

A Life With Plants and Farmers

Reminiscences of an Agronomist in Palestine, Israel and Worldwide

Isaac Amon

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Preface

I was born in the first decade of the 20th century and have almost managed to reach the millennium. I have lived through the most exciting century in human history, a period that has witnessed more wide-reaching changes than any other period in human history. It has been a century of political change; of scientific, technological and medical discoveries; of new forms of industrial production and commerce, and of a revolution in communications. In the beginning of the century most of the world was still ruled by empires: the British empire alone controlled one quarter of the globe. The century has seen autocracy replaced in advanced countries by democracy: constitutional parliamentary rule, the rule of law, respect for the individual, and the right to self-determination.

The 20th century has also witnessed tragic and devastating periods: two World Wars, a multitude of lesser wars, Nazism and Holocaust, Fascism and Stalinism, international terrorism. Corruption and tyranny are rampant in many developing countries, stifle progress and cause a life of misery for untold millions. There is a resurgence of religious militant extremism. The division between developed and developing regions, between haves and have-nots is still rampant.

I have attempted to recreate in my memory the home and the environment I lived in as a youth in order to gauge the enormous change that has developed in living conditions in the course of my lifetime. I lived in a middle class residential home in a good neighborhood in the modern town of Antwerp. Running water and indoor toilet facilities had only recently replaced a hand-operated pump and an outhouse. Like in most homes, showers and baths were non-existent. Gas for cooking and lighting had been quite recently installed, replacing a coal burning stove and kerosene lamps with glass chimneys. There was no telephone, and until the mid-twenties no electricity. Even after electricity was installed, refrigerators, dishwashers, vacuum cleaners, irons, washing and drying machines were still in a distant future. Tramways in Brussels, the capital, were still horse-drawn and travel was restricted to the rich.

If I was allowed to chose the century I wished to live in, I would unhesitatingly chose the 20th, from beginning to end. I would not have liked to be born earlier, because life, except for the very rich, was for most people a short life of drudgery, malnutrition and deadly dullness.

I would not have liked to be born at a later date, because then I would have missed the thrill and awe of witnessing all the wonderful developments of our times. It is this sense of reverence for the complexity of living things and for the workings of the human brain that has never left me and that I feel to be a most precious asset. I have never become blasé when taking a plane and sit daily, always in astonishment, before my computer. My great-granddaughters play their games on the computer; they take for granted that when they dial a number, they can instantly contact a cousin in distant America and watching television is part of a daily routine. They take for granted what to me, at their age, would have seemed unimaginable luxury. There is no longer a sense of wonder and awe, and I feel that this is a great loss.

I was born not only in the right century, but also in the right places to grow up in. I was born in Belgium, a democratic and freedom-loving country, where I never experienced manifestations of antisemitism. I passed the most formative years of my life as a war refugee in England, mostly in a rural environment, where I learnt to love nature and where I made agriculture my career choice. In this choice I have never wavered. I also learned from the English a sense of tolerance, fair play and honesty that have always guided me. During my adolescence I was active in a Zionist-Socialist youth movement which further molded my character and imbued me with a sense of mission: to reestablish a national home for the Jewish people. I had the privilege of being involved in the realization of this dream.

If one defines as a miracle "an event that defies logic, occurs against all statistical probabilities and whose outcome is contrary to what the average person would expect", I have witnessed many miracles in the course of my adult life in Palestine -Israel. The first and foremost miracle was the establishment of the State of Israel against all odds.

As a research agronomist I participated in the transition from biblical farming based on back-breaking drudgery to modern sophisticated agricultural production, that has occurred in this country and in which Jewish and Arab farmers alike are involved. I have also traveled widely as a consultant on agricultural research and development in developing countries on behalf of various international organizations.

After retirement, I made a change of profession when appointed Director of Research at the Settlement Study Center in Rehovot. After a decade, I retired a second time, and I spent two wonderful years at the University as a student of archeology, consolidating my knowledge on what had been a love affair whilst

married to agriculture.

I am presently in the penultimate (touch wood) decade of my life. As an octogenarian my main occupation has been writing. I have written three books based on the experience gained during the three main activities of my professional life: as an agronomist and research worker - Agriculture in Dry Lands - as a Director of Agricultural Research - Agricultural Research and Technology Transfer - and as a consultant on agricultural research and development in developing countries in four continents - The Modernization of Agriculture in Developing Countries. I have also been Chief Editor of the Israeli Encyclopedia of Agriculture and during this period I completed six volumes of a new edition.

Having scraped the bottom of the professional barrel, I would have remained out of work if my daughter-in-law Naomi had not continuously pressed me to write my reminiscences.

Eager to keep the small quantity of gray matter that still remained as active as possible, I complied with her request and decided to go modern by investing in a personal computer, or should I rather say a series of computers with which I have been wrestling ever since.

In view of the time spent learning to fight these super-sophisticated machines, the many glitches, the many files that simply disappeared never to reappear, the frustrations and the anger, I might have finished writing this document some time ago by using a simple old-fashioned typewriter.

But where would have been the challenge, the fun of beating the cruel instrument at its own game (and the pleasure of having Orna, my eldest granddaughter, coming to extricate me from some of the computer garbage that I unwittingly created).

I have avoided detailing the intimate and personal aspects of my life for reasons that are my own. A few words on the subject are however now indicated.

My wife of sixty-five years, Hilda, left me over two years ago, after several years of devastation by Alzheimer, the terrible disease which destroys the personality of the sick person without awareness on her part. Actually, I had mentally taken leave of my life's partner when she no longer was the person I had known; when nothing remained but the feeling of responsibility and of duty to care for her to the best of my ability.

Six months after she died, I was admitted to hospital for open heart surgery from which I emerged by the skin of my teeth and have never managed to recover completely.

This is the first time I am writing a non-professional book, targeted not at my professional peers or at my constituency - the farmers, but at the public at large

Many times I felt in doubt whether anyone would be interested, let alone whether the manuscript would find a publisher. But writing it has kept me busy and I do not regret the time I have devoted to recollecting what has been for me a rewarding, exciting, and hopefully, useful life.

I hope that at least those that are nearest to me will be interested. To my sons and daughter-in-law, who have shared most of the events recorded here, it may give new perspectives on their own lives; to my grandchildren, it may tell them something of the wonderful and exciting times in which their parents and grandparents participated; as to my great-grandchildren, who hardly know me, maybe it will bring me nearer to them than when I was alive.

Last and not least, to my wife, Flora, I wish to dedicate these reminiscences. It is she who has had the smallest share of my life. I married her when life alone became unbearable and she has given me love and warmth and made me unbelievably happy, notwithstanding all the problems faced by an octogenarian: an unreliable heart, a couple of light brain incidents, breathing as a problem to be overcome, and a feebleness to which I cannot resign myself. This is for me the last and ultimate miracle of my life.

Acknowledgements

It is with pleasure that I acknowledge the considerable effort my son, Danny, invested in the preparation of the manuscript and its graphic presentation. I regret however the many frustrations he endured resulting from the incompatibilities between our respective P.C.s: his a Macintosh, mine a Windows 95. Danny also contributed several of the illustrations. Most of the other illustrations are from the pen of my grandson, Yoram - and I am duly grateful.

I also wish to thank my friends and members of the family to whom I gave the manuscript to read in order to test readers' reactions, for their constructive and encouraging comments. Last, but certainly not least, I acknowledge that it is my daughter-in-law, Naomi, whose insistence prompted me to start my voyage down memory lane and encouraged me to keep going till I completed the assignment.

Part one: CHILDHOOD

"Recalling the past is an act of resurrection"

The Early Years

Arrival and Earliest Recollections

I was born in the first decade of the present century, in my parents' bed, as was usual at the time. Their home was in Jacob straat, a house built in the previous century, and that still stands unchanged. Presently, it serves as Administrative Center of the Jewish Community of Machsike Hadas (The Bearers of the Faith).

My earliest recollections are of a man walking the streets towards dusk, carrying a long pole to light the gas lamps with which the streets were illuminated. When we later moved to the Kievitstraat, it is the sour taste of the soup that was served by the nonnekes (nuns) in the convent's kindergarten that I cannot forget. Smells are also etched in my memory: the contrasting smells emanating from De Beukelaars biscuit and chocolate factory at one end of the street, and the sour-sweet smell of manure and milk in the dairy barn at the other end, where milk was swished straight from the cow's tits into the pot I carried.

The sweet-smelling chocolate factory has since been dismantled and replaced by an hotel; the dairy court-yard has remained unchanged, but serves as a small garage.

I remember tugging at my grandfather's beard and the pleasure of braiding it into pigtails; the noise and din at the shtibl (an unadorned room serving as a kind of chapel) to which he took me every Saturday; the jar with sweets from which I was treated at every visit, the chicken soup prepared by my grandmother every Saturday for lunch, and the admonition to eat bread with my chicken drumstick - an intuitive approach to a balanced diet of proteins and carbohydrates or simply a way to still the appetite when the portions of meat were small?

One-time recollections are the strangely costumed masked men and women that paraded past our house on carnival wearing masks (later outlawed); a visit with my grandfather to Brussels where we rode a tram drawn by a huge Belgian horse; my mother holding my nose, whilst a dose of castor oil was forced down my throat. Nor have I forgotten the chocolate elephant that had been given to me as a bribe to open my mouth and to swallow the awful stuff; the elephant was crushed in my clenched fist, the symbol of my first rebellion against parental authority.

Grandparents

My paternal grandparents, Dov and Sprinze Aronovitch, came to Belgium about 1905; and established a home in Antwerp, in Borgerhout, a former village that had merged with the town. From being a lumber merchant in Poland, my grandfather recycled discarded newspapers which then served for wrapping purchases in groceries and other retail shops.

My grandfather was a very devout orthodox Jew, who observed all the commandments. But he was very tolerant, and never complained when I came hatless to visit. At meals with my grandparents, out of respect for them, I would wear one of my grandfather's skullcaps.

When he was sixty, he suffered a stroke which left his right side paralyzed. From then on, I would come once a week to wash him. He died when in his sixties, at the time considered to be a ripe old age.

My grandmother was a handsome woman, with aristocratic features which confirmed her reputedly Sephardi origins, additionally confirmed by her name Sprinze (Esperanza). She died when she was in her fifties.

They had three children, a daughter who died in childhood, and two sons. My uncle Maurice was ten years younger than my father, who adored him. They later became partners, and worked together for many years, until Hitler disrupted their lives.



The Baby - as seen by the lens



The Baby - as seen by my son

My maternal grandmother I never knew nor did I hear anything about her from my mother and aunts, in contrast to the many stories told by them about my grandfather. Yet, she must have been a remarkable woman, who gave birth and raised nine children - two boys and seven girls - all educated and all of whom reached adulthood and raised families of their own; all this whilst providing the material needs of the family.

My maternal grandfather, Jacob Urbach, I met for a short time when on a visit to Poland. His image in my memory confirms all the stories told about his saintliness and piety combined with tolerance for the weaknesses of others. The typical story is that one day, a granduncle of mine came to him and, in great agitation, told him that Miriam wore a dress with short sleeves. "How do you know?" -asked my grandfather -"I saw with my own eyes" - was the answer. Grandfather closed the conversation with "who asked you to look!". He spent all his life studying Torah, leaving his wife to make a living for the family, which she did by keeping a little shop. This was a quite usual arrangement at the time.

What is astonishing is the change in attitudes that took place within one generation. Of the offspring, only one - my Uncle Shmuel-Leib was really orthodox, but was concerned with making a living besides studying Torah. He was the only one with a big family; three families had a single boy, and five had two or three.



Paternal grandparents with sons

My Parents

Father

My father, Godel Solomon, followed his parents to Belgium a few years later. He first peddled cigarettes to sailors in the port area, often receiving slaps in the face and curses from his "clients", instead of the money due to him. He was one of the many Jewish immigrants peddling their wares in the port, mostly illegally.

He subsequently became an apprentice diamond cutter, and in due course established his own workshop. He then invited his cousin, my mother-to-be, to come from Poland; shortly thereafter they were married.. (I still treasure the invitation to the wedding ceremony). At the time of my birth, they were already relatively prosperous, and owned the house in which we lived.

My father was a self-made man. His only schooling was that received in the "cheder", a school where a devout and otherwise ignorant teacher taught children of all ages to read the Bible in Hebrew by rote, from early morning till evening.

He was an avid reader of newspapers, always well-informed of world politics; he spoke and wrote Russian, Polish, Flemish, French and English - none faultlessly. In 1931, he was on vacation in a German spa, and wrote to me that he had the feeling trouble was brewing in Germany. Shortly before the outbreak of World War 2 he saw the writing on the wall and fled Belgium with my mother.

My father was an agnostic, but yet retained certain religious practices, such as regularly saying Kadish (a memorial prayer for his parents), fasting on the day of atonement and going to the synagogue on the holy high days.

After settling in Israel, he invested all his German restitution money to bring his parents bones from their graves in Putte (Holland) for reburial in Israel. Once I asked him to explain the inconsistencies of not believing and yet maintaining a few religious practices, he replied :



Maternal grandfather (sitting, right) with extended family

one should always retain an open bridge in case one changed one's mind as one became older.

My father was also politically active and was one of the founders of Poalei Zion in Antwerp. As such, he was also active in the Socialist party, with whose leader, Camille Huysman, he had a friendly relationship. Huysman later sponsored my father's application for Belgian citizenship, which was granted, making us one of the very few recently immigrated Jewish families to become Belgian nationals. The main reason the Belgian Government gave for its reluctance to grant Belgian nationality to immigrant Jews, was their resistance to assimilate e.g. to integrate with the Belgian nation and that therefore they would always remain a foreign element.

Mother

My mother was a petite pretty woman, with intense blue eyes and chestnut hair, the result of some romantic intrusion of Nordic genes, somewhere along the line. Because blue eyes is a recessive character, my father must also have contributed a gene for blue eyes, as his own were dark brown. The fact that my parents were cousins was also a factor. This inbreeding was very common in our family, and in my case, fortunately, no marked disadvantages have been apparent.

My mother was religious, and kept a kosher home. However, she was tolerant of others and could live with the agnosticism of husband and son.

In 1913 my parents bought a small house with a small shop in the Kievitstraat; my mother was thereby able to contribute to the family income by selling chocolates and sweets.

One of her major preoccupation's was to bring her numerous siblings out of Poland. The first one to arrive, was my Aunt Harriet, a seventeen year old who lived with us almost until she married. Most of the others came as families, one by one, and were put up in our home till they were able to settle down. In most cases, Father took the family head into his business, till he knew enough to strike out on his own. In this way, my parents unknowingly deprived Hitler of a number of victims.

War

The Flight from Antwerp

This period came to a sudden end. On August 1, 1914 shortly after my fifth birthday, Germany had declared war on Russia, and two days later on France, Russia's ally. The Germans invaded Belgium the same day.

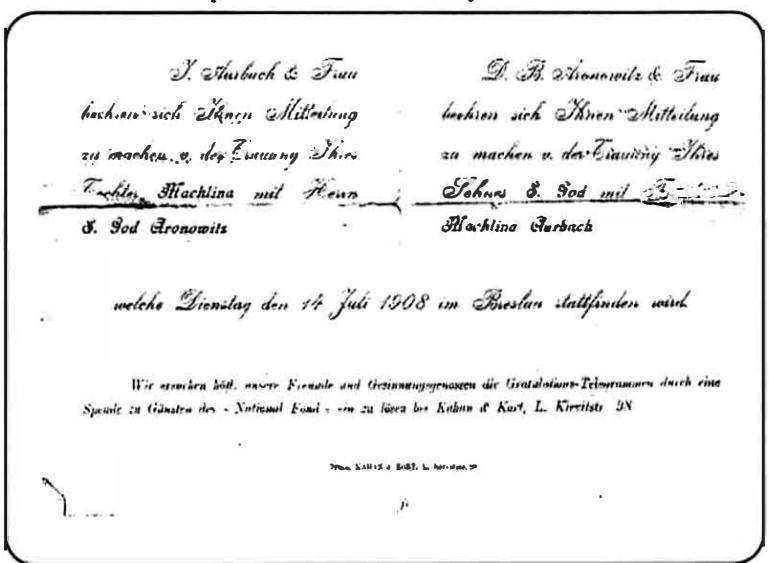
Little did I know that I was witnessing the beginning of the first world war which was supposed to end all wars, and actually laid the basis for a still more violent sequel in 1939.

For several weeks previously my parents had been eagerly awaiting the morning paper and discussing its contents at the breakfast table. I heard over and over again the word war, without knowing what the excitement was about. The most vivid recollection of the five-year old are the flashes in the sky, accompanied by the rumble of cannon which marked the bombardment of Antwerp by the Germans.

In recent years, I find that very few people are aware of the significance of the date November 11 th, a date that in my time was celebrated every year the world over. This is a sure sign that very few people know what this first world war was about, and its immense historical significance.



My parent on the eve of marriage



Invitation to my Parents' Marriage

I will therefore take the opportunity to give a thumbnail sketch of the events that led to this conflict and its results, as I learnt in the course of the war, from hearsay and the newspapers and later from history books.

War was the outcome of the rivalries between the great powers: Germany felt the time was ripe to achieve hegemony in Europe; its ally, Austria-Hungary felt it necessary for its survival to destroy South Slavic nationalism. England, France and Russia (the Triple Entente powers) joined forces to stop the Germans and their allies the (Central Powers) who were later joined by the Turks..

All wars require a pretext; and in this case it was the assassination of the Austrian Archduke Franz Ferdinand in Sarajevo, which provided the necessary excuse. All the participants were convinced that the war would be of short duration, the casualties limited and of course each side was sure of victory. In the end, all proved to be wrong. Many things had changed in warfare, without the Generals changing their tactics. Magazine rifles, automatic machine guns, rapid-firing cannon gave defenders advantages they never had before. The number of men involved was enormous, and the front lines facing each other extended over hundreds of kilometers, making classic outflanking movements impossible. The Western Front extended from the Swiss border to the English Channel.

All this resulted in a stalemate. The Central Powers first tried to eliminate Russia from the War. By 1915 they had inflicted one million casualties on the Russians, and had penetrated up to 500 kilometers into Russia, but Russia did not give up. Throughout 1915 France incessantly and unsuccessfully attempted to break the German lines by direct confrontation and in the single battle of Loos, lost sixty thousand men. In a diversionary attempt, initiated by Churchill, an attack was launched in the Dardanelles (the Gallipoli Campaign) the Allies lost over 500,000 casualties and were forced to retire. The Germans lost their East African colonies and their navy was largely destroyed in the Falkland battle.

By 1916, the war had mostly degenerated into static battles, bogged down into the mud of Flanders. Both sides again attempted to break the stalemate by frontal assaults - the Germans at Verdun and the Allies along the Somme River. Both enterprises ended in disaster and the combined losses were a staggering 2,370,000 casualties.

Instead of bringing hostilities to an end, these huge losses made both sides reluctant to talk peace, and the scale of fighting actually increased. In 1917 the Czarist regime was replaced by a republic and the United States joined the Allies after Germany declared unlimited submarine warfare.

Another French attempt at frontal assault in 1917 at the Chemin des Dames, again ended in such a disaster that the French soldiers mutinied. In Autumn it were the British whose advance got bogged down at Passchendaele in Flanders, after losing another 250,000 men. The Germans attempted to exploit the confusion and weakness on the Russian front to force Russia out of the war. They occupied territories in Poland, the Ukraine and Finland, hoping thereby to break the Allied blockade.

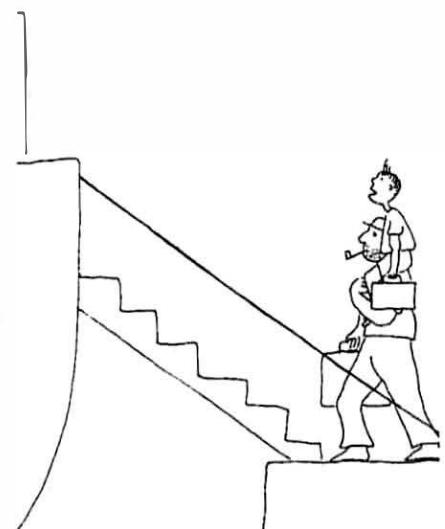
In October 1917 the Austro-German armies attacked the Italians at Caporetto, inflicting 600,000 casualties, but Italy remained in the war. In March 1918, the Bolshevik government concluded a treaty at Brest-Litovsk, conceding German hegemony over Eastern Europe.

In March and April, Ludendorff attempted a renewed attack on the Western front. After some initial success, the Allies, joined by American reinforcements, counterattacked. By July 1918, over a million Americans had joined the Allies.

On November 11, Armistice was signed and on June 1919, the Treaty of Versailles imposed harsh conditions on the defeated Germans.

Refugees

Indelibly etched in my memory are the hundreds of people crowded in the entrance hall of the Centraal Station waiting for a train to carry them out of the inferno created by the Germans. After hours of bombardment, we left by train for Rotterdam; there I remember being carried



on the shoulders of a sailor onto a cattle boat which was to take us to England. Thus, in a typically Jewish way, I was to become a refugee at the age of five.

London

Our first English home was in London. Somehow I found myself in a school named Finsbury Park College. The pretentious name must have attracted my parents, who wished to give their only child the best English education possible. Little did they know that this school was a replica of the one described in Tom Brown's Schooldays; I was soon made aware of this fact by being rapped on the knuckles for minor mistakes and caned on my bare backside for more serious offenses. Characteristically, my school certificates were signed by the headmaster with the flourish of a goose quill pen. I terribly regret not having kept one of these documents.

Curiously, I remember my embarrassment when the pupils sang God Save The King, a daily rite at the beginning of the school day. My parents, like all Jews at the time, were firmly pro-German, and still more anti-Russian. The Germans had a reputation for liberalism and symbolized the Emancipation of the Jews. Nowhere in Europe had the Jews prospered and become prominent as in Germany.

By contrast, the Russians carried the stigma of oppression, discrimination and pogroms. Though, at the age of six, I certainly had little political awareness, my parent's reactions to the war news, and their conversations with their friends, expressing their sympathies, must have seeped somehow into my consciousness.

The many thousands of Jews that had fled the pogroms of Czarist Russia, at the end of the 19th century and had found refuge in England (mostly concentrated in the East End of London) were also fanatically anti-Russian. Many still had Russian citizenship, but found devious ways and means of avoiding mobilization in the Russian army, an ally of Great Britain in its war against the Germans.

This certainly fueled the latent anti-Semitism that existed in England. When at war's end, the Czarist regime was toppled, and the Czar (a cousin of the King of England) and his family were murdered by the Bolsheviks, the Jews became ardent supporters of the revolutionaries, again in contradiction with the English consensus.

As a six-year old, I already felt a stranger among my co-pupils, unable to join them in the singing of the national anthem.

Wing

Our stay in London came to an end when my father was released from hospital after an operation. To give him a chance to convalesce, we moved to Wing, a typical small village in Buckinghamshire.

Sixty years after our stay in Wing, I received an illustrated brochure entitled "Wing as it was", from which I learnt many things which completed the sketchy knowledge of the 6-year old I was then.

The Parish of Wing originally consisted of the village proper (High street, Church Street and Vicarage Lane) and four adjacent hamlets. The empty spaces between the hamlets and the village were gradually filled with rows of brick cottages with slate roofs.

The Rothschilds

Wing, like almost every other village in England, was an "estate community" with its livelihood and daily activities controlled, directly or indirectly, by a member of the landowning class. In the case of Wing, the major, and almost only landowner, was Baron Mayer de Rothschild, who in the late 1850's established a famous racing stud in one hamlet (Crafton); another hamlet (Ascott) was transformed into a Rothschild estate. In 1874 his nephew Leopold occupied the old Jacobean farmhouse which he transformed into a mansion with magnificent gardens.

Here Leopold and Mrs. de Rothschild entertained royalty, political leaders, the rich and the



Wing: the handwritten text by Edna: "Sorry, our house hidden by horse drawn delivery van. However, the open bedroom window (marked) where you and your parents slept."

famous. In contrast to the former landowners who did not reside in the parish, Leopold and his wife were both involved in village life and did much to improve conditions.

The estate and the racing stud were the main sources of employment for the villagers. The estate workers were housed in what were at the time considered light, airy cottages, many built in a distinctive brick and half-timber Tudor design. The Rothschilds also built a cottage hospital and a village hall, and donated a school library.

There were regular treats at the estate and outings for the children. Every winter, "meritorious" schoolchildren each received a pair of heavy hob-nailed boots, which gave them the slow, plodding gait which characterized the rural working class. I too received such a pair of boots, so I must also have been meritorious.

The authors of the brochure state that "the memory of Mrs. de Rothschild is still revered among the older inhabitants".

Leopold de Rothschild was the stereotype English landed gentry, except for his name and origin. He was considered one of the keenest "sportsmen" in England. He hunted the fox and transferred to Wing a princely pack of stag-hounds and hunting stables established by his uncle Mayer de Rothschild. His horses twice won the Derby. He also supported cricket, and on weekends members of the Rothschild family and staff would play against the village team.

The villagers

The majority of the able-bodied male population was employed in agriculture, which was still very labor-intensive. Others worked on the estate and racing stables of the Rothschilds as grooms, gardeners and household staff. A few skilled craftsmen and shopkeepers provided most of the villagers' needs. For many sons of poor village families the army provided an alternative to work on the farms.

Very few showed real entrepreneurial spirit. Seth Denchfield, a cousin of the Denchfield in whose home we were to live, was an exception. He described himself as a carpenter, joiner, undertaker, wheelwright, timber dealer, saw-mills and general contractor and steam thrashing-machine owner. His enormous steam engine was much employed on local farms.

The former cottage industries (straw plaiting, lace-making) were in decline and had almost ceased to exist.

Whilst there was a traditional identity of interests and outlook between the Church of England and the ruling classes, the working people expressed their non-conformity in the only way open to them: religious non-conformity. Besides the thousand year-old church, there were chapels for Primitive Methodists, Wesleyan Methodists, Baptists, and Congregational Unionists.

The chapels were not only religious but also social centers that provided some relief from the day-to-day drudgery of village life. The preaching and hymn-singing were exhilarating; year-round a series of events took place: Sunday School fetes, outings, and temperance festivals. There was also a village band.

In 1838, a railway station was opened in the little town of Leighton Buzzard, a few miles from Wing, an event that helped to end the village's isolation and self-containment.

During WW 1 there were practically no able-bodied men of military age to be seen in the village. As most young villagers were used to working with horses they generally joined the cavalry, horse artillery or mounted infantry and saw active service on many fronts.

Many of them were in Palestine years before I came; they participated in the invasion of Palestine by Allenby. In a cavalry charge at El Mughar on November 1917 the Squadron Officer, Major Evelyn de Rothschild, was killed.

I have gone into some detail on Wing mainly because of the profound effect the two years we spent there had on me, also because of its links with the Rothschilds and indirectly with Palestine

Arrival in Wing.

We arrived in Wing sometime in 1916, having traveled by train from London to Leighton Buzzard and from there to the village by horse-buggy. On the way, the driver pointed out to us the magnificent gardens of the Rothschilds with the planted labyrinths and many trees sculpted into the most extraordinary shapes.

We were the only Jewish family in the village (excepting the Rothschilds, of course); I doubt whether the latter were associated in any way in the villagers' minds with Judaism.

The Denchfields

We lived in a small attic, in the home of a farm laborer, the poorest of the poor. But there was a piano in the living room, which Edna, the only living daughter, had learnt to play. The Denchfields were deeply religious, and on Sunday only hymns were played on the piano. The fact that we were Jews made absolutely no difference to them, and they made us feel part of the family. The warmth and friendship were reciprocated, and until his death, my father maintained contact with our English hosts.

I corresponded with Edna, and met her occasionally when in England, until her death in 1992. She was a sweet old lady who, after retiring from her work in a post office, remained active in charitable work. It was Edna who sent me the brochure from which I gleaned much of the information on Wing.

Our stay in Wing

I haven't the slightest idea what my parents lived on; I have a vague memory of my father giving Bible lessons to Jewish youngsters in London, he of course had no such clientele in Wing except myself. My mother made embroidery, to supplement whatever meager income they may have had. This was a time of shortages for everybody, and we lived very frugally.

My father accompanied Dr. Chignall, the village doctor, by then an old man, on his rounds. When they went by car to outlying villages, my father would crank up the engine each time the doctor ended his visit; when they went by horse and buggy, I have no idea what was his duty. I doubt whether he received any payment; I am sure that he enjoyed the contacts with the many people he met on the doctor's rounds.

Our entertainment we received from different sources: my father was a church-goer and I was a chapel-goer. He loved music, and would go on week-days to hear the vicar practice on the organ whilst my father worked the bellows. I was invited regularly by the Denchfields to accompany them to the chapel and to participate in the events described above. I cannot remember ever having believed in God as a child; my father's Bible lessons did nothing to convince me of His existence, nor did the many instances in which God acted cruelly endear him to me. Never was there any attempt at proselytising or preaching to me. Never did I forget that I was a Jew but never did this embarrass me, thanks to the kindness and friendliness of the people, old and young alike. Children are generally prone to be cruel to outsiders - who could have been more an outsider than a foreign city-bred Jew, who spoke English with a London accent? And yet I joined in all the games, the group mischief-making, the collective gathering of blackberries for the military hospital - as if it was the most normal thing in the world.

One day, an airplane flew overhead, very low, and it was apparent that it was in trouble and searching for a place to land. The whole gang of kids started racing behind the plane; several hours later we reached the field in which it had force-landed and I had my first glimpse of an airplane from nearby. How this contraption of wood and wires was able to fly amazed me.

When I returned home late in the evening, I learned an important lesson. If I had been overdue for half an hour, I would have been reprimanded, if not punished. Being overdue several hours, the relief from deep anxiety made my parents forget my misbehavior and I was greeted with warmth!

My choice of a career

It was in the village that I became enamored of country life. At a time when my school friends opted for future careers as policemen, firemen, railway engine drivers, I just as firmly had decided to become a farmer.

I have no idea what awakened this love for agriculture. Surely the poverty of those engaged in farming and the back-breaking drudgery which was their lot, could not have been an incentive. Village life was hard and frugal; the residences of the families of the agricultural laborers, such as the one in which we lived, had no running water, and no inside lavatories. Water was drawn from communal pumps. The only lighting was by candles and oil-lamps. There was no doctor



Foreign city-bred
seven-year old in a
village setting

in the village, until the arrival of Dr. Chignall in 1899 .

Even books or poetry for children were not very helpful in creating a favorable image of agriculture. Here is an example (author unfortunately unknown to me):

The farmer will never be happy again,
He carries his heart in his boots,
For either the rain is destroying his grain,
Or the drought is destroying his roots.
In fact if you meet this unfortunate man
The conclusion is only too plain
That Nature has an elaborate plan
To annoy him again and again.

Nor were Zionist ideals involved; I knew little or nothing of Palestine at the time, or of the role agriculture was to play in the Zionist movement. Whatever its origin, my love for agriculture never wavered, and has remained steadfast to this day.

School

The children of the village learnt together in a single classroom, part of the church buildings. There was a single teacher, Miss Monk, who was much beloved by all the pupils. She would exhort me to preserve what she called my beautiful London accent and not to speak like a yokel. She also gave me my first lesson in logic. I had written my essay on the life of a cat, in the first person singular, a story which ended tragically when I was killed by a fierce dog. Miss Monk wrote at the bottom of the page: "How comes you were able to write this story after being killed by a dog?"

Many years later, in 1988 to be precise, I was in Chichester to discuss with my publishers Wiley & Sons some matters concerning a book of mine . On my way to the railway station to return to London, I saw a double-decker bus with a sign stating that its destination was Aylesbury and beyond. The name rang a bell in my mind, and a closer look showed that the bus passed by Wing. On an impulse I boarded the bus and within the hour landed in Wing. Where there had been a smithy, there was now a garage, but otherwise, change had by-passed the Wing I remembered.

I walked to the churchyard, identified the wing of the building where the classroom was located and tried to peer through the window for a look inside. An elderly matron pushing a baby-carriage with her grandchild was passing by. She asked me whether I was looking for something and suggested that maybe she could help; I told her I was looking for the classroom where I had been a pupil 60 years ago. She asked me: was your teacher Miss Monk?

When I answered in the affirmative, she said that we both had probably sat on the same bench, as the children were grouped according to age in the single classroom..

The return to London

Air raids

Shortly before the end of the war, we returned to London, at a time when the Germans bombed the city almost every night. I remember the days spent in the Tube (the London Underground), and the nights when, in response to the air-raid sirens, my mother carried me down four flights of steps to the cellar. One night, on the way down, I glimpsed over her shoulder, through a window, a zeppelin in flames falling from the sky.

I wondered at her habit of turning around on each floor; in later years I asked her to explain these strange pirouettes. She explained that she turned her back on the window on each floor, to protect me with her body, against shrapnel which might enter the building.

An accident

One day, I fell off my scooter and broke my left arm at the elbow. The doctor decided that the location of the break would make it impossible for me to bend my arm normally, and gave us the choice of immobilizing the arm, bent at the elbow, or held permanently straight. My mother

was horrified at both alternatives. She had heard from the Belgian grapevine that our family doctor had joined the flood of refugees and was in London; so she took me to him for consultation.

He absolutely forbade the operation proposed by the British doctor and proposed a regime of daily exercise, the major element of which was to progressively straighten the arm by carrying a pail of water up the four flights of stairs leading to our lodgings and daily visits to the hospital for physiotherapy. This painful regime I followed meticulously, scared at the thought of losing the use of my arm. Every day, the eight year-old traveled alone by tramway to the hospital always watched over by the conductors. Gradually, millimeter by millimeter, the arm straightened out, as predicted by the Belgian doctor.

Character formation

Throughout our stay in England, I read voraciously everything I could lay my hands on: Gem and Marvel were typical boys' weeklies, whose stories of schoolboys at ivy-covered schools were based on the classic *Tom Brown's Schooldays* with their standard prototypes: the prefect - an honorable, decent 6th-former; a group of upright schoolboys, such as the "Greyfriars Five", who always remained, year after year, in the 4th form, and a standard cad and bully who represented all that was wrong and hateful, and had to be fought and defeated.

