The farm was on a dirt road 20 miles from Graham, the county seat of Young County, Texas. There was no telephone, electric power or "running" water and only dirt roads. During the growing-up years in the 1920-30s times were hard. There was the Depression along with the dust bowl, and other minor disturbances like grasshopper plagues, hail storms and tornados to add to the struggle. This is the story of those years and the struggle of parents to raise their family under circumstances that seemed difficult. In reflection, those were good years filled with experiences and happenings that were valuable training.

My birth was in San Antonio, Texas at a large hospital about 300 miles from the home farm. Why was this? Mother went to be with a sister who lived in San Antonio, so that skillful treatment and delivery was available. We returned home by train when I was one-month old. Until Dad could purchase a farm of his own, we lived with Grandmother Robinson who was a widow and raising her own large family. She was Swedish, spoke very broken English, and took a leading role in my early life. Mother taught at one-room country schools, remote from home, so she lived away during the week and returned by horseback, wagon or buggy on weekends. I stayed with Grandmother until old enough (4 years) to accompany Mother to school, riding in front of her in the saddle.

The early life with Grandmother Robinson was a happy one, for Grandmother R. had several things she did regularly: (1) baked fruit pies every Saturday, (2) kept several Hershey candy bars on hand, and (3) cooked about the same food weekly and it was GOOD. Besides teaching in the one-room schools, my mother took summer courses and I stayed with Dad and Grandmother. When I was 4 years old I went with Mother to school, riding in the buggy or behind the saddle. I started to school unusually young, in order to be with Mother. The schools were usually 3-5 miles from where we lived. They were small, about 10-20 students, with all the grades up to junior high. Each grade had from 1-5 students. One of my fondest memories was "going to school" with mother.

Dad was farming, ranching and building while we were in school in the fall, winter and spring. He was unusually adept at farming and ranching on the same place. It was said that he could raise sheep, goats and cattle together very successfully. Dad did better at ranching but had less interest in farming. He had not attended school past the fifth grade. His main interest was in raising sheep.
Dad served in France during World War I for about one year. His service was in an ammunition train unit rather than in a combat unit. He never did describe his experiences to the "home folks".

My school attendance was somewhat fractured. The first school I remember was one room, Myers Branch, about 15 miles north of our farm. Here Mother and I had a small apartment and went back and forth about 5 miles daily by horse and/or horse and buggy. The next was in the community of Sunshine, which was about the same size (maybe 2 rooms) and as distant as Myers Branch but in the opposite direction. Then came Murray, a larger school (4 rooms) and classes taught by three teachers. I went to the Murray school for the period 1930-1935 and finished the 10th grade while living at home. Transportation during this time was by foot, riding a horse or driving a Model T Ford.

The sequence was eight months school and four months on the farm. The farm work was hard: preparing, planting and harvesting cotton, cutting and harvesting barley, oats and milo; and working with the thresher crew. The crew consisted of probably 15-20 men cutting, hauling and feeding the bundles of grain into the thresher, which was equipped to pile the straw in a large mound and discharge the grain into sacks. The duty of a 12-16 year old was the sacking, loading the filled sacks on the wagon and hauling the sacks to the mill (20 miles) or to the granary (5 miles.) This was hard work for a 12 year old.

During the summers and at other times our family tried to supplement our income by raising chickens, turkeys and a vegetable garden. Turkeys are a difficult fowl to raise and seemed to pick up a variety of diseases. There were also varmints like skunks and coyotes that liked to feed on the turkeys and the garden.

I graduated in 1938 from high school with honors. There were about 20 in our senior class, some of whom traveled 20 miles via horse to school. Our senior class trip was to Carlsbad Caverns, about 1000 miles in a Model A Ford bus. This trip was probably the highlight of the senior class activities.

My employment during the summers of 1935-1937 was unusual. The salary was about $1.50 per 8 hr. day - cutting, piling and burning prickly pears on a ranch. This was a government program to create employment for school age youngsters to raise some money for school and food, etc. The most exciting part was nests of snakes (rattlers) and dens of skunks and o'possums. Usually several snakes were killed each day. It was a miracle that no one was bitten during the two summers.
My first government service was for the A.A.A. (Agriculture Adjustment Act) in 1938-39. I worked two summers, first as the chainman, and second as leader for measuring cotton and wheat acreage. The wages were higher and the work of a more professional nature. The acreage measurements were used to determine payment for reductions in yield of land lying idle. After several weeks we found that the chain was in error for length for the first season and the beginning of the second. I was almost fired for this oversight.

