days. Everyday dress was much more formal. Leisure clothing was almost as formal as everyday dress. Whether working around the house, or even fishing, one could not be seen in the type of leisure clothing we wear today, in the year 2001. My father and mother went fishing in the Stillwater River, approximately one mile north of their home on Rung Street in relatively formal clothing. (Fig. 1)

Chapter II. Why the Flood.

In the middle of March, 1913, three major storm systems converged over the Miami Valley. One came from the northwest, one from the southwest, and one from the north. In the three days prior to March 25th, these storms dropped as much water on the valley as flows over Niagara Falls in thirty days. With the frozen or soaked ground unable to absorb any of this water, it all flowed into the streams and rivers going into and through the Miami Valley towns and cities. With that much water coming all at once, the Great Miami River started rising about one foot every hour. I took a picture in 1979 of the river at its normal height. I was standing just below the top of the levee at about where the Great Miami Boulevard comes out on Riverside Drive. (Fig. 2) The Dayton Canoe Club is on the left, and the bridge to Island Park is partially shown in the upper right. If you visualize the water having risen to the top of this levee, you can understand how much water was flowing down the river before it overflowed the levees.

Dad left me a picture showing Lois and myself with our parents before the flood. Lois is held by our father, and I am held by mother. This was in the backyard of our home at 33 Rung Street. (Fig. 3) Fashions for baby clothes were different in those days, just as were fashions for their parents. Both Lois and I were dressed in long dresses, probably because of the ease of taking care of us so dressed.

From data in Arthur Morgan's book, the Miami Conservancy District, I drew a graph to show heights of the Great Miami River in Dayton. (Fig. 4) I had permission from Mr. L. Bennett Coy, when he was general Manager of the District in 1983, to use information and pictures from this book. The graph shows just how fast the water was rising. On the morning of March 24th, 1913, the river was near normal, about 6 to 8 feet deep. By the morning of the 25th, it had risen to about 15 feet, about up to the top of the levee. By the evening of the 25th, it had risen to almost 30 feet. At times, it was rising about one foot every hour. After it spilled over the tops of the levees, the continued fast rise gave people little time to try to move things to higher levels within their houses. Furniture had to be left wherever it was used. Food in the pantry had to remain in the pantry. Some people had to go up to their attic when the water started to rise within their homes.

The path of the Great Miami River through the city of Dayton is roughly a large "S" curve. (Fig. 5) Tributaries come into it within the city. The Great Miami comes in from north-northeast. The Stillwater joins it from the north. The Mad River joins it from the east. Wolf Creek flows in from the west. Twin Creek flows into the Great Miami River from the west, below the scope of Figure 5. For several reason it is necessary to know the area covered by the floodwaters. (Fig. 6) The area in gray shows the area that was covered by the floodwaters at their maximum height, after they rose higher than the levees. At that time, no longer constrained within the riverbeds, the entire mass of water rushed south, directly through the center of downtown Dayton. Remember that gray area. I will describe its use later.

Our family were members of Riverdale United Brethren Church at the time of the 1913 Flood. It was renamed later to become Cowden Memorial United Brethren Church, (Fig. 7),

to honor Col. Robert B. Cowden, a leading member. Also at the time of the flood, my mother's father, my grandfather, was Dr. James W. Hicks, pastor of the U.B. Church in Fostoria, Ohio. He was a graduate of Union Theological Seminary, in Dayton. This was the predecessor of Bonebrake Theological Seminary, predecessor of the current United Theological Seminary. The U.B. Denomination merged with the Evangelicals in 1946. and the E.U.B.s merged with the Methodists in 1968, to become the present United Methodist Denomination. My grandfather, Dr. Hicks, also worked for the Evangelism Department of the U.B. Denomination, headquartered in the U.B. Building in downtown Dayton He held many evangelistic meetings in Ohio and Indiana. He started some U.B. churches in northern Ohio. He was honored by the Denomination for his work as an evangelist. Riverdale United Brethren Church, at Main and Hersey Streets, was just a few blocks from our home on Rung Street. The 1913 Floodwaters rose above the snow-covered roof over the entrance. (Fig. 7) The water marks left by the floodwaters on the walls of the Sunday School area were left on the walls as a reminder, until our congregation merged with First U.B. Church at Fourth and Perry Streets, downtown, about 1927. When the building was torn down, it became the site of a major restaurant and dinner theater, Suttmiller's, at Main Street and Great Miami Blvd.

It is interesting to note that the automobile seen in Figure 7 was a hand-cranked model. In the early 1920s, my mother was the patron of a group of young ladies in Cowden Church, the Otterbein Guild Girls. Mother hosted a meeting of her Guild Girls at our home, at that time on Hudson Avenue, in Northern, or Upper Riverdale. It was a cold winter night, with ice on the street. Mother asked me to start one of the girls' cars, so it would be warm for her drive home. The car was a Model T Ford, with a hand crank for starting., The car backfired, sharply reversing the crank, throwing my head against the fender. I still have two false teeth as a reminder of that incident.

Chapter III. Capsized Boats Dump Adams Family into Floodwaters.

On the morning of March 25, 1913, my father walked to the levee of the Great Miami River, at Great Miami Boulevard, to survey the situation. He recognized that the water was about to overflow the levee, or possibly break through close to the top of the levee. By the time he could rush back home, the water had broken through the levee and was rushing down Rung Street. (Fig. 8) A rescue boat was already at work by a neighbor's house. My mother, after the flood, put a mark on this picture to show how high the water got at our house during that day. It rose to about one inch from the ceiling of the first floor. My father and mother realized our home was no place to take care of Lois and me, the twin babies, with no heat, no drinking water, and really no way to take care of us. They decided to go to mother's Aunt Fannie's home at 59 Warder Street, the next street north, and on much higher ground. All around our home, people on the street were calling wildly for their neighbors to get out, go to higher ground in Upper Riverdale, for safety. With mother carrying me, and Dad carrying Lois, together with Dad's father, John Adams, and mother's visiting sister, Estelle Hicks, the family walked through the water covering our back yard. We had to crawl up and over a high wall at the back of our lot, and then walk up the street to Uncle Ottie's and Aunt Fannie's home on Warder Street. (Fig. 9) Anticipating there might be floodwater high enough to come into our house, Dad and some neighbors had raised the piano and placed it

on top of a heavy table in the living room. Neighbors were all helping each other move their pianos to places they thought would be safe from floodwaters. Pianos were relatively much more expensive in 1913 than they are today. With average family incomes about \$675.00 per year, the \$68.00 cost of a piano was a big cost item. Before leaving our house, Dad checked to see that all the windows and doors were tightly closed. This was to prevent strong currents within the house if the water got that high. Such currents could wash many things clear out of the house. The canary bird in our house was singing. This reminded Dad that it was in its cage on the first floor. Dad took the cage to the second floor, where the bird survived the flood to come.

Uncle Ottie's home on Warder Street had a front porch approximately 7 feet above street level, with a railing around the porch. There was a large tree in the front lawn. This played a key role in our family's experience that follows. Although Dad thought Uncle Ottie's home would be above any floodwaters, the water just kept on rising. By noon it was rushing west, down Warder Street. By 3:00 P.M. it was up to the porch level, both at Uncle Ottie's house and the houses across the street (Fig. 10). The cellar was flooded, so there was no heat in the house. There was no water supply, and few provisions. It was thought best to take Lois and myself up to North Riverdale.