The ideal schoolboy was characterized by fair play, honesty, truthfulness, pluck, and stoicism; I have no doubt that these stereotypes had considerable influence on the characters and behavior of the generations that thrived on this literature, myself included.

My father also took a subscription to "The Children's Newspaper", which kept me well-informed of local and world events

Armistice

On 11 November 1918, Armistice was declared. I remember well the delirium in the streets of London. I was by then old enough to realize the significance of the end of war; I doubt however whether the adults realized that this peace was going to be no more than a prelude to a second world war to end all wars.

The war that had just ended was actually a pacemaker for the one that followed, and a trial ground for new techniques and weapons that would transform future warfare. For the first time tanks were introduced to the battlefield; to be used by the Germans in their devastating blitzkrieg years later. For the first time airplanes were used for military purposes, a prelude to their massive use in the next war with terrible consequences for the civilian populations of the warring nations and the main ingredient of a new concept - total warfare. Both sides used poison gas; the results were so horrible that this weapon at least was not included in the new war doctrines but at a later date became the atomic weapon of choice of the countries aligned against Israel.

No less dramatic were the political consequences of the peace treaties that were signed several years later. This marked the end of European hegemony in World affairs, Czarist Russia broke down after a bloody civil war from which Soviet Russia emerged; the dissolution of the Austro-Hungarian Empire resulted in a number of weak, unstable states in Eastern Europe.

The rise of Hitler and Nazism in a defeated, humiliated and embittered Germany, and of Mussolini and Fascism in Italy made a shambles of the first international system - the League of Nations - which was meant to replace wars between nations by collective law, justice instead of might and collective security instead of each for himself. What a hope!

The Return to Antwerp

A New Home

Immediately after the Armistice, we returned to Antwerp. Our home and the shop had been stripped bare. My parents sold the house, and moved to a basement dwelling in the Terlist str. The house still had an old-fashioned toilet in the yard, but the former owner had added a more modern flush W.C. inside, on the first floor landing. There was, naturally no bathroom, as people at the time would go to the communal baths for their weekly ablutions. Nor was there electricity. When the latter became available in the quarter, I explored the flea-market, buying electric wiring and insulators, with which the 12 year old installed electricity in our home, one of the first to

enjoy electric lighting.

Many years later, when I visited Antwerp after the Second World War, I wrote to my wife that the streets we had lived in had become surprisingly narrower and shorter, but the houses themselves had remained unchanged.

School

After a stint at the Lycée d'Anvers, a posh private francophone school, I was transferred to the Athénée Royale, a municipal bi-lingual school. Like practically all Antwerp Jews, my parents chose the French option in which I was to study. This, in a Flemish town, was certainly no incentive to like Jews.

Anti- Semitism in school

At the Athénée, there was no perceptible anti-Semitism. Jews were not required to attend classes on "morale", an euphemism for catholic teachings; instead, Rabbi D.Wiener gave us lessons on Jewish ethics.

I was allowed, at my parents' request, to be absent from school on Saturdays; Jewish holidays were also a legitimate reason not to attend classes. At first, the classes I missed did not make it appreciably difficult for me to keep up with the rest of the class, until we had two hours of trigonometry, integrals and differentials on Saturdays , which made it very difficult for me indeed.

The only teacher whom we felt to be anti Semitic was Monsieur Beguin, a devout catholic who taught French grammar and literature. He was careful not to express his feelings in words, or to discriminate blatantly against the Jewish pupils; yet, we were somehow made aware of his strong antipathy to everything Jewish.

Particularly offensive to him was my way of dressing: corduroy jacket and shorts, an open blue shirt with white strings - the civilian uniform of the Hashomer Hazair, which we had copied from the Arbeider Jeugd movement.

I had a sweet revenge on Mr.Beguin, when my turn came to present my "exercice d'élocution" (presenting a paper). I prepared and delivered a well-documented paper on "L'Inquisition". The teacher's refutations were very feeble and I even received a good mark for my presentation.

An entirely different person was René Johalle, freshly graduated from the teachers' college. He was everything a teacher should be, with one exception. He was enthusiastic about his subject, French literature, and his lessons were very interesting. He however lacked experience on how to control a class of unruly 16- year old youths, and we made life hell for him with all kind of schoolboy tricks. In despair, he left for an assignment in Wallonia. I felt sufficiently ashamed of our behavior and sorry at the loss of such a good teacher that I wrote to him a letter of apology in which I told him how much he had really been appreciated. He answered my letter and followed a sustained correspondence which continued for several years.

Part two: ADOLESCENCE

The Youth Movement

Joining the Scouts

In 1920, I joined Bar Kochba, the boy-scouts movement, the brainchild of General Baden-Powell, initiated by two brothers named Kincler. At the insistence of my father, I was accepted, though at 11, I was below the minimum age. The movement soon became my home from home; it molded my way of thinking and acting and determined my future life.

Hashomer Hazair

The Movement

These influences were further strengthened when the majority opted to join the Hashomer Hazair, a movement that had originated in Poland and whose credo was Zionist-socialist and pro Soviet Russia. This decision caused a split in the organization, as those who opposed the left-wing character of the new movement departed to join other Zionist youth organizations.

After the scission, we became a very close-knit society. But even so, there were smaller and more intimate groups within the organization made up of close friends.

In my group of peers was, first of all, Hilda Gunzig, who had arrived in 1920 with her family from Czechoslovakia. Hilda and I had become close friends, and at the ages of 14 and 15 respectively, we were acknowledged as a couple. What had attracted me in the first place to the young girl was her outspokenness. When we all felt that the leaders had made a wrong decision, she was always the first, and sometimes the only one, to speak out.

Notwithstanding the friendship, the common ideology and background, in due course the members of the group took different paths and did not share a common destiny, as evidenced by the thumbnail description of the other members of the circle of friends and what happened to them: Jacques Gunzig, nicknamed Dolly, Hilda's brother, who was the ideologue of the movement, and Editor of its journal. Dolly left in 1929 for Tunisia, where he spent two years initiating and organizing a Hashomer Hazair Branch. He then left for Palestine, joined the kibbutz Ein Shemer, found after a time that he could not reconcile his aspirations as a Zionist with what he considered the rights of the Arabs. He decided that the only way out of the dilemma was to join the communist party that promised to make national problems redundant by replacing them with ideals of social justice and thereby incidentally solve the Jewish problem.

He left the kibbutz together with his wife, Rachel and arrived back in Belgium just a few days before we left for Palestine but did not make any attempt to convert us to his way of thinking. He and Rachel became officers of the Republican army in Spain and survived the Civil War there. Jacques was active in the Resistance and the "Red Orchestra", till he was denounced to the Nazis by a collaborator. He was "transported" to the concentration camp in Muenthausen, where he died.

Emile Ackerman, (nicknamed Tarzan) was my closest friend; in due course he left the movement and joined the Communist party. He volunteered to join the Spanish Republican Army in its unsuccessful war against Franco, and was killed in action as was his young brother, Rik. What a waste!

Sarah Goldenhaar (known as Sarenka) came to us from Warsaw where she had been one of the leaders of Hashomer Hazair. She was a beautiful, sensible and charismatic person, and had considerable influence on us. From her we learnt much about the objectives and teachings of



The scouts of Bar Kochva, in 1921. in the center - the founder, Kincler



Boy-Scout at 11

the Hashomer Hazair. She became a founding member of Kibbutz Ein Hachoresh. After marrying Dr. Shiba, a member of the neighboring Kibbutz Givat Haim, both left their respective kibbutzim. Dr. Shiba was to become the founder of the hospital named after him, which he set up in former British army barracks in Tel Hashomer. This hospital was to become one of the most prestigious medical institutions in Israel.

The dual purpose of redeeming a homeland for the Jewish people and creating an ideal society made my life as a youth wonderful, rich in content and purpose. Every Saturday morning we would meet in the Nightingale Park, to play handball and other games; Saturday afternoon was devoted to singing Hebrew songs, the tunes were almost all of Russian origin, as I was to discover to my discomfiture at a later date, when I heard the self-same tunes sung by White Russian anti-semitic students. Sundays, rain or sunshine (more often rain than sunshine), we would make an excursion to the countryside.

One evening, every week, we would have a lecture prepared by one of us, followed by a discussion. Once a year we would go camping in the Ardennes.

Group leader

After I became group leader, even more of my spare time was devoted to movement activities. I took my responsibilities very seriously. In order to prepare themes for our weekly discussion sessions, I read voraciously books on sociology and Jewish history, thereby associating Socialism with Zionism, a combination that was the hall-mark of the Hashomer Hazair. I was about two years older than the members of my group, all of whom attended the same school. Among these were Maurice Lerner (Shita), who made aliya (left for Palestine) in 1934 or 1935; he became a prominent member of kibbutz Ein Hachoresh and together with his wife Genia, became my lifelong friends; Rik Ackerman (Kfir), who later became a communist and fell in the Spanish civil war; Emile Kleerkoper, (Tandor) who came to Palestine in 1935 and became my assistant at the agricultural experiment station in Acre. He fell ill with bovine infectious abortion; doctors from all over the country came to see this rare case of human infection by an animal disease. He was told that a change of climate was essential to save his life and returned to Antwerp to become a prosperous diamantaire. Dov Amitai (Crator) also made aliya in the early 19-thirties, also joined the kibbutz Ein Hachoresh, in which he has been active to this day. Isidore Springer (Sabor), my wife's cousin - a handsome, promising youngster, a future member of the Resistance, was caught by the Gestapo. Afraid that he would be forced by torture to betray his friends, he jumped to his death from an upper-story window.



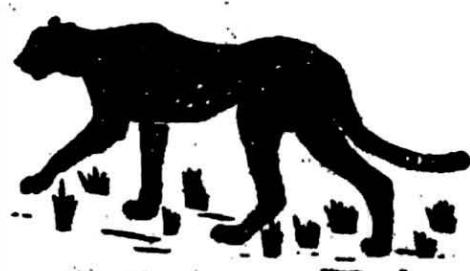
Group leader in
Hashomer Hatzair -
the Panthers.
Standing right to
left: Kfir, Sabor,
Bagheera, Shita.
Sitting: Tandor,
Namer.

Leaving the Movement

In 1929, I married Hilda Gunzig, my girl friend. Her father, Dr. Israel Gunzig, had been chief rabbi of Loscice, in Bohemia and a prominent figure in the Emancipation and Enlightenment movement. In Antwerp, he founded the first Jewish school, the Tachkemoni.

Hilda and I had become close friends at the ages of 14 and 15 respectively. We married mainly to free her from the parent-imposed rule to be home before 11 p.m. which made it difficult for her to attend the lectures and discussion groups that meant so much to us.

In 1929, we decided to leave the Hashomer Hazair, for reasons I cannot presently remember, but which I have long regretted. I wonder what Freud would make of this lapse of memory when everything else is so clear. The only quarrel I had with the movement was the blind adoration of the Soviet Union. Hilda did not share this aversion, on the contrary, she was a firm believer in Stalin and his policies.. This difference of opinion was the cause of frequent, sometimes loud arguments between us, so it could not have been the joint reason for leaving the movement.



Other activities

Exploring Antwerp

On my own, I loved to roam the streets of Antwerp, in particular the old town, of which the "Schippers Quartier" (Sailors quarters), adjacent to the port was the most lively. Of course I had no idea why there were so many large show windows, behind which sat sedate women busily knitting or embroidering. In the background a bed and a washbasin were always in evidence. From time to time, a man entered one of the houses, the curtains were drawn, and when I passed the house again, on my return, the lady was again busy knitting a pullover.

To reach these quarters one passed a large market place surrounded by beautiful Renaissance houses including the town hall where I was later married.

Another favorite haunt was the port, the second largest in Europe, which stretched for several kilometers along the riverside. The port was almost 90 km inland on the River Scheldt. All ocean-going vessels could reach the port excepting the very largest. Many containers would break open, and their contents strewn on the docks; a walk along the docks was a symphony of smells and sights.

The off-loading of merchandise was manual, for machinery was confined to a few cranes. There were four main groups of dockers: handlers of grain, of coal, of wood and of minerals. Grain was handled in the following way: the grain in the hold would first be filled into baskets, these would be hauled onto deck and emptied into sacks, these would be carried to the weighing machines where the controllers waited, notebooks in hand, to check quality and weight. From there, porters would carry sacks weighing 60-100 kilograms on their backs to the waiting carts to which enormous horses of the distinctive Flemish breed were hitched. The control was handled by two firms, one representing the supplier, the other the buyer. Amongst the controllers were many Jews.

Also interesting was the castle that used to guard the port, the Steen and was now a museum in which one could still see the dungeons and the instruments of torture used in the good old times.

In proximity to the Steen, is the Suikerui, which was formerly a Jewish Quarter, inhabited mainly by Jews who had immigrated from Holland. Here was the very first synagogue in Antwerp, already active in the early 1830's, at the time when Belgium became an independent State.

Dominating the old quarters, was the Notre Dame Cathedral, a magnificent Gothic structure built in the 14th Century. At the foot of the building, a marker in the pavement indicates the spot where the architect of the Cathedral fell to his death. He had jumped in despair from the steeple of the Cathedral, when it was discovered that the building was slowly sinking into the wet earth. Legend has it, that the problem was solved by burying huge numbers of sheepskins under the foundations, which reputedly absorbed the excess moisture. Whether it is true or not that the building was saved in this way, it is a fact that the Cathedral stands in all its glory to this day.

Exploring the Countryside

I also loved to go on long excursions by bicycle, alone or with one or two companions. Alongside all the roads were bicycle paths which made riding safe and pleasurable even on major highways.

In one memorial trip, Jaap (another scout) and I crossed Belgium into Germany passing through the areas annexed from Germany following the Treaty of Versailles. The not so benign neglect by the Belgian Government of these districts, with their still hostile and frustrated population, was evident everywhere, and most of all, in the numerous potholes which marred the roads. The locals responded by putting up signposts decorated with the symbol of death - skull and bones - and the words HALS UND BEINBRUCH (Break Neck and Bones).

In Cologne we visited an exhibition devoted to Communications. There we saw, publicly



My best friend:
Emile Ackerman
(Tarzan).

demonstrated for the first time, a new invention called television. The public stood in one room and watched on a flickering screen what was happening in an adjacent room. We were not overly impressed.

Passing through German villages on Sundays, we were always treated to the sight of processions of middle-aged Germans, all dressed up in uniforms, and playing at soldiers on parade, headed by a military band of blaring trumpets and beating drums. A taste of things to come.

To take respite from cycling, we boarded a boat plying the still unpolluted Rhine in a leisurely upriver jaunt. I pointed out to Jaap the site of the Lorelei made famous by Heine. The Lorelei, a beautiful nymph, was reputed to lure sailors to their death by distracting them with her songs. We passed by safely and disembarked in Alsace, a French province that had been ceded to the Germans in the aftermath of the Franco-Prussian war of 1870 and had been reclaimed by the French in 1919. From there, back home through Luxembourg and the Ardennes.

A Town of Sick People

A shorter, but no less interesting excursion was to a small town called Gheel. The town is fortunately not on the tourist agenda, and few Belgians visit there, though the usual epithet used to tell an adversary that his head needs examining is "Go to Gheel".

Following an old tradition, the town provides a home (in the full sense of the term) for the mentally ill. It is told, that some time during the Middle Ages, a Princess fled from home to escape the unwelcome advances of a suitor to whom she had been promised by her father, the King. She found refuge in Gheel, and the people refused to deliver her to the army of pursuers. But the persecution she had suffered resulted in her becoming mentally deranged. Since then, the town has continued its tradition of giving asylum to the mentally ill.

Gheel is unique in that the whole life of the town revolves around the mentally ill. Every family adopts a sick person, and tries to provide him with a life as normal as possible. Many of these guests lead a productive life, generally in the family business.

We visited a flour mill, all whose workers were mentally handicapped. Others wander around the town, acting out their fantasies, and everybody humors them. One individual imagines that he is God, and in that capacity determines when trains may leave the station. He is assisted by the Station master, who politely informs "God" that it is time for the train to leave, whereupon "God" blows a whistle, and the train leaves on time. And nobody displays any surprise. At a crossroads stands another person, with a much more modest delusion, and directs the traffic. And everybody obeys! There may be some mix-ups, but nobody loses patience or good humor. An unusually large percentage of the ill are Dutch Jews, possibly the result of consistent inbreeding. One little man approached us, and seeing we were wearing the blue and white scarves of Jewish scouts, announced that he too was a Jew, and as proof showed us that he wore his handkerchief tied around his wrist, in order not to desecrate the Sabbath. He implored us to intercede on his behalf, as he was absolutely sane and kept in Gheel because he was a bother to his family, a delusion shared by many of the mentally ill.

I sat down in a coffee-shop for a refreshment, and asked the waiter how one could distinguish between a sane and a sick person. He answered: "You cannot, if his behavior is not eccentric". Looking around, he pointed to another guest, sipping a cup of coffee and said: "he is sick". Then pointing at the driver of a horse-drawn cart "he is sick too" and then pointing at himself said: "so am I!"



Exploring
Germany in 1930.

Hobbies

Tools

I would spend hours in the Vogelmarkt (Flea market) wandering about, fondling the puppies, admiring the birds that were the main item on sale, hence the name of the market (Bird Market). But my main objective were tools. I loved tools and also enjoyed using them, a trait that was later to earn me the title "Grandfather Garage" as my grandchildren turned to me whenever repairs had to be made to their toys. My pocket money was limited, so I had to be very selective in my purchases.

Chemistry

At the end of the marketplace was a second-hand bookshop where I did a lot of browsing. I bought a book on chemistry printed in the 1890's which awoke an enthusiasm for experimenting with chemicals. I transformed the cellar into a makeshift laboratory, to the dread of my mother who expected me (justifiably) to harm myself or alternatively to blow up the house, the lesser of two evils.

Some things I learnt the hard way, such as not to add water to sulphuric acid but to add the acid to the water. One precept which I have never forgotten, and which characterized the approach of the author to chemical problems and the dearth of adequate equipment at the time was "A good chemist must know how to file with a saw and how to saw with a file". Because of my limited budget, this was a precept I often applied.

Radio

My father with his love of music, had been among the first to acquire a radio - a strange contraption consisting of a large wooden box, filled with vacuum tubes and wiring. On top of the box were installed reels which had to be exchanged whenever one wished to switch stations. These reels reacted with frightening shrieks and howls whenever a hand approached with the intention to remove them, so that one had to pay for the joy of music with deafening noise pollution.

I decided to build a radio of my own, joined a radio club (the only thirteen year-old among the adults) and learnt the ropes. Followed a search for the essential parts in the Vogelmarkt and I proceeded to build a crystal radio set. The excitement I experienced when it became possible to hear a whispering voice from Brussels amongst the whistling atmospherics is difficult to describe and the pride with which I presented my contraption to the members of the club was proportional to the compliments I received from them.

Sports

I joined the sports club Maccabi, where on two evenings every week I engaged in light athletics and wrestling. I was a fleet runner and good jumper. My sparring partner in wrestling was my friend Emile Ackerman (Tarzan) who in due course became national champion in his weight class. The Graeco-Roman style of wrestling that we practiced was not of much use for self defense (martial arts were not yet popular) but it gave me a lot of self-confidence, and a set of hard stomach muscles on which it is possible to bang a fist to this day. But most important, it taught me how to fall without injury. How useful this was, can be judged by the many times I fell from my horse without harm during my military service and from the fact that when at age of 85 I fell off a ladder backwards and hit my head against the wall, the damage was confined to a big lump on the back of my head.

Palestine 1927

Travel to Palestine

When I was seventeen, and in the last year before matriculation, I asked my parents for permission to go to Palestine for two months, to see the country, learn something about its agriculture so as to be able to decide which specialization I was to choose in my future studies. I wanted to work my way to Palestine as a sailor, this my father refused to allow, but gave his blessing to the proposed tour.

With the magnificent sum of 18 Pounds Sterling, an enormous sausage from Ringer Delicatessen protruding out of my rucksack and letters of introduction to comrades in the kibbutzim of Hashomer Hazair, I embarked by train for Trieste, and from there by Lloyd Triestino to Jaffa. I paid two pounds ten shillings for the privilege of sleeping on deck and eating the food I had brought with me. I had bought an enormous bottle of Italian wine encased in a wicker basket, as I had been told that drinking wine was the best way to prevent sea-sickness. For the first time in my life I had wine with all my meals, and the antidote must have been effective, for I was never sea-sick or even squeamish after meals.

Every morning, I rose at 4 a.m., washed under a hydrant, so as to free my bedroom for the sailors who came to wash the decks an hour later.

Worth mentioning is the fact that the only passengers were a dozen tourists in second class, and myself in the (at night), star-spangled class of open deck.

When we arrived in Jaffa, the quarantine doctor requested all passengers to stand in a row, unbuttoned the top of their shirts and after a quick look, indicated who had to go to quarantine. I was one of the lucky few who was allowed to leave the harbor straight away. I afterwards learnt that by glancing at the undershirts, the doctor was able to decide whether a passenger was addicted to hygiene or not, and this served as his sole criterion on deciding whom it was safe to let loose on Jaffa. I had taken my early bath that morning, and changed my underwear and thereby gained immediate entry to the Holy Land.

The gate to the port was crowded with gesticulating men, who would eventually be called chappers (grabbers): mostly bearded men who touted their respective hotels. My luggage was immediately grabbed by one gentleman, so I followed him to a horse-and-carriage, which took us to a sea-front hotel in Tel-Aviv. This was the only night for which I paid during my stay in the country; after this one-time luxury, I slept on benches or tables in scout clubs, in the barns in kibbutzim, and very occasionally I shared a bed with a friend. This was the least pleasant option, as to turn over, we both had to leave bed and change sides; the ubiquitous bed-bugs also made beds an undesirable option for a night's sleep.

In the morning, I rose early, and went for a walk along the beach. I saw my first camels outside of a zoo, loading gravel (zif-zif) and sand, a motif I was to see frequently repeated on pictures and postcards. The houses on Yarkon street, mostly half-a-star hotels, were few and far between.

Jerusalem

The Trip

I decided that before leaving for the North, I would visit Jerusalem. There were a dozen transport companies, each with one or two buses, competing for fares. For half a grush, the cost of two glasses of lemonade, it was possible to travel from Tel-Aviv to Jerusalem. The cut-throat competition made meaningful upkeep of the buses impossible, and the trip was made in ramshackle vehicles that emitted clouds of smoke as they panted up the steep inclines.

At the entrance to the valley that leads to Jerusalem (Bab el Wad) was a billboard indicating that the "Men of the Trees" had planted the forests lining the road to Jerusalem. I later found out that this was an international organization devoted to covering with trees various desolate parts of the world. I mention this, because the billboard was no longer there when I arrived in

Palestine six years later, and the Jewish National Fund, the Mandatory Government's Forestry Department, and later, the Israeli Forest Department, all claimed to have planted those trees. I think that credit is due to the Men of the Trees, and hope hereby to have set the record straight.

When I wrote home, describing the trip, I mentioned that it was more exciting than any adventure story. At a certain point, one descended towards Jerusalem on a narrow, twisting road, long since abandoned, called the seven sisters for the seven consecutive hairpin bends that had to be navigated.

Jerusalem itself was not quite as dilapidated as described in Mark Twain's "Innocents abroad", at which time it numbered 14,000 people. The old city was still much as described by the author, but even the quarters built outside the city walls reminded me of a neglected small provincial town.

One exception was Rehavia, a model of rural planning which had been started in 1922, and at the time of my visit was already well developed. At least two-thirds of every building plot was devoted to gardens and plenty of space left between neighboring houses.

There were many more signs of progress and modernization. Two years earlier, the Hebrew University had been inaugurated and a new road - King George V Avenue - linked Jaffa Road with the railway station.

A kibbutz, which I visited - Ramat Rachel - had been established within the municipal borders.

When I arrived in Jerusalem, several new Jewish suburbs were under construction in Western Jerusalem, including the Sanhedrya in the North and Mekor Haim in the South. The Franciscans were building the Terra Sancta College, and the Jesuits the Biblical College. The British administration firmly upheld the regulation that all houses had to be fronted with stone.

The day I arrived was Nebi Musa, a Moslem holy day, and my first encounter with Arab masses was at the Jaffa Gate, when hordes of wild-eyed men came pouring out of the old city in a procession, brandishing swords and shouting "katel el yahud" (kill the Jews). Though I did not understand the words, the intent was all too clear. Two years later, this call was translated into action, when the fanatic mobs killed many Jews.

When I visited the old city, I was warned not to try to enter the Mosque area, as fanatics would kill me on the spot, and I had to content myself with admiring the golden Dome of the Rock from afar.

From Tel-Aviv to Metullah

After Jerusalem, I started on my trek to the North.. The road was paved from Tel-Aviv up to the place that was to become the town of Bnei Brak; from there on the entire journey up to Safed, it was all dirt tracks, railway tracks or paths through the fields.

From Safed, a paved road led around the mountain to Rosh Pinah. This road symbolized the work of the "Gdud Havodah" (Workers Battallion); judging from their biographies, apparently all the important figures of the political spectrum had participated in the stone-breaking and back-breaking work on this road.

Two incidents will illustrate the state of security in the country at the time. On the first day of my trek, I reached Kibbutz Givat Hashloshah, at that time located in Petah Tikwah. After lunch I told my hosts that I was going to visit a friend in Ramat Hasharon, and asked them to indicate the way. They flatly refused, telling me that a couple had been killed two days previously on the way to Ramat Hasharon, and that it was madness to go alone and unarmed.

Nothing daunted, I opened my map and laid it on the ground, and in the best scout tradition, used my watch as a compass to give me the right direction.

On a bee-line between my point of departure and my destination, there was an ominous Arab village. This I reached at dusk, and was greeted by a pack of howling dogs; when I instinctively bent to pick up a stone, they turned tail and fled. Having no alternative, I entered the village, walking through the main street, and saying Salaam, right and left to the villagers seated in front of their huts. I suppose the surprise of seeing a lone Jewish youngster walking at dusk alone through their village was too great for them to react quickly, other than by returning my greetings of Salaam. Little did they know, that hidden in my pocket, my right hand clenched my secret weapon: a short pipe in which a steel spring tipped with a lead ball could deliver a deadly blow.

to an assailant, provided he was near enough and prepared to collaborate at being knocked on the head. I must have been uptight, but not really scared, as I walked slowly the gauntlet of staring eyes. Instead of faith in God, it was the certitude that "it can't happen to me" that prevented me from realizing how foolish I really was.

It was dark when I reached my destination, and found my friend, Sender Teichteil (Agami), one of the first from Bar Kochba to make aliyah. He did not join a kibbutz, but worked as a laborer for one of the moshava's farmers. In the evening we shared a tin of pineapples I had brought with me, and passed the night together on his narrow bed, both groaning with a pineapple - inspired bellyache.

The next morning I left for Chedera, and from there followed the railway tracks to Haifa. Only two incidents marked this leg of my trip: at one point, I had my first glimpse of a snake outside a zoo, when an enormous black snake slithered across the tracks in front of me. A little later, I heard steps behind me, and looking over my shoulder, saw an Arab walking silently behind me. I certainly was not going to show how scared I was, so I continued at the same pace, expecting a knife thrust in my back at any moment. Maybe my companion was scared too, and after a few, very long kilometers, we parted company as he left the tracks.

From Haifa, I made a detour to Acre, to visit a friend, Arie Lahav, whom I knew from the time he was a halutz (pioneer) training in Holland. He used to come to Antwerp to visit friends several times a year, and I had smuggled him over the Dutch border after each visit.

He was working at a new experiment station which was being established at the time near Acre; I visited his work place with him and was most impressed. I thought to myself how much I would love to work in such a place. Little did I dream that I would pass the first seventeen years of my life in Palestine at that very place, and that reality would not be a disappointment.

Continuing from Haifa, I left for Afulah in the company of a group of boy-scouts and was confounded and disgusted by their foul language. Afulah, was one of those Zionist dreams that was never fully realized; it was supposed to become the cultural and economic center of the Emek; instead, I found a sleepy village, where the major pastime and social event was to come to the railway station whenever a train (Haifa- Hedgaz) was due.

From Afulah, through the Emek, stopping at all the kibbutzim of Hashomer Hazair on the way. In Merchavia, the home of Meir Yaari, the leader and long-time guru of Hashomer Hazair, and one of its founders, I met another friend from Antwerp, Eliezer Reich, who had made aliyah a year earlier. In the dining hall, I made a serious faux-pas: one of the members dominated the conversation, speaking in a loud voice that offended me. I asked my friend who is the big mouth; Shocked, he whispered Sh.....! that is Meir!

I was to spend the night at Bet Alfa. Towards evening I arrived at a kibbutz and asked one of the members if this was Bet Alfa, to be indignantly told "NO! We are not Hashomer Hazair; this is Chefziba. Bet Alfa is 50 meters further down the road". This was for me a first inkling of the rivalry and tensions between the different kibbutz movements.

In Bet Alfa, I found the friend of my friend, who was to be my host. After showering, I sat in front of his hut, observing what went on around me, and witnessed a minor incident that both shocked and dismayed me. It was dusk, and two members were arguing loudly as to whose turn it was to light the "Lux", a carbide-operated lamp which was the source of light for the common dining room.

The other kibbutz members, after showering in the communal showers, started to arrive, tired and hungry after a hard day's work, to find the dining hall still in darkness and the argument still unsettled. When I told my host how upset I was by the scene I had witnessed, he laughed and said: real life in a kibbutz is far from being the idyll we imagined in the youth movement.

On to Degania, the mother of kibbutzim, and the Jordan valley. Another night was spent in the hay loft of Ayelet Hashachar, where I shared my quarters with the kibbutz artist, who described



the difficulties faced by an artist in a kibbutz who had to contribute to the economy of the kibbutz, without giving up his artistic creativity.

In the morning, a man in his thirties, asked me whether he could join me, the seventeen-old, on the way to Kfar Gileadi, as he was afraid to go alone. I finally reached Kfar Gileadi, and from there returned uneventfully to Tel Aviv.

The Problems of the Kibbutz

At every kibbutz, I would clarify what were the major problems with which the chaverim had to cope, in particular in the field of agriculture, practically the only source of income for those kibbutzim which were already settled on the land.

My conviction grew that the two major problems that had to be solved were a) to provide a source of work for those members who could not, or could no longer, cope with the back-breaking work involved in the agricultural operations of those days; and b) provision of work during the off-season periods, when there was little to be done in the fields. Most of the agriculture was rain-fed, and therefore extremely cyclical in nature. There were two peak periods: one at the beginning of the rainy season when the baked earth became sufficiently soft to be tilled and subsequently sown; the other at the end of the rains, at harvesting time. No wonder there are so many Jewish festivals between these two peak periods, but such short, intensive working periods were not conducive to high incomes or even to achieving an acceptable standard of living.

Return Home

After a few more days in Tel-Aviv, I left with the Messageries Maritimes for Marseilles. What a contrast with my coming! Every inch of deck space, as well as all the berths below deck were crammed with yordim (emigrants), leaving the country in despair, not because of security problems but because of what appeared to be a hopeless economic situation.

An Agronomist in the Making

The Agronomy Institute

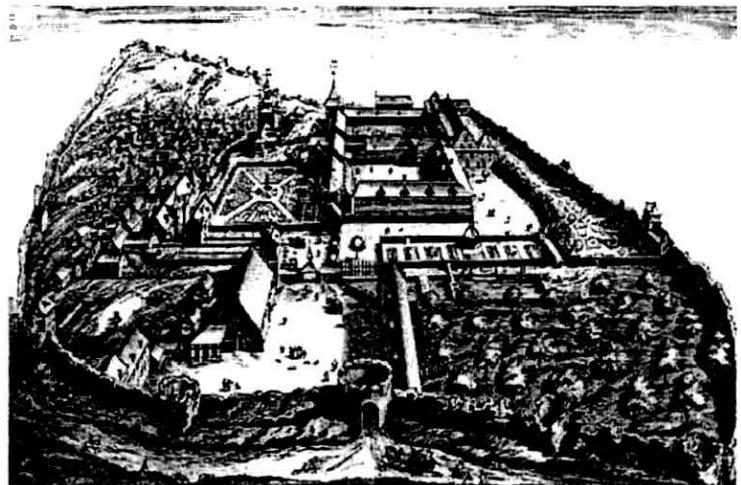
In 1927, shortly after my return home from Palestine, I passed the entrance exams to the "Institut Supérieur Agronomique de l'Etat", at Gembloux. I was most impressed by the stately building in which I was to spend the next four years. Before writing about the studies proper, a few words on the historical background of the town and its central institution, which I learnt to know very well.

Gembloux

Gembloux is a small provincial town in the center of Belgium, on the main route between Brussels and Namur. I was fascinated by its rich prehistorical and historical past. Its name indicates a Celtish origin; its Roman connections are numerous, including the remains of the old Roman Road, which parallels the present highway and which connected Rome with its western provinces.

Its main development started in the 10th Century, after Wichbertus, best known as Saint Gilbert, founded a palatial Benedictine Monastery, which became the center around which all the town's activities were based.

The construction of its massive walls and towers, of which only vestiges remain, was started in 1153, but did not save Gembloux from being a prize over which various Kings and Counts have fought, and did not prevent the sacking and destruction of the Abbey and the town a number of times. The latest reconstruction of the Abbey was in the neo-classic style; it was started in 1759 and continued in stages till 1770.



The Agricultural Institute

In 1775, the province of Namur was annexed by France, and a year later the Directoire suppressed all monasteries and convents in the Provinces and confiscated all their possessions. The Abbey and its dependencies were sold to a private speculator, and in 1860 was rented to the newly established Belgian State for the establishment of a national agricultural school. In 1881 the estate was purchased outright by the State and the school was promoted to academic level and named "Institut Agronomique de l'Etat". Finally, in 1960, on the occasion of its centenary, the Institute was renamed "Faculté des Sciences Agronomiques de l'Etat".