In retrospect several items contributed to my early training as design draftsman and research engineer, which later resulted in soil and water research work. I worked my way through college with several part time and/or full time training positions and jobs. These were in the following order:

1937-1938 summers, completed 2 1/2 years in high school with training in plane table surveying and mapping plus standard high school courses in woodworking, mechanics and raising livestock.

1939-1943, completed 3 years of college training: in mathematics, flying (private pilot), general college work in science and accounting. During this period worked as a dishwasher, cook, dairy (milking), poultry (chicken cleaning), general farm work.

1943-1947, U.S. Army as a draftsman doing topographic design for an engineer combat battalion. Service in the states of Texas, Missouri, Kansas, Iowa and overseas in the Philippines. During this period finished requirements for certificate in Civil Engineering, which in 1947 was extended for a degree in Civil Engineering.

During a period in 1943 I was taking a three month specialized course in design drafting at the University of Texas. The course was government sponsored for the purpose of training in the art of drawing and designing of machines for making aircraft bomber parts. After the training was completed, I was assigned to the Hughes Tool Co, Houston and did drafting for about one year. We were concerned with B-24 and B-25 bomber parts. Following this assignment in 1944, I was drafted into the Engineering Combat Battalion.

ARMY - My service was in the 1296th Engineering Combat Battalion, which was said to be the construction arm of the Army Infantry. We trained first at Jefferson Barracks, MO. I was given standard Army basic training, followed by short sessions in Nebraska and South Dakota where we learned army administration procedure. A one year period was then arranged at the Univ. of Iowa to study Army civil engineering practices. Six months were training in basic combat engineering procedures at Ft. Riley, Kansas. The first 6 months were training for the European
theatre with an additional 6 months for the Pacific theater. We were the most thoroughly trained group to have never reached actual combat. But we were ready.

We entered our "Liberty Ship" in California and joined several other ships and subs for the trip across. Somewhere near the Philippines we were in a typhoon and our ship was disabled, so we (our ship) sat alone until repairs could be made. Enemy subs were all about, but we were not bothered. Our engineers made the repairs. We landed on Panay in the Central Philippines and started preparing for the invasion of Japan. Luckily the war ended and we were left on the island for about six months. Mostly we played volleyball with some duty in construction of roads and airfields. I was assigned to a Catholic school to assist the nuns. We hauled things for the school as needed, and I ran their projector for evening movies. It was an enjoyable experience and no heavy duty, although we did capture several Japanese in the mountains.

On returning to the USA we came through another storm with the Liberty ship, but no problems - I was not sea sick. A most beautiful sight is the Golden Gate Bridge at sunrise.

1947 - Discharged from the Army Corps of Engineers (combat) and continued college work at Iowa U. Accepted position located in Wyoming (in 1947) as Research Hydraulic Engineer. Supervised two other employees for surveys of sediment accumulation along the Wind River, Wyo. Made field measurements of amounts of sediment, silt and water flowing down the river.

EXPERIENCE IN SOIL AND WATER RESEARCH - On returning home "discharged" in 1946, I prepared to return to the Univ. of Iowa for more engineering studies. With my army training I was able to get a degree in less than one year. Also, I worked part time for the U.S. Geological Survey, developing sediment samplers. On finishing the degree I went to work for the USGS in Wyoming. This was interesting work.

As with most professional people, the most outstanding step was marriage. I was married to Martha Burney on June 16, 1948. We met while in school at the Univ. of Iowa. I was living and working at the time in Riverton, Wyo., so we began our married life in a second floor apartment on the Main Street. Riverton was entirely different -- Indian reservations joined the city limits and much of the local shopping was with Indians. After a few months living on Main Street we moved to a small, one-bedroom house.

My work in Riverton was with the Department of Interior, designing agricultural drainage systems and setting up stations along the Wind River to measure the amount of water and sediment flowing in the river. I worked alone for the measurements,
suspended in a cable car over the river even during floods. During cold weather when there was ice, I stood on the ice and bored holes through it for the sampling program. When there was not much water I waded in the flow for the measurements. At times there was quick sand to add to the difficulties.

Wyoming has blizzards and on occasions we were "snowed in" for several days. Martha Burney quickly fitted into Wyoming life and was a tremendous help in living under difficult conditions.

1949-1951 Graduate Research Assistant, Colorado State University, Fort Collins.

After living in Wyoming, our move to Ft. Collins, a larger city with a University, was like "heaven". Our marriage was later blessed with two children, Craig and Gwen, who were born in Colorado.