Dad hailed a boat. He told the boatman, Carl Sinks, that they wanted to take us to either the Geyer Street landing or to a rescue center at Forest and Grand Avenues. Mother had wrapped Lois and me in shawls. With mother holding me, and Dad holding Lois, we were loaded into the boat over the porch railing, together with Dad's father, John Adams. Due to the cold weather, Dad, mother, and Grandpa were wearing heavy overcoats. Carl Sinks pulled the boat away from the porch railing to start toward the landing. As soon as he got away from the railing, the strong current caught the boat and slammed it against the tree in the front yard. The boat capsized, throwing all of us into the cold, muddy water. The water soaked the heavy overcoats. This made it difficult to stay afloat. Mother cried out she was drowning, and lost her hold on me. Fortunately, Grandpa Adams was able to grab me. Dad attempted to help mother. In doing this, he somehow lost his hold on Lois.. She was washed, by herself, on down the rushing floodwaters. Ferd Appel, a Dayton Journal staff artist, later made a sketch of this scene. (Fig. 11) Dad, helping hold up my mother, Grandpa Adams, holding me, and Carl Sinks the boatman, all managed to grab the limbs of a smaller tree several houses further down the street. By this time, witnesses were shouting for help, some firing guns to attract attention to the family in the water. Harold Miller, later husband of Ivonette Wright Miller, was in a boat on Warder Street, close to Main Street. He told me, years later, he was too far away to help, but added his voice to the others calling for help. Ivonette, in a wheel chair in the latter part of her life, looking up to me standing beside her, remarked that her husband had helped in our family's rescue. Mr. W.A.Chryst, a neighbor of Uncle Ottie, did what he could to try to help my parents moor themselves to the limbs of the smaller tree. Another boat, manned by John Ryan, was just coming from Geyer Street to Warder Street. His attention was called to the plight of our family, and went to our aid. Dad helped mother get into Mr. Ryan's boat. Mother asked for me, and Grandpa put me into mother's arms. No sooner did mother get me in her arms, when that boat, too, capsized. (Fig. 12) Mother lost me, and I followed Lois down the flooded street. Both of us were now tumbling about by ourselves, tossed about by the cold floodwaters.

Chapter IV. Rescues of Family Members.

A boat manned by Firemen Jack Korn and Warren Marquart pulled up to the tree and rescued my father, my grandfather, Bill Chryst, and Carl Sinks. They were taken back to Uncle Ottie's house. Dad was almost out of his mind, worried about what had happened to mother, Lois, and me. He was put to bed in warm, dry clothing and urged to try to get some sleep.

In the meantime, Mr. Dudley Arts, oarsman in another boat, pulled from Geyer Street into Warder Street, and saw mother in the water. She was almost drowning. With her heavy, wet overcoat, he had quite a time getting her into his boat. (Fig. 13) Mr. Arts took mother to the rescue center at Forest and Grand Avenues. A Dr. D. E. Miller attended to mother and got her back to normal.

Mr. Bob White and Mr. Howard Ooly, in another boat, turned into Warder Street just in time to pick up Lois. A peculiar thing happened. They took Lois to a private home. The lady of the house, thinking Lois' mother had drowned, at first refused to give her up. But when the lady recognized Lois needed immediate medical attention, she was taken to the same Dr. Miller for resuscitation.

A Mr. E. L. Riley, with two women in the back seat of his boat, was rowing up Geyer Street when some one called to him to "get that baby out of the water". Taking an oar out of its oarlock, he reached the oar under my clothes and lifted me out of the water. He placed me in the laps of the women in the back seat of his boat, and took me to the same rescue location where mother and Lois were being cared for. A sketch by Ferd Appel illustrates Mr. Riley lifting me out of the floodwaters. (Fig. 14) Dr. Miller was able to resuscitate both Lois and me, as well as attending to our mother. Many years after the flood, Alice Riley Workman, sister of Mr. Riley, invited Loraine, my wife, and me to visit her in her home, close to where our flood experience took place. We showed her my flood pictures. She gave me a picture of her brother in the boat from which he rescued me. (Fig. 15)

Dad took a picture showing how high the water was on Warder Street a few hours before we were in the water. (Fig. 16) Since the water was rising about one foot an hour, the water was about three feet higher when we were in it.

Warren Marquart, after taking my father back to Uncle Ottie's home, took my grandfather to the rescue location at Grand and Forest Avenues to see what he could find out about Lois, mother, and me. Grandpa found that Dr. Miller had attended to mother, Lois, and me, and that we were all stabilized. Mr. Marquart took us all to his home in Upper Riverdale. The next day Mr. Marquart and Mr. Korn boated back to Uncle Ottie's to tell Dad that we were all well and staying at the Marquart home. Dad was almost overcome with joyous emotion. The flood had knocked out all but personal, one-on-one communication. Phones were not working. Dad had spent the whole night thinking that mother, Lois, and I had been drowned in the turbulent, muddy floodwaters. He was taken by the two boatmen back to the Marquart home to rejoin mother, Lois, and me. We were now a very happy family.

Chapter V. The Twins Get Pneumonia.

After a few days, due to the exposure to cold floodwater, and having some of that cold, muddy water in Lois' and my lungs, both of us started developing pneumonia. This was the time before antibiotics, of course. Neither our home on Rung Street nor Uncle Oattie's home on Warder Street, were suitable for taking care of twin, sick babies. Mother's brother, my Uncle Nelson Hicks, was a pharmacist in Fostoria, Ohio, where their father, my grandfather, Dr. J. W. Hicks, was pastor of the United Brethren in Christ Church. Using his profession as a reason, Uncle Nelson was able to get through the guard lines around the beleaguered city of Dayton, to see if he could help his sister's family. The decision was made that he should take mother, dad, Lois, and me to the Manse, in Fostoria, Ohio, the home of my grandfather Hicks, for our recovery. There under the direction of a Dr. Hale, mother and Dr. Hale struggled very hard for over three weeks to get Lois and me over the crisis period of our pneumonia. It was extremely difficult, in the days before antibiotics. Lois' heart had some residual problems. My bronchial tubes gave me some problems most of my life. But we did survive both the flood and the subsequent pneumonia.

Chapter VI. Rescues and Help to Dayton.

In 1884, Mr. John H. Patterson bought the controlling interest in a small company making cash registers. He renamed it The National Cash Register Company. By the time of the flood in 1913 he had developed the company into a major manufacturing plant, with large buildings having huge windows for daylight lighting. It was built on a knoll south of the city. The National Cash Register Company stopped production of cash registers when the flood seemed imminent. John H. Patterson, President, called all his top executives together and told them he was certain Dayton would have a disastrous flood. He assigned specific jobs to each to have NCR prepared to handle what he was sure was coming. He told the woodworking department to start immediately to build flat-bottomed rescue boats. (Fig. 17) He dispatched another man to round up medical supplies, and request doctors, nurses, and medical staff personnel to report to NCR immediately. He set up part of the plant as a morgue, (Fig. 18), and sent for the coroner to work there. He had the kitchen staff start preparing meals and coffee to serve refugees and people in bread lines. (Fig. 19) Part of the plant was delegated to be sleeping quarters for single men, and another part for women. He had a tent city put up on NCR grounds for families that would be forced out of their homes. His carpenters started turning out flat bottomed boats about one every seven minutes, for a total of over 200. These were used both when the floodwaters came, as Mr. Patterson predicted, and for rescue work needed even after the water started receding. (Fig. 20) The receding waters left water lines showing on buildings. Snow on roofs verified that people had to be in heavy overcoats. Approximately 300 people in the Miami Valley died in the flood. Of these, approximately half were from waters in the city of Dayton

Chapter VII. Flood Damage.

While the floodwaters were still rising in Dayton, things were getting very bad in both the residential and the downtown areas. At about the time the levee of the Great Miami River

let go to cause the flood problems for our family and the Riverdale Area, the river also overflowed the levee along Monument Avenue, downtown, close to the Main Street bridge. This started floodwaters to surround Newcom Tavern. This was a major landmark for the city. It was the first structure built in Dayton when it started to be settled. It was located between the levee and Monument Avenue, in Van Cleve Park, across Monument Avenue from Steele High School. The waters continued to rise in downtown Dayton. Horses struggled in the water at Fourth and Ludlow Streets, downtown. (Fig. 21) During the rest of that day, March 25, 1913, the water rose to the light bulbs on top of the light poles lining the sides of downtown streets. Floodwaters kept rising on West Fourth Street, downtown. (Fig. 22) This was a little later, and the water is a little higher on the light poles. The high tower in the right hand edge is First United Brethren Church. Riverdale United Brethren Church, where our family were members at the time of the flood, merged with First Church about 1927, after the Riverdale Church had been renamed Cowden Memorial Church.