Since the first World War, the Gembloux Institute has had a world-wide reputation for excellence and about half the students came from foreign countries, mainly South America. And yet, the general state of knowledge at the time I was a student was woefully inadequate. Viruses were still defined as small, infectious particles, that pass through a screen that retains microbes. And that was practically all that was known about them excepting that these particles multiplied and were infectious! Atoms were described as the smallest units in which matter could be divided. How fungi multiplied was still a riddle, and the only source for a major hormone was the urine of pregnant mares. There are many more deficiencies of which I became aware when I started to work as an agricultural research worker and which I will describe in due course. However, the basic grounding must have been satisfactory: at a given moment in the early history of the Ministry of Agriculture of Israel, all three professional leadership functions in the Ministry were held by graduates from Gembloux: Director of Professional Departments (Zalman Rapoport),

Director of the Extension Service (Alfred Albert) and Director of the Volcani Institute of Agricultural Research (Isaac Arnon).

Life as a Student

The students lived in private apartments rented from the townspeople. I first rented a room at the entrance of the Institute. When I visited Gembloux many years later, the house had been dismantled to disclose the remnants of a massive wall. How I would have been thrilled to know that I was sleeping on top of the former ramparts of the town.

I soon made friends with another "Antwerpenaar", Hubert Leys, whom I met on the midnight train with which we returned to Gembloux every Sunday evening. We rented an apartment jointly, taking turns at preparing breakfast and cooking supper. Lunch we took with a widow whose main attraction was that she provided chips without rationing. She was also famous for a large iron pot, which she never cleaned, to each day's leftovers were added to whatever was needed to make a fresh supply of soup.

We soon became inseparable, we had the same tastes and interests; we followed the same classes and played truant together. We often toured the countryside on bicycle, for example searching for violets of which Hilda was very fond. We spent nights in the woods just to hear a nightingale sing. Nowadays our relationship would have seemed suspect in many eyes, but we both had a healthy and exclusive interest in the opposite sex. In the four years we were together, there was not a single discordant note, and Hubert even planned to join us in Palestine. This proved to be too difficult to realize and he joined the Colonial Service in Congo instead.. We met only once thereafter, after the Belgians had been expelled from Congo following its liberation from Belgian rule. I have made many efforts since then to track him down, unsuccessfully.

Specialization

The first two years were devoted to basics, so there was plenty of time to decide on specialization, which began in the third year. During the vacation at the end of my first year, I worked as an inspector for a seed company producing certified pure seed. The village at which I worked was unique in the sense that all the farmsteads belonged to members of one large extended family. In the village itself was a complex of factories transforming the products of the farms; a flour mill and bakery, a brewery, a conserve factory, a winery and distillery, a sugar factory, a textile factory, and more. In a flash, I realized that here was a ready-made solution to the two problems of the kibbutz with which I had been grappling since my return from Palestine: to complement agricultural production with an industrial base, using as raw materials most of the agricultural products from the farm. I decided that I would specialize in agricultural industries, and after a year I gained the diploma of *Ingenieur des Industries Agricoles*, the equivalent of a B.A.degree.

As I have mentioned, in 1931 Hilda and I decided to leave *Hashomer Hazair*, and thereby gave up the idea of joining a kibbutz. As a result, the bottom fell out of my plans for industrialization of the kibbutz. Without my joining a kibbutz, these plans were no longer relevant for me. I had chosen this particular specialization only because I felt that it could be my major personal contribution to the movement. On the other hand, my true love was agriculture, and not industry, even if the latter was closely related to the former. I therefore approached the Rector with a request to switch to another specialization. At first, he refused even to consider the possibility, stating that there was no precedent for such an aberration. I did not give up easily, and must have confused him completely with my story of belonging to a youth movement, my wish to serve the kibbutz (not yet known in the wide world), my change of heart and of direction, my love of plants and my abandonment of at least one aspect of my youthful ideals. To his own surprise, he accepted my pleas, and as a result I am probably the only person to have a BA in Agricultural Industries and an MA as *Ingenieur Agronome - Plantes de la Grande Culture* (Agronomist, Field Crops.)

Vacations

I spent all my vacations, with the exception of the first one (see above) in training on the farm of Victor Tuytelaars, in Contich, a village about half an hour's bicycle ride from Antwerp. Victor was a middle-aged farmer, with the character of a gentleman and a wry sense of humor which generally found expression when he watched my attempts to learn an unfamiliar farming



With my fellow-student Hubert leys

technique. He was very tolerant when I made mistakes but would not allow me to practice milking a cow; he explained that not only would he lose money, but the cows would suffer. The Tuytelaars family consisted of his parents - a toothless old man who pottered around the farm making himself useful and a diligent old woman forever knitting garments for the family; his wife, a buxom, pleasant-faced woman who had not a moment's respite from home and farm chores and about half a dozen children aged from one to ten years old.

There was also another volunteer trainee, Gedalia Kornitzer, a friend from the Hashomer Hazair, who worked full-time on the farm. He was the most accident-prone person I have ever known. If there was a banana skin within walking distance, Gedalia was sure to slip on it and break a limb. Several years later, in Palestine, he was gored to death by a bull that he was leading to an encounter with a cow.

When all sat around the kitchen table for meals, it was a rather tight fix. The first time I joined the family at table, Victor remarked quietly, with his typical smile: "one can see immediately that Jaak is an only son". From then on, I kept my elbows firmly pressed to my sides when at table with the Tuytelaars.

The farm was a small (about 3 hectares) typical Flemish family farm, which grew mainly potatoes and an assortment of vegetables, forage for the animals; kept three cows, an unremembered number of pigs, and a flock of free-roaming chickens. And there was a horse. What a horse! A giant Flemish gelding with a back so broad that one could not straddle it but had to sit sideways, like a prude lady. To mount the horse one had to climb on the oats chest and from there slide onto the wide expanse of his back. He had only a single rein, whose function was to draw his attention by a light jerk to a verbal order at which he would turn right, left, move forward or backward, as indicated to him in a special horse language that he always obeyed in his placid way.

And the pigs! Little did I realize that those pigs were going to have a major effect on my career, but that is a different story that I will tell elsewhere.

I was much impressed by the care taken in building up the manure heap. Each fork-load was placed carefully in accordance with a special technique which resulted in a neat, rectangular heap of manure, which remained untouched till the manure had turned into compost. When Victor saw how I made every effort not to spoil the shape of the manure-heap, he told me the following typically Flemish farmer anecdote: "A son said to his father: 'Father, I am now 22, it is time to get me a wife'. The following Sunday, the father told his son to hitch the horse to the buggy, and they set out to find a wife. In the first village they passed, the son spied a beautiful blonde with blue eyes and a fine figure. 'Father, look - I like her.' The farmer urges the horse ahead with nary a look.. As they pass the second village, a chestnut headed girl, buxom and good-looking, crosses their path. 'Father, Father look - I like her.' The farmer urges the horse ahead with nary a look. As they reach the third village, they pass a farmstead with a neat pile of manure, constructed in the best Flemish tradition. The farmer pulls up the horse and starts to dismount. To his son he says simply: 'Heer zul ye trouwen' (this is where you shall marry)".

My first job was to help in harvesting potatoes, earned me the title "Jaak, de patate raaper" (Jack the potato harvester). Two specialist contract workers armed with forks, would lift the potatoes out of the ground and drop them on the surface, and the farmer's wife and myself, each in the wake of a "lifter", would scramble on our knees to place the potatoes, first in a basket and then in a sack. The contractors worked swiftly and efficiently and it was not easy to keep up with them, which was essential as otherwise the lifted potatoes would be covered by soil from the next line.

I very much wanted to learn to milk the cows, but in view of Victor's firm refusal to allow me to practice on the cows, saying it was not fair to the cows and that it would cost him money, my friend Gedalya rigged up two ropes, with the thickness of a cow's teats, that dangled from the ceiling. My notion that milking simply consisted in grasping a teat in each hand and pulling



Crying over spilt milk



Not all the milk was spilt

each in turn, as simple as ringing a bell, was soon dispelled. Gedalia taught me the Dutch technique of milking: how to encircle the top of the teats with finger and thumb to prevent the milk from backslicing into the udder, and then pressing downward with each finger in turn, much like playing do-re-fi-ma on the piano. Every night I practiced, till I fell asleep, the ropes slipping from my hands.

And then Gedalia cut the palm of his hand, and could no longer milk the cows. Victor was faced with three alternatives: his wife would do the milking, which, in view of the overload she was already carrying was unacceptable; do the milking himself, and thereby reveal a secret he had guarded since his marriage when he had pretended not knowing how to milk in order not to have to get up at 4.30 a.m.; or Jaak, the rope-milking practitioner. That is how I came to be sitting on a low, three-legged stool, with my head resting on the flank of the cow, and playing do-re- mi-fa on her teats. Even the occasional switch of a wet tail across my neck or face did not temper my joy as the milk swished into the pail, firmly held between my knees. All in all, I very much enjoyed my vacations which strengthened my love of farming.

Anti semitism in Gembloux

My only experience of anti-Semitism during my university studies came, not from my Belgian colleagues, but from a group of White Russian students, of whom there were about twenty, roughly equal to the number of Jewish students. They were all rabid anti-Semites, even though to my great surprise they sang in Russian most of the songs of the Hashomer Hazair extolling Zionism and return to the land!

The most active in demonstrating their dislike of Jews, were two brothers, the Mikkelsons. I had many a fight with them, involving fisticuffs. Though I was a head shorter than either of them, I had no problem giving them a hiding, thanks to my training in Maccabi. One typical incident, in the laboratory, involved a Jewish girl, Bluma Makover, the first and only girl student of agriculture at the time. One of the Mikkelsons had made an offensive remark to her, overheard by all the other students. I promptly smacked him hard on the face. Other students interrupted the ensuing scuffle, afraid that we would damage laboratory equipment. I suggested to Mikkelsen that we continue our debate outside the Institutes gates; he agreed but was nowhere to be found when I came out.

On an other occasion, the elder brother had an argument with Shapira, a burly and surly student from Palestine, who was in his fourth and final year at the Institute. When Mikkelsen called him "sale Juif" (dirty Jew). Shapira, instead of punching him on the nose, drew an Arab curved dagger and struck the Russian on the forehead. Mikkelsen fled, with blood streaming down his face and Shapira in hot pursuit. Fear must have added speed to Mikkelsen's retreat, because he managed to elude his attacker.

Shapira was arrested shortly after the incident, and released on bail. The Rector immediately announced that Shapira would be expelled from the Institute, which meant that not only were his years of study lost, but that no other higher institution of learning would accept him.

The Jewish students sent a delegation to the Rector; as the only Belgian national among them, I was naturally the spokesman. We expressed our condemnation of the use of a weapon in a quarrel between students, but requested that the Rector reconsider his one-sided hasty action against Shapira. As the case was sub-judice, and two sides were involved, we demanded that a final decision be delayed until after Shapira had been judged in court.

The Rector refused point blank to retract his decision; this response had been anticipated and we were able to announce on the spot that if our demand was not met, all 20-odd Jewish students, zionists, Communists and non-political alike, would resign from school. Such a mass resignation, with its anti Semitic overtones, was bound to cause a huge scandal, something that any academic institution would like to avoid. The Rector referred the matter to the Senate, and it was decided to postpone a decision until after the trial.

The trial took place a few weeks later. The defense lawyer started his plaidoyer (pleading) with "moi, petit Juif" (me, a small Jew) which made me want to laugh and puke at the same time, especially when looking at the burly Shapira sitting next to him. His defense must however been effective: Shapira was considered guilty of an armed attack, but the Judge ruled that the

constant anti Semitic harassment by Mikkelson was a provocation to which it was difficult to react calmly and rationally. Shapira was therefore condemned conditionally to a few weeks imprisonment, suspended, and to 1 franc dommages interet (damages). This was much more favorable than what we had dared to hope for.

In the light of the judgment, with its stress on the provocation that had started the incident, the Rector decided to mete punishment equally to both parties: he requested that Mikkelson and Shapira both resign from the Institute and thereby close the incident. Both complied, and subsequently enrolled in other universities, so that each lost only one year of studies.

The Sequel

The incident described above had a most amazing sequel. In 1974 I was invited to present a paper at a Semaine d' Etudes, at my Alma Mater.

I was invited to lunch by the Director of the Agricultural Research Station, and we went to a restaurant bordering the Brussels - Namur highway

Whilst we were waiting for the main course, the waitress brought me a slip of paper on which was written "Moi je t'ai reconnu; pourrais tu faire autant ?" ("I have recognized you, can you do the same"). Looking up, I saw none other but the younger Mikkelson. He asked if he might join us, as he had a story he wished to tell me. Asked to sit down, he told the following story:

Since graduating, he traveled once a week on affairs from Brussels to Namur, passing Gembloux on the way. This was the first time in 40 years that he had decided to stop for lunch at the roadside inn in Gembloux, and he spotted me immediately after he entered. He was convinced this could not be entirely accidental.

During the war, both he and his brother joined the Resistance, and came to realize how wrong had been their attitude towards Jews. One day, he was walking in Brussels, when a truck full of women and children stopped at a red light and a woman, with a baby in her arms, jumped from the truck. Mikkelson realized that the woman would be spotted immediately; he went up to her, took her arm, and walked calmly past the truck with her, like a normal married couple. The woman and baby were subsequently hidden by the resistance and saved. Some weeks later, Mikkelson was arrested by the Gestapo. When he was accused of belonging to the resistance, he burst into laughter and told them "Me? I have a lifelong reputation as an anti Semite, and was even wounded by a Palestinian Jew". The Nazis checked the archives of the Namur Court of Justice, and found that the story told by Mikkelson was true in all details; they failed however to notice that the Christian names did not tally. From then on, he was a welcome visitor in Gestapo circles, and become more useful than ever to the resistance.

He concluded his story by saying that many times he and his brother regretted they did not have the opportunity to tell Aronovitch, with whom they had had several violent encounters (with fists, not daggers), of their change of heart. It is trite to say that truth is stranger than fiction, but who can refute that this extraordinary encounter justifies using the worn cliche?

Army Service

Tribulations of a Private

Soon

The Adjudant and his Sense of Humor

Soon after graduating, I joined the army, volunteering for the cavalry, as I thought horse-riding would be a useful asset in Palestine. As there were very few volunteers for this service, I was accepted, notwithstanding my short stature.

One of the criteria for admission to the cavalry was height, so that I was the shortest soldier in my regiment. This had a number of drawbacks, the major one being the length of the blade of the sabre, the standard weapon for charging and for display, which was adjusted to the long arm of the average cavalier. At (my) arm's length, the saber was still firmly in the scabbard, which caused me many an embarrassing moment during parade. The order "Trek Uit Saber" (draw saber) and the shout "A R O N O V I T C H !!!! are firmly linked together in my memory.

My difficulties were compounded by the fact that the Adjudant (Regimental Sergeant Major), with a strange sense of humor, had found fit to allocate the tallest horse in the regiment to the shortest horseman. Whenever I tried to put on his bridle, Katanga would lift his head high, beyond my arm's reach. When I climbed onto the feed chest, he promptly lowered his head. The result was that I was almost always the last on parade.

And here is another example of the Adjudant's sense of humor. On our first meeting, he told us that weekends begin on Saturday evening, but we would be allowed to leave as soon as we had cleaned everything - our sleeping quarters, our personal equipment and weapons, and that of our horses. That Saturday, we got up at 5 o'clock and cleaned and cleaned till everything shone. One of us was dispatched to the Adjudant, to inform him that everything was ready for his inspection. He came promptly, and without a look around he asked for a chair. Wondering what he had in my mind we brought the chair which he placed near the door, and climbing on to it, passed his white-gloved hand along the upper rim of the door. Of course his glove was blackened and a single word Stinks obliged us to keep on cleaning till late in the afternoon. The next week, we cleaned everything, including doors and windows, top, sides and bottom; after the Adjudant arrived, he asked one of the soldiers to bring his top-boots. One look at the soles, which of course had only been cleaned and not polished, and therefore did not gleam brightly like the uppers, elicited the response Stinks. This weekly scene was repeated throughout the six months that we were privates, when the Adjudant was able to demonstrate weekly his fertile imagination.

During these first months of service, we had no privileges, lived in barracks and, as described above, had to do our own cleaning and grooming the horses. All this ended when we entered the school for cavalry officers. We were each assigned a private who had to do the spit and polish for us, and we were only reprimanded if we were not strict enough in supervising his work.

I gladly admit that I very much enjoyed my army service, especially after the grind of preparing for graduation exams. I loved horse-riding, especially after I had overcome the open wounds on my backside due to friction between my tender skin and the far harder leather of the saddle. The army-ordained cure was even worse than the wounds which had to be treated by cold compresses of salt water. I discovered that under the right circumstances, cold water can bum as effectively as boiling water.

Learning to be an Acrobat

I loved "voltige", an exercise in which we were taught to jump on, and jump over a galloping horse. The horse itself was bare-backed, excepting for a collar with a handle on each side. The



Trek Uit Saber -
Aronovitch -
always last!

horse was tethered to a 5-meter rope, held in the hands of the instructor, so that the steed had to run around in circles.

An assistant first demonstrated how it was done: standing alongside the horse he would grip the two handles of the collar and start moving together with the horse which gradually increased its speed until it was galloping in a circle. As soon as he felt that propulsion was sufficiently strong, the assistant instructor lightly vaulted on to the horse and shortly thereafter landed back on the ground, to vault this time over the horse's back and back again into the saddle.

The whole procedure appeared to us terrifying and more suitable for trained circus artists than for raw recruits who hardly knew how to sit on an immobile horse. The instructor called for a volunteer to be the first stunt rider; looking around, I saw that no one intended to respond of his own free will. As the only Jew in the group, I felt obligated to pioneer, and found myself next to the horse gripping the two handles of its collar. Once we were at a gallop, I vaulted into the saddle and was surprised how easy it was with the centrifugal boost provided by the galloping horse. When I vaulted over his back I had to hold on to the handles with all my strength in order not to be propelled beyond the arena as the horse gathered speed. My success as an acrobat, and still more my having come forward as volunteer, gave me a lot of much-needed prestige.

Of course everything was not always smooth sailing. For several months we had to ride without stirrups, in order to gain balance, and during this period falling of the horse and going to hospital with a fracture was a common experience. I was sent to hospital for an entirely different reason. In winter, my chronic bronchitis started, and our captain ordered me to hospital because my persistent cough made the horses nervous.

When jumping obstacles, we were ordered to lean forward to lessen the weight on the horse's hindquarters. What nobody told me was that Katanga, when jumping over a hurdle, always threw her head backwards. Consequently, at the first hurdle, Katanga's head came into contact with my chin, resulting in a knock-out blow. Unconscious, I clung to the mane of my horse, which jumped all the remaining hurdles, proving once for all, that army horses do not need a rider to do their drills. When I recovered, I was greeted by laughter at having completed the obstacle course whilst fast asleep.

This ability of army horses to function on their own was often useful. When making maneuvers the distance between every two riders was about 20 meters; when a whole regiment was involved, the distances from one wing to the other could be considerable as was the distance from the commanding officer. When I could not hear his shouted order or notice his hand signals, I simply loosened the reins and pressed the flanks of my horse with my thighs. The horse always knew what do, and I am sure that all the horses in the regiment would have carried out the maneuver at a signal of the officer without any one of us holding the reins.

Loss of Privilege

One day, I had returned late to base, and my privilege to pass the nights at home was canceled. That same morning we had an exercise shooting with four Hotchkiss machine-guns from behind a hill at an unseen target. I was in charge, receiving directions from an observer perched high in a tree and translating these into directives for each of my gunners with the aid of trigonometry tables. At the first salvo, all my guns hit the target and the cancellation of my privilege as a married man was rescinded. The first and only time I made use of the trigonometry it had cost me so much trouble to learn.

Cavalry Officers School

After we entered the Cavalry School as cadets we were allowed on some afternoons to wander the countryside, in groups of three or four friends, on our steeds. I had exchanged Katanga for



Jumping the
Hurdles - just
before knock-out



Enjoying a free
afternoon in the
Kempen

a small, lively Arabian mare, and at last the smallest man in the regiment was matched with the smallest horse, and I was able to enjoy riding to the full.

The cavalry was the most outdated arm of the army. We carried 1890 carbines, our sabers certainly dated back to the Middle ages, and our Hotchkiss machine guns, with their horse-drawn carriers, did not appear to be much more recent. They operated in batteries of four, of which at a given time, no more than two or three were functional.

The methods of operation, as described in the manuals of regulations which we were supposed to know by heart, were even more outdated. The basic, specific function of the cavalry was to serve as scouts for the other units.

As such, each advancing army unit was led by a regiment of cavalry, both at its head and guarding its flanks. A squadron advanced at the head of the regiment, and a platoon at the head of the squadron. Two cavalrymen advanced ahead of the platoon and these alternated in going ahead, one at a time, as a scout. It was improbable that the scout would spot a hidden enemy, and it was clear to us (though never explicitly stated) that his duty was to draw enemy fire, at which his surviving companion would turn back and gallop to inform the platoon commander, who in turn sent a man to inform the squadron commander and so on down (or up) the line.

When the Army was not advancing, the cavalry became indistinguishable from the infantry, as they dug in like the others, and the horses - less expendable - were sent behind the lines. Archaic or not. I thoroughly enjoyed all these exercises, even the most outdated of all.

In the last week of our service, three regiments of Lancers met in a barren area in the Kempen, where the last maneuver was held. It consisted of a classic frontal cavalry charge, when line after line of horsemen, sabers drawn, shouting wildly, attacked at gallop the enemy lines. That was really exhilarating, even though every year one or two horses would stumble and fall and their riders were killed under the hoofs of the galloping horses, and even though, as a military exercise it had lost all relevance.

It is therefore not surprising that three years later, when we came to Belgium to visit our parents and show them their grandson, I noticed that men wearing the Lancers uniform were spurless. In view of the fact that I had once been punished for wearing my left spur on my right boot, and vice versa, I asked one of the soldiers I met to explain. He said the cavalry units no longer had horses, but used light armored carriers instead. *Sic transit Gloria Mundi!*

Towards the end of our service, we were informed that we would be sent to the Charleroi area to suppress a strike by the miners. I was torn by the thought that I would either have to refuse to obey orders, probably the only one to do so, or act in contradiction to the conscience of a principled socialist. Fortunately, the strike ended without our intervention, and I was spared this particular mental ordeal.

I had often heard my fellow officer-aspirants discussing the possibilities of a future war, and all declared without hesitation that they would use every means to avoid having to fight. I was again the only one who felt an obligation to fight for the country in which I was born, and that had unfailingly been good to me, my family, and the Jews.

Throughout my army service, I never experienced any anti-Semitic bias. On the contrary, I received special privileges as the only married enlisted man. I finished as first the officers cavalry school, and at the ceremonial leave-taking, I was asked by my fellow fledgling officers to be the one to speak in the names of all.



Graduating class of the Cavalry Officers School.
Front row: fifth from left - the Adjutant with the sense of humor.
Third row: third from the right - myself.

Belgium and the Jews*

Historical Background

In 1976, the Brussels newspaper *La Libre Belgique* published an article: "*Le Centenaire de la Commune Israelite*" according to which the first recorded presence of Jews in Antwerp was in the third century. Though they were regularly persecuted, no pogroms were ever recorded.

The first edict forbidding Jews to reside in the country was enacted in 1260. A door was however left open to enable the residence of Jews whose potential economic contribution was considered to be important. Relying on papal prescriptions from Rome, these favored Jews "*auraint leur résidence dans un lieu séparé, qu'on appelle la Judecca ou Serrail, lequel se serre tous les soirs; qu'ils portent le chapeau Jeane ou autre signe distinctif des Chrétiens; qu'ils ne pourraient estre servis de nourrices ou servantes chrestiennes, qu'ils ne sortroient point hors de leur serrail toute la semaine sainte; qu'un certain nombre d'eux devroit venir à la predication, qu'on tiendroit à fin pour les convertir*" (would have their residence in a separate place called the Judecca or Serrail, which would be closed every evening, they will wear a Jeane: hat or other sign distinguishing them from Christians, they may not be served by Christian wet-nurses or servants, they may not leave their Serrail during Holy Week, a certain number of them will come to hear preaching, with the object of converting them).

The Jews who came to Antwerp at the beginning of the XVIth century were Marranos, or "new Christians", who had been expelled from Spain and Portugal. Antwerp at that time was at the pinnacle of its prosperity and the Marranos were attracted by the commercial opportunities resulting from this prosperity. and were not deterred by not having received residence permits. Some adhered fully to their new religion, others secretly continued certain Jewish traditions and returned openly to their faith as soon as circumstances made this possible.

The edict of 1260 remained in force for several centuries. In a letter dated 24 October, 1672, addressed to the Governor of the Spanish Lowlands, the Archbishop of Antwerp, a certain Marius Ambrosius Capello, complains that several Jews with their families were residing illegally in the country "*au grand préjudice et danger de scandal de nostre S.Foy et du Peuple Chrestien.*" (to the great prejudice and danger of scandal of our Holy Faith and the Christian people).

Legally, it was forbidden for Jews to reside in Belgium, and hence the need for a mantle of Catholicism to enter the country. But once established, the authorities showed a considerable amount of tolerance towards those they suspected to be Jews in Catholic clothing. The anti-Jewish laws were not abolished, but administrative procedures were dragged out by the administration and the central government in Brussels, a response to anti-Jewish measures that was to be repeated in Belgium in coming generations.

After a particular strict edit signed by the Emperor *Charles Quint* ordering the expulsion of the new Christians the local administration argued that these men bring fruits and spices, and great quantities of pearls and precious stones which constitute a source of considerable profits for Antwerp. The imperial edict was not implemented, but after a secret synagogue was discovered, the whole matter was raised again, but the reluctance of the local authorities, with the support of the population, once more frustrated implementing the expulsion.

Both Jews and the economy of the country benefited from this lack of diligence in persecuting the Jews. In 1730, the Tribunal of Antwerp informed the Austrian Governor (The Spaniards had in the meanwhile been replaced by Austrians) that six-seven Jewish families are active in Antwerp and added: It would be desirable to allow more families to settle, for only a few dozen individuals

* Most of the information on Jews in Belgium up to World War I, and during the period after I left Belgium, without which I feel my story would be incomplete, I derived from the publications of the "Antwerpse Joods Historisch Archief". This is the one-man undertaking of Sylvain Brachfeld, who for years has been diligently collecting publications, documents and personal reminiscences and thereby has done a great service to the Belgian Jewish community.

have received permits to settle. And again the same pattern repeats itself: the Imperial authority makes difficulties, the local authorities prevaricate in their attempts to save the nascent diamond and lace industries. It is interesting that in these reports no mention is made of the stereotype money-lending Jew.

It is in 1816 that, for the first time, the Jewish community in Antwerp, numbering about 100 souls, receives official recognition following the initiative of the local provincial Governor. From 1831, the Jews are allowed to practice their religion openly. The first synagogue was established in the old quarter, 83 Marché aux Chevaux. In 1832, the first representative body was elected: the "Consistoire".

Jews in Contemporary Belgium

The Belgian Constitution

All forms of discrimination were abolished with the adoption of the Belgian constitution in 1850. Lack of official discrimination in Belgium went so far, that Jews were not allowed to establish a separate cemetery, because the constitution forbade religious segregation in any form, up to and including the dead. I think that very few Jews in Belgium knew that the reason the community had to bury its dead in Putte, Holland - just over the border, was due to anti-discrimination! The same was true for Protestants and other denominations. All the cemeteries in the country were attached to churches, which were all Catholic. As the Catholics objected to non-Catholics being buried in their cemeteries, the High Court solved the problem by decreeing that each individual plot was consecrated to the religion of the person buried there. So that what had been originally a Catholic graveyard became a crazy-quilt of plots of different religions.

The Jewish Communities

It was only in 1876 that the juridical status of the Jewish communities of Brussels, Antwerp, Ghent, Liege and Arlon was defined by the Belgian Government.

Towards the end of the 19th century, the Jewish community in Belgium was very small, and consisted mainly of assimilated old-timers, part of the bourgeoisie of Brussels. In Antwerp, there was a single burial society, founded by a small group of Dutch immigrants.

The beginning of the 20th century saw an increase in the great wave of Jewish emigration from Eastern Europe. Antwerp was the gateway to the United States for the hundreds of thousands of Jews fleeing the pogroms and economic hardships of Eastern Europe.

It was the port of Antwerp that served as point of embarkation to the Land of Promise, the USA. The emigrants traveled under the aegis of the now defunct "Red Star Line". The date of their arrival by train did not usually coincide with the date of departure of the steamships, and the travelers were lodged in a number of special hotels.

It is a stain on the Jewish community that for a time, the emigrants were allowed to be fleeced in every possible way, even a glass of tap water had to be paid for. A most dastardly scam was perpetrated by a group of swindlers, who for \$50 promised the emigrants passage and illegal entry to the USA. The naive travelers, afraid of not passing the health check before being allowed on board a Red Star ship, paid up, were herded on board a small ship that set sail and after a few kilometers upstream docked and forced the unwitting passengers ashore. With inborn distrust of authorities in general, and police in particular, they were afraid to seek redress.

A certain Henry Schulsinger, when he became aware of the exploitation of the emigrants, decided to intervene. He mobilized a few more well-intentioned people and together they established "Ezra", a charitable organization, that was to prevent exploitation by the hoteliers and the assorted rif-rif of swindlers. A welfare kitchen was established to provide free food to the needy.

Schulsinger was indefatigable in his efforts to help the emigrants, and intervened on their behalf with the authorities and various consuls. Schlesinger died shortly after WWII in an old-age asylum, blind and penniless.

In 1920 and 1925 restrictive laws on immigration in the US and South America caused the stranding of many Jews in Belgium. The American authorities also closely checked the health of the would-be immigrants before embarkation. Anybody with an infectious disease was

rejected, the main cause being trachoma. Those rejected, did not return to their countries of origin, but remained in Belgium. Thus, the number of Jews in Belgium increased from 10,000 in 1918, to 50,000 in 1930. They were later joined by a wave of refugees from Germany, and by 1939, their number had swelled to an estimated 65-75,000 people.

The "Jewish Quarter"

Without any compulsion whatsoever, the Jewish immigrants in Antwerp created a de facto Jewish Quarter in a cluster of streets in proximity to the Central Station. There was however no exclusivity involved: many non-Jews lived in the quarter and maintained shops that vied with the Jewish shops for the local clientele.

My parents enrolled me in the local kindergarten which was managed by the nuns of the nearby convent. I cannot recall a single instance of strife between the different sectors.

When individual Jews became more prosperous, they moved out from the quarter to some of the suburbs, such as a Zurenborg, which started to get a decidedly Jewish character, with the new residents blending well with their non-Jewish neighbors. The richest and most prominent Jews moved to the most prestigious areas in town without creating resistance from the neighbors or causing a drop in the price of real estate.

In Brussels, the Jewish community was more dispersed .

Social Classes

The Jewish Worker Class: At the bottom rung of the social ladder were the new immigrants whose main sources of employment were those to which the better-established former immigrants as well as the Belgian workers were not attracted such as coal mining, night shifts in industries with heavy manual work, peddling, etc.

A higher rung was occupied by those who had a little money with which to pay for an apprenticeship and become craftsmen of luxury goods. In Antwerp the diamond workers were the most favored. Those who learnt one of the diamond trades, cutting, sawing, polishing, cleaving etc. usually moved upwards after a few years to become diamond merchants. In Brussels, it was leather work that attracted the workers.

The first distinctive sign of acculturation of this class was the organization of the workers into syndicates in order to promote and protect their interests. Such were the syndicates of tailors, of food providers, of butchers, of diamond workers, of artisans, etc. all operating under the roof of the "Yiddische Intersyndikale Commissie" affiliated to the "Algemeen Belgisch Vakverbond" (General Belgian Syndicate).

The next step was increased militancy, mostly in the form of strikes, which sometimes turned violent. Many of these strikes were organized by former members of the Hashomer Hazair: Emile (Tarzan) Ackerman and Isi (Sabor) Springer organized the strikes of the diamond workers. In one strike of coal-miners, which turned into a violent confrontation with the gendarmerie, Rik (Kfir) Ackerman, another of the former members of my group, was involved. It was this strike that my regiment was called upon to suppress and that caused me so much mental agony towards the end of my military service.

The Free Professions and Merchant Class: There was the usual class of free professions - doctors, lawyers, engineers etc. Very few at first, their numbers increased rapidly as more Belgian-born youths reached University age.

At the top of the social ladder were the diamond merchants. This industry was extremely cyclic with periods of great prosperity interspersed with severe crises. Bankruptcies were common, and yet most diamond merchants kept their heads well above water.

The commerce in diamonds started very modestly in small buildings; after WWI a sumptuous Bourse was built in the Pelikaanstraat which vied with the "Club" for the diamond business.



King Baudouin of Belgium visiting the diamond bourse

On the right - my father and my uncle Maurice

Many affairs were settled in a number of cafes in the same street, but most conspicuous was the dense throng of merchants and couriers that assembled on the pavement in front of the Club. This was the first sight one saw when looking out of the window of the train, as it steamed slowly on raised tracks the length of the Pelikaanstraat towards the Central Station.

The diamond commerce was very well organized and strictly self-controlled. All transactions were on credit, settled by a handshake and finalized by the formula "Mazel und Bruche" (luck and fortune). No documents were exchanged, possibly a throwback to the perennial fear of Jews towards the Authorities.

Strict adherence to these unwritten pacts was the rule, because complete and irreversible exclusion from the business was the price paid for any infraction. In spite of this superficial honesty the trade had its share of shady dealers. My father, who wanted no part of this, traded only in diamonds for industrial purposes called "boort". He received a regular supply of ware from the Beers syndicate in London, who controlled the trade, and his main clients were the diamond cutters and polishers who needed the boort for their work.

Many wives of this class could be seen parading their fur coats and diamond necklaces on their way to one of the chic cafes on the Kaiserlei, an obtuse demonstration of vulgarity of the newly rich that did credit to nobody.

Politics

The Zionist movement: started in 1899 as a fringe movement set up by old-timers of the Agudat Zion and became really active in 1902 under the presidency of Sylvain Kleinberg. From within its ranks, came the leaders of the Zionist movement in Belgium, among them the brothers Oscar and Jean Fischer and Henri Grundzweig.

In 1905, Jean Fischer founded the Zionist Federation, which comprised Agudat Zion, the youth movement "Hashachar" and the Women's "Zionist Organization". Jean Fischer was an energetic leader: though he was small in stature, a poor orator and lacked charisma, he compensated for these drawbacks by his devotion to the cause. In 1907 Jean Fischer made a visit to Palestine which he described in his book: "Das Heutige Palaestina".