I had a graduate assistantship at Colo. State Univ., beginning in 1949, to study hydraulic models of dams for India. There were three dams built to model scales (usually 1:40 or 1:80) to study their operation and design before they were built full size in India. The three dams were some of the largest to be built in Asia. Our studies showed many changes and design modifications to save labor and cost. The study included the power plants and stilling basins, with the stilling basins being a very important design phase. One of the dams, Bakra on the Indus River, is the largest dam of its type in the world.

1951-1963 Research Engineer, USDA, Fort Collins, CO.

After finishing my Master's degree at Colorado State Univ. in 1951, I took a full time hydraulics engineering research position with the U. S. Dept. of Agriculture. The duties were primarily making seepage measurements on a portion of the Colorado-Big Thompson project and the Grand Valley project in western Colorado. Parts of each canal were lined and parts unlined so several methods of seepage measurement, including seepage meters, could be tested. Sections of the Grand Valley Canal were isolated to evaluate ponding and inflow-outflow methods of measuring seepage.

Other irrigation and drainage methods were developed and checked while stationed in Colorado in the late 1950's. These included irrigation structures, flow measuring flumes and underground pipe systems. Roughness in irrigation systems was studied to determine better values of the roughness terms in discharge equations. Another engineer, Gordon Kruse, was added to the work force, so now there were three of us, including Carl Rohwer, Senior Hydraulic Engineer.
Flow measurement flume studies were of particular interest at Colorado State University. I developed flumes of trapezoidal cross section to fit into pre-formed irrigation channels. Flumes were also developed and tested for particular problems found by the Forest Service on their research watersheds.

It was in Ft. Collins that I started playing golf and even made the sport's page with an article entitled "Robinson Gets Birdie". A reporter was part of the foursome and he wrote that Robinson's ball collided with a seagull. From our backyard we could see the foothills and the tip of Long's Peak, which shined like a beacon in the morning light. Both children learned to ski at Hidden Valley in the Rocky Mountains. I worked on snow surveys to determine the amount of water available for the next summer's crops. One snow survey site was at Vail when it was still a wilderness area with only the wind, snow and the mountains.

1963-1969 Director and Research Agricultural Engineer, Research Center, Kimberly, Idaho.

In 1963 there was need to staff, equip and develop the research program for the Snake River Conservation Research Center at Kimberly, Idaho. This was a new center and was established to study irrigated agriculture along the Snake River in southern Idaho. I was selected to be the first director and was actually responsible for construction and staffing of the research center. My chief concern was the research program, which included soils, plants, water use, water management and distribution, irrigation methods and structures. The total staff included about 60 persons on site and at satellite locations. It encompassed soil physicists, chemists, engineers, agronomists, an instrumentation and computer specialist, equipment operator, etc. Water and fertilizer use by plants were major phases of the research program. An important program was development of structures for water control, both underground and surface. Water measuring flumes were one of the significant phases of study.

Our home was in Twin Falls in an area called Magic Valley. With irrigation the desert bloomed. Initially the main crop was potatoes, but later seed crops like beans and corn became profitable. Close by was Magic Mountain, ideal for beginning skiers. As a special treat for our children there was a day of skiing in Sun Valley, 80 miles away.
1967-1968  Research Hydraulic Engineer, St. Anthony Falls
Hydraulic Laboratory, St. Paul, Minn.

In 1967 it was determined that Robinson needed special
studies on erosion and sedimentation, and a one-year study-grant
was approved at the above location. Automated instrumented
structures were used to measure scour and erosion, which was
analyzed by computer methods. Fred Blaisdell and Dr. Alvin
Anderson were particularly helpful. In addition to research, I
attended classes in sedimentation and hydraulics while
authorities were available at St. Anthony Falls.

After a very valuable period of one year, I returned to
Idaho late in 1968 in order to move to Mississippi as director of
the Sedimentation Laboratory in 1969. It was a relief to leave
Minnesota after the winter weather of 1968.

1969-1974  Director and Research Hydraulic Engineer,
Sedimentation Laboratory, Oxford, Mississippi.

In 1969 it was decided to change leadership at the National
Sedimentation Laboratory located in Oxford, Mississippi. I was
selected to fill the position as director and also to carry on an
active research program in sedimentation structures. The USDA
Sedimentation Laboratory is concerned with local, national and
international problems and is the only laboratory of its type in
the world. The main concern is with chemical properties of water
and soil as they are affected under cultivated agriculture. The
research is carried on in cooperation with several agencies,
notably the U.S. Corps of Engineers, the U.S.D.A. Soil
Conservation Service and others. The staff and the laboratory
physical plant was expanded to about double in size.