The Miami-Erie Canal traversed the downtown area of Dayton through the portion east of Sinclair Street. When the waters of the Mad River and the Great Miami overflowed their levees, the canal formed a natural path to help carry floodwaters through that section of downtown. It had been built along the west side of Ohio in the mid 1800s. There were many small businesses along the canal where it went through downtown. These were all heavily damaged by the 1913 floodwaters, . Most of the canal activity had virtually stopped in Middletown by 1909. But it was still in use in Dayton. The 1913 flood completed the finishing of the canal business through Dayton. However, it was not filled in until 1934, to become Patterson Boulevard. When Dad was working for Mr. Kettering at Delco, just east of the canal on First Street, I occasionally walked over the bridge carrying First Street over the canal, to meet him after work. It is interesting to note that some sections of the canal still exist. Above Piqua, as part of the Johnston Historical Park, a section of the canal is kept in operation, and on which you can take rides on a restored canal boat pulled by a horse, just a originally operated.

The force of the water flooding down the streets was awesome. It demolished a house close to our home. (Fig. 23) Another house close to ours had the foundation under the front porch washed away, causing the roof to fall (Fig. 24). It is also possible to see the quantity of debris left by the retreating floodwater. People had to cut holes in roofs and attic walls, so survivors could be rescued when trapped in the attic, with no food or water. (Fig. 25) The debris on the roof, below the hole cut in the attic, shows how high the water had been before it started to go down. This should be remembered later in my account, when "Remember The Promises You Made In the Attic" became a slogan for a pledge drive for money to do something so such a flood would never happen again.

Steele High School, from which Lois and I graduated in 1930, was at Monument and Main Streets, downtown. The northwest corner of the school, included a round tower section of the building. The floodwaters washed away the foundation of the tower, and it collapsed. (Fig. 26) Our Steele Lion, a bronze sculpture on a pedestal in front of the tower, was washed off the pedestal. It was found under the rubble from the collapsed tower. It can now be seen on the side lawn of the present Dayton Art Institute, across from the Masonic Temple.

Some time after the flood, Col. E. A. Deeds established an historical park along the Great Miami River, just south of the downtown area. At this same location, he and Mrs. Deeds also built a tremendously high carillon with bells and a keyboard for playing the bells. She played the bells on its console when the carillon was dedicated. The park takes its name from this carillon. In the summertime, we go to Sunday afternoon concerts given on this carillon. Newcom Tavern was moved from Monument Avenue to this park. The park also houses the Wright Brothers' 1905 airplane, their third airplane. This was the plane they used to really practice and learn how to fly, at what was called Huffman Prairie., now part of Patterson Field, a section of Wright Patterson Air Force Base. Both the Huffman Prairie and the Wright Brothers' airplane at Carillon Park are now part of the Dayton Aviation Heritage National Historical Park. There are many other historical buildings and artifacts in Carillon Park. The park even has a Print Shop, which make us remember that the Wright Brothers were printers before they invented the first, controllable airplane. The Print Shop at Carillon Park was set up by Gus Brunsmann. Gus and his wife, Chuddie, were close friends of Lois and me and my wife Loraine. Chuddie and Loraine were sorority sisters. Gus and Chuddie researched and published a book on Wright and Wright, Printers. The park also has a lock section of the Miami-Erie Canal.

Earlier, you saw horses struggling in the rising waters at Fourth and Ludlow Streets. There were 1400 horses drowned on the streets of Dayton by the floodwaters. (Fig. 27) Remember, at the time of the flood, although there were both electric and gasoline powered cars on the streets of Dayton, there were many horse drawn buggies and working wagons. The water rose so fast the many horse drawn wagons could not get out of the way in time to beat the flood. One wagon was upended by the floodwaters, and the horse was caught in the harness and drowned. Water got into the horse, distending its stomach beyond the limit of its flesh. Not a pretty picture. (Fig. 28) The Dayton Bicycle Club members, out of the goodness of their hearts, took it upon themselves, as a club, to remove all 1400 dead horses from the streets of Dayton. I checked with the Bicycle Club and found that some of the dead horses were taken to a glue factory, some to an incinerator just outside of Dayton, and the Club members buried most of them on farms around Dayton. The Dayton Bicycle Club still exists, next door to the Y.W.C.A., on West Third Street, in downtown Dayton.

The flood caused major damage to commercial buildings as well as residential homes. From the southwest corner of the Dayton Montgomery County Public Library, looking southwest across the intersection of East Third Street and Sinclair Street, one could see the fire damage to the buildings. (Fig. 29) Whenever fire got started by damaged boilers, or for any reason, it was not possible for fire departments to get there. So buildings burned to the waterline. The force of the floodwaters tore up the pavement. Wherever water could get into the ground, the hydraulic pressure forced utility pipes up out of the ground. Marooned people, to escape both floodwaters and burning buildings, used ropes and ladders stretched between buildings to move from building to building to get to safety.

I was told later that guests in the hotels, downtown, were stranded until the waters receded. There was always some concern about the possibility of fire. Many of the buildings in the fringe of the downtown area did catch fire, and burned to the waterline. Mother told me she

could see the reflections of these fires on the clouds in the sky all night long. The inventories of all the merchants, downtown, below the upper floors, were heavily damaged by the muddy floodwater. Some could be dried and partially restored. But much was damaged beyond repair. Some records were simply washed away. Barney and Smith R.R. Car Building Company was so badly damaged it could not recover. (Fig. 30) From 1860 to 1890 the company had grown to a prominent position as a builder of beautiful, highly ornamented, wooden railroad cars. But by 1913, steel railroad cars had gradually taken over. The company had started to build some steel cars, but still had a huge inventory of special woods for decorating their railroad cars. This was all either washed away or so badly damaged by the floodwaters that it could not be used. This was the major contributing factor in the closing down of the business.

Flood damage to the Dayton Montgomery Public Library was very extensive. Water got up to the second floor. There was no time to remove books from shelves and get them out of harms way from the rising, muddy water. Book shelves toppled over, pitching books helter-skelter into the water. I was told later by the librarians that thousands of valuable books were damaged beyond repair. Newspapers were also submerged and ruined. Many other things of value were destroyed. At that time the library was also a museum. There were many artifacts that came under muddy water. Several librarians were stranded in the building until the water receded. They had come to work Tuesday morning, March 25th. The water rose so high and so fast they were unable to get away before it was too late. After the water retreated, books and papers were spread on boxes and tables all over the library grounds to dry, so attempts could be made to save as many as possible.

Chapter VIII. Clean Up.

Dad told me that after the floodwater receded, two major things happened in the city of Dayton.

1. First was the necessary clean up, both in homes, streets, and businesses.
2. Second was the resolve to never let it happen again.

In our home on Rung Street the flood really left a mess. It was typical of all the homes hit by the flood. While Lois and I were recovering from pneumonia with the help of mother and Dr. Hale, in Fostoria, Dad and his father had the job of cleaning up the family home on Rung Street. Dad and his father, one with a shovel and one with a spade, are shown in (Fig. 31). The muddy pile of stuff in the wheelbarrow shows what the muddy water left inside the house. Just as for fishing, fashions of the times were different for working at dirty jobs. Both Dad and my grandfather were doing all that dirty work wearing stiff collars and ties. This was 1913, not 2003. Also note the two uniformed officers on the porch. They were there to protect against looters. Some things about people are the same in all ages. Dad told us later that when he walked into the house, the piano was lying on its back in the mud. The large, round, dining room table had floated straight up to the ceiling. Since he had closed all the doors and windows before we all went to Uncle Ottie's home on Warder Street, there were no water currents inside the house. In the center of the dining room table had

been left a dish of peanuts. The table floated straight up and then floated straight down. That dish had been trapped against the ceiling, preventing water from filling the dish. Dad said he ate the peanuts.