Opposition to the Zionist movement came from the "Consistoire", the organization of the assimilated old-timers, who were afraid that the new movement would "rock their boat". Another source of opposition were the orthodox, with the exception of the Mizrachi.

Two leading Belgian Socialist leaders: Emile Vandervelde and Camille Huysmans gave strong support to the movement. The latter even helped in the transfer of arms to Israel during the 6-day war.

Between the two World Wars, Zionism became well rooted in all social strata of the Jewish population.

The Communist Party: Whilst the Belgian Socialist Party, despite its philosemitic stance, was ambiguous towards immigrant workers, seeing in them potential competitors for jobs, the Communists were the unequivocal defenders of this sector.

Jewish Communists started to become active in the 1920's. Immigrant Bundists (Left Poale Zion) founded the Kulturvareyn in 1923 which five years later was taken over by the Communists, a sign of their increasing influence. Identification with the communist party became commonplace, and in the processions of May 1, 1932 and 1933, half the participants were Jewish. The antagonism of the Communists was directed mainly towards parties whose ideology was similar to their own: the Bundists and the Hashomer Hazair.

Many of the most active and militant leaders of the Communists were defectors from the latter organization, some of whom had returned disaffected from Palestine and among them some



Former Hashomer Hazair members who became volunteers in the Spanish war:

Top: the Ackerman brothers who fell in the war for "Peace, Freedom and Democracie"

Bottom: Jacques and Rachel Gunzig, who returned safely and later joined "the Red Orchestra"

of my closest friends.

Jewish Communist ideology was full of conflicts and paradoxes. On one hand they rejected nationalism in general, and Zionism in particular, as counterrevolutionary because they divided the international struggle against fascism, on the other hand they supported enthusiastically the Jewish Socialist Republic Birobidjan.

Their blind faith in the URSS and its leader Stalin caused them traumatic dilemmas, as after the signing of the Russo-Nazi Pact during WWII. For these reasons, they never fully identified with the Belgian Communist Party, resulting in a Jewish Party within the Party.

When the Communists became more militant and fomented a wave of strikes, in particular in 1932 in the Walloon coal mining areas, the Government initiated a systematic campaign against the immigrant Communists, striking against Jewish party members in Antwerp and Brussels.

When the Comintern introduced in 1935 a new Popular Front strategy as part of the anti-Fascist struggle, which claimed that Communists were to support the "national forms of proletarian class struggle", the Jewish Communists moderated their attacks on Zionism, religion and social democracy.

Most of the hard-core Jewish Communists, numbering about 150 volunteers, joined the Foreign Brigades of the Spanish Republican army and even had a Jewish unit named Botwin. Many failed to return, and those who were more fortunate soon found a new field of activity in the underground movement against the Nazi occupation.

The Flemish Movement

The war of the languages was already virulent when I was a child; its major reason was not just linguistic but expressed the antagonism and sense of inferiority of the deprived Flemish-speaking areas, as against the advanced industrialized Walloon-speaking regions. Many years later, the language war and resulting animosity had not become less virulent - only the roles had been reversed with a vengeance: it was the Flemish half of the country that was prosperous, and the Walloon half that had become economically deprived.

Jewish Involvement in the War of the Languages: Some prominent Jews were active members of the Flemish movement "The Vlaamsche Beweging" aimed at assuring the preponderance of the Flemish language and culture. One, Dr. Martin Rudelsheim, was active in demanding the "vernederlandsing" (adoption of the Flemish language) at the Ghent University. During World War I he supported the German occupation and was appointed by them to the "Raad van Vlaanderen" (Counsel of Flanders). In April 1920 he was condemned to prison where he died - the first martyr of the Vlaamsche Beweging was a Jew! Other Jewish members fled to Holland.

It must be stressed that the cases described were rare exceptions. The great majority of Belgian Jews were francophone, and almost without exception, including my parents, chose French as a vehicle for the education of their children. The reasoning was: "what earthly good would knowledge of Flemish provide in the wide world of the cosmopolitan Jew?"

The language used for teaching in the first Jewish school in Antwerp: the "Tachkemoni", was French, with Nederlandsch as a second language, and this in a proud Flemish town!

This one-sided attitude provided a very good reason for the citizens of Antwerp, intensely involved in the language war with its cultural and social aspects, to harbor anti-Jewish feelings, even though generally repressed.

In the second World War, most of the Jewish members of the Vlaamsche Beweging, disenchanted with the movement's involvement with the Nazis, became ardent Zionists.

After the war those Jews who remained faithful to the movement were considered collaborators with the enemy and therefore traitors.

The feelings of enmity of the population were directed only at the collaboration with the occupation and not at the fight for the predominance of the Flemish language which was shared by the whole population. There were many who collaborated in traditionally conservative Flanders who did so to end Belgium's historic domination by francophones rather than out of sympathy with the Nazis.

In Wallonia, the collaboration was much more ideologically identified with Nazism. The notorious Leon Degrelle organized Walloon SS units and acted brutally against the resistance

and fought on the Nazi side in Russia. It are mainly political groups in Wallonia that cannot forget and are not willing to forgive.

The language conflict became more virulent as time passed by. When I was a child, there was still a measure of tolerance: street names were bilingual and one could speak French in the streets of Antwerp without raising any comments.

Jewish Communal Politics

In 1910 the Jewish community in Antwerp established the "*Shomrei Hadas*" (Guardians of the Faith) mainly to provide supervision of kashrut and to enforce religious observance. After WW1 it was headed by Rabbi Amiel, (who was later to become Chief Rabbi of Tel Aviv). He would run the streets of Antwerp on the Sabbath, especially the Pelikaanstaat, the center of diamond trading, to ensure that no shops were open and no trading was conducted on the day of rest. Apparently the "*Shomrei Hadas*" were not sufficiently strict in their interpretation of "Halacha" (Law) and so the Ultraorthodox founded a second Jewish community - the "*Machzike Hadas*" (Holders of the Faith). Fortunately both shared the same (Ha)das (religion).

Religious institutions: In 1887, the Municipality of Antwerp decided to create a new quarter in a large, vacant tract on its southern outskirts. Hoping to attract the Jews, who were immigrating in large numbers to move into the quarter, a beautiful synagogue was built by the municipal authorities. However, only few Jews settled in the out-of-the-way quarter, and the synagogue was frequented only by a few Dutch Jews, hence its name the Dutch Synagogue.

Much more recently, a small but beautiful little synagogue was built in the so-called Jewish quarter called the Portuguese Synagogue, where the liturgy was in the Sephardi tradition; it is in this synagogue that I held my *Bar Mitzva* in modern Hebrew..

For some reason Orthodox Jews from Eastern Europe preferred the "*Shiblech*" (literally - small rooms) reminiscent of their former ghettos, characterized by their homely atmosphere. and lack of decorum. The first shtibl was established in 1909, and served not only as a place of prayer, but also as a hostel for needy new arrivals, as a club, a trading center and a center of leaning.

Followed two more *shiblech*, one used by prosperous worshipers and lighted by electricity and therefore the members were dubbed the "*Elektrische Chassidim*" and the other, whose worshipers could not afford to install electricity (still a luxury at the time) was known by the name "*Gaz Hassidim*"; which was subsequently changed to the "*Boxers*" after a riot during service which resulted in many black eyes and torn shirts.

Since then, many more places of worship, large and small have been built or improvised. Antwerp Jewry, after WWII, was considered the most orthodox community in Europe.

In religion too, there are several stages of acculturation. The most recent arrivals from Eastern Europe, generally maintain their traditional garb of "*streimel*" (fur hat), kaftan, white socks and a clearly visible prayer shawl. Quite often the next generation also maintained the tradition. In the second stage, modern dress is worn, sometimes a yarmulke is worn under the bowler hat; religious practice is still orthodox. The next stages are more gradual, one no longer goes to shul regularly, but attends the services on the High Holidays: others say *Kaddish* regularly. The glide towards agnosticism then follows.

The Second World War

It would be unjustifiable if I was to omit to mention, however briefly, the heroic stand of the majority of the Belgians in their efforts to protect the Jews from the Nazi extermination machine, even though I was at the time safely in Palestine. I owe most of the information on what had happened to Maxime Steinberg (*Extermination, Sauvetage et Resistance des Juifs de Belgique*). The heroic deeds of the Danish people in resisting the Nazis are well known; far fewer people know that the Belgians were no less praiseworthy.

Sixty thousand Jews had remained in Belgium at the time of the Nazi invasion. Those of Belgian nationality had been joined by immigrants from Poland, and refugees from Holland, Germany and Austria. At first the Germans tried to do their misdeeds discreetly, because they well knew how violent would be the reaction of the population to mass persecution of the Jews. The census of the Jews and their detention were made in the guise of mobilizing workers for

the war effort, and the Jews themselves were involved in implementing the plan through the nomination of a "Jewish Section" through whom the call-up for deportation was implemented

When the German authorities ordered all Jews to wear a distinctive yellow patch the paper "*La Libre Belgique*" published the following call: "*Citoyens, par haine du Nazisme, par fidélité à vous-mêmes, faites ce que vous ne faites pas: sur la simple vue de l'étoile jaune, qui vous les signale, saluez les Juifs.*" ("Citizens, out of hatred of Nazism, and to be true to yourselves, do what you do not do: at the sight of the yellow star indicating who they are, **salute the Jews**"). In contrast to what occurred in occupied France, the State apparatus refused to incorporate the anti-Jewish offices and did not allow them to benefit from institutional assistance. Nor were the Belgian police involved in rounding up Jews for deportation.

The German Occupation Authorities requested the communal authorities to distribute the yellow stars to the Jews, the Conference of Mayors refused to associate themselves "with an act which attacks the dignity of the individual, whoever he may be."

It must be said that, as in all other occupied countries, the German police found willing helpers among the local population, mostly in Antwerp. The pro-Jewish policies of the Socialist Mayor of Antwerp were attacked by extreme right elements, such as the "Volksverwering" (League for the Safeguard of the People) composed of national-socialist elements and the extreme right Rexists who cooperated with the Nazis. The Union of Flemish-speaking lawyers decided to expel its Jewish members. Anti-Jewish riots broke out in the Jewish Quarter, abetted by the Catholic newspaper *Gazet van Antwerpen*.

All these actions were not insignificant and resulted in most of the Jews fleeing Antwerp. But this antisemitic behavior "*roused the indignation of the Antwerp population and even of those who had never shown special predilection for the Jews*" (Max Gevers: *Le Journal d'un Bourgeois d'Anvers*). It also pales in comparison to the heroic efforts of thousands of Belgians in resisting the German occupation and in their efforts to protect the Jews..

Out of a population of 10,000,000, only 405,057 Belgians were charged with collaboration, resulting in 57,254 criminal convictions, and 100,000 people barred from jobs in Government, teaching and some other professions. About 2,000 people remained without civil rights who cannot vote or be elected to office.

For that matter, there was also a minuscule number of Jews, who tried to save their own skins by denouncing fellow Jews.

In the Autumn of 1942 the Germans started a systematic round up of the Jews. In the course of three months, 16,000 people, one-third of the Jewish population, had been arrested and deported to Auschwitz in 17 convoys. Of the deported, only 1,507 survived.

The remaining Jews, defied the call-ups, fled their homes, discarded their yellow patches and attempted to get lost in the general population.

The Belgians help the Jews

The hunt was on! The final figure of deportees reached 28, 418. The Germans found that their macabre task was not easy. The head of the Police SS reported on June 1944; "his difficulties result from the fact that 80% of the Jews have been provided with false identity papers, and are helped by many Aryan Belgians".

I have always asked myself how was it possible for Jews to survive as hunted people, without ration cards or stamps, without work and no source of income, without a roof over their heads. The Belgians found answers to these problems. Thousands of Belgians translated their sympathy into active help, exposing themselves to harsh reprisals. Many of the initiatives were taken by individuals, others were organized by the local authorities. The municipal administrations supplied blank identity cards, provided forms needed to change one's address and handed out food stamps. Thousands of food parcels were distributed.

In Catholic institutions, priests and nuns provided shelter to children; 2500 children found asylum in 138 institutions - convents, pensions, clinics, and sanatoria as well as 700 private homes

The Resistance took upon itself the task of protecting the Jews. Secret hiding places were prepared, which provided shelter to Jews and to allied pilots. Regional Committees of the

"Independence Front" received detailed instructions how to protect the Jews. It was an immense task for a small country.

The Jews also played their role. At the initiative of the Communist party, they set up the "Comité de Défense des Juifs" (C.D.J.) which organized an efficient clandestine relief structure for those living in illegality, and in particular for the children. It distributed an allowance to 4,000 adults and provided boarding for 2,000 hidden children.

All these underground activities involved an efficient organization and required devoted leaders. The persistent investigators of the Police SS, the collaborators and the mercenaries complicated the task of the leaders and increased the risk they ran, as more and more people became involved. As it became more efficient, the Nazi machine increased its efforts; more and more activists were tracked down and deported, but always the leaders were replaced and the cells reconstituted.

Formerly antagonistic underground Jewish organizations of Communists and Zionists started to cooperate for self-help and participated actively in the armed struggle.

All these efforts, in which all levels of the population participated, resulted in the saving of half the Jewish population of Belgium.

The Red Orchestra: One facet of the struggle against the Nazi invader was a spy network that was active during WW2 named "the Red Orchestra" and whose founder and leader was Leopold Trepper. When Trepper moved his activities to Belgium, the first and most prominent members of the ring were three former members of the Hashomer Hazair, who had become Communists and with whom I had been connected as mentioned elsewhere in this book: Jacques Gunzig, my brother-in-law and his wife Rachel, and Isi Springer, a member of my "kvutza" (group), who later studied at the University of Ghent. Also mentioned, is Vera, widow of Emile Ackerman, my closest friend.

And this is what Trepper, in his book "*Le Grand Jeu*" (1975) has to say about them: "The Belgian group has made a choice recruit in the person of Isidore Springer. I know him personally from the 1930's when he was still a militant member of Hashomer Hazair and used to heckle me during the lectures I gave in Brussels. He later joined the Communist Party and the International Brigade. His courage was formidable, and impressed even those who were used to looking death face to face. The signature of the Germano-Soviet pact was a trauma for this militant, antifascist fighter. In 1940, he was an officer in the Belgian Army. He accepted to join us as soon as he was asked to, and together with his wife, Flore Verlagst, surpassed himself.

He has his own personal small network of technicians and informers, officers he has known during the war..... and industrial specialists. Amongst these should be mentioned Jacques Gunzig (Dolly), a communist militant since 1942, former combatant in Spain where he knew Tito and Marty. Gunzig organizes sabotage groups beginning in the last months of 1940 and, together with his wife Rachel provides Springer with information on arms factories. At Springer's side, Vera Ackerman, for all her 32 springtimes, has a long history as a militant. She served in Spain in a hospital. Her husband (Emile Ackerman) fell in 1936, fighting in the defense of Madrid. Tepper continues further on to describe how Springer is trapped: "One evening, returning to a room his wife and he had rented in Lyons. They have agreed on a sign in the window which indicates whether it is safe or not to mount the stairs. It is dark, all lights are extinguished, it would be wise to be cautious. Instead, he mounts the stairs, revolver in hand: maybe the Gestapo is waiting for him up there? No importance, he knows how to take risks. He opens the door, and there they are - sitting, standing, agglutinated like woodlice. He shoots into the lot, wounds two and attempts to swallow the capsule of cyanide he always carries. Imprisoned in Lyon, Springer is transferred the next day to Fresnes where he was tortured for four days."

Trepper cites Colonel Remy, who in his book "*Livre du Courage et de la Peur*", describes the heroic death of Springer. "Christmas day started with a suicide. A desperate prisoner jumped from the third floor to his death..... Springer jumped into the void not out of despair, but in order to avoid at all costs to be forced to speak under torture".



Isidore Springer
The hero of the
Red Orchestra

Springer was decorated posthumously by the Belgian Government which wished to bury him with full military honors, but the family preferred to rebury his remains in the Jewish cemetery of Putte.

Part three:

AGRONOMIST IN PALESTINE

Blessed is he who has found his work (T. Carlyle)

"Aliya" (Settling in Palestine)

Getting a Visa

Hilda and I decided to leave for Palestine immediately after completion of my military service. At that time, the number of would-be immigrants permitted to enter Palestine was strictly limited by the British and the number of certificates of immigration allotted to Belgium was minuscule.

A few weeks before demobilization, I went to the office of the Zionist Federation and requested a certificate for Palestine for my wife and myself. The man in charge, known in the community as the "roiter Friedman", who was a friend of my father, told me that he was not going to waste a certificate on us, as he was sure that I would find some other way to reach Palestine.

The next day I went to the British consulate, attired in the ceremonial uniform of a cavalry cadet, complete with jack boots (not yet a Stuermer symbol) and clinking spurs. I told the consul a cock and bull story: that my father, a very rich man, wanted to invest in a farming enterprise in Palestine, and that he had asked me, a qualified agronomist, to see whether there was a good prospect for such an undertaking.

The consul answered that he would write to the Colonial Office in London, and I would get an answer in a few weeks. I said, oh no!, I have an offer for a job in Congo, and if I did not receive a positive reply within a few days, the whole matter was off. I suggested he send a cable at my expense, and let me know the decision as soon as possible.

How I managed to convince him with my bare-faced lies is a wonder to me to this day, but I received a capitalist visa to Palestine within the week.

Leaving home

In November 1932 we packed our belongings in crates, and left for Palestine, armed with a bank-certified check for 10,000 Pounds sterling. We went by rail to Marseilles, and from there by Messageries Maritimes to Jaffa. Hilda became sea-sick as soon as she set step on deck, and all my explanations that the ship was still moored and had not left the quayside were to no avail in lightening her suffering. Once at sea, she however recovered, until we reached the Bay of Biscay, where she had a valid reason to be sea-sick.

Arrival

The day of arrival I was up at dawn, anxiously scanning the horizon for my first glimpse of our new/old homeland. I have since left and returned to the country many times, the first sight of shore or of the lights of Tel-Aviv have never failed to excite me.

The debarkation, and in particular the handling by the Arab porters who carried the passengers to the waiting boats, visibly upset Hilda.

After arrival, we spent the afternoon walking the streets of Tel Aviv. The town had hardly changed in the five years since my first visit, and looked just as provincial and depressing as I remembered. I knew what to expect, but when I glanced at Hilda, I was shocked to see the tears rolling down her face. In reply to my surprised question, she wailed: I want to return home! Fortunately, the next boat for Europe was due in a week, so she had time to adjust to our new reality.

The girl friend of my brother-in-law, Ester Shapira, to whom we turned on the evening of our arrival, and who subsequently became a life-long and close friend, was a great help in Hilda's adapting to the new situation.

Ester shared a single room on a the roof of a house in Allenby street with a young man named



On the way to the
British Consul

September 1932



Ester Shapira
Roof-top room (no
penthouse!)

Wofka. There was no romantic attachment between the two, but this was a routine and common arrangement at the time for people of opposite sex, who were short of money, to share the costs of an apartment.

We spent our first week with them, sharing their respective beds. Wofka, a house painter, had been without work for six months, and lived on credit at the Histadruth kitchen (Mitbach Hapoalim), as did many, many other unemployed at the time. Wofka remarked to me in jest, that Ester was so modest, she would never undress or dress in the room when he was present, but would go out on the roof, where hundreds of passer-bys could see her!

It was more difficult at the time for house-owners to find tenants than for the latter to find a room. Generally, a family would sub-rent one room in their apartment and share kitchen and bathroom facilities with their tenants.

We soon found a place to live in Montefiore street, unpacked our crates and settled down. The walls of the room we had taken were covered with the blood stains of bed-bugs that had been crushed; victims of the constant warfare between man and bugs. Live and active specimens were also not lacking. This was, at the time, considered a normal situation, found in practically every apartment in the country.

Well, the butterfly flies on wings of gold,
The firefly wings of flame,
The bedbug's got no wings at all,
But he gets there just the same (Wendell Hall)

A weekly routine in the kibbutzim was the torching of the iron bedsteads in the never-ending war against these pests, that shared our lives so intimately. It was only with the advent of DDT, during the Second World War, that this scourge was eliminated, together with malaria, popotachi, and other afflictions.

The immigrants who arrived after the establishment of the State, and who complained bitterly and complain to this day about the indignity they suffered when they were powdered with DDT, do not realize how much suffering and indignities they were thereby spared.

Search for work

Soon after arrival, I went to register with the Histadrut as an agronomist in search of work. Incidentally, to this day, more than 60 years later, I have not received a single "michtav shlicha" (letter of appointment) from the Histadrut! When the secretary heard that I had arrived without a certificate, he sent everybody out of the room and asked me to divulge my secret.

The possibility of finding work in my profession was infinitesimally small. Zalman Rappoport, a sabra and son of a well-established banker, who had graduated from the same alma mater as myself, did his best to help. He had returned to Palestine two years earlier and had found employment in the Government Department of Agriculture. He took me on his motorbike to the Agricultural Experiment Station of the Jewish Agency at Rechovot, where I met for the first time a future adversary and subsequently friend, Dr. Shmuel Hurwitz.

We found him outside the station building, in a white laboratory coat, the uniform of the research agronomist, taking notes at some experiment plots. He told us that there was absolutely no prospect of work at the station, and that those already employed, received as salary coupons with which to pay for the bare necessities of life at the grocer and vegetable shops.

I had come armed with introductory letters to various key personalities, signed by the President of the Zionist Federation in Belgium. After two interviews, which were both barren and humiliating, I tore up the remaining letters of recommendation.

Less embarrassing, but not more fruitful, was our meeting with Meir Dizengoff, who was not only mayor of Tel-Aviv, but also owner of a shipping company plying the Jaffa-Antwerp route and had been appointed honorary consul of Belgium.

In the latter capacity, he invited us to tea. As there were less than a dozen Belgian citizens in the country, each one could expect full consideration from our consul.

To the consul's question as to whether we had any problems, I answered that I was looking for work in my profession, without success and apparently without prospect. He called in his secretary, who, on hearing that I knew French, German, English and Dutch, on the spot offered

me a job in the office. I knew that after ensconcing myself in an office, my prospects of working in agriculture would be nil, and I felt obliged to refuse his kind offer.

Immediately after arrival, I had torn up the check I had received from my father, and ceased to be a capitalist. Though we lived very modestly, and life at the time was exceedingly cheap, we were soon penniless and started to sell for a pittance the silverware we had received as wedding gifts.

Work as a laborer.

After several fruitless attempts to find work, I went to visit friends in Kibbutz Ein Hachoresh, which the Belgian "garin" (nucleus) had joined. Not wishing to stay at the expense of the kibbutz, I volunteered for outside work. Before leaving for work, I had a standard kibbutz breakfast consisting of bread dunked in oil spiced with fried onions. The meal was washed down with a mug of tepid, weak tea. For lunch, the members who had been hired for work outside the kibbutz, each received a slice of bread, a piece of dry herring and a piece of halvah to replace the calories expended at work.

I was paired up with Numa, a close friend, who was a muleteer. When we arrived at the orchard where we were to cultivate the rows between young saplings, Numa hitched each mule to a baladi plow, a very primitive nail plow that could do a very good job but had a will of its own. When I took the reins in one hand, and the single handle of the plow in the other, and encouraged my mule to start pulling, the plow started zigzagging like a demented snake, hitting saplings right and left. The unhappy owner of the orchard ran after man and mule crying in Yiddish "dear God, what have you sent me". He calmed down after I got the hang of things and was able to subdue the awful implement.

Through "proteczia", I was able to get a job as laborer in a pardess (orange grove) in Ness Zionah. The overseer was an Arab, and the workers a mixed crew of Arabs and a few Jews. Opening irrigation basins with a hoe was back-breaking work, but when the picking season started I very much enjoyed the work.

I was impressed by the care taken in harvesting oranges for export; every morning the overseer checked our hands to make sure that our fingernails were cut as short as possible to avoid wounding the fruit even slightly during picking. I was also impressed when I saw that my fellow workers, after peeling an orange for themselves, would open a hole in the ground with the back of a shoe-heel, deposit the peels, and carefully cover the lot. I of course assumed that this was done to prevent the spread of disease from the inoculum on the peels.

That there was a different reason for the careful procedure, I was to find out when the owner of the pardess, during a break, called us to stand in a circle around him in order to hear his instructions. I thought this was a good opportunity to eat an orange. I carefully chose a nice one, peeled it, opened a hole in the ground, and covered the peels in the best tradition of sanitation. My fellow workers, none of whom, to my surprise, was using the break to eat an orange, followed my operation in silence, and then broke into a peal of laughter when I finished covering the evidence.

The boss however was not in a laughing mood and angrily asked me why, if I could not refrain from eating his oranges, I chose prime export quality instead of brara (culls).

One day, I received a telegram from Rapaport: "*Go to Acre, possibility of a job at the Experiment Station*". I left immediately, without even collecting the salary due to me for my hard work in the pardess, thereby repaying in full the export-quality oranges I had unwittingly consumed.



Working in an orange grove in Nes Ziona

Top: Pretending to pick oranges

Bottom: Lunch break

Agricultural Research in Palestine - A Personal View

Why Personal?

Most of my personal and professional life has been so intertwined with the development of agricultural research, almost from its beginnings in our country and until its present form, that it is difficult for me to relate to the process in an objective overview. Also most, if not all, those who have participated in this grand adventure - transforming a primitive agriculture, identical to that described in the Bible, into a modern, sophisticated and constantly upgrading itself profession, all in the course of a lifetime, are no longer with us. Even all my assistants from the very early days, markedly younger than myself, are gone.

Appointment to Acre

The vacancy

As I have already mentioned, one day. I received a cable from my friend Rapaport instructing me to go to the Acre Stock Farm and Agricultural Station.

At Acre, I was informed that the post of Superintendent of Agricultural Experiment Station was vacant. The previous holder of this post, was the self-same Shapira, who had wounded Mikkelsen with a dagger at Gembloix, and had now been sacked from Acre for incompetence. I was also told that there were more than 20 candidates for the post (many years later I learnt that Dr. Hurwitz was one of them), and that all would be interviewed by a committee of senior British officials.

Government agricultural research

Whilst I waited for the appointment committee to convene, I explored the situation, and gathered formation on the Center. In the pre-independence days, research had to serve two different communities of farmers - Arab farmers and Jewish. The Arab farmers practiced the typical Mediterranean agriculture, which to all intents and purposes had remained practically unchanged since biblical days.

At first, there was no Jewish farming in the accepted sense of the term. The early Jewish villages were peopled by men and women who had chosen farming as a vocation from a sense of national duty; who felt that a return to the land was the first essential step to the redemption of the country and of its people. These farmers were generally of a high intellectual level, had a great measure of devotion and dedication to hard work, but had absolutely no knowledge whatsoever of farming. The only agricultural tradition that the settlers could fall back on was that of their Arab neighbors.

The Government of Palestine had established a number of experiment stations all over the country, mainly in the Arab areas. In accordance with the system adopted in all the British colonies, each station was concerned with a single field of agriculture such as: field crops, horticultural crops, vegetables, or animal husbandry. Each Station was under the direct supervision of the Chief Officer in charge of the specific branch of production at Departmental headquarters in Jerusalem.

The Government Stock Farm and Agricultural Station

The Mandatory Government's center for agricultural experimentation was established at Acre in 1925 and named: "The Acre Government Stock Farm and Agricultural Station", which, for convenience, I will call the Acre Center.

Typically, the choice of the site for the Center was not determined after a survey aimed at finding the most suitable location for an agricultural research center, but by the fact that State land, previously owned by the Turkish Sultan, was available in the area. The fact that the site was geographically remote, the area available insufficient and the land itself unsuitable, was not taken into account.

The Stations at Acre were headed by men without academic training but with practical experience, mostly gained in "Hachsharah" (agricultural training) in Holland. They were all capable and highly motivated people who made the utmost efforts to overcome the limitations resulting from the lack of formal education, by keeping abreast of developments, each in his own field. An agronomist (Z. Meytes) was originally in charge of the Horticultural Station, but left in the early days and was replaced by his assistant (I. Garmi). The other Superintendents were Y. Kutchersky (Field and Vegetable Crops) Z. Ben Adam (Poultry and Bee-keeping), M. Pfeffer (Livestock), A. Lahav (Forestry), Dr. K. Schweig, (Entomology laboratory).

The choice of Jewish leaders to head agricultural research units, in a predominantly Arab region, even though most had no academic qualifications, was not due to lack of bias of the British authorities, but reflected the dearth of qualified Arabs who could undertake this work.

The laborers were recruited from the neighboring villages and consisted mainly of illiterate workers, men and women, but with the skills associated with primitive agriculture. No laboratories, library or equipment for scientific work were available at the Center, with the exception of an entomological laboratory, functioning in a small wooden hut, and headed by a lone entomologist (Dr. K. Schweig).

Each of the Stations was professionally dependent on the respective sections of the Agricultural Department with headquarters in Jerusalem, but the Acre Centre as a whole was administrated by a Manager, a Scot called Bradley M. Cameron, who was in charge from the inception of the Center, and till the end of the Mandate.

Appointment

After a wait of a few days, I was finally interviewed, and was told that I would get an answer in writing after all the contestants had been evaluated. With no professional experience, I felt that the probability of my being appointed to such a relatively senior post was practically nil, but felt impelled to try my luck. And lucky I was: two weeks after the interview, I was informed by letter that the post was mine, at the princely salary of 144 Palestine pounds per annum.

Moving to Acre

We immediately packed our few belongings and left by train to Haifa. From there we took a bus to Acre. By the time the bus had filled up with passengers, it was dark. Hilda was terrified - two Jews traveling alone in a bus full of Arabs, and still more frightened when she realized that there was no road to Acre; the bus traveled on the wet sand along the sea-shore, the waves lapping at the tires. We arrived at Acre without being murdered, and then proceeded to the Acre Centre. We spent the first few days in the quarter reserved for Jewish workers at the Center, situated on a hill aptly named Tel el Akrab (Scorpion's Hill). Scorpions there were in every crack and crevice, inside and outside the rooms.

We found an empty house on the outskirts of Acre, which we rented jointly with Dr. K. Schweig and his wife Nusha. There was a living-bedroom for each couple, an enormous salon (as usual in Arab houses at the time) and shared kitchen and bathroom facilities. The first few weeks the wives got along very well together, and then Nusha suddenly stopped talking to Hilda, no reason given. Followed a year of strained silence between the two in the shared confines of the kitchen, until just as suddenly, Nusha embraced my wife and said: "let us be friends". When asked what had prompted the ice period, she replied simply "I don't remember".

Life was fairly Spartan, though with our above-average salary, we did not suffer any hardships. Even though it was Winter, we showered with cold water, because there was no choice. It was only after we had changed lodgings that we had a shower equipped with a boiler heated by burning wood. Cooking was on a "primus", a contraption using a flame produced by kerosene under pressure and on a small kerosene burner. Food was kept in an ice chest which we shared



Senior Staff at the Acre Stock Farm and Agricultural Station

From left to right :
I. Aronovitch, K.
Schweig, Visitor, Z.
Ben Adam, B. C.
Cameron, M.
Pfeffer, Z. Meytes,
Y. Kutchersky.

with our neighbors. When a "Frigidaire" salesman offered us a refrigerator for 20 Palestine pounds, payable in 20 monthly installments, we did not even consider the offer as relevant to our circumstances. Laundry was washed by hand, in a tub, using huge cubes of dark-brown soap produced in Nablus.

The Importance of Cleaning Pig-sty

A few years later, I asked my chief, Gerald Masson, the Chief Agricultural Officer - a very friendly, though generally inebriated Australian - why I had been chosen among the many candidates, of whom some at least, undoubtedly had more experience than myself.

He answered that when I was asked to describe my practical experience in farming, I mentioned that I had worked on a small farm during my vacations. When asked to detail the tasks I had carried out, I had replied "all farm work, from lifting potatoes to cleaning the pig-sty". We were looking for a college graduate who was not afraid to dirty his hands, and you was the one who fitted the bill", Masson concluded.

When several years before, the stench of the pig-sty nauseated me, little did I realize that this unpleasant chore would have a greater impact on my career than my diploma of Ingénieur Agronome from an Institute with a world-wide reputation.

Masson further told me that the major hesitation in deciding on my suitability for the post was my very youthful appearance, which might be a major handicap in maintaining discipline among the hundred or more Arabs employed at the Station, for whom age was a prerequisite for respect.

This potential shortcoming was laid to rest when the workers saw me ride one of the Stock farm's stallions, dressed in my ex-cavalry officer's breeches and top-boots. From then on, my nickname was "el zabet" (the officer) and discipline was never a problem. So my decision to serve in the cavalry because it might prove to be useful in Palestine was vindicated.

Finding my way

Completely lacking in experience, I would have preferred by far to have become an assistant to a veteran research worker, rather than being burdened with full and sole responsibility for the research program. In my first groping for guidance, I wrote to Dr. K. Pinner, formerly of the Agricultural Research Station at Rehovot, who had recently been transferred to a new job with the Jewish Agency. He had been in charge of wheat-breeding, which had been suspended following his transfer.

As wheat was by far the most important rain-fed crop, I had decided that work on this crop would be my major project. I asked Pinner for guidance, so that I would not needlessly repeat the work he had already done. He answered that he had written a report on his work; when this would be published, it would be available to me as to everybody else. Till then, it would remain in the drawer of his desk (The first half of the report, describing the native varieties, had already been published; the second half, describing the work that had been done is probably still in its drawer).

I next wrote to Professor Eig, an eminent botanist at the Hebrew University, indicating that I was interested in research aimed at improving the natural pastures of the country. I asked what were, in his opinion, the most potentially useful natural herbage species in the country. Eig answered that as this was a very interesting topic of investigation, he might work on the subject himself, which precluded his giving information to others.

The Field Crop Growers Association

Seeing that my search for guidance from the academic world was not very fruitful, I changed



"El Zabet"

direction completely. I consulted kibbutz members who were responsible for the field crops branch in their respective kibbutzim and asked them to describe the major problems they were facing.

The first wave of Jewish farmers had simply copied Arab traditional farming methods, using the same implements, crops and varieties. This tendency was strengthened by the fact that the Arab technology was identical to that described in the Bible and was therefore, theoretically at least, familiar to the Jews. The major departure by the kibbutzim from the traditional technology was to reduce the drudgery and backbreaking work involved, by gradually, where possible, replacing animal traction and manual work by the most modern farm equipment available at the time, mainly tractors, steel plows and combine harvesters.