The research program was divided into five major fields in
order to cover the research assignments. These were (1) Sediment
properties, (2) Sediment yield, (3) Sediment transport, (4)
Erosion on cultivated land, (5) Reservoir and stream channel
problems. The research problems were studied both in the field
and in the laboratories. The research staff numbered about 60,
doing field and laboratory work.

Shortly after we moved to Oxford, tragedy struck our family.
Our son Craig, a junior in engineering at the Univ. of Idaho, was
killed in an accident. The warm love and support given us by
friends and the church in Oxford enabled us to live through this
difficult time. Our daughter Gwen graduated from Oxford High
School and then completed two bachelor degrees, one in elementary
education and the other in accounting at the Univ. of
Mississippi. While attending Ole Miss, she met Scott Clay, a
student in mechanical engineering, from Monticello, Miss. They
were married in 1975.
1974-1979 National Program Leader, Beltsville, MD.

From 1974-1979 I supervised nationwide research programs on erosion and sediment control for the U.S. Department of Agriculture, Agricultural Research Service from Beltsville, Maryland. The research was concerned with cultivated lands, rangelands, disturbed lands (including surface mined lands) and stream channel systems, and was conducted on field watersheds and under controlled laboratory conditions. Evaluations were made of different systems of erosion and sediment control. Sediment movement and deposition in stream channels, ponds and reservoirs were studied. Guidelines for sediment control systems were developed.

It was while in the Washington D.C. area that I became interested in genealogy and found the National Archives a good source of information. However, it was a Mormon couple in Salt Lake City who found the family of Grandmother Robinson. This led us to a trip to Sweden where the farm she lived in and the church where she was christened were located in the little town of Høfa in the lake district.

Martha had the rewarding experience of being a docent at the National Gallery of Art in Washington D.C. She led school children on tours, introducing them to the artists and paintings exhibited there.

Our son-in-law Scott Clay entered the nuclear navy after his ROTC training at Ole Miss. Gwen and Scott lived in Florida, Upper New York State and Rhode Island before settling down in Virginia Beach. In 1980 they became parents of Taylor Robert and in 1982, Chase Thomas Clay. Since it was only a four hour drive from our home in Maryland we visited them often.

1978-1988 INTERNATIONAL EXPERIENCES

China. In 1978 and again in 1980 I was a participant in international sedimentation exchanges in China. I represented the agricultural and irrigation expertise on the types of problems related to sedimentation. Since I retired in 1979 from the USDA, Agricultural Research Service, these assignments were much in mind because of recent research progress.

China has a very dense agricultural population and irrigation is widely used, as are hand methods for tilling and working the land. Sediment in the rivers and irrigation systems is very troublesome. Sediment is removed from the irrigation systems by all known methods, including hand methods that are known only to the Chinese. The sediment is usually hauled back
to the agricultural areas to build up the land in terraces and along the river banks, so it can be tilled and farmed again. Prior to the recent "people" problems in China, farming was a most important source of income. It is assumed that most products still are produced with hand methods on land that needs erosion control practices.

In 1978, before entering China by way of Hong Kong, the group of which I was a member decided to buy a slide projector essential for the presentation of the material at seminars in laboratories. This was definitely needed, because such equipment was not available. China was emerging from the "Dark Ages." Crowds of Chinese would gather around and stare at foreigners. It seemed like everyone rode a bicycle or took a bus. The only cars were government ones. By 1980 life in China was beginning to relax and tourists in Beijing were a common sight.

AID Manual. During 1980-82, I prepared a manual on design of small irrigation structures to be used overseas by USA Agency for International Development contractors in Egypt, Pakistan, India and Sri Lanka. The information was intended for on-farm irrigation systems in developing countries, where there is an abundance of labor, but modern equipment is very scarce and in many cases does not exist. In this case the equipment would need to be developed and constructed first.

These manuals place emphasis on improvement of irrigation, water control and application efficiency. This is accomplished using structures and methods that are first adapted for the area using field testing techniques. Water control and sediment and erosion control were all considered in this project. In fact water and sediment control are all-inclusive methods which have almost the same end product for conserving water and cultivating lands.

Egyptian experience. During the period of 1980-82, I had several assignments in Egypt. Reports and technical papers were prepared on irrigation outlets, water measurement and pipe irrigation systems. The Egyptian engineers were mostly well trained and needed only our experience to design the systems. Much of the work was in Middle Egypt, to bring water to the deficient areas.

Some of the local color is noted. The Moslem prayers were called early (5:00 AM) in the morning. Shortly the streets were filled with donkey carts and horns of autos. My previous trip to Egypt (in the 1960's) was to design and construct a large (60' x 80') irrigation display on an island in the Nile in downtown Cairo. This was well attended, with Mr. Nasser being the dignitary who opened the display. Ramadan occurred at the same
time and there were difficulties in finishing the construction of the display since there was no eating or drinking during the daylight hours.