My grandfather had the major chore of cleaning up our house. He took some of the debris out the back door and over the back porch. He got some help from our next door neighbor, Mr. Keller. (Fig. 32) He owned a grocery store at the corner of Main and Rung Streets. Mr. Keller had the same problem with the groceries in his store, due to the flood, that I did years later, while attending the Electrical Engineering Department of the University of Cincinnati. With some of my classmates, I helped Ohio River bottom people recover from a flood, there, in 1937. We were given salvaged can goods for helping. The only problem was that we didn't know what we were going to have for dinner until we opened the cans. All the labels had been washed off of the cans. Mr. Keller had that problem with the goods in his store. The picture shows my grandfather with a mop in his hand. The ice box, pulled out from the kitchen, shows that muddy water had gotten into the box both from the door and the top lid, where chunks of ice were loaded into the box for cooling. This was before the days of Frigidaires. There is also a pile of debris and mud from cleaning the inside of the house. Mr. Keller had three daughters who frequently were baby sitters for Lois and me. Many years later, one of the Keller girls called me to tell me of the times they baby-sat for us. She invited my wife, Loraine, and me to her home outside of Germantown, and gave us pictures of herself and her sisters baby sitting Lois and me.

Everybody who had had their homes or businesses flooded had to take part in the massive cleanup operations after the waters receded. My Uncle Ottie Fries, in vest and shirt-sleeves, with my grandfather waving his hat, together with another man in shirt-sleeves, and Dr. Whitney, worked together on cleaning up. (Fig. 33) The latter two men worked with my uncle at the Otterbein Press. The wheelbarrow full of muddy debris had just been taken from inside Uncle Ottie's barn, behind his home on Warder Street.

Floodwaters also damaged downtown buildings, just as they damaged and left mud in our home and Uncle Ottie's barn. The Dayton Engineering Laboratory Company's building, on First Street just east of the canal, got floodwater inside the building. This left the machinery covered with the same, sticky mud. (Fig. 34) In order to clean the machinery as quickly as possible, to get back into production, Charles Kettering went to Cincinnati. There, he obtained an Ahrens-Fox pumper-type fire engine, and drove it back to Dayton, himself. He used this to flush off their machinery, using the high-pressure pumper to remove the mud from all parts of the machines. In the picture you see that some of the machines were powered by belts driven by overhead line shafts and pulleys. As a co-op engineering student, in the 1930s, at Delco Products, I ran some lathes and drill presses still powered by belts from overhead line shafts. To change the speed of the machines, you had to take a long wooden pole, and literally lift and shift the belt from one pulley to a different diameter pulley. Dad was Cashier for Mr. Kettering at this Delco plant. An interesting comment about this era of Dayton is the way Dad paid the employees. He would walk

downtown to Winters Bank, get the entire payroll in cash, and walk back to the plant with all this cash in a large bag. It is also interesting to note that when General Motors later bought Delco, they separated Mr Kettering's Laboratory portion, and moved it to a building in Moraine City, south of Dayton. It was located in what had been the Wright Airplane Company building. This was the start of General Motors Research Laboratory. At that time Dad was Mr. Kettering's private secretary. Dad would take me with him on Saturdays, sometimes, when not too much was going on. There, I was shown some of the major developments being invented to help the auto industry. For example, Tom Midgely showed me the experiment for leaded gasoline. A gasoline engine was mounted on a concrete block. Above it were two fuel supplies, feeding the engine through two petcocks. Mr. Midgely first fed the engine plain gasoline. When the engine almost "knocked" itself off its mount, he switched petcocks and fed leaded gasoline to the engine. It quieted down immediately. The only problem was that the pollution problem this would cause was not recognized.

Cleanup on the streets of downtown Dayton after the floodwaters receded was a major problem. Street cars had been overturned by the rushing waters. Debris carried into the downtown area from upstream areas was caught in all manner of different locations. Dead horses, broken wagons, waterlogged automobiles, broken furniture, were scattered in the mud all over the streets. Retail store windows were broken, and merchandise on display had been displaced, some even washed away. It required a lot of trucks and a lot of manpower to clean up the mud and get rid of damaged material and trash.

The news about the flood was widely covered clear across the country. My Aunt Stella Hicks, sister of my mother, was visiting mother through all of this. Stella was on the staff of the Fostoria Daily Review. Her paper carried all of the stories of the Dayton flood. It is interesting to note that "slips" occur even in newspapers. A headline in the Fostoria paper carrying the Dayton Flood story, of course, was printed in 1913. But the date on the paper reads "1912", when it should have read "1913". (Fig. 35) The headline article is about all the terrible events happening because of the 1913 floodwaters. It gives the names of many people involved. The article shows that Mr. John H. Patterson, President of the National Cash Register Company, was head of the Dayton Relief Committee. (Fig. 36) The article states that Secretary of War Garrison was sent to Dayton by prompt action of President Wilson. (Fig. 37) These names help us realize where the 1913 flood was located within the history of our country. General Leonard Wood and Col. Rupert Blue brought in the uniformed soldiers to assist local police in maintaining order and preventing looting. , (Reference Fig. 31, which showed two uniformed soldiers on the front porch of our home on Rung Street.) Governor Cox called to tell the authorities to use their own judgment in appointing someone to take care of sanitary problems. With water supplies shut off, both drinking water and water for sanitary purposes were not available. We were all ordered to dig trenches in our back yards for sanitary uses.

Chapter IX. Remembering Promises Made in the Attic.

After the cleanup, in fact even as some of it was still going on, the second major effort of Daytonians came under the slogan "Remember The Promises You Made In The Attic".

The city was determined to never let it happen again. Nobody knew exactly what to do to prevent another major flood like they had just gone through. Everyone who had property damaged by floodwaters was very conscious of just how much money their loss incurred. Certainly, my folks and mother's Aunt Fanny and Uncle Ottie knew what the muddy water did to our homes, and the costs incurred because our family was dumped into the floodwaters, with remarkable rescues. But it was generally recognized that whatever was done would take a lot of money. Under the leadership of John Patterson and Col. E. A. Deeds, a drive was started to raise pledge money to "do something" to prevent another devastating flood. The front of the Courthouse was the center for this drive. (Fig. 38) The banner, above, "Remember the Promises You Made in the Attic", was stretched across the top of the Court House. With John H. Patterson heading the drive, it was understandable that the N.C.R. made a huge mockup of a cash register on which to ring up the pledges as made by the citizens of Dayton. This was mounted on a high platform at the front corner of the courthouse. A huge amount of money in those days, \$2,000,000, was raised to "do something", although they didn't know what. Among the well-known people pledging sizable sums was Elizabeth Richter, better known as "Lib Hedges". She was the "madam" of a "house of ill repute" in downtown Dayton. Liz was a truly magnificent woman. And her statuesque bust emerged triumphantly from the frilled and ruffled elegance of the gowns of her generation. She was generous to a fault. Her Bon Ton hotel and her fifty-one other pieces of property suffered disaster in the flood. She pledged about four times the amount other well-to-do citizens pledged to see that "it never happened again". Lib retired in 1915, when "the good people" triumphed and the Chief of Police ordered the houses closed. She spent her declining years in the now silent and darkened Bon Ton Hotel. She lived to see the farce of Prohibition begun, and remarked that if the world was getting that crazy she was ready to leave it. She died in 1923, mourned privately by prominent citizens, and publicly by none of them. She was buried under a beautiful monument in Woodland Cemetery.