In this approach, they came into conflict with Elazari-Volcani, the Director of the Rechovot Experiment Station, who rightly stated that "expenditure could not become modern, whilst income remained primitive". He therefore opposed the allocation of budgets by the Jewish Agency, for costly and sophisticated machinery. He insisted that Jewish farmers should seek to improve Arab methods of production, without the use of expensive equipment and he himself devoted much time and effort in studying the fellah's farm.

Experience had already shown the Jewish farmers that the possibility of increasing yields of the native varieties, by using modern inputs, such as fertilizers, was very limited. The introduction of a three-course rotation, with a forage legume grown on one third of the land; deeper plowing made possible by tractor-drawn steel plows, and fertilizer application increased yields by a respectable 50%. The base-line for the native varieties of wheat and barley grown under the traditional methods was however 60-80 kg/ha, so that even a fifty per cent yield increase was still insufficient to pay the costs of mechanization and modern inputs, let alone ensure a decent standard of living. It was for this reason that I felt that the starting point would have to be the replacement of the standard varieties of wheat (and of barley for the drier parts of the country) by others with far higher potential productivity, so that modern inputs could make significant and economically justified impacts on yields.

Amongst the friends I had made in the course of my search for professional guidance in the kibbutzim, were Mendel Reisner and Zvi Neuman of Bet Alfa, respectively secretaries of the Field Crop Growers Association and its Forage Section.

This was the time of the Choma and Migdal (Tower and Stockade) settlement strategy. Several of the new settlements had been established under ecological conditions with which Jewish farmers were unfamiliar, such as the calcareous soils, heat and dryness of the Beisan Valley, and the loess soils and aridity of the Negev. It was suggested to me that I carry out a program of experimentation at these locations; this would help solve not only the technical agricultural problems with which the new settlements were faced, but also ameliorate their economic situation.. Each kibbutz that joined the program was to allocate one worker to be responsible for the experiments and as many people as necessary for the work. It was up to me to plan the experiments and to find the necessary budget and thereby incidentally providing the kibbutz with a welcome source of income.

The project was very successful and soon expanded to involve veteran kibbutzim to study specific problems. The Vegetable Growers Association also joined the project. Within three years, I had a chain of experimental sites located from Kfar Gileadi to Nirim. The Department of Agriculture, convinced that sooner or later Arab farming would also benefit from this extensive research program, made no obstacles, and even allowed me to divert funds from my budget for the Acre Station for these outside activities. A Jewish Inspector of Agriculture, as the Government extension workers were called, also provided funds from his extension budget.

I know how lucky I am!

During this period, the Colonial Office sent Dr. Keen, Deputy Director of the famous Rothamsted Agricultural Experiment Station, to evaluate the agricultural research work carried out in Palestine. After a visit of several days, during which I explained my work and gave him a copy of my annual reports, he complimented me on my work but was unable to believe that a single person could have carried out research on the scale and diversity described in my reports. I agreed with

him that it was impossible for a single person to have done this work, and told him that I had a score of assistants, not recorded in government books, covering the entire country. When I explained that these assistants were farmers who volunteered their services, he was incredulous. He said: "nonsense, farmers without formal training could not do research"! I told him to pick out at random one of the files from a shelf and see for himself. It so happened, that he picked the file of a most complicated irrigation experiment we were carrying out in Tel Yoseph; the man responsible was Ben-Meir, a veteran self-taught farmer.

The object of this particular experiment was to achieve maximum uniformity in the spread of irrigation water during flooding, the major irrigation method at the time. This involved finding the optimum combination of slope, width and length of beds, size of irrigation stream, and duration of water application.

The file was full of topographical maps, data on soil moisture analysis at different locations and depths, records of climate, phenology and plot yields. All these data had been sent to me for analysis.

Keen looked through the file and said: "Aronovitch, you don't know how lucky you are with such farmers to serve!" I answered: "Dr. Keen, you are mistaken, I do know how lucky I am." And this feeling of being extremely lucky in having such farmers for whom to work, never left me in the course of my professional life.

Conflict with Rehovot

The Background

The agricultural experiment station, founded in 1921 by the Zionist Organization, was faced with the unique situation of having to devise ways and means of enabling the new settlers to make an acceptable living from a soil depleted by centuries of abusive use under difficult climatic conditions. They had to manage without reliable data on climate, vegetation or soil type or any other essential information, in a region characterized by its backward agriculture, and in the absence of research institutions. Any improved practices would have to be carried out by people completely lacking in experience, training or agricultural tradition. In the words of Volcani: "We placed unprepared people on unprepared soil under unprepared conditions". It was therefore essential that the station undertake the dual task of research and farmer education.

The first agricultural experimentation was carried out on various locations in the country: Jebata and Merchavia in the Emek, Degania in the Jordan valley and Ben-shemen in the Central coastal plain. Headquarters were in Tel-Aviv.

Yizchak Vilensky (subsequently Y. Elazari-Volcani), an agricultural economist who had arrived in the country in 1908, concentrated mainly on a study of the fellah's farming methods. He assumed that the traditional system, similar in all respects to the methods described in the Bible, was an adaptation to the Mediterranean environment resulting from the experience of generations of farmers and that it could be adapted to the needs of Jewish farming. His work on the subject was published in Hebrew and English (*The Fellah's Farm*).

The early orientation on the fellah's farm as a possible model for Jewish farming proved to be a non-starter. It could not serve as a framework for an intensive, highly productive agriculture. Therefore, one of the major problems to be tackled was to devise an entirely new approach to agricultural development and planning. The "Organic Farm", became the prototype for all the family settlements established by the Jewish Agency at the time.

The inspiration for this model was the farming system adopted by the Templers. In the villages they had established in several parts of the country, mixed-farming was the rule, and each farm had its dairy and small stock, poultry, orchards, vegetables and field crops.

This concept, based on an integration of animal- and field-husbandry, was completely at variance with the type of farming practiced by the fellahs, and which had served as a model for the first wave of Jewish farmers in Galilee. The two occupations, animal- and field-husbandry, had been traditionally separate in the Mediterranean region since the days of the Bible. The new approach made it possible to replace the traditional soil-exhausting land-use by cropping systems aimed at building up soil fertility, so that modern tillage methods, fertilizer use, and improved varieties could in their turn progressively increase yields.

Conflict

In the meanwhile, my research activities in the kibbutzim had attracted the attention of the Rehovot Experiment Station people, who were most perturbed and angry at this intrusion in what they considered to be their exclusive domain. The first shot to be fired, was a warning to the Field Crop Growers Association that if they continued to cooperate with me, Rehovot would sever relations with the Association. When Reisner informed me of the dilemma his association was facing, I told him that whilst my chiefs would not be unhappy if I discontinued our joint work, there was no way that the Jewish Agency would allow a boycott by the Rehovot Station against a Jewish farmers organization. This argument proved effective.

Faced with the refusal of the association to comply with their request, the then Director of the Rehovot experiment station, Elazari-Volcani, invited the Director-General of the Department of Agriculture, Mr. Mason, to visit the Station. The latter asked me to accompany him; this did not prevent Volcani from requesting that the Department should order me to stop my work in the kibbutzim, which was the exclusive domain of the Rehovot Station. Another complaint which Volcani voiced bitterly, was that I had established a dangerous precedent by consulting farmers on research work programs, something akin to a doctor asking nurses and patients for advice!

Mason's reply was short and to the point: the Department had no objection to the work Aronovitch was doing; Jewish agriculture was part of the agricultural sector for which the Department was responsible, and Aronovitch was free to decide where in the country and for whom he was going to do research.

After these two setbacks, Rehovot, on the principle that if you can't fight them, join them, sent Amir, at the time head of the Extension arm of the Rehovot Station, to ask me to invite my peers at Rehovot to cooperate in my programs, a proposal I gladly accepted. The open war was over, but problems still arose after peace was officially proclaimed and I remained public enemy nr. 1 in the eyes of the Rehovot establishment.

One conflict in particular turned into a personal competition, that with Shmuel Hurwitz. We had adopted two diametrically opposed solutions to the problem of forage supply to milk cattle. Hurwitz devised a system of staggered daily supply of fresh forage throughout the year based on a variety of short-season forage crops. I took the opposite approach, based on the premise that cows should harvest their food themselves and therefore I concentrated on devising a form of pasture capable of providing almost year-round grazing. Incidentally, the same argument was heard world-wide and discussed at every international grassland conference.

Naturally, each approach had its enthusiastic adherents, and arguments sometimes became strident. In due course, with the development of new, efficient machines and procedures for harvesting, storing and distributing forage, both approaches became obsolete. It became convenient and efficient to base forage supply on silage and hay, each grown and harvested once a year for a year's supply.

However, one incident between Hurwitz and myself took an ugly turn, and spoiled our relationship for many years to come. With age and maturity, we both overcame our animosities and settled into a comfortable professional relationship.

Changes in personal status

After a few years changes had occurred in my status as Superintendent of the Agricultural Experiment Station.

At the time of my appointment, the Agricultural Experiment Station had two Superintendents. One was Yehuda Kutchersky, who had no academic training, and was responsible for managing the farm lands, extending over 4000 dunams. The other was myself, responsible for the research work, with a completely free hand in the choice of the problems to be investigated.



Dignitaries visiting the Rehovot Experiment Station

Front row from right: Chaim Weizmann, Sir Arthur Waughscope, Yizchak Volcani

Subsequently, Kutchersky was transferred to the regional office in Jaffa, and Subchi Shehabi, a Moslem Arab, was appointed in his place, as a means of redressing the balance of Jewish-Arab heads of Stations at Acre.

Subchi was a real gentleman. Not a hint of the Arab-Jewish conflict clouded our relationship. Before his appointment, quite naturally I took over Kutchersky's functions, in addition to my own. As Subhi was unfamiliar with the situation, I continued to do so, whilst carefully keeping him informed and always with his approval. This arrangement was supposed to be temporary, till Subchi learnt the ropes, whereupon it was understood that he would take over the management of the Station, as senior Superintendent.

Actually, matters turned out otherwise. Subchi wrote a confidential report, declaring that there was no justification for two Superintendents, that his position was therefore completely redundant, and suggesting that I should be nominated sole head of the experiment station, with an Arab assistant. This was accepted at Headquarters, Subchi was nominated Agricultural Officer of the Gaza District and Musa Haddad, a Christian Arab, was appointed as Assistant Superintendent. We got along very well, and there were no problems arising from our different ethnic backgrounds.

Being the lone Superintendent and managing a large agricultural estate gave me the opportunity to become familiar with all practical aspects of farming. I learnt to drive a tractor and became adept in all agricultural operations; to my surprise this proved to be a useful asset in my research work.

In 1935 I was appointed Overseer of all the Government Agricultural Experiment Stations in the country. These had all been established in what were at the time entirely Arab regions. The promotion from Grade O to Grade N was accompanied by a hefty increase in salary. I ordered a tailor-made suit for the first time in my life.

Seed Production

Experimental plots always leave behind residual effects that inevitably affect the results of an experiment that follows on the same area. It is therefore customary to allow 3-4 years of uniform cropping before using the area again for an experiment. This explains why the land required for an experiment station must be several times larger than are the actual needs for experimental purposes.

At Acre, the farm lands were used for propagating seeds of selected strains and varieties, grown under the supervision of the breeder, and called "registered seeds". We produced about 100 tons of cleaned and graded registered seeds a year.

The usual procedure was to distribute the seed as a loan to farmers recommended by the Agricultural Officers, half being allotted to Arab and half to Jewish farmers. The loan would be returned after harvest, in the form of grain from the thrashing floor from the Felaheen, and from the combine harvester from Jewish Farmers. Neither could be used for seed and were fed to the farm stock after screening out the stones and dirt. It was clear to me that this system led nowhere, and was simply a small subsidy given to a limited number of farmers.

The Vegetable Growers Association had established a small seed-growers cooperative. I suggested to my friend, Mendel Reisner that the cooperative be enlarged to comprise seeds of all field crops and promised him that the Acre Station would supply him annually with sufficient registered seed to produce the certified seed needed to supply all members of the Association.

I then made the following proposal to my Chief Agricultural Officer. For one year, our entire harvest of 100 tons of registered wheat and barley seed would go to a Jewish Seed Growers Cooperative, which would undertake to multiply the seed on selected farms under joint supervision of the Experiment Station and the Cooperative and produce certified seed of the varieties we had supplied. 100 tons of certified seed would be returned to us for distribution to Arab farmers, at double the previous amount, and the remainder would be available for sale by the Cooperative to the farming community at large, including Arab farmers.

To my pleasant surprise my proposal was accepted in its entirety by the authorities and thus a sustained improved seed production program was born. Born also was the Seed Cooperative

"Hazera", the prime mover of the scheme, which in the course of years became a seed production firm of international standing.

In due course, the Rehovot Experiment Station joined the seed production scheme, and inspectors from Rehovot assisted in the supervision of certified seed production on seed farms.

The Seed Laboratory at Rehovot, and in particular its Head, the energetic Dr. Chaya Gelmond, was instrumental in defining rules and regulations on procedures for seed certification. After the establishment of the State, these became the basis for a Seed Law.

Personal Relationships in the Workplace

Arabs and Jews

The following description of relationships between Arabs and Jews is extremely subjective and I will not attempt to generalize from my personal experience.

After my appointment, the lack of a common language with most of my staff was of course a serious hindrance to establish relations and was almost bound to be a source of misunderstandings and tension. My first step was therefore to hire a school-teacher from Acre for private lessons. Instead of the regular teaching procedures, I would prepare a list of sentences that I knew I would need at work the following day, have them carefully enunciated in Arabic by my teacher which I then transcribed in Latin characters. After making sure that my pronunciation was reasonably understandable, I would memorize the required text.

The morning after my first lesson, I tested my new-found knowledge. After hearing me carefully pronounce the required sentence, the first worker I addressed looked at me incomprehendingly. I tried another sentence on a second worker - same result. I then asked a Jewish colleague what was possibly wrong. He asked me to repeat the carefully memorized sentences I had tried out on the workers. I had hardly finished when my colleague burst out laughing. "You were trying to give instructions in literary Arabic and not in the spoken language". He volunteered to translate my sentences into comprehensible Arabic, and my first hurdle was overcome.

I was soon to find out that lack of language was not the only disability I was enduring. An understanding of Arab customs and mentality proved to be as important in creating a good relationship as language.

A few days after my appointment, I found a basket with fruits, vegetables and poultry on the doorstep of our home in Acre town. I was completely at a loss on how to react. Was this a form of baksheesh, in the expectation of future favors, or was it a genuine gesture of goodwill in accordance with Arab tradition.

This gesture was followed a few days later by a visit to our home by a score of workers - all male of course. They sat around in the salon, in a circle, and my wife offered cold drinks, fruits and sweets. Fortunately, the first lessons in Arabic were devoted to traditional greetings, of which there are many. For fault of a common language, these were the basis and entire content of the conversation. Each guest in turn would ask about my health, that of the family, satisfaction at work, etc. to each of which I responded with "el chamdulila" (roughly "thank Allah") and repeated the same question directed at his health, that of his family and his satisfaction at work. When the circle was completed with each guest having inquired on the state of my health, etc. and after my having reciprocated as required by custom, the same greetings were repeated by each guest in turn followed by my response over and over again. After a couple of hours I was beginning to get desperate, all the refreshments were consumed (the visit came as a complete surprise). I then suggested to my wife that she should consult our neighbor Dr. Schweig; a veteran in Palestine, who asked her: "have you served coffee?", something we had not thought of doing on this hot day. Coffee was served, another round of farewell greetings and the visit was over.

Relationships at the workplace were reflected in day-to-day life. We were often invited to marriages in the village of Manshieh, home to most of our workers. We would stay on until after midnight, and even Hilda felt no anxiety. When it was time to go home, a half-hour trek, a score of villagers would accompany us to our doorstep to ensure our safety.

Hilda would go shopping in Acre almost daily. She had a favorite grocery store where she enjoyed credit which was repaid at the beginning of each month when my salary was received. If my wife asked for something that he did not have in stock, the grocer would take money out

of the till, give it to her and indicate where she could get the required object.

On the surface, relations were normally very good, but when the political atmosphere in the country heated up, hidden tensions came to the fore. Many incidents illustrate this relationship, and are described in the chapter on the Arab revolt 1936-39.

The ambivalence of Arab attitudes towards Jews is best exemplified by what occurred in times of political tension. Our Arab neighbors would inform us in time that the situation was going to heat up; we always had a suitcase ready for the occasion, and would take the train to Haifa and spend the nights at a hotel, until things had calmed down. I will never know if the same solicitous neighbors participated in the mob outburst they correctly anticipated, or whether there were two distinct sectors in the Arab population: those politically active whose hatred for Jews erupted periodically and others who were willing to live in peace with their Jewish neighbors and even cared for their well-being.

A further element in establishing trust and respect I found intuitively by myself. My employees addressed me as Muallem (teacher) and, instead of being just a boss, that is the role I attempted to fulfill. In the course of experimental work, I did a lot of things which were incomprehensible to my workers, and many of which ran counter to their agricultural traditions. Instead of expecting blind obedience to orders, I made every effort to explain what I was intending to do, and what were the expected results. Also, I took care never to voice an order, but to express a wish. The first time I heard the response to such a request: "*Ala Rasi*" (on my head). I thought I was being mocked, and that my approach appeared ridiculous to one accustomed to receiving orders, but I soon came to realize that the worker simply meant that he was taking full responsibility and that what I requested would be meticulously carried out.

Little did I realize at the time that this attitude of respect for my workers, to which they were not accustomed, would one day be instrumental in saving my life, but this is another story I will tell elsewhere.

The Arab Villagers

From my earliest contacts with Arab villagers, I was impressed by the general level of native intelligence which characterized most "fellaheen" (Arab farmers), and was at least equal to that of the average English or Belgian villager, who I knew well. I also found a considerable difference between rural Arabs and town-dwellers. As to the Bedouin, they are a completely different species, and the mutual distrust and contempt between fellahs and Bedouin, are difficult to express.

After I became more familiar with the local scene, I came to the intuitive conclusion that many, if not most, of the Arab villagers were descendants of the Jews who had preferred to convert rather than be killed or banished from the country, and this could account for the frequent empathy between Arabs and Jews that is in such sharp contrast to the mutual hatred which is much more evident and documented. How could one explain otherwise the large number of Arab villages that had maintained throughout the ages the biblical names of their settlements? The usual cycle of events was: conquest, destruction, death or banishment and abandonment of the site. Later resettlement of the site by the victors would most certainly involve a change of name.

It was only in later years that I found that President Ben Zvi had investigated the subject and had come to the same conclusion.

Intra-Jewish relationships

The lack of academic qualifications of most of the Jewish staff did not result in discord. On the contrary, the backbiting, the frenzied attempts at being first to sign papers, the professional jealousies that are endemic to most, if not all, academic institutions, were completely absent and relations between the Superintendents of the several Stations were excellent. There was no first among equals, but when the need arose (as when it was necessary to organize the defense of the Center during the Arab revolt) matters were arranged by consensus without causing any problems. Families visited each other in an atmosphere of friendship and mutual interests.

I always had at least three Jewish Assistants: Jacob Efrat, responsible for the experiments in the kibbutzim, Tandor Kleerkoper, later followed by Shalom Wachs for the seed and seedling

propagation program, and Fritz Bran, later followed by Karl Ullman for vegetable research.

Efrat was a former kibbutznik with good connections at his job. He was later pirated by the Hazera Seed Cooperative, then taught at Mikve-Yisrael School of Agriculture, from which job I enticed him to return to work as wheat plant-breeder in Bet Dagan. He was a one-minded person at his work, and finally earned the Israel Prize of Agriculture.

Kleerkoper, from my group in the Hashomer Hazair in Belgium, followed me on aliya, and for once I allowed myself the privilege of providing "protekzia" to my fellow countryman. I taught him all he needed to know, and he was a willing pupil.

He however was unlucky in contracting Bovine Brucellosis, an exclusive disease which caused infectious abortion in cows. Doctors from all over the country came to see the young man who was sick with a cow disease. His situation became so grave that he was told he must return to his native country as another bout of fever would be fateful. He complied, and became in due course a prosperous diamond merchant.

Waks was employed in the poultry station but dreamt of working with plants. When Kleerkoper left, he asked to replace him, a wish to which I acceded. After the establishment of the State, he became chief plant breeder of Hazera.

Bran was a typical Yekke, in charge of vegetable introduction and breeding. His dream was to make it possible for farmers to grow their own potato seed, which used to be imported from Ireland and Scotland. Ultimately, his one-minded quest was successful. He was thrown off a speeding military truck, from whose soldiers he had requested a lift. He was disabled for life and lost an eye from this evil anti-Semitic prank.

He was followed by another Yekke, Ullman, who concentrated mainly on breeding melons and pulses. He later transferred to the Kadoorie School where he taught vegetable growing to famous personalities such as Yigal Alon and Yizchak Rabin as well as to my son, Dan.

With British Government Officials

In general, relations with the British mandate officials were rather complex. Ralph Amelan, in an article in the Jerusalem Post, called them "the nicest oppressors". With much experience in the administration of colonial dependencies, in Palestine, with its limitations imposed by the Balfour declaration and the terms of the Mandate they received from the League of Nations, the British found themselves on unfamiliar ground. The obligation to facilitate the establishment of a Jewish homeland, ran counter to their instinctive liking of the Arabs and the feeling that the latter were being unfairly treated.

Most British officials disliked the Jews who were quite unlike the other natives over whom they ruled, and resented the presumption of the Jews that they were equals. Whilst they respected the education, organization, and dedication of the Jews, these traits did not diminish their dislike or their prejudice.

During the Arab revolt, the British were shot at and many were killed by Arabs, but they never reacted with the venom they showed following attacks by the Jewish underground - Irgun or Lehi - even though these were rejected by the Jewish Authorities and the majority of the Jews. Though these characteristic attitudes were shared by most British soldiers, policemen and bureaucrats, there were differences. In particular, among the officials of the Department of Agriculture, several were sympathetic to the efforts of the Jewish farmers to improve their productivity and I cannot remember a single case of anti-semitism or discrimination shown by an official from the Department of Agriculture.

Relations with the Scottish Manager were very good. Though biased towards the Arabs, like most British officials, he attempted to be even-handed. The only expression of bias was reflected by his dog, who showed his intense dislike of Jews when one of them approached his master, but wagged his tail enthusiastically when an Arab appeared.

Personally, I had a very warm relationship with this bluff Scotchman, about twice my age. Though professionally I was responsible to the Chief Agricultural Officer, I made a point of keeping him informed of what I was doing, and would invite him to visit the experimental plots. He always responded with interest, and in appreciation of his support, I named my first barley strain released to farmers BMC in his honor.

The Chief Agricultural Officer, Jerry Masson, my professional boss, was an Australian who

had served under Allenby and decided to remain in Palestine after the war. He was a warm-hearted person with a major weakness for drink. He would arrive at the Experiment Station at dawn, drive straight out to the fields, bed down on straw under the thrashing machine or whatever equipment was being used at the time, warn the guide not to disturb him, and sleep off the latest bout of drinking. Relations between us were very friendly. On a joint visit to the Kurdaneh swamps, he asked me whether I went hunting or fishing. When I answered I had no time for these pursuits he responded with "I don't want any officer of mine to say that he has no time for hunting and fishing".

One day I received a summons to come to his office in Jerusalem. I came at the allotted time, but he was not there. After waiting half an hour, a messenger arrived and told me that Mr. Masson was waiting for me at the foot of the stairs. Down I went, to found him hiding in a recess under the stairs. He greeted me with "Aronovitch, look me in the eyes. Do I look drunk"? Startled, I was at loss for words; he then said: "no need to answer, I see the answer in your eyes"!

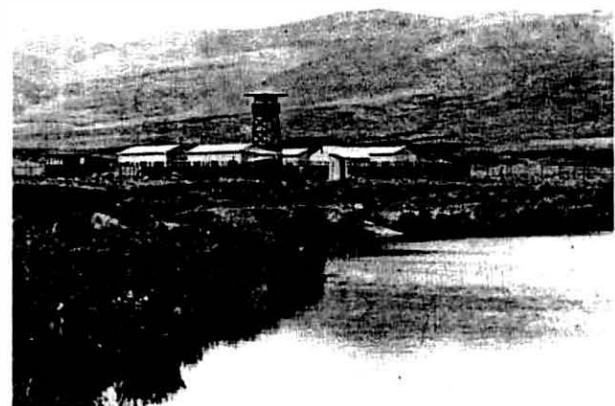
To ride with him was a terrifying experience. When the road through Chedera was blocked by cart-drawn traffic, he simply mounted the pavement, scattering pedestrians left and right. Scared to death, I consoled myself with the thought that if he was still alive after years of drunken driving there was a good probability that we would emerge unhurt from the present odyssey.

Once I took him to see my experiments at Tel-Amal (now Nir David) one of the "Tower and Stockade" settlements. He was most impressed. A journalist friend of his heard of his visit and in the next day's Palestine Post cited him as saying: "I am ashamed that after two decades of British rule a farmer cannot go to work in his fields without having to carry a gun". When the same morning, Masson arrived at his office, late and inebriated as usual, he found a note from the Chief Secretary: "Jerry, prepare for the big jump". In view of the affection most of the officials had for him, and in view of how near he was to retirement, it was decided to overlook his misdemeanor and he got off with a severe warning. At our next meeting he swore that "next time I'll keep my foolish mouth shut."

It was not to be: a short time later, after Tobruk had been retaken by Rommel's forces, he stormed into the bar of King David Hotel, and told the assembled British brass that they were bloody bastards who had let the Germans take what the Aussies had spilled their blood for. This was apparently too much, Masson was confined to his room, and after a few weeks, when his retirement age was reached, was packed off home to Australia in disgrace. And thus ended my relationship with one of the most colorful personalities I was to meet during my professional life.

At one time, an expatriate official named Tom Bell, was appointed Assistant Manager, and he immediately assumed that he could command me, and the others, as he saw fit. One day, he asked me who had told the workers they could take a two-hours rest at mid-day. I told him that I was responsible. He said: "Ridiculous ! Tell them that from now on, the break is 30 minutes." I did no such thing, and when he remonstrated, I told him: "tell them yourself". He did no such thing, and dropped the matter. After a few more encounters, he stopped interfering in my work. Fortunately, he was transferred to Kenya, and we were rid of one of the few obnoxious British officials I encountered during the Mandate.

The next Assistant Manager to be appointed, was P.L.Guy, a retired archeologist who had excavated at Megiddo and Latrun, among other sites. A greater contrast with Bell could not be found. A gentleman in the best British tradition, he never interfered but was always ready to help when he could. I would take him on my visits to the other stations or to the kibbutzim where I had experiments going. Travel with him was a revelation and a pleasure. On the way, he would point out a Roman bridge, ruins of a caravanserai, a tel and other sites that I had passed dozens of times previously without having noticed.



Tel-Amal,
December 1936. A
new settlement is
born

Summing up

Rehovot

The two major centers for agricultural research in pre-state days were the Agricultural Experiment Station of the Jewish Agency at Rehovot and the Government Stock Farm and Agricultural Station at Acre. The differences in organization, staff, equipment, facilities, financing and orientation were considerable.

The Rehovot experiment station was an integrated unit, entirely independent in defining its policy and research program. Research activities were mainly organized according to disciplines and the major departments were research laboratories (soils, phytopathology, entomology, seed testing, etc.).

The concern with agricultural economics reflected the professional inclinations of the Director. This form of organization emphasized the importance of basic research and the publishing of papers. The major commodities on which work was done were citrus and tropical fruits, forage crops and groundnuts. Practically no work was done in animal husbandry and poultry.

The experimental fields were located at Kubeiba, several kilometers from the campus, on a small area, little suited for its purpose. Budgets were extremely limited and most of the work was carried out on a shoestring.

The staff consisted mainly of people with academic training; academics even served as technicians. Staff salaries were very low and payment erratic. The research workers also did extension work, some devoting up to half their time advising farmers. Travel to the farms was extremely arduous, mostly by bus and on foot.

Notwithstanding these limitations, the contribution to agriculture was remarkable.

Acre

At Acre, research was organized into separate commodity experiment stations, directed from Jerusalem by the various heads of divisions of the Department of Agriculture.

As already mentioned, there were almost no laboratory facilities. Most heads of the commodity stations had no academic training. There was therefore no attempt to do basic research, but important work was done on introduction and testing of new horticultural crops and dissemination of planting stock; introduction, testing and breeding of field and vegetable crops and provision of quality seeds and seedlings; introduction, breeding and provision of improved sires of horses, cattle, sheep, pigs, poultry and small stock; experimental bee-keeping.

Budgets and staff salaries were adequate, there were no limitations on labor. The stations had ample areas available for field work (over 4000 dunams) of various soil types. In addition, there was a network of experimental fields in kibbutzim from Kfar Gileadi to Nirim.

Extension was handled by Agricultural Inspectors, most of whom were Arabs with little contact with the research workers. Personal contacts with Jewish farmers were frequent and cordial. Most of the Station heads had car, motorcycle or horse allowances which made travel to the farms fairly easy.

Notwithstanding the limitations, the Center had a considerable impact on farming practices in the Jewish sector, and made important contributions to raising the productivity of crops and animals. As the result of relatively simple experimentation - improved varieties of cereals replaced the traditional land-varieties, appropriate fertilizer practices were evolved, improved breeds of horses, cattle, sheep, goats, pigs and poultry were made available, new field and vegetable crops were introduced and investigated, and new horticultural branches developed. Certified seed was produced and distributed to farmers, and advice on insect control was provided.

Evidently, these successes were possible, notwithstanding the primitive means available, because of the generally low level of agriculture at the time.

Tribulations of a young research worker

I had come to my post with what was considered to be a good basic training in agriculture: a degree from an agricultural institute with an international reputation for excellence. I was soon to realize how very deficient this training was in preparation for research work in general, and crop production in a Mediterranean environment in particular. On many occasions, a "hidden hand" saved me from making horrendous mistakes or showed me that I was on the wrong path.

Agricultural experimentation

Very few of the graduates of the Agricultural Institutes at the time were expected to find jobs in agricultural research; therefore very little teaching time was devoted to this subject in general, and to techniques of field experimentation and statistical analysis of research results, in particular. Fischer's methods of experimentation, based on randomized blocks and a special method of statistical analysis, were those adopted in all British experiment stations. At Gembloux, our teacher dismissed Fisher's approach as cumbersome and complicated; and very little time was devoted even to the German method, favored in Europe - a systematic approach in which each two varieties or treatments to be tested were flanked by a standard variety or a control treatment. Plots were long and narrow, and replication was achieved by dividing each plot into 4 or 5 subplots. Statistical analysis was simple, and each variety or treatment tested had its own standard error. Sowing the plots, and allocating the treatments was simple and practically error-free. In brief, an elegant solution to field experimentation and statistical analysis. Elegant yes, but as I was soon to find out, unreliable and misleading.

Early on, I laid out a variety trial of 13 varieties, and one that served as control. The method required a pair number of treatments, so I simply sowed the control variety twice: once in its role as control and once as a variety to be tested. When, to my great surprise, I found that the test variety differed significantly in yield from the very same variety in its role as control, I knew that there was something wrong with my elegant method. It is not the place here to explain the fallacies of the "standard method", but I realized that it was a method I could no longer rely on.

I took my annual leave, and pored over books on agricultural experimentation. I found that Fisher's method had well earned its reputation of being complicated and that its statistical analysis was bothersome, but I came to the unequivocal solution that it was the method that should be adopted. I was the only one to do so in the country, and after gaining some experience with the method, I wrote my first professional article, in Hassadeh, on the pitfalls of the "standard method", used by my peers in the country.

Durum and bread wheats.

At the Institute, the courses on crop production were strong on northern European and on tropical crops; most of the Belgian graduates were destined for a career in Belgian Congo, and most of the foreigners came from tropical countries..

Lacking, and occasionally misleading, was most of the information on Mediterranean agriculture. For example, in all the textbooks it was stated, unequivocally, that only *Triticum durum* (macaroni) wheat varieties were suitable for a Mediterranean climate whilst the *T. vulgare* (bread) wheats were the only ones adapted to a continental environment.

It took me some time to realize how untrue this was. By chance, two varieties of bread wheats (CCC and BIPM) were included in a consignment of wheat varieties received from Australia. These significantly and consistently outyielded all native macaroni varieties. A short time later, a North African variety of bread wheat, Florence x Aurore, was introduced concurrently, by myself (from Algiers) and by Rehovot (from Morocco). This variety, a cross between the Australian "Florence" and the French "Aurore", became the dominant wheat variety for well over 30 years, displacing completely all the native varieties, and incidentally disproving the view that the life-span of highly-bred varieties was about 10 years, by which time they would have usually lost their inbred resistance to disease.

Florence- Aurore was eventually replaced by the semi-dwarf Mexican varieties, originating from the International Center for Wheat and Maize Breeding in Mexico, enabling farmers to produce the formerly inconceivable yield of 800-1000 kg per dunam.

Land races

In traditional agriculture, the varieties grown are characterized by numerous genotypes which have specific adaptation to narrow ecological niches.

A widely held view, was that the best source for breeding material were the so-called land races, which were reputed to be best adapted to the local environment.

This concept was supposed to be still more true in Palestine, where the Arab farmers had traditionally, year after year, selected ears of wheat that were representative of the village or regional variety, and saved the seed for sowing the next year's crop. A large number of distinct varieties had thereby been created, which were traditionally sown in the village or region in which they originated and the names of which they carried.

These "land races" were remarkably uniform in their respective types, as a result of mass selection and adaptation over a very long period.

The view that land-races were the best source for breeding material led me up a blind alley for a number of years; the best results that I achieved by line selection from native varieties was an increase of 10-15% over the unselected material. As the base-line for yield of the native varieties under favorable conditions (crop rotation, fertilizers) was at most 100-125 kg per dunam, this was not exactly a major achievement

Breeding for specific ecological niches

A related view was that breeding crop varieties should be aimed at developing strains adapted to the ecological conditions of each region. A variant of this view was the need to aim for drought resistance in areas of low rainfall.