There are many holidays in Egypt, so we were able to see artifacts such as the Pyramids, temples at Luxor and Aswan Dam. Other items of interest were sheep along the canals, use of the turnouts for washing and cleaning of clothes, and the many students along the university walks. A familiar sight was a child prodding a water buffalo as the animal turned a wheel for irrigation.

On two occasions, my wife, Martha and I conducted tours in the Western USA for irrigation specialists from Egypt. Several of the engineers were Egyptian women, which is unusual in any country.

On one of the return trips from Egypt I stopped in Paris to give a talk at UNESCO. Here a boy from a farm in Texas was having his speech translated into other languages at an international meeting.

Sri Lanka experience. During 1982 I spent several weeks as a consultant for the U.S. Agency for International Development, reviewing irrigation research projects in Sri Lanka. During this period guidelines for development of a new project were drafted. This was a very pleasant assignment, working with well-trained engineers in Sri Lanka in an area much like a tropical paradise. There were many colorful birds, flowers and elephants. The elephants served as beast of burden and hauled timbers from the forests. There was a Buddhist holiday where the elephants were rigged with lights and decoration. The parade was held at night and was a beautiful display. During my tour I stayed mostly with the Arthur Coreys in the old capitol of Kandy and at the experiment station. The main crops were hot, red peppers, sweet potatoes and rice.

India experience. Gil Carlson and I worked together on an assignment in India to improve irrigation systems. Particularly, we assisted with design and construction of canals and structures for small farm irrigation systems. The small systems needed water measurement and control structures. We used new types of structures not used before in India. These were called broad crested weir flumes with gated turnouts. They were very effective for control of water.

In India the beast of burden was usually the camel or oxen, which were very useful for the small (up to 5 acre) farms. India is a beautiful area with an abundance of flowers, trees and crops like rice and wheat. Our assistance for design and construction was useful, to help them to increase production for food crops like rice and wheat - many times up to several hundred percent of
the old yields. The speed of construction (by hand) was noteworthy during the monsoon season. With the help of the Indian engineers the old irrigation system was revamped. One farmer told us that he was getting water for the first time.

Here there were many holidays and weddings, particularly in June. The big holiday was the festival of lights - Dewali. We lived at Chittagorgh in a government house which had been a maharajah's hunting lodge. A large fort overlooked the entire valley with elaborately carved temples. Common sights were women in bright saris working on the roads, open shops with people weaving chairs, making pots, sewing.

**Pakistan experience.** The work in Pakistan during 1986-87 was the most rigorous, since the war with Afghanistan was very active in the mountains between the two countries. There were a multitude of refugees traveling by foot in the area. Several times I was accompanied by guards for safety. Luckily the guards were not used. I did not actually need the guards, but that was not known until later. My assignment was to design measurement structures for two tribal groups so that they could divide the water in a correct manner. Also these structures were used to remove sand from the water, which was creating problems for generating water power.

On the first visit I stayed in Karachi and traveled each day by jeep to the desert to redesign the canal system and irrigation structures. Here, too, the farmers were happy with obtaining water for the first time on their irrigated farms. Most of Pakistan that I visited was desert and the roads were very poor or non-existent. The Indus River is the life-blood of the area, with limited areas developed for ground water by pumping. Land drainage is necessary for raising crops. Sand and sediment carried by the canal water creates many problems. Cleaning, dredging and sluicing are necessary to keep the canals open. For the larger canals, dredges are floated and operated to keep the canals open.

On a second tour in Pakistan, Carl Nordin and I made recommendations for three new designs for irrigation laboratories. Pakistan has many dams and structures for water control. They have developed the designs using their own facilities.

People travel by bicycle, camel, donkey cart and in elaborately decorated buses. Women wear scarves around their necks that can be placed on the head whenever there is a call for prayer. Pakistan is a devout Moslem country.
1987-1990 Home in Oxford

After retiring from 35 years of government service, we decided to move from the metropolitan area. We chose Oxford, Mississippi because it is a small, university town with friendly, caring people. The redwood house we built has a passive solar design. Also in 1982 daughter Gwen and her family moved to Granbury, Texas where Scott works at a nuclear power plant.

I became a member of the local genealogical society, Rotary and an Elder in the First Presbyterian Church, concerned with personnel and property management. The years speed by and my days are full of memories. I am reminded of the love and concern of family and friends as I recall my adventures in this country and abroad.

A. R. Robinson, Jr.