A firm in Tennessee, Morgan Engineering, had done some flood control projects, but nothing on the scale of what would be required in Dayton. John Patterson and Col. Deeds interviewed Arthur Morgan. (Fig. 39) They were impressed, and hired him and his engineering firm to come to Dayton. They were hired to determine what should be done, and do it. Our family, with all of us, Lois, me, mother and dad, and grandpa, having been in the floodwaters, were intensely interested, along with others who had been affected.

Chapter X. Arthur Morgan and the Miami Conservancy District.

Arthur Morgan brought his engineering team to Dayton and started work. They examined all the areas that had been flooded. They surveyed the entire Miami Valley, from Fort Laramie and Sidney, down to below Hamilton.. After considering several possible approaches, Arthur Morgan settled on the concept of five large holding dams, together with some riverbed improvements. His concept included the major, tremendous requirement that the system had to work with NO MANUAL CONTROL. It had to be self-operating, self-controlling. To accomplish this, his engineers had to do a lot of surveying, researching past floods, calculating maximum water depths in the backup waters expected behind each of the five dams, and conduit sizes for flow through each dam. The flow through each dam,

at maximum water depth behind the dam, had to just fill the riverbeds below each dam. This required considerable engineering and experimenting to establish the size of conduit openings through the dams for maximum flow, which of course would take normal flow, too. To do this, Col. Deeds offered Arthur Morgan the use of his swimming pool at Stroop Road and Southern Boulevard. It is still there in the year 2002. In the early 1920s, Dad's cousin, Lou Adams, and his wife Mert, were caretakers for Col. Deeds' farm, across Stroop Road from his home. Lou and Mert kept Lois, our younger sister Winifred, and me, for two weeks during several summers. In addition to roaming around over the farm, we got to swim in Col. Deeds swimming pool. Mr. Morgan used this pool to set up some of the experimental conduit setups and develop his designs. (Fig. 40) At the discharge end of the conduits through each dam, at maximum flow, the force of the out-coming, uncontrolled water flow would destroy the concrete water guides to the riverbed. Three of Mr. Morgan's engineers invented what he called the "hydraulic jump" to dispel or reduce the water velocity and its force. (Fig. 41) A schematic drawing will show more clearly how this "hydraulic Jump" works. (Fig. 42) The three engineers were Sherman Woodward, Ross Riegel, and John Beebe. It forced some of the water to flow back on itself, thus dissipating its energy. Because Dad, mother, Lois, grandpa, and I had all been in the floodwaters, we followed these developments very carefully. From his working relationship with Mr. Charles F. Kettering, Dad knew Col. Deeds very well.

The map showing the Official Plan shows the location of all five dams, Englewood, Taylorsville, Huffman, Germantown, and Lockington. Locations where the riverbeds were to be improved are also on this map. (Fig. 43) While all this work was being designed and construction plans made, Col. Deeds was doing all the litigation and legal work to set up the Miami Conservancy District, as this would be named. Not all farmers were willing, at first, to sell their lands where it had to be purchased for building dams, construction sites, and for backup water area in front of the dams. The Ohio General Assembly passed a conservancy act in early 1914, the Vonderheide Act. Governor Cox signed the bill in February of 1914. Col. Deeds had to handle lawsuits, attend meetings, convince local and state officials, and finally go to the Supreme Court of Ohio. On June 28, 1915, the Conservancy Court set up the Vonderheide Act, and declared the Miami Conservancy District organized. Now they could legally issue bonds to provide money to do the plan. They sold \$30,000,000 of bonds. The money to pay back the bonds, the cost of construction, and the ongoing expenses of the Miami Conservancy District, came from, and still does, assessments made on all property shown in the gray area in Figure 6. The assessments are based on the combination of the area covered, and the height of the floodwater that covered that area, in the 1913 flood. Now all the work called for in the "Official Plan" could begin in earnest. After the job was finished, 85 per cent of the money originally pledged to "do something", \$2,000,000, was returned to those who gave pledges. Col. Deeds had a headquarters building erected on the southwest corner of Monument Avenue and Jefferson Street. He and Mrs. Deeds formally gave it to the Miami Conservancy District as a gift, for permanent headquarters. Just as Col. Deeds did a good job of planning and legal work, Arthur Morgan did a good job of engineering, construction, and finances.

The construction job was gargantuan. Nothing on this scale had ever been done before.

Because it was during and right after World War I, construction and earth moving equipment was scarce. War industries in the Miami Valley were making ship engines, airplanes, tanks, armament, and other war materials. Recognizing these needed to be protected from floods, the Employment Service of the National Government classified the work of the Miami Conservancy District as essential war work. Work on all five dams went on simultaneously. They had to scrounge around near and far to get the equipment needed. They had to make some themselves. Arthur Morgan was both a good engineer, and a very responsible employer. In place of the temporary, ramshackle type of housing for workers at most construction sites, he built nice homes for his workers at each site. Arthur Morgan's wife designed some of the homes at these sites. Each site was complete with good schools for worker's children. Each living site area was operated as a self-governing village. For instance, at the Englewood Dam site, the housing area was locally called "Morgantown". Because of the experience of our family, Dad took Lois and me, and sometimes Winifred, to see the construction in progress, rather frequently. In 1915, our family moved from Rung Street further north, to a home at 126 East Hudson Avenue, a half block from the Stillwater River. Winifred was born there in 1916. The street had quite a slope down to the river. Driving straight north on Main Street, it was not a long drive to "Morgantown" and the construction site at Englewood Dam, on the Stillwater River.

One of our neighbors on Hudson Avenue had also been through the flood before moving to Hudson Avenue. Mr. Zerbe Bradford and his family lived on Babbit Street, a little north of Rung Street. He was part of Mr. Charles Kettering's "Barn Gang", the group that worked in Col. Deeds' barn and developed the electric starter for automobiles. Mr. Bradford was the draftsman for this group. When he and his wife woke early on Tuesday, March 25th, they realized floodwaters might become high enough to come into their home. They moved furniture from the first to the second floor, and took food from the ice box with them. The water kept rising up the steps to the second floor. So they had to go to their attic. They finally were able to get a boatman to take them to McKinley Park and on to dry ground on Forest Avenue, probably the same rescue location at Grand and Forest Avenue where Lois, mother, and I had been taken. Some years later, in our grade school years, on Hudson Avenue, the Bradford's son, Billie, was about the same age and was a playmate of our younger sister, Winifred.

The method of construction for the actual building of these earthen dams was called "hydraulic fill". Material for making the dams was dredged from the soil, mostly areas upstream from the site of each dam. Since it took a lot of earth for each dam, this left very sizable holes in the ground, which later filled with water and became lakes. Arthur Morgan insisted these be later developed for recreation purposes. The earth was separated into its components of sand, gravel, stone, and clay dirt. Using huge centrifugal pumps and large 15-inch diameter pipes, these materials in water were pumped to the locations as needed to build up the dams, hence the term "hydraulic fill". The central core of each dam was made up of clay, to settle as an impervious core, about which the main body of gravel and earth was deposited. The entry and exit walls and conduits for normal river flow through the dams were made of concrete, including the "hydraulic jump" described above. Mr. Morgan and his engineers recognized they had to be prepared for another flood while their work was in progress, before the dams were completed. That did happen April 19-20, 1920.

Because plans had been made for this, little equipment damage was incurred. One big dragline could not be moved fast enough, and was partially upset. The machinery was not materially damaged.

With our family home now on Hudson Avenue, so close to the Stillwater River, it is interesting to know a few things about river life as I was growing up. I spent a lot of time on the river, both in summer and in winter. There was a boat house on the river's west bank, just north of the Ridge Avenue bridge leading to Triangle Park, so named because of its triangle shape formed by the Great Miami and the Stillwater rivers. My neighborhood boy friends and I used this boat house as a place from which to go swimming in the Stillwater River. Both rivers were frozen over during most winters during my early years. We played ice hockey on the frozen Stillwater River. Our ice skates were "clamp on" devices, clamped and strapped to our shoes, not built onto the shoes as done today. The puck was simply a flattened tin can. My father and I frequently fished in the Stillwater River. One evening, while fishing in a canoe, close to a small island where Hudson Avenue ended on Riverside Drive, a small 6 inch small mouth bass jumped out of the water and landed in our canoe. Starting about 1940, the Stillwater River became very polluted and fish were scarce. About 1965, river cleanup was started. In the early 70s, I was again able to catch small mouth bass by bait casting.