Palestine may have been the size of a province, but the country had as great a variety of ecological niches as to be found in a continent.

All these accepted principles proved to be misleading and led me up many a blind alley, and it sometimes took me some years to find out how wrong they were.

Here is an example of the fallacy of breeding varieties with very specific adaptation to each of the many ecological regions of Palestine.

Early on, I had carried out trials in which all the available land-races were tested in different regions of the country, for several years. In the course of the first six years of work on wheat, 51 experiments were carried out in 11 locations, from Dan in the North to the Negev in the South. The annual rainfall recorded during these trials ranged from 340 to 940 mm. The varieties tested experienced drought, water-logging and dry, hot winds from the desert. The experimental sites were located at altitudes varying from 100 m below to 500 m above sea-level, and the soil types ranged from loess to heavy loams. These trials were therefore representative of conditions likely to be encountered in the country by wheat, and the generalizations to be drawn from the data could be considered to be well founded

The surprise result of these trials was the finding that it were not the "adapted" land-races that gave the best overall results in their respective regions, but that one or two introduced varieties were found to be outstanding in almost all the trials, notwithstanding the great range of conditions encountered.

From this work I came to the conclusion that attempts to adapt varieties to each of the country's eco-agricultural regions was a waste of effort, and work should be directed to developing and introducing varieties with as wide range of adaptation as possible.

The "Green Revolution" is a striking example of the success of this approach on a world-scale, and it is only after the advent of the high-yielding, so-called "miracle varieties" of wheat and rice, that the importance of breeding for wide adaptability became widely accepted. These varieties are successfully grown over a wide range of environments in a world-wide geographic area. They have an aggregate of characteristics: breeding for insensitivity to photoperiod (resulting in a wide range of adaptability), resistance to lodging, high ratio grain/stalk, high response to fertilizers, resistance to many diseases. These characteristics are favorable in most environments, and make for wide-adaptability.

Drought resistance.

It took me more time to realize that this approach was also valid in breeding for drought resistance.

Breeding-programs for drought-prone areas require a decision between breeding specifically for drought-resistance, or breeding for wide adaptability, e.g. genotypes that produce well, on average, in a relatively broad range of environmental conditions.

There are many morphological and biological plant characteristics that improve plant performance under moisture stress; all these characteristics emphasize plant survival at the expense of productivity.

Typically, in semi-arid areas, drought conditions vary widely in severity and timing from year to year in the same sites and between sites in the same year. Stress due to drought in semi-arid areas is therefore unpredictable in time and intensity. Selections made for drought resistance under these conditions will generally result in genotypes of lower yield potential that have relatively low yields even in seasons with good rainfall.

In practice, wide adaptability means that in breeding program for semi-arid regions, for rain-fed field crops, emphasis should be given to ability to give fair average yields over the years; this will automatically include traits that enhance the plant's ability to maximize water-use, to tolerate intermittent stress, and to avoid terminal stress, whilst able to give high yields in years when moisture conditions are favorable.

Breeding for drought resistance is futile in desert areas and fringe semi-arid areas, where crops are under almost constant and severe moisture stress and yields are bound to be low. And yet this view is not commonly accepted and huge resources are devoted to breeding for drought resistance in many fringe rainfall areas.

On a visit to an experiment station in Kenya, located in a region with a bi-modal rainfall of 700 mm, where former grazing lands had been converted to arable farming, the Director told me proudly: "we are well aware of your opinion on breeding for drought resistance, but we have proven that it is possible to produce a drought-resistant maize variety."

In proof, the Director produced a few little runts of cobs of maize, each carrying 4-6 kernels. I explained to him that his breeding program had succeeded in ensuring the survival of his maize variety, but not of the farmers who grew it. His "success" explained why Government drought relief in the area was necessary in nine years out of ten in order to prevent the starvation of the people who had been transferred from the Kenya highlands to this drought-prone area.

I suggested that as each of the bi-modal amounts of rainfall was insufficient to produce a crop, research resources might have been better directed to trying to conserve water from one seasonal rainfall to add to the next seasonal precipitation, producing one good crop annually instead of two crop failures.

I am convinced that below a minimum level of available soil-water, economically acceptable yields of grain are not achievable, and breeding for suitable, e.g. drought-resistant varieties is an exercise in futility. Under these conditions, all efforts should be directed at improving the water supply, and reducing water losses to a minimum. This can be achieved by conservation tillage, crop-fallow systems, water harvesting, mulching and weed control.

Introduction of new crops and varieties

Preconceived ideas, based on climatic analogies, also proved to be misleading. My own experience proved that it would be an unnecessary limitation to confine the search for new crops or varieties to the relatively narrow limits of homoclimes.

In Israel, for example, excellent results were obtained with potato varieties from Ireland and Scotland, peas and tomatoes from the United Kingdom, sugar beets and flax from Holland, grasses from tropical Africa, sunflowers from Canada, barley from several European countries, and many other crops from all parts of the world..

By contrast many varieties introduced from homoclimes, such as California, proved to be complete duds.

Two examples: "Palestine" oats, a leading Californian oat variety at the time, was a complete failure in Palestine, from which the original breeding material had come. Vavilov, on a seed collecting mission, also visited Palestine and expressed interest in local early-maturing varieties of wheat. I gave him a collection of native varieties and selections, among the earliest was a strain of Heity wheat from the Hauran. A few years later, I read that the outstanding variety in the short summer of the Arctic Circle was the Heity strain I had given Vavilov. A greater contrast than between Arctic Circle and Hauran could hardly be found.

In brief, I came to the conclusion, early on, that there is no certain guideline for deciding a priori from which countries or regions successful introductions can be expected. The scientific level of a country and its prowess in breeding work on a certain crop, are frequently more important criteria than the climate of the country.

However, there is no denying that the assumption that a search for new plant material in countries with similar climatic conditions to your own (homoclimes) is apparently the most

logical approach. By contrast, expanding the search to countries with widely different environments to your own appears, at best, unreasonable.

Yet experience showed that it was the unreasonable approach that is the more successful of the two.

I had a good example of how "logic" can triumph over experience and actual facts in the decision-making process. A visiting consultant, Dr. Natanson - a plant ecologist from the USA, proposed to the Minister of Agriculture to make a major survey of homoclimes of Israel and find what they had to offer in the way of new crops and varieties.

The proposal was accepted with enthusiasm by the Minister, who approved a very large sum for Natanson's project, thereby significantly reducing resources for other research projects. My opposition to this futile enterprise was to no avail, even when based on facts with which the Minister was very familiar.

Natanson got his budget, hired a large number of students to scour the literature in the libraries of the USA and produced a heap of documents destined to gather dust in the Minister's office and the libraries of the agricultural institutes. Natanson even sent me a list of recommended varieties based on his findings, and offered to send seed for me to test. When I informed him that all these varieties had already been tested years ago by our Crop Introduction Service, he was completely unfazed and sent anyway a huge collection of seed samples of the self-same varieties.

The Arab Revolt 1936-39

The Grand Mufti - Arab Policy

"Disturbances" were fairly common in the past, and we had learnt how to adjust to the situation. They usually started at the instigation of the muftis in the mosques. Fanatical mobs screaming "Allah is great" and "kill the Jews" would engage in the random killing of Jews; these "disturbances" would peter out after a few days.

In 1935, Jewish immigration had reached a record number of 69,000 - mostly refugees from Eastern Europe and Nazi Germany. This, and the feverish activities of the Yishuv in accelerated settlement building, alarmed the Arabs, who were afraid that they would eventually lose their majority status and their hope for an independent Arab state.

A political infrastructure was set up by the Arabs, comprising the "Arab Higher Committee", headed by the Grand Mufti Haj Amin El Huseini, which ensured a measure of centralized planning and coordination unknown before, and was supported by armed bands. All moderate voices in the Arab camp were brutally silenced.

In November, 1935, the Arab Committee presented three demands to the Administration: the complete cessation of Jewish immigration, the prohibition of land sales to Jews, and the establishment of an Arab state in the whole of Palestine.

Whilst the Arab demands for an Arab state and cessation of Jewish immigration were rejected by the High Commissioner, he proposed the establishment of a Legislative Council of 28 members, of whom 12 would be elected. The Jews considered the proposal a violation of the Mandate and opposed it vehemently. This was sufficient reason for the Arabs to favor it. The proposal was not ratified by the British Government, which increased the resentment of the Arabs who considered the rejection of a proposal favorable to them as a capitulation to Jewish pressure.

General Strike

On 19 April 1936, an Arab mob attacked and killed sixteen Jews in two days of "disturbances". These escalated rapidly. Two Jews were murdered near Tulkarem, followed a day later by the murder of two Arabs near Yarkona. When the Arabs of Nablus declared a general strike, nobody imagined that this time the disturbances would develop into a full-fledged revolt which would continue, with alternating peaks of violence and periods of relative calm, for a full three years.

Called "Hameoraot 1936-39" by the Jews, "disturbances" by the British and revolt by the Arabs, the revolt has recently been renamed "the first Intifada".

The revolt was different in many ways from all the disturbances that had preceded it. First of all it had a clearly defined political objective reflected by the three demands mentioned above. Well aware that the killing of British soldiers or civil servants would be counter-productive and backfire and that the British army was stronger than the armed bands on which the Arab Higher Committee relied, destruction was directed against government property and violence was channeled against the Jews, and, at a later stage, many of the victims were moderate Arabs who favored compromise.

The early reaction of the British government was fairly benign and they handled the Mufti with silken gloves. The tolerant attitude of the Administration changed after the murder in September 1937 of the Northern District Officer, L. Andrews, in Nazareth, by a band acting on its own initiative.

This was the first time a high British official had been killed by the Arabs. The High Commissioner, Sir A. Waughope gave orders to suppress the revolt with a heavy hand.

The Arab response was to intensify acts of sabotage. Railway tracks were sabotaged, and train service was discontinued; arms were pillaged from police stations; all the Government Experiment Stations, established in Arab regions and entirely devoted to the improvement of

Arab agriculture, with one exception, were destroyed. The Mufti, intent on achieving his personal ambitions, began to organize a more serious rebellion.

Armed Arab bands started operating in Upper Galilee and in the Hebron hills and attack Jewish settlements. In August 1936 Fawzi al-Kaukji, a Lebanese army officer, who had served in the Ottoman army, and had fought the French in Syria during the Druze uprising, entered the country from Lebanon and welded the individual Arab bands into a single fighting force. This gave the original disturbances the true image of a revolt.

The Peel Commission

In April 1937, the British government appointed the Peel Commission to find a solution to the Palestinian problem. The appointment of another commission was viewed by the Jews with misgivings. They knew from experience that nothing "good for the Jews" came from the numerous commissions that had made their recommendations in the past. It was said that "the crimes of the British in Palestine were not crimes of omission, but of commission after commission".

No attempt was made by the British to disarm the bands and sporadic violence continued, but the strike was terminated. An opposition to the Mufti and his policies developed, formed of landowners and businessmen who realized that the activities of the Mufti had caused them much loss and little gain. The Mufti reacted to the break-up of the Arab Higher Committee by suppressing his Arab opponents using even more violent measures against dissident Arabs than against the British and the Jews. He had a private gang of assassins; landowners, businessmen and muftars who opposed him, were liquidated.

After more than two months of fact-finding and deliberations, the Peel Commission first considered "cantonization" - a crazy quilt of autonomous regions under the overall authority of the British. After deliberations, this proposal was rejected and the Commission's report recommended the partition of Palestine, giving to the Jews a minuscule state comprising Galilee, the Central Valleys and the Coastal Plains. The British Government accepted the recommendations of the Peel Report. The Zionist movement split between those in favor of an independent state, and those adamantly opposed to what they called a small Jewish Ghetto in Palestine. The Arabs solved the Jewish dilemma by completely negating any Jewish State, however small. In 1938, Arab violence reached its peak. In October an armed band entered Tiberias and murdered 19 Jews.

Jewish Reaction

The Jewish reaction to the Arab excesses was one of calm defiance. There was a feeling that we were living in a heroic period. There was increased self-reliance and self-confidence. Up to June 1938, the Yishuv had acted with restraint and confined itself to self-defense. Acts of counter-terrorism by the Irgun Zvai Leumi were relatively few.

The Jewish economy received a shot in the arm; after years of refusal to permit the building of a port in Tel-Aviv, permission was finally given and within a short time a Jewish port was in operation. The Haganah, the Jewish Defense Force that had been set up after the 1921 riots, became efficiently organized. The Jews were allowed only shotguns for defense and training in the use of arms remained illegal. Unable to provide adequate protection to the Jewish population, the British reluctantly agreed to the establishment of a Jewish settlement police force of 3000 armed men. After the military gradually took over, cooperation with the Yishuv improved. In 1937, Captain Orde Wingate, known by the Jews as "the Friend", trained mixed squads of British and Haganah soldiers, who attacked the Mufti's forces in their hill strongholds.

The basic response to Arab provocation was the establishment of new settlements. In order to avoid violent confrontations with the Arabs, and the banning of any settlement activity by the authorities, it was necessary to devise a new strategy and tactics for establishing new settlements, especially in areas dominated by the Arabs. After much deliberation the following model was adopted: a small number of huts were to be erected, surrounded by a stockade consisting of a double wall of wooden planks, the space between the walls filled with gravel and in the center of the embryo settlement a wooden observation and communication tower was to be set up; the whole concept aptly named: STOCKADE AND TOWER SETTLEMENT. The stockade was to be manned by a force of 40 armed men who should be able to withstand any attack, until

reinforcements could arrive. The basic condition for success was absolute secrecy. In order to achieve surprise the whole setup had to be erected in a single day, from early dawn to nightfall.

On the day Tel Amal, the first "stockade and tower" settlement was established (10.12.1936), a convoy of lorries left at dawn from Bet-Alpha, the nearest kibbutz, loaded with the prefabricated construction components, with a work force of 80 men guarded by supernumerary policemen. At noon, many volunteers from neighboring settlements joined the work force and by dusk the tower, the huts and the stockade were standing ready for the nucleus of settlers. This procedure was often repeated in the coming months, and by the end of the Arab revolt, in response to Arab violence and intransigence, 54 new settlements had been established in this way, thereby redrawing the map of Jewish Palestine. Nor were the Jews in the Diaspora frightened away and immigration, legal and illegal, continued unabated. The Jewish population in Palestine reached 400,000.

Guard Duties

I have mentioned that all Government experiment stations were sabotaged, with one exception: the Acre Stock Farm and Agricultural Station, in which a handful of Jewish employees guarded the Station against sabotage.

It was no simple matter to work by day and guard by night. Those of us who lived in Quiriat Haim were exempted from guard duty at home. In view of the small number of Jews at the Station who could participate in safeguarding buildings, animals and equipment, only one man stood guard at night while the others slept with their weapons at hand.

The guard post was on the roof of a house facing the Arab village of Manshieh a few hundred meters away, from which came most of our workers.

A British post was stationed on Napoleos Hill about two kilometers from us. When we turned on the searchlight, the soldiers would occasionally amuse themselves by shooting at the searchlight. This was more scary than fear of our Arab neighbors, as the shooting was very erratic and could just as well hit the man on guard, as the soldiers regularly missed the searchlight. All around us was darkness.

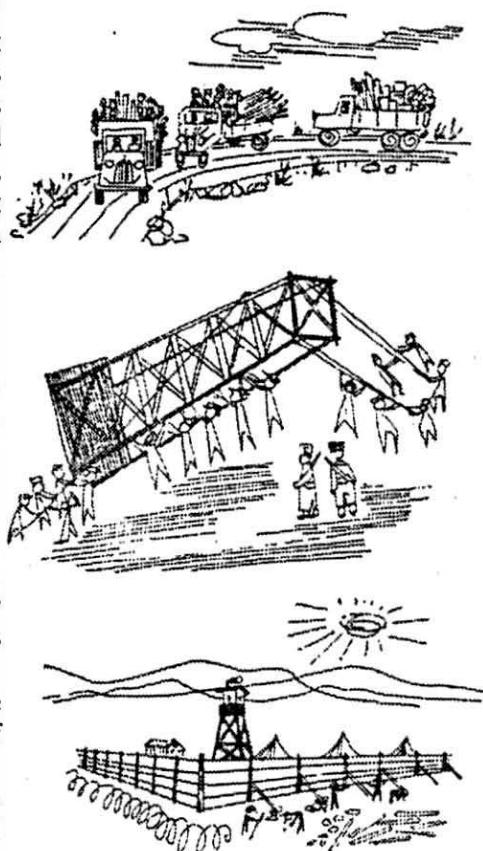
On the night of March 21, 1938 - I was on guard duty when suddenly lights appeared near the summit of the mountains in the North. We were no longer a lone outpost. Hanita, another of the Tower and Stockade settlements, was being established up in the mountains near the Lebanese border. Shaveh Zion, a near neighbor, to the North, Ein Hamifratz and Kfar Mazaryk to the South, followed in quick succession.

Travel

The trip from Quiriat Haim to Acre and vice versa became a daily nightmare. We, who worked at the Acre Center, which was about 2 kilometers North of Acre, could not avoid passing the outskirts of Acre on the way to work. We would travel in convoy, with me ahead on my motorcycle and the others following in the jointly-owned Morris 10. One day, our "convoy" was held up by British soldiers at a check post they had set up at the exit of Quiriat Bialik. Whilst they were checking our identity papers, a motorcycle carrying two men passed us without being stopped by the soldiers.

A quarter of an hour later, when we arrived at the bend of the road at Acre, we found a scene of confusion: soldiers milling around and police questioning the two motor-cycle riders who had passed us at the check post a few minutes earlier.

We heard from them later that an Arab, standing at the roadside, had shot at them from pointblank range; the bullet passed between the driver and the pillion rider. Either the revolver jammed or the Arab fled without shooting a second time, in any case they escaped unharmed.



Building a Tower and Stockade Settlement

(From "Homa veMigdal" by "Teachers for Keren Kayemet", published by Department of Education, Jerusalem, 1987)

If we had not been held up at the check post, which was the first time this had happened to us, I would have been the target of the gunman, and who knows if he would have missed the target, as he did when he had to choose between two victims.

Elsewhere travel had also become a nightmare. One day, returning from Tel Aviv, passing through Haifa, a Hagana outpost signaled to me to stop. Thinking that all he wanted was a "tramp" (lift) I continued on my way. Two hundred meters up the road an Arab suddenly jumped into the road, signaling me to stop. I had run into an Arab position. I was able to retreat hastily in reverse. When I reached the Hagana outpost, the man who had tried to stop me said: "you fool, I tried to warn you. but you had to find out for yourself".

Trying another route, I was stopped at the bridge over Wadi Rushmie. Again, a Hagana man gave me the signal to stop and this time I obeyed. He told me to be careful, the Arabs are shooting at traffic on the bridge. I asked him "what do you mean by being careful"? He answered "try to pass between volleys!" This advice did not suit me, so I again chose a different route.

One day, passing through Wadi Malik, my companion, an employee of the Field Crop Growers' Association, asked me: "do you know what happened here early this morning?"

As we approached a small bridge, he told me that the Arabs had concealed during the night a stack of weapons under the bridge. This had been reported to the Hagana who, at dawn, sent a platoon of men to "recover" the weapons. As they approached the bridge, they saw a platoon of Arabs arriving at the same time from the opposite direction.

The Hagana officer signaled to his counterpart that he wished to talk. He told the Arab that if they tried to resolve the situation in which they found themselves by shooting it out, it was not certain who would get the hidden weapons, but it was certain that many on both sides would be killed.

He therefore suggested to divide the booty between them! The Arab commander agreed and the Hagana got half the weapons concealed by the Arabs, without losing a man. Whether the leaders were congratulated or reprimanded by their respective commanding officers, I do not know.

Relations at the Agricultural Center

On the Station, there began a period of tension between the Jewish and Arab employees. I received strict instructions from Jerusalem not to go out to the fields but to remain in my office. These orders I disregarded, because it would have meant the loss of a year's work as well as irreparable loss of genetic material.

One morning, I found Abdullah, the head mule-driver, waiting for me on my way to the office. Surprised, because he was on vacation, I asked him what he was doing here. He whispered to me to go to my office, where he joined me after a few minutes. He warned me not to go out to the fields that morning, as there would be an ambush waiting to kill me. Apparently they knew where I was going to work that morning.

I may have been foolhardy in disregarding instructions from Headquarters by continuing to go out to the fields, but I am not a complete fool, so I went to the Manager and asked him to notify the police. This he did, and was told that if the police were to check every wild story, they would need many more men. However, after a couple of hours, the police rang up the Manager, to tell him that his information had been correct.

The terrorists, frustrated at my non-appearance, had broken down the fence of the Horticultural Station nearby, and after beating up the driver, had absconded with his team of mules. A police patrol had encountered the band on the Safed-Acre road with their plunder, but being outnumbered, did not interfere with the orderly Arab retreat.

Some time later, I asked Abdullah why he has risked his life to warn me. He answered: "you are the only boss who has always treated us with dignity." Apparently, my English upbringing, reinforced by my Hashomer Hazair background, was paying dividends.

Much later I was to find out that Abdullah was himself a member of the terrorist band that



A light appears on the summit of the mountain

Hanita, March 21, 1938 (from "Choma veMigdal" by "Teachers for Keren Kayemet", published by Department of Education, Jerusalem 1987)

wished to waylay me. He was a giant of a man, but always soft-spoken. When there was trouble between two mule drivers, he would take both by the scruff of their necks, and knock their heads together. Usually, one knock was sufficient to restore peace.

My colleagues, with the exception of Grimetlicht, the Superintendent of the Horticultural Station, had no problems like mine, as all their activities were normally within the Center. As to Grimetlich, his trees could remain without supervision for a couple of months without any great harm, and he too did not leave his office. This was however no guarantee for security.

Moshe Pfeffer, the Superintendent of the Stock Farm, whose work was entirely within the precincts of the campus, made his daily rounds, with his Arab assistant walking behind him. One morning, his trusted assistant shot him in the back of his head and escaped. Fortunately, the bullet passed through the neck without causing serious damage. Though the identity of the gunman, as well as his whereabouts were known, the police made no effort to arrest him, which was typical for their attitude during this period.

The reaction of the Arab workers was also typical. Convinced that the Jews would exact blood vengeance, they wrote a letter to the Director of the Department of Agriculture demanding that all Jewish employees be disarmed. In the meanwhile, they declared an open-ended strike!

This was a serious problem, as there were hundreds of animals to feed. The Manager undertook responsibility for the horses, Aronson for the sheep, Ben Adam for the Poultry and so on. I was assigned to supply green fodder for all the stock, which entailed several hours daily of unfamiliar work with a scythe.

I was also to feed the mules. This in itself was not a problem; however we knew that one of the twenty mules kicked and bit anyone who came near him, excepting its own driver. None of us could identify the vicious animal, so there was no choice but to find out by experience. Each animal had its individual stall, just wide enough to allow a person to slip past the mule and place his feed in the manger.

On my first feeding assignment, I had finished caring for fifteen mules without incident, and had just slipped past the hind legs of the sixteenth, when the animal declared its intention by turning his head and snapping at me, narrowly missing my arm. When I tried to retreat, he lashed out with its hind legs. Caught between the Scylla of his mouth and the Charybdis of his hind legs, after mulling the problem, I decided that a wild dash out of the narrow stall was the only possible option. I rushed, the mule kicked and missed, and I was safe! Talk of the dangers of going out to the fields! After a talk with the Manager, it was decided that the unfriendly brute would have to go hungry till the strike was over.

End of the Revolt

By Autumn 1939, the British Army had completed the opening of roads which made possible an effective offensive against the bands in the hills. In December 1939, the revolt was completely quashed by the British army, aided and abetted by numerous disenchanted Arabs, who were sick and tired of the loss of their livelihoods. From the military point of view the revolt had been a dismal failure, and yet the Arabs indirectly achieved important political gains.

After having rejected the Peel Committee's proposal of partition, the British, anxious to ensure the cooperation of the Arabs in the coming war, issued the infamous "White Paper" which spelled the practical end of the Jewish Homeland and promised a bi-national state with a huge Arab majority within 10 years.

The War within a War

World War II

The Beginnings

On March 15, 1939, the Nazis invaded Czechoslovakia. The Czechs gained a lot of sympathy from those countries that had guaranteed her independence, but little else.

Emboldened by the lack of response of France and England to his disdain of signed treaties, Hitler unleashed his air and land forces against Poland on September 1, 1939. The Poles attempted to stem the advance of 16 Panzer divisions with 11 brigades of cavalry. Warsaw was bombed into rubble. The town surrendered.

On September 17 came the infamous Ribentrop-Molotov agreement, dividing Poland between the Reich and the USSR. My wife reasoned that Stalin, disappointed with the lack of action of the Allies, unprepared for war, had no choice and was trying to gain time. I felt differently, and like many others, thought that this was a base betrayal of the Allies, for which Stalin would pay dearly.

France and England finally declared war on Germany. The Germans next invaded Norway and Denmark encountering little resistance.

The Phony War

The British and French had mobilized their armies after the Polish invasion, but remained passively behind the Maginot Line, facing the Germans ensconced behind the Siegfried Line. Followed a period known as the "Phony War". The Germans prepared for their big thrust and the Allies waited.

The Jewish-British Government Conflict

Change in Attitudes

Following the outbreak of the war, the Jews hoped against hope that the British would not enforce the "White Paper". The British, desirous not to antagonize the Arab world, thought otherwise.

My first hint that a change in the relationship between British and Jews was imminent came to me when a British officer visited the Station requesting information on security problems. In the absence of the Manager, it fell to me to brief the officer. When I started to explain the strategic situation regarding the Arab villages, he cut me off with a curt "it is not the Arabs I am interested in, it are the Jews who are going to make trouble!"

Another sign of the new situation was that from then on it were no longer the Arab vehicles that were stopped at the "check post" at the Junction of the Haifa-Acre and the Haifa-Nazareth Roads, but the other way around. It was now the vehicles from Quiriat Haim that were searched whilst those from Acre sailed blithely through the checkpost.

The Land Law

On April 29, 1940, the British published the "Land Law", restricting drastically the right of the Jews to purchase land in Palestine and strictly limited immigration.

This was the end of the collaboration between the Mandatory Government and the Yishuv. Ben-Gurion called for rebellion and the conflict changed from Arab-British to a showdown between Jews and British. Ben-Gurion ordered the Haganah to act against the Mandatory government. Ezel and Lehi did not require Ben-Gurion's call to arms, they simply continued their activities against the British.

There were mass demonstrations against the Land law. Jewish youths took to the streets, and in confrontations with British soldiers several were killed or wounded.

Illegal immigrants

In 1942, 12,000 Jews entered the country illegally through the northern border with Lebanon. Quite unwittingly, I became involved in this episode. I was traveling North with colleagues from

the Field Crop Grower' Association, when the subject was discussed. One of my passengers remarked on the ingenious way the British police trapped the illegal immigrants. Women were not required to have identity cards, because of Muslim susceptibilities, so suspects were asked in what year they had arrived in Palestine. In order to prove that they were indeed legitimate veterans, they would fall into the trap by replying "15 or 20 years ago". The next question was where they had disembarked, and the unsuspecting new immigrants would reply: "Haifa".

There was no harbor in Haifa at the time of their declared arrival. Not only were the women arrested for trial but also their companions whom they had implicated by their naive answer were also in trouble. We could hardly avoid laughing at the neat trick played by the British, but afterwards it turned out to be no laughing matter for me.

After we had finished our work in Kfar Gileadi, the kibbutz secretary asked me if I could take a young woman with me till Haifa. Of course I agreed. I was stopped at the checkpost in Rosh Pinah, where the Northern frontier control was located. My male passengers and myself showed our identity cards, proving that we were bona fide Palestinians.

When the lady was asked how long she had lived in Palestine, she said "15 years", and when asked in which town she had arrived, answered, to our shocked disbelief, "Haifa".

She was immediately arrested and taken into the customs office.

We were told to wait, with a policeman watching us to make sure we obeyed. We were indignant at the kibbutz secretary, who had not found fit to tell us that the lady was one of the thousands of illegals coming into the country. If we had known, we could have warned her of the trap used by the police.

After half an hour I was called into the office and confronted by a British police inspector and asked what was my relationship to the woman. I answered that she was simply a hitchhiker who had asked for a lift to Haifa and that I had never seen her before.

"Oh Yes", was the ironic response, and to a policeman: "Bring her in". When my lady hitchhiker appeared he asked her what was her name. She answered "Aronovitch". No relative of yours, Mr. Aronovitch? asked the inspector ironically.

He then informed me that according to regulations, he was obliged to confiscate the car used for transporting an illegal passenger and I would have to appear in court at a future date. It took a phone call to Headquarters of the Department of Agriculture, before the inspector let himself be persuaded to "lend me my car, required for official duties" until my appearance in court. Of course I was angry at the young woman for having needlessly incriminated me; she must have heard one of my companions address me by my name.

Several years later, I was having lunch in the dining hall of kibbutz Dan, when I recognized the woman serving us as the one that had got me into so much trouble in Rosh Pinah. I asked my companion from the kibbutz what was her name, and he answered "same as yours - Aronovitch!" I mentally apologized for the unkind thoughts I had harbored against her.

Haganah Prisoners

In September 1939, the British police arrested 43 armed members of the Hagana whilst they were returning from a training camp. They were sentenced to ten years prison with hard labor, an unusually harsh sentence. They were thrown into Acre jail, the former Crusader thick-walled castle. All remained in one large, dank dungeon. The Jewish Agency set in motion all its powers of persuasion to ameliorate as far as possible the conditions of prison life of the youngsters. The Agency managed, after several months of unremitting lobbying, to obtain their transfer to barracks that had been erected near the sea-shore on the land of the Agricultural Experiment Station, and after more lobbying they extracted the permission for the boys to work on the farm lands of the Station.

And thus I became involved. One day, I received a message from Captain Grant, the prison warden, to come to the prison. There he introduced me to 43 young men, all looking alike clad in brown prison garb, and all with shaved heads. Grant made a small speech, explaining that from now on, as the result of the usual arm-twisting of the British Government by Jewish politicians in England, they had been granted the unique privilege of working on the Agricultural Experiment Station, and that I, Mr. Aronovitch would be responsible for determining their daily work quota. Grant, the stereotype prison warden, brutal and cynical, added: "and to commemorate

your starting to work with your hands, all mental work - reading, writing, learning will stop as of now, until further orders."

It was no simple task to organize daily work for 43 men, to whom another 20 members of Ezel caught under similar circumstances had been added. Every evening, at the end of the day's work, I would discuss with their "muhtar" Moshe Dayan, the next day's work.

We had to find a quota which was not too demanding, but which was acceptable to Grant, who had warned that any shirking at work would result in the immediate retraction of their privilege.

I regret to say that the boys, to my surprise, were not too enthusiastic at work, unless it was possible to organize a competition, for example who could turn out the greatest number of bales of hay in one hour. Almost every day, I had to mobilize my Arab workers to finish the agreed upon quota.

One day, for example, I had explained to my workers that they were to remove from a field of wheat all strange plants. As an inducement for them to make a little effort, I added that the seed of that field would go to Hazera for providing selected seed to Jewish farmers. As I stood watching the men advancing through the field, the Irish sergeant in charge observed to me: look at that fellow, I bet you he will pass the tall plant without touching it. And he was right. The same afternoon, after the prisoners had left, I brought 20 Arab women to "clean" up after them.

Every morning I would arrive at the site of the day's work on my motorbike with my pullover covering a bag of letters, chocolates and sundry other things for the prisoners.

Another major problem was to organize work in places that could afford meetings with their wives. One day, I asked the Sergeant in charge, an Irishman with no love for Grant, to come with me so that I could show him where they would work the next day. He came with me but could not refrain from remarking "if you think that I did not see Mrs. Dayan lurking behind a bush, you are very much mistaken". Without the "blind" eye of the friendly sergeant, all these little "favors" would have been impossible.

Blitzkrieg

The long-awaited German attack began in May. The two adversaries had more or less evenly matched forces, but the Allies were overwhelmed by the new German tactic aptly named "Blitzkrieg". In six weeks the Germans conquered the Netherlands, Belgium, Luxembourg and on June 21 the French capitulated. The British retreated to the Coast and evacuated what remained of their forces, back to England. Italy entered the war on the side of the Germans. On June 22, Hitler invaded a still unprepared URRS. After first achieving spectacular victories, the first setback occurred in Stalingrad, and General Winter forced the German armies to retreat back to the Reich.

The Middle East War Theater

The Middle East was of considerable importance in the strategy of both sides during the war. To the East it lay across the supply lines of the British and of the Americans; it held considerable oil resources; it bordered on the southern frontiers of the Soviet Union and was within reach of her oil supply in the Caucasus.

The German and Italian armies, advancing through the Balkans and along the coast of North Africa, attempted a vast pincer movement, which if successful, would have enclosed Palestine in the Nazi sphere.

War in North Africa

The Italians mounted an offensive in North Africa. The Italian thrust failed, and hundreds of thousands prisoners were taken by the British. Hitler sent in the Afrika Korps under Rommel. He soon turned the tables and reached the Egyptian border. Egypt was restless and pro-Nazi as were the other Arab countries, with the exception of Jordan and for a short time Iraq.

From its base in Libya, Italy mounted air attacks against Palestinian targets. Tel-Aviv and Haifa were bombed regularly. But the main target was the refineries. Almost daily Italian planes come in over the Carmel range to swoop down on the Refineries, and drop their bombs.

Preparing for a Second Massada

During the phony war, Tel-Aviv had probably been the quietest place on Earth. When the German advance ended the phony war, it was realized that all efforts must be directed at defeating Hitler. Ben-Gurion ordered a halt to all anti-government hostilities. Even Ezel agreed to a truce. Palestine becomes a training base for the British army. For the second time in history, Australian troops were seen in Palestine, and the Aussies became the favorites of the Yishuv.

Beginning 1942, the Yishuv was still calm. The war had seemed remote and the economy was flourishing. Some news of the persecution of the Jews had filtered through, but mainly dismissed as rumors. A short notice on the subject in the Palestine Post appeared at the bottom of the page. This showed how well the Germans, who realized that the key to success of their "Final Solution" depended on absolute secrecy, had managed to withhold information on their campaign of annihilation.