A longitudinal cross section view of the Germantown Dam is typical of all five dams. (Fig. 44) The conduit outlets show as two small black dots. The top of the dam shows across the skyline. There is a lot of concrete work at the discharge area (Fig. 45) This was a massive construction program, as seen in a picture of pool beaches and downstream slope of Germantown Dam, November 20, 1919. (Fig. 46)

Large, concrete plaques identify the names of each Dam. (Fig. 47) The job of building the two conduits to carry water through the Englewood Dam, before the gravel, clay, and earth structure was built over the conduits, was really massive. (Fig. 48) The size of all this can be gauged by looking at the railroad tracks for trains to carry materials to the site, and from the relative size of the people in the picture.

The conduit outlets of the Englewood Dam and the concrete works to contain the water as it comes out of the conduits are quite large. (Fig. 49) They have held up from the time of completion of all dams, in 1922. This is true of all five dams. Mr. Morgan did a good job. The "Hydraulic Jump" has served its design objective very well. It is even quite impressive from a little further downstream. All dams have roadways across the top, with guardrails for protection. Old Route 40, once the main east-west highway across the nation, goes across Englewood Dam. The slope of the dam cross section is very apparent in this figure. (Fig. 50) The Miami Conservancy District, ever since the dams were completed in 1922, and on into the future, was and is responsible for the maintenance of the dams. They check to be sure no seepage gets under the dams, and that all debris carried to the dams by high upstream river flow is removed from the entrance of all the conduits. On the upstream side of Englewood Dam is a beautiful small lake. (Fig. 51) This small lake, and the similar lakes on the upstream side of most of the dams, were the natural result of excavations for getting the great amount of earth used in building the dams. The top of the dam is the skyline of

this picture. Until recently, the green space and lake on the upstream side of all dams was maintained by the Miami Conservancy District. Now, these recreation areas have been leased to, and are maintained by the Five Rivers MetroParks Association. The Miami Conservancy District is still responsible for the maintenance of the dams, themselves. My wife, Loraine, and I frequently took advantage of the green recreation areas associated with these dams.

Loramie Creek is the stream controlled by Lockington Dam. (Fig. 52) This is a little north of Piqua. Loramie Creek is a tributary of the Great Miami River. It discharges into the Great Miami between Lockington and Piqua. It contributed quite a bit of water to the Great Miami during the 1913 Flood. This led Arthur Morgan to determine that one of the dams needed to be close to the bottom of Loramie Creek, to reduce the flow of the Great Miami in event of heavy rainfall in this area. There are two outlets from Lockington Dam. (Fig. 53) A friend and his wife, Cleo and Rachael Hoff, went with my wife, Loraine, and me, in 1979, to look at all five dams. There were some boys looking down at the water as it came out of the outlets at this Lockington Dam. (Fig. 54) Cleo and I walked down to talk to the boys. We found the boys were watching a muskrat swimming in the water. The town of Lockington created a nice recreation area for the townspeople on the downstream stretch of the Creek.

The Great Miami River is seen approaching the Taylorsville Dam. (Fig. 55) Turning 180 degrees from the view of the Great Miami river approaching Taylorsville Dam you see the dam Spillway. (Fig. 56) It is a little lower than the top of the dam. Arthur Morgan recognized that the design of the dams needed a way to protect the dam in the event a rainfall exceeded that planned during the engineering for all five dams. If a dam failed, with the backed up water greater than planned in the design phase, it would cause greater damage than that from the 1913 flood. The spillway of the Taylorsville Dam is directly over the conduit location. Not all spillways are so located. Mr. Morgan located the spillways based on topography of the land as surveyed, and where the depth of the backed up water would be the greatest. There are four outlets from the Taylorsville Dam. This is the only dam with four outlets. Most of the others have two. Our friend, Cleo Hoff, went down to talk to some boys fishing at the outlets. (Fig.57)

At the Huffman Dam some debris carried by high water got trapped at the entrance to the conduits through the dam (Fig. 58) It is part of the ongoing work of the Miami Conservancy District to police and clean up this debris. There is a beautiful small lake at the upstream side of the Huffman Dam. (Fig. 59) The recreation area associated with this is a popular site. I took advantage of this, frequently, whenever my work took me to Wright Patterson Air Force Base, and on trips coming back to Dayton from the east. As with all the other dams, this recreation area is now leased by and operated by the Five Rivers MetroParks. The skyline of the dam is visible through the openings between the trees. In surveying and working out the design and details of the Huffman Dam, several things were quite different from the other sites. Arthur Morgan and his engineering team found it necessary to relocate part of a railroad track system, to get it out of the area that would be flooded with water backed up when the flow exceeds the normal river capacity. The same thing had to be done with the little city of Osborn. It was relocated close to the city of

Fairfield. The two cities have since merged into a city now known as Fairborn. At very rare intervals, some land between Fairborn and Huffman Dam might be flooded for brief intervals.

The city of Hamilton suffered considerably from the flood. (Fig. 60) It was a different situation than Dayton, in that the Great Miami River ran right through the very crowded industrial and business district. The 1913 floodwaters rose to 10 feet in the business district. This rushing water had tremendous force, destroyed many building, and over 200 lives were lost. The valley bottom, broad above, narrows at the city to a trifle over a mile. This entire width is occupied by houses, businesses, and industries. The drop, or fall of the river is steep. In a distance of about a mile and a half, the drop is about 22 feet. It was impractical, both geologically and economically, to reroute the river around the city. The solution to flooding had to depend on the five dams in the upper valley, plus enlarging the river channel through the city. The Miami Conservancy District took on the chore of doing this.

The widening of the riverbed in Hamilton involved the purchase of a strip of land 150 feet wide and about a mile long along the east bank of the river. Several major industrial plants had to be torn down, of necessity. The cost of the strip was over three quarters of a million dollars. Widening and deepening the riverbed, (Fig. 61), plus protecting the riverbed edges by lining the banks with monolithic concrete paving six inches thick, to prevent erosion, provided adequate flow capacity for Conservancy estimates of future flow from the five dams up stream.

The intermediate smaller towns of Piqua, Troy, West Carrollton, Miamisburg, Franklin, and Middletown, all had flood damage from the 1913 Flood. With the river flows limited by the five Conservancy Dams, protection from future floods was provided, primarily, by improving the levees along the riverbanks. The levee heights were made to meet the maximum flow estimates from the conduits of the five dams. Some work was done on the riverbeds. Where necessary, riverbeds were deepened and widened to be sure the maximum flow from the conduits through the dams would be contained within the river channels. This is all shown on the official plan.

Chapter XI. Huffman Prairie.- McCook Field- WPAFB.

Col. Deeds, while associated with the aircraft production program in Washington, D.C., during World War I, in 1917, asked Arthur Morgan to locate a site near Dayton for a large flying field. Arthur asked Orville Wright to go over the grounds with him and contribute his judgment. Orville felt the best site was the valley of Mad River between the Huffman Dam and the village of Fairfield. Orville and his brother Wilbur had used part of this area, called Huffman Prairie, for learning more about flying, after their first flight at Kitty Hawk. This area was purchased by the Miami Conservancy District and offered to the U.S government for a flying field. Col. E. A. Deeds had a large part in this transaction. It is also interesting to note that when the entire Miami Conservancy District was completed, Arthur Morgan gave the primary credit for its accomplishment to Col. Deeds. Arthur felt that Col. Deeds' influence, particularly when objections almost stopped the project, really made it happen. The flying field Orville Wright and Arthur Morgan selected became Patterson

Field, and the adjoining area became Wright Field, the chief aeronautical research center of the country. This research work was originally done at McCook Field. This was started about 1917, under what was then the Signal Corp of the United States Army. It was located in Dayton, just east of Island Park, alongside the Great Miami River. McCook Field research work was moved to Wright Field about 1927. Patterson Field and Wright Field were merged into one command and are now known as Wright Patterson Air Force Base, or WPAFB. McCook Field was on the south bank of the Great Miami River. Island Park was on the east bank of the Great Miami River after its "S" curve where joined by the Stillwater River. McCook field was the first research airfield. It was a small field. So small, in fact, that on the top of its hangers was painted "This Field Is Small-Use It All". But it was the scene of many major research programs, and development of many service airplanes. In 1924, I bicycled to the levee on the west edge of McCook Field and watched the Army Air Force "Round The World Fliers" land there on that leg of their flight around the world. Dad and I, on a hill in Triangle Part overlooking McCook Field, watched a strange contraption attempt to fly, some time in the 1920s. It looked like a four-sided assembly of pipe sections, with a vertical axis propeller at each of the four corners. When we saw the engine fired up, a tremendous cloud of dust arose. The thing started to lift off the ground. Suddenly, it collapsed in a tangle of twisted pipes. We think it may have been an early attempt to build a helicopter. Also at McCook Field there was a huge, inverted, "U" shaped sand box. Inside the "U" was a propeller test stand. Wooden propellers were put through their test phase inside this "U" shaped sand box. After the tests were completed, the propellers were run to failure, at which time the pieces slammed into the sand box with a loud band. We could hear this happen, sometimes in the middle of the night. It could be heard all over Riverdale.

Dad had a cousin, Charles Rauch, who lived on Apple Street, immediately north of Miami Valley Hospital. Apple Street was deeply engulfed in the 1913 floodwaters. Behind his house he had a building in which he made mandolins and violins. The second floor of this building was a large practice hall, used by string orchestras. When Dad participated in these, Lois, Winifred, and I would enjoy listening to the music.

Col. Deeds was involved in many things benefiting Dayton. He and Charles Kettering built the Engineers Club building at the southeast corner of Jefferson Street and Monument Avenue. This is directly across Jefferson Street from the Miami Conservancy Building that Col. Deeds built earlier for the Conservancy headquarters. Orville Wright, a charter member of the Engineers Club, was on the Board of Governors of the Club, and accepted the key to the building from Col. Deeds when he and Mr. Kettering donated it to the Club in 1918. I became a member of the Engineers Club in 1937, and have belonged ever since.

The bridge that carried Ridge Avenue over the Stillwater River from Riverside Drive to Triangle Park had steel hand-rails and steel vertical supports. On one of the steel supports was an indentation caused by a bullet. We understood that the bullet mark was caused by the bullet from a gun that somebody fired at a lady named Bessie Little. She was killed by this. After this we all called the bridge the "Bessie Little" bridge. It was later replaced by a concrete bridge structure.

Chapter XII. Arthur Morgan and Antioch College.

In 1921, after the Miami Conservancy District had completed all engineering and almost all of the construction work on the dams, Arthur Morgan resigned as Chief Engineer to assume the presidency of Antioch College in Yellow Springs, Ohio. The condition of the college was not in good shape, and this was a real challenge for Mr. Morgan. He straightened it out and made it an outstanding, innovative college. Dean Herman Schneider, Dean of the Engineering College of the University of Cincinnati, had started a co-op program in 1906, where students worked in a manufacturing plant part of the time, with the alternate time in school at U.C.. Mr. Morgan established this same sort of co-op program at Antioch College. Arthur Morgan was well acquainted with Charles F. Kettering, who had started Dayton Engineering Laboratory Company, or Delco. Mr. Kettering was a major contributor to Antioch College. He built several buildings on campus, including a laboratory to investigate "Why is grass green?" Dad, as mentioned above, was cashier for Mr. Kettering at Delco, in their building on East First Street. General Motors bought Delco. They made the research portion the General Motors Research Laboratory, and moved it to the former Wright Aircraft Company building in Moraine, Ohio, just south of Dayton. Dad was Mr. Kettering's private Secretary in this Moraine location. I was shown many of the early experiments in the laboratory. For instance, Mr. Tom Midgely showed me the leaded gasoline he was developing for Mr. Kettering, and how it quieted down a rough, noisy engine. It was not recognized at that time that this would become a major polluter of air. This, together with Mr. Kettering's electric self-starter, pushed the internal combustion engine cars ahead of the battery operated electric cars for the rest of the 20th century. In 1933, President Roosevelt appointed Arthur Morgan head of the Tennessee Valley Authority, or TVA. Its plan was largely based on the Miami Conservancy District.

Chapter XIII. Post Flood Events.

In 1970 the Corp of Engineers attempted to take over control of the Great Miami River, claiming that it was a navigable stream. They based this on the fact that a barge had been moved from Cincinnati to the emerging Dayton area, way back in history. I wrote Congressman Tony Hall, as did some others. Largely through his efforts, the "navigable" aspect was disproved, and control was retained by the Miami Conservancy District.

In April of 1983, I asked Mr. Jim Rozelle, then Chief Engineer of the Miami Conservancy District, "How many times would water have been at Third and Main Streets, in Dayton, if the five dams had not been built"? He checked their records and came up with seven times. It would have happened in 1924, 1929, 1933, 1937, 1952, 1959 and 1963. Since then there has been one other. There have been over 1200 instances when there have been enough water backed up by the dams to have caused minor flood damage if the dams had not been built.

About a year after the flood, my great uncle, Dr. Ottie Fries, published his first hand account of our flood experience. The Dayton Flood Twins, Lois and I, are shown in a picture in this article. (Fig. 62) Also after the flood, our mother, Viola Hicks Adams, visited with her cousin, Mary Fries, on our front porch. Lois and I were there. Her daughter,

Virginia, is in the buggy. (Fig. 63) Our father and grandfather did a good job of cleaning up all the debris after the flood, as there is no evidence of it, here.

After the flood, several books were published about major disasters, including the 1913 Dayton Flood. It is amazing the “literary license” taken by the reporters gathering information for these books. Our family experience in the 1913 Dayton Flood appears in most of these books.

In 1927, Dad held a reunion of all the boatmen who helped rescue our family. The names of these boatmen are given above where I described the rescues of each of us in the family. This reunion write-up appeared on the front page of the Dayton Journal, February 20, 1927. (Fig. 64) First hand information was related to the Dayton Journal’s staff artist, Mr. Ferd Appel. He made the sketches appearing between our pictures shown with this article. These sketches illustrate what was happening when we were all in the water, and of course Dad could not use his camera.

In 1960, Elisabeth Frierhood had a book published by Doubleday, titled “Promises in the Attic”. Elisabeth had been a children’s librarian in the Dayton Public Library. Her friend, Maryann Woolery, mentioned to Roz Young, Dayton newspaper columnist, that much of the plot of this book was based on the fact that the Dayton Flood Twins, Lois and myself, were separated from our parents, and went floating down the floodwaters individually, by ourselves. Roz had gone all the way through school, from Kindergarten at the brand new E.J. Brown Elementary School, through Steele High School, with Lois and me, and knew our story.