The complacency of the Yishuv was shattered in 1942 as Rommel swept through North Africa rapidly, retook Tobruk in May 1942 and within six weeks had reached the Egyptian border. The British prepared to abandon Egypt and Palestine and retreat to a new line in Mesopotamia.

The Yishuv became acutely aware of the danger and started preparing a redoubt on Mount Carmel for a last stand, and everybody fully expected that this would be a second Massadah. And yet there was no panic, only a calm fatalism.

Hilda and I decided to join the Jewish Brigade after dispatching Danny to his grandparents in the USA. We were told it would be foolhardy and irresponsible to send a seven-year old alone via Dakar, the only route open at the time. I was refused permission to enlist, as my role in the Mid-East Food Production Scheme was considered more important than my potential contribution to the military effort. So we decided to stay together.

End of the Nightmare

In October 1942, the British under Montgomery counterattacked at el Alamein and within 15 days Rommel was forced to retreat to Bengasi

After Rommel was defeated at El Alamein a huge sigh of relief could be heard in the Yishuv, which found its expression in the wave of babies that started nine months later, the so-called "El-Alamein babies". Gideon, our youngest, was one of them. On June 6, 1944 the Allies invaded France. This was the beginning of the end of the war.

The Anglo-American Commission.

In November 1945, the British Prime Minister, Mr. Bevin announced a joint Anglo-American inquiry into the future of Palestine. After having visited the main refugee centers in Europe, the Arab capitals and Palestine itself, the Committee published its report in April 1946. It did not recommend partition, but the continuation of the trusteeship till a single government, under international guarantees, was capable of taking over. They recommended immediate action to improve the economic and educational level of the Arabs, the continuation of immigration and the rescinding of the Land Law. The Jews were not happy with the report, and the Arabs rejected it outright. The Atlee Government made continued Jewish immigration contingent on both the Jews and the Arabs disarming. As there was not a chance that the Arabs would disarm in order to allow Jewish immigration, the report was a non-starter.

In June 1946 the Administration announced that they had evidence of the complicity of the Jewish Agency in attacks on the Government. All Agency leaders and 2000 prominent Jews were arrested and interned in detention camps; arms searches in the settlements were intensified.

The Underground revolts

Freed of all constraints by the leadership of the Yishuv, the two underground movements, Ezel and Lehi, declared armed revolt against the Government.

On July, 1946, the wing of the King David hotel, which housed much of the Secretariat, was



Gideon: An El-Alamein Baby

blown up. Over 100 Jews, Arabs and British were killed, including nearly half the senior British officials.

This apparently was the last straw; the British Government realized the futility of their attempts to achieve peace and decided in February 1947 to hand the Palestine problem to the United Nations. Two more events poisoned the Anglo-Jewish relationship. Three members of the underground had been hanged by the British; in revenge, Ezel kidnapped and hanged two British sergeants, and booby-trapped the bodies, causing more casualties. In response, the British, after intercepting a large transport of illegal immigrants, returned them to camp life in Germany.

Sabbatical

Middle East Food Supply Center

During the War, the Department of Agriculture was much concerned with a project code-named Middle-East Food Supply Center (MEFSC). I was involved in seed production for the project, and in addition to the land owned by the Agricultural Station, used my staff and equipment to cultivate large tracts of fallow land near Nesher, Jenin and elsewhere. There was talk of establishing a Central Experiment Station to serve the Middle-East as a whole, and there was a rumor that I was slated to head this Center. Confirmation that this might be more than a rumor came, when Stedman-Davies, the Deputy Director of Agriculture in charge of the MEFSC, asked me whether I would like to spend six months in the UK, followed by six months in the USA, to familiarize myself with the research work done in these two countries during the war years.

I was happy to accept this proposal, the first and only sabbatical I took during my career.

My family was to receive my salary during my absence, whilst I would subsist on a per diem allowance and travel expenses. It was decided that my first six months would be spent at the Aberystwyth Plant Breeding Centre and that I would be free to visit the major agricultural research stations in the UK.

Travel on Ship

Travel at the time was still restricted and I was accorded a berth on a troop-ship carrying demobilized soldiers back home from the Middle-East fronts.

I was the only civilian on board. I would queue, with a tin canteen in hand, in the line of soldiers and receive like the others a dollop of mashed potatoes and bully beef with some unidentifiable gravy. I received a hammock which I hang up under deck between those of two soldiers. The smells were deafening.

I was too young and resilient to be inconvenienced by the Spartan conditions; but one thing did bother me extremely: the row of open toilets. I would attempt to restrict my visits to the nauseous places to the hours between 3 am and 4 am when the chances for privacy were optimal.

Otherwise, after almost five years of war, and without a hint of sea-sickness, I enjoyed the trip very much.

Aberystwyth

On arrival in Aberystwyth I found that I had exchanged one center of austerity for another. Every purchase, whether it was a handkerchief or a bar of soap required coupons. It was surprising how the fact that chocolate was rationed made one hunger for a bar of chocolate, and how soon after wolfing down a month's ration hunger would again be felt.

Lodgings had been arranged for me with a Welsh family who made me feel very comfortable. After a few days, I was joined by another lodger, a botany student from Cambridge, Leo Sachs, with whom I became very friendly and whose companionship made me feel less lonely. Leo was very tall, and when we walked together, the contrast was so marked that everybody stared. Leo had two brothers, both taller than he. When I was invited to visit the family for the weekend, and the four of us ventured into the street together, every normally reticent English head was turned in our direction.

Leo Sachs eventually made a name for himself as a geneticist at the Weizman Institute and was a laureate of the prestigious Wolf Prize, but that was still in the distant future.

Aberystwyth is a small town of about 10,000 inhabitants, but it is the cultural capital of Wales. The countryside is mostly covered with pastures, and for this reason the main grassland experiment station, as well as the Commonwealth Bureau of Pastures and Forage Crops were located here.



With my fellow trainee at Aberystwyth - Leo Sachs

The Experiment Station

I do not know to this day what impelled my superiors to chose this place over all other research stations in Great Britain. The main concern of the Aberystwyth Station was the breeding of improved strains of the principal herbage grasses, which were of no concern to someone working in a Mediterranean environment. Breeding methods were relatively unsophisticated, and the results of any work I might have done during my stay would take several years to manifest themselves. The techniques of how to interfere with the sex-life of grass species were easily mastered after a few hours. So I spent most of my time in the library, soaking up the reports on the work done during the war years and which had not reached us.

I also prepared a program of visits to all the experiment stations and other places of professional interest in the UK. First and foremost the Rothamsted Experiment Station (the first of its kind in the World), the Cambridge Plant Breeding Station, The Agricultural Engineering Institute and the Kew Botanical Gardens.

Rothamsted

Rothamsted was, and still is the center for experimental techniques and statistical analysis as well as soil research pioneered by Sir John Russel.

Statistical Analysis

I was happy to have the opportunity to clarify some points of statistical analysis that bothered me and which I had tried to solve in my own way, without feeling sure that I was not violating some basic principles.

Dr. Fischer, who had laid down the rules for the system of agricultural experimentation that carries his name, had retired and was replaced by his former assistant K. Yates, who had expanded and developed Fisher's ideas and had already made a name for himself. The backbone of Fisher's method was replication of treatments and their randomization; it was absolutely forbidden to tamper with the latter, even if one could thereby improve the layout and hence, the validity of the results.

One of the problems with which I had grappled was that in randomizing the plots allotted to the various treatments, it often happened that several replications of one treatment were bunched together in one or other corner of the field. Inevitably, this would bias the results, for better or for worse, for that particular treatment. I solved the problem by rearranging a few plots, but did this with a bad conscience.

When I explained my problem to Yates, and ventured to tell him how I resolved it, Yates said in typical English fashion: "When you play a game, you play according to the rules of the game". I answered: "Dr. Yates, this is not a game I am playing, for me it is a very serious matter". After Yates left the room, one of his assistants said to me: "don't worry, we do exactly the same as you do, only Yates doesn't know"!

Weed Control

In the laboratory for weed control, I saw for the first time the selective action of auxins in weed control in a cultivated crop. Some years previously, the Dutch scientist F.W. Went had isolated a growth factor in oats. The identification of indole-acetic acid and its subsequent synthesis led hundreds of other workers to do empirical research on the effect of applying auxins (growth factors) to a large variety of plants. In England, researchers investigating the effect of 2-Methyl-4-chlorophenoxy acetic acid (MCPA) on the root growth of oats, observed that pots in which the oats had been treated with the auxin were free of weeds without the oats being harmed in any way, whilst in the control pots wild mustard plants grew and developed normally. Closer study showed that the mustard plants were not killed outright, but growth was grotesquely distorted, indicating that their death was due to interference with normal physiological processes and not to chemical poisoning.

I was little aware at the time that this example of serendipity was going to result in the most significant agricultural innovation of recent years, enabling selective weed control in almost all cultivated crops and freeing farmers from the drudgery involved in previous weed-control techniques.

The English researchers were apparently aware of the potential significance of their discovery, and knew that their American colleagues were hot on the same trail.

When I told my hosts that I would shortly be leaving for the U.S. they asked me to tell their American rivals that they, in England, had been the first to discover the selective herbicide activity of plant hormones. This I promised to do, though I do not think that I was very successful

in convincing the Americans. The fact is that most textbooks mention 2,4-D (1,4-di-chlorophenoxy acetic acid), on which the Americans were working, as the first hormonal herbicide and not Metoxone (2-methyl-4-chlorophenoxy acetic acid - MCPA) the English choice, shows that the Americans appear to have been the winners in this competition.

Aberdeen

I was invited to join the delegation from the Welsh plant-breeding station to a grassland conference that was to take place in Aberdeen. There I experienced for the first time the long days of summer in the proximity of the polar circle, and was able to read a newspaper at midnight without artificial lighting.

North Scotland is a Celtic land characterized by its own dialect, folklore, customs and architecture. No wonder that the Scottish Manager of the Acre center reacted vehemently whenever someone referred to him as English.

To my great surprise, I learnt from one of my Scottish colleagues that the name "Scotland" is derived from a Celtic tribe from Ireland, the Scotts who settled west Scotland during the 6th Century. By an ironic twist of history, their Protestant descendants invaded northern Ireland in the early 1600s., giving rise to a bloody conflict with the Catholic native population of the same Celtic stock. I could not help but notice the analogy with the return of the Jewish people to their ancient homeland after two thousand years of exile and the bitter conflict that resulted with the Moslem inhabitants of the country who were quite possibly of the same Semitic stock as the newcomers.

I also had the opportunity to visit the famous Loch Ness. The monster did not show up, but I was struck by the resemblance of the Loch and its surroundings to Lake Kinneret and the Galilean environment.

London

Plastics

On a visit to London, I went to a first ever exhibition of plastics, "the material of the future" and their industrial applications. The variety of consumer goods, equipment and machine parts shown was a revelation, but still only a token of the future promise of the new material. I bought plastic building blocks for the boys, the first Lego-type toy produced. I was impressed in particular by the pastel colors of the blocks, not painted on as was usual for toys at the time, but as an integral, indelible part of the material. These I sent home at the first opportunity.

Organic Farming.

I also visited the experimental farm initiated by Lady Eve Balfour, one of the first apostles of organic farming. Here I encountered an example of experimentation biased by preconceived ideas.

For example, I was shown an oil-drum with a vertical partition made of wire netting down its middle. In one half was soil fertilized with sulfate of ammonia, in the other half soil to which manure was added. Earthworms were added in equal number to each half. After a short time, all the earthworms had migrated through the partition, from the fertilized half to the manured half. This result, showing a preference of earthworms for a site rich in organic matter, their normal food, against one in which it was lacking, was interpreted as proving that the fertilizer had negatively affected soil fertility, on the premise that a soil inhabited by earthworms was fertile and one lacking earthworms was infertile.

In another experiment, a crop rotation using fertilizers exclusively, was compared with the same rotation using farmyard manure. When I asked about the results, Lady Balfour answered: "True, the chemically fertilized plots are giving higher yields, but this will change in the near future". With difficulty I refrained from asking "why carry out an experiment that will take many years if you already know the answers"?

I had been very much influenced by the writings of Howard, Balfour and Steiner, the founders of the organic farming movement. At the Acre Experiment Station, as well as in my own garden, I carefully saved every scrap of organic material which was then composted according to the method developed by Howard. But, after my visit to the Balfour Farm, I became highly skeptical about the dire results predicted by the Organic School which would result from the use of chemicals in agriculture. When negative effects did occur, I was convinced that they resulted from improper use and/or negligence by farmers.

Blenheim Castle - A Vignette

On a weekend excursion to Blenheim Castle, Winston Churchill's birthplace, I also walked to the graveyard where he is interred. Whilst I was there, an ancient two-seater car came chugging laboriously up the hill, came to a stop and out stepped two old ladies. They went straight to one of the graves, replaced the faded flowers by a fresh bouquet, stood in silence for a few minutes, returned to the car and chugged down the hill as they had come. Prompted by curiosity, I went to look to whom these two old ladies had paid their respects. It was the grave of an eighteen year-old youth, who had fallen in the first World War. Twenty years later, his memory was still kept fresh in the minds of two old ladies. This incident was so heart-warming and sad at the same time that it made my day.

Visit to Antwerp

One day, I received word from my mother that she would be coming from the USA to settle some of the family affairs in Antwerp. I joined her for a tearful reunion during the week-end, so that no dereliction of duties was involved.

Afterwards, I wrote to my wife that the streets in Antwerp had amazingly become shorter and narrower, whilst the buildings themselves had remained completely unchanged.

A sign of the times was that the bilingual names on the street signs were now monolingual - the French names had been painted over in black paint.

On my next visit, I found that the formerly bilingual plates were now in Flemish only. I had a small taste of the animosity engendered by a few words of French. I had entered a post office to buy some stamps. When I absentmindedly made my request in French, I was rewarded with a cold glare, and no stamps were forthcoming. Fortunately I had the presence of mind not to repeat my request in Flemish, because then the fat would really have been in the fire. I switched to English, and was rewarded with polite and friendly service.

USA

By Cargo Boat to Jamaica

Shortly before my six months in England ended, I received a message from the Colonial Office informing me that I could leave for the USA if I agreed to go first to Jamaica by a cargo boat owned by the Ffyes Banana Company, and from there by sea-plane to Miami. I was happy to agree, as I was becoming tired of my stay in Aberystwyth.

Travel by boat was not a novel experience for me, but this voyage was the most delightful of all those I had undertaken. All in all, there were about 30 passengers, and we were pampered by the company, for whom we were a welcome addition to their income. I had my own cabin, and the food served made us forget the war-time fare we had had for almost five years.

The trip took over three weeks; we moved only during daylight, to avoid being blown up by one of the mines with which the sea-lanes were still infested. In the bow, a sailor armed with a rifle was always on duty, and from time to time an explosion was heard, indicating that he was vigilant. At night, the ship dropped anchor.

The sea was stormy in the Bay of Biscay, but after that all was calm sailing. We passed through the canal of Corinth, which had been dug by 10,000 Jewish prisoners from the Jewish-Rome debacle and deported by Titus for this purpose. Visigoth mates were given to these prisoners by the Romans. It are these women who are apparently responsible for the divide between Ashkenazi and Sepharadi Jews as well as for my blue eyes and long-gone chestnut hair.

Dr. Shiba, in his war-time study of the transmission of genetic diseases, explained why favism, a female-borne disease common in Sephardi Jews, was non-existent in Ashkenazi Jews. This was as due to the cessation of genetic transmission of this trait as a result of the above mentioned interference by Titus in the eugenics of the Jews.

At each table were seated four people who came to know each other fairly well in the course of the voyage. My table companions were a missionary couple; he Chinese and she the daughter of a Chinese father and English mother. She was the most beautiful woman I had ever met, and I had difficulty to keep my eyes off her during meals. The other passenger was a scion of a plantation-owner family from Jamaica.

When my companions found out that I was knowledgeable in biology, they kept plying me with questions and listened avidly to my mini-lectures, in particular my beautiful lady missionary was fascinated by my erudition. One day, overwhelmed, she could not refrain from exclaiming:



Revisiting
Antwerp

"The Brabosh"
throwing the cut-
off hand of the
ennemy into the
river. Hence the
name
"Antwerpen"
("Handwerpen =
throwing of hand")

"My God! how can one know such wonderful things and not believe in Jesus"!

Even as a child, when my father taught me the Bible, and in particular Genesis, I did not believe in God, let alone Jesus. But to this day, I find it impossible to believe that the intricate and awe-inspiring manifestations of life were the result of chance meetings of molecules of carbon, hydrogen, oxygen and nitrogen in an ocean of water.

I had made it clear to my table companions from the beginning that I was Jewish, and this too had become a subject for questions and answers, all without a trace of antagonism.

My plantation companion asked me what are the distinguishing characters that made it possible to recognize a Jew. I told him I could not say, but nevertheless could immediately identify a Jew when I met one. He did not believe this was possible, and offered to bet me a packet of chocolate, (a rare commodity at the time) that I would, on occasion, fail to do so. I accepted his challenge without hesitation and then forgot the whole matter as it could not be put to test in the confined society of the boat.

The voyage was otherwise uneventful, excepting the thrill of watching flying fish and the play of dolphins.

We stopped at Port of Spain, Trinidad, where we were allowed to go ashore for a few hours. I took the opportunity to visit the experiment station where I had my first glimpse of tropical agriculture. At a certain moment my guide glanced at his watch and said that we must get back to the main road as in another half-hour it would be raining cats and dogs. The sky was clear and there was no discernible sign of imminent rain. Notwithstanding, a torrential downpour started exactly half an hour later.

I spent an hour at a corner of a busy street staring with amazement at the mix of human races passing before me. Every possible cross between white, yellow, brown, and all shades of black was represented. The only type missing were the original Caribbeans, who had been completely obliterated by attrition and imported diseases.

I was also surprised to see that the policemen wore as emblem the shield of David.

Jamaica and the Jewish Test

Finally, we disembarked one morning in Kingston, the capital of Jamaica. After settling down in the hotel, I went for an exploratory walk. Most passers-by were various shades of black, and very few whites. In the afternoon, I was called to the phone. It was my plantation companion who told me that his mother wished to invite me to a cocktail party, and after the other guests left, I would stay for dinner.

Punctually, he arrived in a Cadillac to take me to his home: a typical colonial mansion familiar from "Gone with the Wind". His mother too was a typical colonial aristocrat, at the same time dignified and a friendly and warm hostess. I was introduced to the other guests with whom I mingled for about an hour.

After the other guests had left, we sat down to dinner and polite conversation. I can't remember which exotic foods were served, but before dessert and coffee, my companion asked me what I thought of the guests I had met an hour earlier. I mentioned my impressions of the few people with whom I had conversed, adding that they were all cultured and agreeable people, mostly of the free professions, with whom it had been interesting to talk. My host insisted: "did anything strike you as common to all of them"? On reflection," I added "come to think of it, all your guests were colored". "You miss the point", he replied, "and incidentally, you have lost your bet. All our guests were Jewish"!.

I was to return to Jamaica many years later as a consultant on behalf of FAO. Walking through the streets of Kingston, I noticed that all the jewelry shops as well as other stores carried Spanish-Jewish names, such as Abarbanel, Chelouche, Cordova, Elharazi, Pinales, etc.

Weekends I spent poring over a massive volume describing the history of Jamaica. After the British gained control of the island, they invited Spanish Jews, banished from their homeland by the Inquisition, to settle in the island and help promote its commerce and economic development. Many responded to this invitation; over the generations there was a lot of intermarriage, but many remained faithful to their Judaism though they lost their original color - and I lost my bet.

Arrival in the USA

The next day we left early by seaplane. This was my first flight, and though I knew the principles of aerodynamics that allowed the plane to rise from the water and remain in the air, I was still amazed that the cumbersome structure obeyed these laws, became airborne after a

short rush and remained in the air instead of falling into the sea like a stone.

Landing was still more impressive: how was it possible to halt the mad rush and return to earth with a gentle touchdown? To this day, after flying untold times, I am still not blasé and remain awed by this fantastic achievement, especially after the small seaplane of my first flight with its twenty-odd passengers was replaced by the monster Boeing 747 carrying four hundred passengers and their tons of luggage.

We arrived at Miami without incident, and I left for New-York where I was to meet my father (my mother was in Belgium at the time as I have already pointed out). I was to stay with my sister-in-law Gina and her family, rescued from the Nazis and whose odyssey I will maybe describe elsewhere.

Briefing

The next day I left for Washington, for briefing at the Department of Agriculture and at the British Embassy.

First I reported at the British Embassy, where I learnt that an Arab colleague, Jamal Hammad, would also be on a study tour, his topic being agricultural extension. I must mention here that we both traveled on a Palestinian passport. However, when I introduced myself, it was as a Palestinian, which in the minds of the public identified me as a Jew. Hammad introduced himself as an Arab from Palestine. It is hard to believe how, years later, the Arabs were able to convert "Palestinian" into a national Arab concept.

I was told that during my tour I was free to discuss any professional topic I desired, but that everybody would be plying me with questions on the situation in Palestine. I was warned that if I talked politics I would be sent back home with the first boat leaving the States.

The Department of Agriculture had prepared an itinerary for me which would take me south to the tip of Florida, westward through the southern states - up to the West Coast, northward through the entire length of California and into Oregon, - and then back East to Washington.

The Agricultural Faculties would serve as stepping stones, moving from one to the next by railway.

I told my mentor that I did not wish to learn about American agriculture only by visiting experiment stations; I wanted to have the opportunity to visit farms and talk to farmers on the way between experiment stations, so that I would have some idea of the problems facing the farmers before discussing these with the researchers.

To be able to do so, I intended to buy a car, so as to be able to stop when and where I felt like doing so. The official from the Department agreed, but warned me that travel by car would be very tiring as distances between Universities and Experiment Stations were very great. This however did not deter me; the program was modified so that travel from one station to the other would be on weekends, leaving the workdays free for visits and interviews. I was warned that once zero hour was decided on, there could be no modifying of the program without upsetting the whole schedule. At every station, people would be keeping themselves available to the prospective visitor and this could not be rearranged.

My Arab colleague would be visiting the same universities as I, because in the USA research and extension are located on the same campus of the Agricultural Colleges. However, a different itinerary had been prepared for him, to prevent possible collisions between the two "enemies". Not having the use of a computer the planners were apparently unable to avoid our paths occasionally crossing, sometimes with funny consequences.

Passing the Car Test

Back to New York to buy a car and to pass a driving test. My father had expressed the wish to join me for part of the tour and was ready to finance the purchase of a car, to be repaid from my car allowance.

Buying a car in the USA at the time was no simple matter. (By contrast, on the fifth floor of Macy's one could buy a Piper Cub on the spot, and training was included in the very modest price). The usual procedure was to register with several firms, drive the first car that became available, till the next model that one had ordered became available in turn; then sell the first car at a profit to someone who did not have the foresight or opportunity to order several cars.

I found a Dodge, 3 months old, for which I paid the used car dealer \$2000, instead of the list price of \$1600. Its major weakness was the synthetic rubber tires, which seemed to attract nails and required repair several times a week.

The Jewish dealer kindly offered to help me take the driving test. He prepared all the paper

work and fixed time and place for the test. He told me to "forget" a five-dollar bill on the seat next to me. This I refused to do. First of all, I had a horror of giving bribes, and secondly after 10 years of driving, I did not feel any misgivings about my ability to pass the test. The test was taken, the traffic policeman took his leave without saying a word, the dealer congratulated me on the way I had handled the car and I sent a cable to the Department of Agriculture indicating that zero hour would be in two days,

The next day I received a letter informing me that I had failed the test. My dealer friend said not to worry. He drove me to traffic police headquarters where I explained my predicament to the Chief Traffic Officer. The fact that I was from Palestine and a guest of the USA Government also helped. He came down with us to the car, told me to get in the driver's seat and off we went into the congested traffic of Chinatown. After ten minutes he said: "back to the office" where he had a driver's license prepared for me on the spot. Before leaving, my dealer said a few words to the Inspector, and later in the car told me that I would have to leave \$25 for the Inspector. "Inspectors are more expensive than traffic policemen" and it would have been cheaper if I had followed his advice, besides saving a lot of trouble. So I was able, after all, to leave on schedule.

On the way from New York to Newark, where my in-laws lived, I drove through the Hudson Tunnel. Still nervous with my new driver's license and afraid to transgress any traffic laws. I drove slowly through the tunnel. I suddenly became aware that the policemen stationed at regular intervals along the tunnel, were making signals to me. I thought I might still be driving too fast, and with each signal slowed down a bit more. But the signals became more and more frantic, and glancing in my mirror I saw a long line of cars bunched up behind me. At last I understood what was wanted, and started to speed, but by that time we had almost reached the end of the tunnel

Traveling through the United States

We left the next day as planned. The itinerary was to move southward through the States New York, Pennsylvania, Maryland, Virginia, North and South Carolina, Georgia and Florida, right up to its tip in the Everglades and Miami. We would then turn westward, traveling through Alabama, Mississippi, Arkansas, Louisiana, Texas, New Mexico, Arizona. We then turned northwards through the Californian Desert up to San Francisco, turning East through Nevada, Utah, Colorado, Kansas, Missouri, Illinois, Indiana, Ohio and back to New York.

The trip was planned to take six months. In every state, I was to visit the main University, with its agricultural college and experiment station, and occasionally other locations of particular interest.

It was early autumn, when we set out; a particularly mild "Indian summer". The tree-covered landscape was breathtakingly beautiful with its autumn hues of red, brown, yellow and russet. Moving south, we were actually running away from winter. The only discordant note were the billboards that polluted the roadsides, dinging their message into our heads over and over again. One such message that I remember to this day was shown on a number of consecutive billboards:

DON'T LOSE YOUR HEAD TO GAIN A MINUTE

YOU MIGHT NEED IT - YOUR BRAINS ARE IN IT. BURMA SHAVE

That evening we stopped for the first time at a motel, a purely American innovation born of the motorcar age. One drove right to the doorstep of the cabin assigned, consisting of a large room with two beds, and a kitchen equipped with all accessories - all spotlessly clean and for \$5 a night. One could chose to eat in a restaurant or buy supplies at a grocery store nearby.

When we left the next day my father said he would like to learn to drive. As the car had a fluid drive, I anticipated no difficulties, as all he had to do was to steer the car. When we reached a deserted stretch of road I handed him the steering wheel. He took hold with a tight grip and steered the car straight across the road. With the help of the hand-brake, I stopped the car before we landed in the ditch. After getting the car back to the right side of the road, my father had another try at the steering wheel. With a strange compulsion he again drove diagonally across the road. After another few trials, by mutual consent we decided to stop driving lessons and remain alive.

At my first station in Maryland, I was shown into a room where all the faculty staff was



Ready to start our tour of the USA

In the newly acquired Dodge 1946

gathered, and was told that before discussing professional topics, they wanted to hear first-hand information on the situation in Palestine. In vain I told them of the warning I had received from the British Embassy not to engage in politics, but my hosts were adamant. They assured me there was nobody present who would leak anything to reporters and that I could talk freely without having to fear any undesirable consequences.

This was the time the Jewish underground was waging war against the British, the blowing up of the King David's Hotel, and of Commission after Commission offering solutions. The interest in what was happening in Palestine was as intense as mistrust of the media was great, hence the insistence on live reporting by a participant.

This scenario was to be repeated at practically every stop on my way through the USA, with the Damocles sword of being found out constantly hanging over my head.

A Prehistoric Site

On my way through the Arizonan desert, I saw a sign indicating that a prehistoric site was to be found 15 miles off the road. With my weakness for prehistoric sites, I left the road, and followed a dirt track till I arrived at my destination. There I joined a group of people surrounding a ranger who was explaining the significance of the site. He told us that 80 years previously, a persistent drought for several years and the ensuing famine had forced an Indian tribe to migrate from its traditional location in search of a more favored area and had reached the spot in which we found ourselves. Here they built their pueblo which he was going to show us. It was the usual pueblo of mud bricks with nothing special of interest; he concluded his story by recounting that when the drought cycle ended in their traditional homeland, the tribe left the site we were visiting and returned to their former homes.

The ranger then asked if anyone had any questions and several people responded; I remember in particular one person asking how the Indians disposed of their garbage, an indication that at least some people were already sensitive at the time to environmental problems.

When no more questions were forthcoming I remarked: "Where I come from, events that happened four thousand years ago are still considered history, why is the event described by the ranger as having occurred 80 years ago considered prehistoric"? Visibly controlling his temper, the ranger answered: "Sir! Prehistoric is everything that happened of which there are no written records. There are no written records concerning this site, so it is by definition prehistoric". I had no counter argument to offer.

The incident is indicative to what extremes the Americans go to create an awareness and appreciation of American history, which spanned at the time less than two centuries. At every site of possible historical significance are descriptive signboards attesting to the importance of the place. So one finds signboards perpetuating some act of General Grant, or the beginning of the Apache Trail, or that of the Santa Fe Trail, etc. at many of which I stopped the car to read at leisure and others, such as the Apache Trail I did follow (a hair-raising experience, even without threatening Apaches).

Spur, Texas

In one small town in Texas, the Director of the Soil Conservation Experiment Station, Dickenson, told me that the townspeople were thrilled at the news that a man from Palestine was in town, and expected me to give a talk on Palestine. I demurred, and explained for the umpteenth time that the only subject I was allowed to talk about was agriculture. Dickenson countered: "This is a rural town, and even the agriculture of the Holy Land is of great interest to the townspeople".

With visible reluctance I let myself in for a talk on agriculture in Palestine. In the evening he informed me that the lecture would take place the next morning in the biggest church in town.

All night I rolled from side to side, preparing my talk. Early in the morning I heard a rustling sound and saw a folded newspaper being pushed under the door. On the front page, a banner headline announced: "Mr. Aronovitch will give a lecture on Palestine, it's Peoples, it's Problems, it's Future".

Four good reasons for the British Embassy to send me packing back home. So I decided I might as well give the good people of Spur what they wanted. I jettisoned the speech I had spent



Touring the USA
with my father

Taking it easy after
a day of driving

all night preparing, and decided that I would speak off the cuff.

When we arrived punctually at the church, it was already full. The Pastor asked me if I required anything for my lecture, and I said half in jest, "only a map of Palestine". Quite seriously he asked: "do you want a map from the time of the conquest by Joshua, or maybe of the kingdom of David" and brought me a stack of maps of the Holy Land. When I asked him if he had a map of the USA, the answer was no!

Before giving me the floor, the Pastor asked the audience to rise and said a short prayer: "O Lord, we thank thee for having sent us this man from far away to tell us the truth about the Holy Land". With such a moral obligation, I had to be as objective as humanly possible.

Arab and Jew meet

A few days later, the paths of the Arab and the Jew from Palestine crossed in Amarillo, Texas. Jamal told me with a twinkle in his eye that he had arrived in Spur a day after my lecture and was impressed by the response of the townspeople. But, to his credit, he never snitched on me.

We were both due to meet the Director of the Soil Conservation Service that morning - I at 8.a.m. and Jamal at 10 a.m. I suggested we go together, and thereby save our host the bother of repeating the same story twice. When we arrived in his office, the first thing the Director said was: "I want to say straight away that I am all on your side".

Before he could say another word, I interrupted him saying: "before you say whose side you are on, I would like to point out that Mr. Hammad is an Arab, and I am a Jew and we are on opposite sides of the fence but still friends.

Jamal and I met again in Santa Cruz, New Mexico. When the local radio discovered that there were a Jew and an Arab together in town, they asked us if we would agree to appear together on the radio. We both agreed on condition that the topics would be strictly agricultural.

To ensure that there were no slip-ups, we first had a dry run, with the interlocutor asking each one in turn a question.

The first question addressed to me: was: "is agriculture in Palestine as modern as that of the USA"? I answered that in Palestine modern agriculture and biblical agriculture were practiced side by side: in one field a modern tractor would be working, hitched to a steel plow; and in an adjacent field a team of oxen, yoked to a wooden plow would be scratching the surface of the soil.

Once we were on the air, the interlocutor mistakenly addressed this question to Jamal, who, taken unprepared, responded: "In Palestine we have both modern and biblical agriculture, and you can see a tractor and an ox plowing hand in hand". It took me an enormous effort to keep from laughing and thereby putting an end to the friendly relationship we had established.

California

We arrived in California from the South, and experienced the vast expanses of an American Desert. Eventually we reached the fringes of the areas which had been brought under irrigation, had become saline and had again become desert, with the difference that even desert plants could no longer gain a foothold. A very convincing reminder of the destructive results of irrigation that can result from improper management.

Throughout the trip, I was amazed at the similarity in geography between California and Israel, the latter being a miniature model of the former. The Mojave Desert (the Negev), the Saltine Sea, the lowest spot in California, (the Dead Sea); San Diego (Bersheba); Los Angeles (Tel Aviv); the San Joaquin Valley (the Emek); San Francisco (Haifa).

It would be tedious to describe all the meetings with agricultural researchers, extension workers and farmers throughout my tour, even though they were highly interesting and instructive for myself.

However, one or two meetings left a lasting impression and are worth mention.

In Davies, California I met the then guru of irrigation practitioners - Professor P.I. Veihmeyer. At the time, irrigation practice was dominated by his contention that plant yields were not affected as long as soil moisture was above permanent wilting point. This was a very convenient rule, as it reduced the number of irrigations required to a minimum. Irrigation, at the time, was mainly by surface methods and was very labor-consuming and arduous.

I described to the Professor my experiments with alfalfa, in which it was clearly shown that yields were affected long before soil moisture reached the permanent wilting point. His comment: "I am not convinced" closed the conversation. Fortunately, most irrigation researchers have since come to the same conclusion as I had at the time, and nowadays Veihmeyer's theory no longer

dominates irrigation practice.

Also in Davies, I discussed plant breeding matters with several vegetable breeders. I pointed out that all the new varieties were beautiful to look at, but were completely tasteless. They all agreed that "they had bred in size and color, and bred out taste and aroma".

In every place, the people were most open and gladly shared with me whatever knowledge they had gained. Most impressive was the willingness to supply me with seeds of new varieties and breeding material. As we moved from station to station, the back of the car filled up with seed samples, research and extension bulletins.