A few interesting items about E.J. Brown Elementary School and Steele High School should be injected here. Lois and I had some interesting teachers. At E.J. Brown, a Miss Stephenson taught Kindergarten. She was an attractive young lady, with a way of holding our attention. Another good teacher was a Miss. Buck. Mrs. Flora Amos taught the 4th grade. She was a rigid disciplinarian, and a very good teacher. It was about the 4th grade that we boys started manual training. We were taught to use carpenter tools, saws, planes, squares, and sanding blocks. We made long, finished boxes, with parts glued together to make glove boxes for our mothers’ elbow length, formal gloves. While I and the other boys were in manual training, Lois and the other girls were in sewing classes, making aprons for our mothers. Assistant Principal Miss Ida Hilkey drove to school each day in a battery operated Detroit Electric car. A family friend, Ira B. Wilson, was a composer for Lorenz Music Publishing Company. He composed two childrens’ musical dramas. We children in Brown School learned these, and performed them for the old soldiers at the Soldiers’ Home on West Third Street.

Steele High School was a beautiful building. It had an all-wooden interior. It had polished hardwood floors, even in hallways and staircases. New building codes were issued just before the building was to be occupied. Because of this, with wooden staircases, the building was condemned before it was occupied. Outdoor steel staircases had to be added with emergency exits to them, to permit its use as a school. Lois and I had exceptionally good teachers, including sisters Mary Alice and Francis Hunter. Francis taught English to

juniors, and Mary Alice to seniors. My Latin teacher was red headed Margaret Wright, for all three years at Steele. The freshman classes for both Steele and Stivers High Schools were given at Parker High School, at First and Sinclair Streets. Miss Wright gave me a hard time. She felt I should be playing football after school, instead of working. I worked for Dayton Power and Light Company after school and on Saturday, in their Meter Reading and Bill Passing Department. Professor August Foerste taught Science and Physics. He was also a well-known geologist. He had found the largest known fossilized trilobite on record in the gravel of the glacial moraine, near Moraine, Ohio. He felt that my work in science and physics merited going to the University of Cincinnati to co-op in the Electrical Engineering Department, which I did. At Steele, Lois was a member of the Agora Literary Society. I was a member of the Geographical Society. Both societies met after school. Lowell Thomas was to speak at Memorial Hall the same day as a Geo Meeting. We invited Mr. Thomas to attend our meeting that afternoon. He came, and gave us an interesting talk. We made him an honorary member and gave him one of our lapel pins. It was about three eighths of an inch in diameter, rounded in shape, like a half sphere, with North and South America engraved on its face.

Roz Young recognized that in the book "Promises in the Attic", the Friermood plot and story were fictional, whereas our experience was real. Since both dealt with the "Promises in the Attic", Roz thought it would be desirable to point out the difference. She wrote a column in the Dayton Journal pointing this out, and describing in essence our family experience in the 1913 Flood. She explained the facts that Lois and I did get separated from our parents, and did go floating down the floodwaters individually. She described most of the details of our family members' rescues. Her column appeared in the paper October 24, 1960. (Fig. 65) Just three months later, January 11, 1961, Lois died suddenly, literally as a result of exposure and pneumonia from the flood. Her heart just suddenly stopped.

Steele High School (Fig. 66) is shown at the time Lois and I graduated in 1930. Our graduation exercise was held in the NCR Schoolhouse. We marched down the aisles to music played by Bob Kline on the Estey Organ. In my opinion, our city fathers made two serious mistakes when they separately permitted tearing down Steele High School and the NCR Schoolhouse. These were very revered, historic buildings. After the NCR Schoolhouse was torn down the Estey Organ was reinstalled in the Victoria Theater, in downtown Dayton.

It is interesting to note that just the steps to the Civil War Monument, which has a statue of Private Fair up on top, can be seen in the picture of Steele High School. Years later, it was felt that this statue, in the middle of the intersection of Monument Avenue and Main Street, was a traffic hazard. It was moved to the Great Miami River's edge in a park along Riverview Avenue. It was moved again, and is now on Main Street, half way between Monument Avenue and First Street.

It is interesting to note that Bill Young, a Y.M.C.A. secretary, and his family, were next-door neighbors of my family when Lois and I were in Steele High School. Some time later, Mr. Young became a widower, and married Roz McPherson. Since Roz Young's column was printed on October 24, 1960, and Lois died on January 11, 1961, the picture

of Lois in Roz's column, is the last picture my younger sister, Winifred Adams Bodem, and I have of Lois.

After graduating from Steele High School, Lois entered Miami University at Oxford, Ohio, in the Fine Arts Department. I went to the University of Cincinnati as a co-op student in Electrical Engineering. My co-op job was with Delco Products Division of General Motors, in Dayton. After her sophomore year Lois transferred to the Fine Arts School at the Dayton Art Institute. She graduated with a Fine Arts degree in 1934. Because of the depression in the 1930s, I dropped out of school for a while to make money to finish, and graduated from U.C. with an Electrical Engineering degree, in 1937. During the years when Lois was at Miami and I was at U.C., the major football game of the year was the Miami-U.C. game on Thanksgiving Day. Thanksgiving Day dinners at our family table were a little bit hectic. After graduation from the Dayton Art Institute, Lois married Douglas Lowles. They had two daughters, Pati and Bonnie. Lois continued her artwork until she died in 1961, as mentioned above. Both Lois and I, while in grade school, as well as Roz McPherson Young, attended classes on scholarships, in the original Dayton Art Institute. This was in a converted private home at the southeast corner of St. Clair Street and Monument Avenue. (Fig. 67) This was before Mrs. Carnell donated the money to build the present, magnificent Dayton Art Institute, on Belmont Park North, overlooking the Great Miami River. After I graduated from U.C., I married Loraine Bagnoli, also a U.C. graduate. We had three children, Nancy Jo, Jeanne, and James Charles. Dad died in 1950, at home in Dayton. Mother died at Otterbein Home in Lebanon, Ohio, in 1973. Our younger sister, Wini, born after the flood, married Roy Bodem. They had two sons, David and Douglas.

In the book "Promises in the Attic", the female lead was a Steele High School senior, who, with her grandfather, rescued a twin from the 1913 floodwaters, by reaching from their attic window. Ultimately, both twins were saved. As explained above, the incident was founded on the experience of Lois and myself, the Dayton Flood Twins. The male lead's home, in the book, was placed on Palmer Street. Palmer Street actually exists, about halfway between 33 Rung Street, now renamed Neal Avenue, and what is now the Dayton Art Institute. Palmer Street was in the flood. (Fig. 68) The story line of the book "Promises in the Attic", as mentioned above, is fictional. But using eyewitness accounts and painstaking research, Elisabeth Friermood, a one-time resident of Dayton, created an authentic background for this book. The accounts of what the heroine found out going on in downtown Dayton after the flood are true history. She managed to find out, and describe in detail, all that John Patterson, as head of the Dayton Relief Committee, did to help Dayton recover from the flood.

Chapter IVX. Arthur Morgan and Miami Conservancy District Honored.

In 1968, a plaque was mounted in front of the "Old Courthouse". It describes the \$2,000,000 pledge drive to "never let it happen again", the formation of the Miami Conservancy District, and the \$30,000,000 cost of the "Official Plan" of the five dams and riverbed improvements, covered by issuing bonds. Arthur Morgan came back to Dayton for the dedication service of this plaque. (Fig. 69) I had to crawl up onto the wall around the courthouse to read this plaque. (Fig. 70) The reason for having to crawl up onto the wall is

evident from the tips of a hedge growing behind this wall. The plaque could not be seen while walking on the sidewalk. Our city fathers have since removed the hedge. It is now possible to read this plaque from the sidewalk in front of the courthouse. The peak of the plaque was the high water level of the floodwater in 1913.

Even today, in the year 2002, visitors and engineers come to Dayton from all over the world to see and study the Miami Conservancy District and the five dams. They are primarily attracted by the fact that the system of flood control is entirely self-operating, “no manual control”. Arthur Morgan’s concept was an historically important development. It has been designated a National Civil Engineering Historic Landmark.

Chapter XV. The Dayton Flood Twins Survived.

Sometime after the flood, the Dayton Flood Twins, Lois and I, are seen pushing our baby buggies along Rung Street. (Fig. 71) The grimace on my face is probably due to my buggy being smaller than that of Lois’.