When in later years government officials and farmers' representatives protested vigorously against Israeli consultants revealing professional secrets to other countries, enabling them to become our rivals on the international market, I would point out that well over 90% of the technology we used came to us from others, and the beauty of our research work was that we were able to reciprocate by extending our advice to less advanced countries. The concept of reciprocity is losing ground in recent years, and is being replaced by taking out patents for every innovation. This may be economically justified, but I cannot avoid a feeling of regret that the time of free exchange of information and breeding material is over, to a large extent.

In San Francisco my father decided to return to New York. We had become good friends in the course of three months of uninterrupted companionship and had grown closer than at any time previously.

Hitch-hiker

I had been warned not to take any hitch-hikers, but when I saw a lonely fellow standing forlorn by the roadside I could not resist his silent plea for a lift. When he got into the car, he asked where I was headed. I told him the name of the next town, deciding that was where I would deposit him. He asked "and next"; so I gave him the name of the next state. He persisted till I told him my final destination was New York. "Fine", he said, "that's where I am headed for". I said that I would reach New York only in three months time. "Fine," he said, "I am in no hurry". But I was in a hurry to get rid of my unbidden guest, and managed to lose him at the first opportunity.

One more incident, possible only in the USA. I had been traveling all day and had covered several hundred miles. It was already dark and I was very tired. Not a soul to be seen on the road. Finally, I came to a cross-roads with a sign post. I could not see in the dark what was written high up on the signpost. I was anxious to know how far I had still to drive to the nearest town as I was very tired and hungry.

I maneuvered the car so as to illuminate the sign, and I climbed up the post. For my trouble, I was informed that to the left was the North Pole, distance 3500 miles, in the opposite direction the South Pole, distance 3450 miles. Neither destination was attractive to me, so I continued straight ahead into the unknown. ,

When I reached the last station on my itinerary, the Agricultural College of Illinois, at Urbana, I was so fed up with travel and sightseeing that I skipped the Niagara Falls, which would have required a bypass of a few miles. This opportunity, to my regret never presented itself again.

Return Home

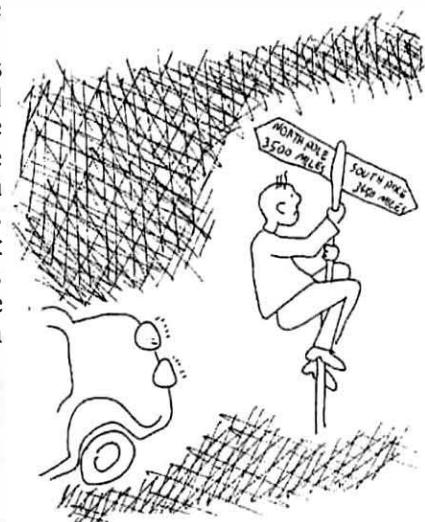
Buying spree

And so back to New York, where I spent a busy week buying up half of Macy's store. Into my packing cases went a washing machine, an electric oven and range, a sewing machine, pressure cookers, a bicycle for Danny, and a cart for Gideon, a Lionel model electric train, an Erector set, complete with electric motor and dozens of other items, all unknown at the time in Palestine.

As Haifa Port had a well-earned reputation for pilfering, I not only nailed down the coverings of the cases, but also added padlocks.

Home by boat

The only "events" during the voyage were the daily notices indicating the latest information regarding the New York share market, around which most of the passengers crowded. I reflected on how lucky I was to be spared the anxiety and stress shown by the many share-owners.



But I want to know
how far is the next
town!

For me the sea-trip was marred only by my anxiety to reach home and family after an absence of 14 months.

Disembarkation

When the ship docked in Alexandria, I found out that I could reach home a day earlier by disembarking and leaving by train for Haifa. I immediately joined the queue at passport control. When my turn came, the official glanced at my passport, looked up at me, put the passport aside and told me to stand aside and wait.

Sensing trouble ahead, I went to look for Jamal, in the hope he might be able to help me. I was told he had already left ship a few minutes earlier. I rushed to the railings and saw Jamal at a distance. I hollered with all my strength, he turned and came back, I shouted to him that I was in trouble, and he returned on board. He must have been very influential or convincing, for after a few minutes I was able to disembark with my passport in hand.

Early the next morning I arrived in Haifa, and there was Hilda, waiting for me at the Station. As I had left the boat on an impulse, and wanted my arrival to be a surprise; to this day I do not understand how she guessed that I would be on that train. To my questions all she answered was: "Because I know you".

Haifa and Beirut Ports rehabilitated

When the boat arrived in Haifa the next day I was told that my cases were at the bottom of the cargo hold and could not be off-loaded. The ship would continue to Beirut, and when the cargo was removed, would return the next day to Haifa and my cases would then be off-loaded. The next day I was told that my cases had been off-loaded by mistake in Beirut and would have to wait for the next boat due in a week. If Haifa had a reputation for pilfering, Beirut was known for completely emptying cases of their contents and leaving empty shells. My prospects of regaining my hardly won household articles and toys was next to nil.

Finally, I received word that my cases had arrived and were waiting for me in the port area. From afar, I saw the cases had been opened, the covers hanging on the side, with the padlocks wrenched from their moorings. I was sure that the worst had happened and that the happy surprises I had in store for my family had evaporated.

To my amazement and disbelief, the contents of the cases had not been touched and everything left as I had packed them. This was in the nature of a miracle, which I accepted gladly.

My car was due to arrive on another boat. I did not have to go again through the pangs of waiting in vain. I was able to drive out of the port area with a car that had remained without a scratch. It was a beautiful glossy black Dodge, with fluid drive - the first of its kind in Palestine and destined to serve me faithfully for 19 years.

The fluid drive was a transition from manual gears to fully automated gears, an innovation that was due to disappear from the production lines after automatic gears became commonplace. The car had the standard three pedals: clutch, brake and gas, it also had manual change of gears. The distinguishing feature was the hydraulic transmission from motor to back axle.

I enjoyed watching the faces of experienced drivers, when I jammed on the brakes without depressing the clutch, and the motor continued purring instead of cutting off with a gasp. The astonishment grew, when without changing gears, I pressed on the gas pedal and the car started gathering speed till it reached the legal speed limit.

The car served me well for 19 years. When a colleague asked me: "why don't you change your car?" - I answered: "I am changing my car, part by part."

Partition

Another Commission

On April 11, 1947 a special session of the General Assembly was convoked and decided to appoint one more commission made up of representatives of 11 nations, whose members included representatives of two Moslem countries (Iran, India), and two Latin America countries (Guatemala, Uruguay). Meeting with the Jewish representatives, they extracted from Ben Gurion the unwilling admission that the Jews "would be prepared to consider a partition plan".

The representatives of several Arab countries stated unequivocally that not only would they never allow the establishment of a Jewish state in any part of Palestine, "as a question of Arab dignity" and also declared that all Jews who had entered the country after the Balfour declaration would be deported.

In August 1947, the Special Committee of Inquiry on Palestine (UNSCOP) released its report, recommending the partition of Palestine into two independent states - Arab and Jewish respectively.

The Partition Plan

The UNSCOP proposal gave Israel only 14,400 square kilometers, divided into three fragments including the Negev, the coastal plain North of Ashdod, eastern Galilee and the Esdraelon valley. At two points, the fragments intersected: one at Afula and the other south of Rehovot. The population would consist of 498 thousand Jews and 407 thousand settled Arabs.

The Arabs were to receive Western Galilee, Judea, Samaria and the coastal strip between Ashdod and the Egyptian border. The population of the Arab State would consist of 804 thousand Arabs and 10 thousand Jews.

The two states were to join in an economic union, with a common currency, customs system and road and transport system. Jerusalem was to be a corpus separatum under international trusteeship, with no control of its road, railway or water supply, which all passed through Arab territory.

The Arabs rejected the UN proposal out of hand and were determined to prevent the establishment of a Jewish state, however small. In response to the Assembly's vote the Arab Higher Committee declared a general strike.

Partition was accepted by the Jewish authorities, albeit with great misgivings. Menahem Begin opposed partition as giving the Jews a Ghetto instead of a State.

Fortunately this plan was never implemented, so that the question whether this fragmented, tiny State was a viable entity, was never put to the test.

Lobbying

During the tense three months between the submission of the UNSCOP report and the vote in the General Assembly, both Jews and Arabs lobbied intensively to influence the national delegations. The outcome was by no means certain. The vote on partition required a 2/3 majority. All the Arabs needed to sink the deal was the negative vote of 9 countries, in addition to the 10 Arab and Muslim members of the Assembly, whose vote against the proposal was assured. Many nations were not favorably disposed to the idea of a Jewish State. The United States were proposing a UN trusteeship instead of the controversial partition plan.

At first, the foreign minister of the US, George Marshall, concerned with his country's interests in the Middle East, had opposed the partition plan, but was overruled by President Truman. The Russians, interested in getting the British out of the Middle East, supported the plan.

Before formal voting took place, the Assembly had been convened as an ad-hoc committee to discuss the UNSCOP report in detail. This committee voted to submit the partition plan to the general Assembly, by a vote of 23 for, 13 against and 17 abstentions, one vote short of the two-thirds majority required. This could be a fateful portend for the Jews of how the Assembly might vote.

Lobbying took all kind of forms, from political arm twisting to downright sordid bribing. How much was rumor and how much fact is difficult to say. In some countries, such as the

Philippines, Haiti and Greece, it was the US that did the persuading. Israel was active with many delegations. In one reputed case, a female diplomat fell in love with a handsome Arab, and frantic diplomatic intervention got her recalled and replaced by a less romantically inclined representative. In one reputed case, a Latin American vote was bought for \$75,000 (it is not clear who paid).

The UN vote

On 29 November 1947, the United Nations General Assembly was convened to debate the recommendations of the Commission.

On that fateful morning, the whole family, like most others in Palestine, sat glued to the radio, with pencil and pad at the ready, to follow the voting "in real time".

The tension was palpable, and when the Speaker announced the results of the voting - 33 for, 13 against, and 10 abstentions, the relief and exhilaration we felt and expressed cannot be described.

Even inanimate objects appeared to have shared the tension, for, immediately after the announcement, a wisp of smoke came out of the radio which had burnt out after the critical moment. Again the trite remark "truth can be stranger than fiction" had proved itself.

Practically the entire Jewish community spent the rest of the day and the entire night celebrating the vote in favor of the establishment of a Jewish State.

Many years later, my eldest son told me that he had never forgiven me for our not having joined the celebrations in the street, and having caused him to miss this historic event. We must have been the only family tamely passing the night in bed instead of joining the celebrations.

The Interregnum

The British Government, caught between a militant Arab majority, and their undertaking to establish a Jewish Homeland, decided to pull out of the country, whilst remaining responsible for law and order until the end of the mandate. As to their declared neutrality, their bias was soon evident by their embargo on weapons, which harmed only the Jewish side. The Arab reaction to the UN proposal was to declare a general strike which soon developed into open warfare, which started in December, and became increasingly intense and open as the British started to pull out of the country. Their promise to maintain law and order till their pull-out was complete also proved to be without substance. Armed forces from the Arab states entered the country without impediment and soon controlled large areas. They were very well armed and had an ample supply of ammunition.

The Haganah remained illegal, its soldiers continued to be submitted to search and confiscation of their arms. The British also effectively prevented arms supplies and recruits from reaching the Jewish forces from the sea.

In January 1948, a memorandum from the State Department's policy planning unit forecast: "It is improbable that the Jewish State could survive over any considerable period of time in the face of the combined assistance which would be forthcoming for the Arabs in Palestine from the Arab States and in lesser measure from their Moslem neighbors".

The Arab Legion

Ostensibly to protect the troops during the vulnerable period in the course of their retreat,



the British invited the Arab Legion, still led by British officers, to enter the country. Actually, the objective was to facilitate the take-over of the military and police infrastructure by the Arabs. Followed a period of tension fraught with danger. "Routine travel had become a game of Russian roulette" (Jerusalem Post, 10.7.94).

Daily, on my drive from Qiryat Haim to Neveh-Yaar, I would catch up with a Bren-carrier of the Arab Legion, traveling in the middle of the road so as to prevent overtaking. A soldier in the back of the carrier would point his gun straight at me, grinning as he pretended that he was going to shoot me. Nor could one be too sure that he was play-acting, as there were many instances of attacks on Jews in which the Legionnaires were involved.

One morning, as I was preparing to leave for the Negev with Yehoshuah, a secretary of the Field Crop Growers association, I picked up the Palestine Post, and my attention was drawn to an incident that had occurred the previous day. The road from Megiddo to Haifa had been blocked at the Junction with the Nazareth-Haifa road by two pick-up trucks with Transjordan legionaires dressed in khaki overalls so as to avoid identification with the regular Transjordan forces.

When a Jewish driver appeared, in this case an irrigation engineer, the soldiers signaled him to advance, moving the two pick-up trucks apart so as to leave a narrow passage between them. When he entered the passage, they shot and killed him in cold blood.

The short note in the newspaper was an inauspicious beginning of the day. The visit to the Negev was uneventful. On our return by the coastal road to Haifa in the late afternoon, we were stopped near Zichron Yaakov by a Haganah patrol and told to detour to Haifa by way of Wadi Malik, as Arabs were shooting at Jewish cars traveling on the main road to Haifa.

We followed instructions, and after reaching the junction with the Megiddo road, I noticed that we were being followed by a Transjordan Bren-carrier. I paid no further attention, as we had become accustomed to sharing the road with these unwelcome intruders.

As we approached the junction with the Nazareth-Haifa road, we saw that the road was blocked by two pick-up trucks with a few figures clad in khaki overalls milling around. This was an exact replica of the item in the morning's paper, and the implication was chilling. Yehoshuah, who was driving asked "what do we do"? I told him to shift into reverse and get out quick. As he did so, we saw that the Bren-carrier that had been following us was blocking our retreat.

What now, was the unspoken question. Both sides of the road were flat terrain, completely bare in which a rabbit would have difficulty in finding cover. Sizing up the situation, I told my driver to move ahead, visualizing a repeat of yesterday's drama. Not seeing a way out of our predicament, I took out my revolver, placed it on my lap and covered it with the Palestine Post with its fateful message.

As we approached the Transjordanians, the men signaled to us to approach, moved the two trucks apart and invited us to pass through the resultant passage. This we did, expecting every second to be shot in the head.

As we cleared the passage we sped off, stopping at Yagur where a Hagana unit was located a few kilometers from the scene of our narrow escape. The Hagana people had difficulty understanding our story and finally responded by saying: "to all intents and purposes you are both dead men". Then started the speculation as to the reason for our miraculous escape. Nobody came up with a convincing answer, but most agreed that the Jordanians were waiting for more important fish. Not very complimentary for us, but we were too stunned by our experience and too happy to be alive to complain.

Ramat Yochanan

Dividing up the Acre Agricultural Experiment Station

When the partition of Palestine into a Jewish and an Arab state respectively was proclaimed in 1947, and it was clear that Acre would be included in the latter, the Jewish Agency decided there was no longer any justification to risk the lives of the Jewish workers, and we were told to leave the Acre research complex.

In the case of fruit trees, there was little that could be transferred, and we had no facilities for handling livestock. But in the case of field and vegetable crops, the seeds of improved varieties

and breeding stock were equitably divided between the two parties involved.

To their credit it must be said, that the Manager, as well as my Arab assistant who was slated to take over my post, cooperated fairly, providing labor and transport.

In order not to lose a season, an area was provided temporarily for our work in Ramat Yochanan.

I was given a small plot of land in the fields of Ramat Yochanan, a kibbutz about 15 minutes drive from my home in Quityat Haim. There I sowed my collection of wheat and barley selections, so as not to lose a season, until a more permanent solution could be found. Almost every day I made my way to the kibbutz, to make my phenological and other observations of the many hundreds of strains I had sown.

One day, in mid-April 1948, all the wheat and barley strains were in full earing and I left home as usual to visit my plots. When I approached Ramat Yochanan, I heard a lot of firing, but could not make out the source or sources of the shooting. As usual, I parked the car at the entrance of the kibbutz, and walked through the grounds in the direction of the fields. On the border of the farmstead, I was stopped by a kibbutz member, gun in hand, lying on his belly on the ground. He asked where I was going, I answered to my plots. He said "are you mad, the Druze are attacking Ramat Yochanan and you talk of visiting experimental plots. You better return to Quiyat Chaim and try to collect some ammunition". This I did, going from house to house, but unfortunately without much success.

It was only some time later that I learnt what had been happening. Fawzi al Kaukji, the commander of the Arab "Army of Deliverance" had managed to persuade a Druze Lebanese officer to recruit a 500-strong Druze force to join the fighting in Palestine. The Druze fighters had taken up positions in two Arab villages - Husha and Kusair in the hills overlooking Ramat Yochanan. On the morning of 15th April the attack began, and wave after wave of Druze fighters attacked the Jewish positions and were repelled with heavy losses on both sides. By noon, the situation was desperate, but orders from headquarters were "to hold on and fight with everything you have. Knives if necessary". The Druze broke first, having sustained more than three hundred casualties. They were brave fighters but, after all, they really had nothing at stake. It was surprising that they had become involved, as they had a long history of persecution by the Arabs. Moshe Dayan was able, a few days later, to sign a non-aggression pact with the Druze who subsequently joined the Jewish forces.

THE WAR OF INDEPENDANCE

The State is born

The British Mandate in Palestine was due to expire on May 12, 1948. Two days previously, "Minhelet Haam" (National Administration) a National Council of 13 members was convened in Tel-Aviv to discuss whether to declare statehood immediately before the British left or to wait for a more propitious time. There was strong opposition from Zionist leaders in the US, who proposed postponement, probably under pressure of the State Department which was pushing hard for its proposal of Trusteeship. Jerusalem was under siege and its population threatened with starvation. The Etzion block was on the verge of collapse, the Judean hills were under Arab control, and the Jewish forces had no reserves, were poorly armed and had little ammunition.

Faced with the possibility of diplomatic isolation and overwhelming military opposition, a decision was not easy and the Council was deeply divided. Postponement would allow time to strengthen the armed forces, Ben Gurion insisted that it was now or never: the future was unpredictable, it would be easier for a state to acquire arms, and most important - this window of opportunity might not recur . By a vote of six to four it was decided to declare statehood on May 14, two hours prior to the formal end of the British Mandate.

The following telegram was received from Dr. Weizman, who was in the US on the day statehood was declared and was destined to be the first President of Israel: "Our forefathers built with one hand while defending themselves with other Stop We called upon today to act in this tradition Stop It is profound desire our people establish relations harmony and mutual respect with their Arab fellow citizens with neighboring Arab states and with all other nations in human family Stop".

On Friday, 14 May 1948, the "Moezet Haam" (People's Leadership) was convened to a secret meeting in the Tel-Aviv museum, to be greeted by half the town's population that had gathered in front of the building. Ben Gurion read the Proclamation of Independence, which was signed by all present and declared: a Jewish State has been established in Erez Yisrael : the State of Israel.

The First Miracle

The immediate Arab response to the Israeli Proclamation of Independence on 14 May 1948 was the invasion of the country by the trained forces of five Arab armies. Egypt's armies invaded a part of Palestine awarded to Israel by the UN, Jordan and Iraqi forces attacked from the East and the Syrian and Lebanese armies attacked from the North.

If one defines as a miracle "an event that defies logic, occurs against all statistical probabilities and whose outcome is contrary to what the average person would expect", then the victory of the Israelis over the combined might of the Arabs was a miracle, with or without divine intervention. Just take the statistics: the whole Jewish population of Palestine consisted of 600,000 souls; its army - of 60,000 fighters, at first grouped into three uncoordinated and frequently mutually hostile groups: Hagana, Ezel, and Lechi. These forces were later joined by 27,000 demobilized soldiers, 20,000 Holocaust survivors, 3,000 Mahal (Jewish volunteers) and a few gentiles who answered the call of the Yishuv for volunteers.

The small number of volunteers was a great disappointment; in view of the large number of Jews who had volunteered to join the Republican Army in Spain; an influx of 20,000 volunteers was the minimum expected by the authorities.

This in no way belittles the enormous contribution of those few who did respond to the call for help. Light weapons, and nothing else, were available for only 1/4 of the soldiers. This ragtag "army" was able to confront the Palestinian Arabs, who outnumbered the Jews by two to one, were heavily armed and had the advantage of occupying the hill areas whilst the Jews were in the plains below them; and held up five invading armies, consisting of well-trained soldiers, armed with tanks, armored cars, artillery, and planes.

Five counterattacks by "Zahal" (the Israeli Defence Forces) were carried out of which only two were unsuccessful (Jenin and Latrun).

The overall miracle I mentioned above was composed of a number of component miracles; I will mention those in which I was personally involved.

The Fall of Acre

In mid-May, I heard that Acre was to be attacked by our troops: I was determined to be on hand, so as to "invest" the experiment station and rescue whatever equipment and livestock were still there.

I arrived early in the morning and found that our army was stationed on, and near Tel Napoleon, so named because Napoleon had bombarded Acre from this high ground in 1799 as part of his disastrous campaign in Egypt. But even Napoleon was unable to take the town after several weeks of siege and had to retreat in disgrace.

To understand the Acre miracle, I must refer to another miracle that had taken place in Safad a few days earlier. There, 1,314 Jews, armed with only 140 guns and limited ammunition were pitted against about 13,400 Arabs, who were reinforced by 2,000 troops from Lebanon and Syria. 6,000 armed and well-entrenched Arabs were sure that the battle would be a walk-over for them.

The British, before retiring, had handed over to the Arabs all their fortified positions, food supplies and surplus armament. The Arabs held all the high grounds whilst the Jews had to fight uphill, from strategically inferior positions.

In mid-May, it started to rain. This happens rarely, but is not unusual. It was however sufficient to abort a Jewish assault on the major Arab stronghold, as the rain dampened the fuses which were supposed to ignite the dynamite placed at great risk against the walls of the fortress. And then, against all odds, the miracle occurred. Reinforcements had brought in a Davidka, a home-made, fearsome weapon, dangerous to friend and foe alike. It did little actual damage, but the terrifying noise made by the mortar shell wreaked havoc on Arab morale. The shelling was immediately followed by a heavy downpour.

When in desperation, the Israelis attacked for the last time, they found the Arab strongholds, (with the exception of the police station), and the entire Arab quarter empty. After the police station was taken by force, no Arabs remained, excepting a few old people, too old to run.

When asked what had happened, one of the old men who had remained explained: "Hashirima!", when the atom bomb fell on Hashirima (sic) the rains came". The horrible whine of the davidka followed by the unprecedented downpour and the knowledge that the Jews had a new weapon caused the Arabs to panic.

"From solid entrenchments, the red-capped soldiers of Iraq, the black-and white crowned Lions of Aleppo and the warriors of the Grand Mufti fled. Outnumbering their enemy by more than 40 to 1, the Arab forces had constructed their own panic, and had then obeyed it" (J.A. Michener "The Source".1966).

Can anyone deny that this was a miracle?

Now back to Acre. At the foot of the hill, I met Moshe Dayan, who commanded the forces attacking the town. Dayan I knew well, from the days he worked at the Acre Center as a prisoner of the British. When I asked him when I could move in to the Center; he answered matter-of-factly: "after we take Acre". As there was little activity going on, I asked him what we were waiting for. A Davidka, he replied briskly. After what seemed an interminable wait, the Davidka arrived from another front (possibly from Safad?). I thus had my first opportunity to see this already legendary weapon.

The Davidka was installed on Napoleon's Hill, the same place from which Napoleon had bombarded Acre to no avail. I don't remember if more than two shots were fired, after which the white flags began fluttering from the roofs of Acre.

Return to the Government Stock Farm and Experiment Station

I received the go-ahead to go to the Experiment Station. When I reached the Station, there was not a living soul in sight. I went to the meteorological booth in order to see when the last observations had been recorded. The mark on the automatic thermograph showed that the meteorological observer had made the most recent records a half-hour before we reached the

Station. I made a mental note that such devotion to routine duty was worthy of recognition; I found out subsequently that the observer was Abdallah Bargouti, for whom I searched and engaged to work in Neve Yaar, where he was a trusted research assistant for three decades until he retired on pension.

The equipment was intact, with the exception of a Caterpillar tractor which the driver had used to flee. There was little I could do the same day, except to obtain a note from the Minister of Agriculture giving me the authority to handle the situation as I thought best.

It is important to note that at this stage nobody realized that Acre, which was allocated to the Palestinian State to be, would remain in our hands. So the Station and its equipment were actually war booty. Apparently, all the kibbutzim in the vicinity also considered the equipment to be war booty, to be removed as quickly as possible.

When I arrived the next day, all the equipment had disappeared, and I started the arduous task of tracing and retrieving each item. One tractor had reached as far away as the Beisan Valley. All the retrieved equipment was moved to a neighboring kibbutz, Ein Hamifratz, which was near the proposed border, but well within the Israeli part of the UN partition plan.

Mobilisation

In the meanwhile I had been called to appear before one of the recruitment committees. The chairman said that I would be asked a few questions in order to ensure that they did not fit square pegs into round holes .

First question "did I have any military training, besides the Hagana exercises with a revolver". I answered: "yes, I had done 14 months service in the Belgian army."

"Fine, and what was your rank?" I finished an Officer's school, with the rank of second lieutenant". "Still better. In what service?" - "In the cavalry." If I had known how great would be the disappointment of the recruiting committee, maybe I would have chosen a different service. Not knowing what to do with a lone cavalryman, they transferred me to Engineers (Ingenieur Agronome). When I appeared before the engineers committee, and admitted that I was neither adept at planning or implementing building houses or roads. they decided that I was of no use to them.

In the meanwhile, my three colleagues at the Acre Center, respectively heads of the Livestock, Poultry and Horticultural Stations, had also been rejected for regular military service, so we decided to take matters in our own hands. We agreed that each one in turn would serve for a month with the "Chel Mazav" (occupation force) - irregulars who took over positions that had been taken by the regular army, whilst one of the others would take care of the Station of the one who was on service.

Kufr Yusif

Background

When my turn came to serve on the "occupation" services for one month, I asked to be posted in Kufr Yusif, as I had received information that one of my tractors had been located there, and I wished to take the opportunity of retrieving it.

Kufr Yusif was at the time a large village of about two thousand inhabitants, with a mixed population of Christians, Moslems and Druze. In ancient times, it was considered a border town of the territory of the tribe of Asher, whilst Acre was considered at the time as being outside the confines of Jewish authority. Therefore, Jewish inhabitants of Acre were buried after their deaths in Kufr Yusif, unless they were poor or impure, in which cases their corpses were buried in Acre. This cemetery remained in use until the beginning of the first World War.

In 1824, a visitor recorded the presence in the village of about fifteen Jewish families, all native-born and all making their living from farming. In 1840, another visitor stated that there were no longer any Jews living in the village.

The "occupation force"

I arrived at the village in my own car. The "occupation force" consisted of 10 men, of whom two only, the sergeant in charge and myself knew how to handle a gun. The others, well into

middle-age, were the baker, the butcher, and assorted shopkeepers from Naharya, all immigrants from Germany, who had made no effort to learn Hebrew, and would not be able to execute orders even if they understood them.

The sergeant made no attempt to give them the most elementary training, either because he did not want to make the effort, or - more important - did not want to reveal to the villagers the lack of fighting prowess of his army.

So they spent their days playing cards on the flat rooftop of a house, on the border of the village and facing the road to Yerka.

The situation

In Yerka, a Druse village 3 kilometers to the North of Kufr Yusif, the infamous Kaukaji, was stationed with his band of irregulars. So we were pinched between a village of some 2000 hostile villagers and a band of well-armed fighters. The nearest unit of the Israeli Army was in Acre, at a distance of about 12 kilometers, and could not come to our succor in time even to retrieve our bodies.

Every day, I made the round trip to Acre alone in my car, on a dirt track that passed the village of Makr, where the embittered refugees from Manshiya had found refuge, and then returned with our daily ration.

Every evening, we would declare curfew. Two men of the occupation force would patrol the streets and not a soul would be seen outside.

The situation I have described, defied all logic, occurred against all statistical probabilities, and its outcome - the fact that no harm befell us - certainly was contrary to what an average person would expect. Hence, I have hereby recorded another one of the numerous mini-miracles we experienced during this extraordinary war.

Exploring the village.

Not having the benefit of a poker face, I did not join the card players on the roof-top, but explored the village. First, I went to look for the Jewish cemetery, which I found easily at the entrance to the village. It was in a complete state of neglect, but the graves and their headstones had not been damaged in any way. As the graveyard was in a rocky area, unsuitable for cultivation, there had been no temptation to convert it to more mundane uses.

I wandered the streets of the village looking for some sign of the ancient synagogue whose existence had been recorded a hundred years previously. The Muhtar, the Priest and the Mufti all declared there was no synagogue in the village, and there never had been one.

I had almost given up hope, when one day I happened on an old fellah, treading the grain on the village thrashing floor. I asked him the usual question, and received the usual reply "Ma baref" (I don't know anything).

This was the highest place in the village, and I had a feeling that this might be the place I was looking for. I now admit to a rather brutal tactic: I threatened the old man with dire results if he would not tell me the truth. Frightened, he took me to a corner of the field, and showed me an area that had been covered with fresh earth. Removing some of this cover revealed a mosaic floor in fairly good condition, the floor of the synagogue I had been searching for. The villagers had feared that the remains of a synagogue would give the Jews evidence that they might use politically, and, apparently afraid to destroy the evidence, had resorted to covering it. I again covered the mosaic. Incidentally, Z. Vilnay, in his Encyclopedia of Erez Yisrael, states that the only existing remains of the Kufr Yasif synagogue is a lintel with carved Jewish motifs. Either the synagogue floor has remained hidden to this day, or was destroyed after my visit, or - Vilnay is mistaken.

Yerka

A few weeks later, I was again in Kufr Yasif, this time on my way to Yerka. Kaukaji and his men had moved elsewhere, and I was determined to retrieve my tractor.

Yerka was a small Druse village, perched high on the mountain, like many of the Druse villages that had suffered from persecution by the orthodox Moslem majority throughout the

ages. Arrived in the village, I left my car at the entrance, windows open and my revolver in plain view on the front seat. Foolhardy? I reckoned that if they wanted to kill me there was nothing to prevent them and my lone revolver would be of no use. My show of confidence either indicated that somehow, somewhere I had strong backing, or that I was relying on the traditional Arab protection enjoyed by guests. Whether I guessed right or wrong, I came out unharmed.

I wandered around the village and saw no sign of a tractor. My attention was drawn to a small building, one wall of which had been recently restored. I looked through a crack in the opposite wall, and there stood my tractor. The villagers had broken down a wall to allow passage for the tractor and then built up the wall after it was safely hidden inside. I told the muhtar that I would come the next day with a trailer to pick up the tractor, which should be waiting for me at the entrance to the village, and that they should prepare a ramp for loading the tractor. I made no threats of any kind, but it was implicit that refusal to comply would have dire results. The next day I was back with a tractor-drawn trailer; the caterpillar tractor was waiting and a ramp had been prepared. One of the villagers loaded the tractor, whilst the Muhtar pleaded with me to pay back at least what the tractor had cost them. I pointed out that they knew perfectly well that the tractor was stolen, but in view of the good will they had shown, I would intervene with the Ministry of Agriculture to get them a permit to buy a new tractor. This I did, and they got their permit, a highly prized object at the time.

I have told this story to illustrate the unbelievable atmosphere at the time. The Arabs, surprised and daunted by their unexpected defeats on the field, acted as if hypnotized. During a short period, a Jew could wander alone in the Arab villages and nobody would dare touch him. Does this not rate as another mini-miracle?

My Major Professional Fashla (Blunder)

"A land whose stones are iron and out of whose hills thou canst dig copper (Deuteronomy 8:9)"

The Arava

At the conclusion of the successful "Uvdah" Operation, our troops had reached the shore of the Red Sea and taken Um el Rafrash in March, 1949, in what was to be the last military operation of the War of Liberation. A short time thereafter, I was asked by Chaim Gvati, the Director General of the Ministry of Agriculture, to explore the Arava (the Great Rift) and to see if there was a possibility of developing any form of agriculture there.

Before undertaking the task, I attempted to gather as much information as possible on the Arava; unfortunately the sources were very limited.

The Arava is part of the great Syria - Africa fissure. It extends from the southern end of the Dead Sea to the northern end of the Gulf of Aqaba. It is bordered on the East by the Moab Mountains in Jordan, and on the West by the Edom mountains.

When the Mandatory Government of Palestine decided to partition the country into Transjordan and Palestine, the border between the two countries was defined as the lowest line running the length of the valley. In the southern part of the valley, the area is very flat, and determining the exact border requires very careful surveying. No wonder that the exact location of the border was unclear and frequently in dispute between the two countries. The stipulated border left most of the plain in Transjordan and only a relatively narrow strip of land in Israel.

The name "Arava" means "a dry and desolate area", which we were to find was a very apt description of the area we were going to explore. The climate is hot and dry. Fierce, hot winds blow down the funnel-like rift.

The vegetation is mainly Sahara- Arabian, excepting in the patches of marshland where the nature of the vegetation depends on the depth of the water-table and its salinity.

Geopolitical importance

The importance of the Arava for whoever ruled the area has been in evidence as far back in history as there are records, only the priorities have changed. The Judeans and the Edomites fought for centuries for its possession. Its importance as a major highway and gateway to Africa, Arabia and the Far East, has remained unchanged throughout the ages and access to the major sea routes, through its port-city Elat to the Gulf of Aqaba was at the time, as it is now, considered a matter of national survival. In the past, it was the land and sea-route that gave access to the spices, silk, gold and other products from Arabia, Africa and India and to the mineral riches of the Arava itself. For modern Israel, free access to the port of Elat, and free passage through the straits of the Gulf of Aqaba are considered vital for its economic development and when the Egyptians attempted to blockade the Straits, it was the issue that led to the Six-day War.

Preparations

I organized my "expedition" very carefully; after Beersheba there would be no possibility to refuel, purchase food or even find potable water. Our old, ramshackle station wagon was fitted out with a workshop and spare parts to serve as a mobile garage, with two makeshift bunks to serve as sleeping quarters. From the Ministry of Agriculture I received the loan of a jeep and its driver. To the jeep we attached a trailer on which we loaded some jerry cans of fuel and water, and provisions for ourselves. We were three: my head mechanic, Eliyahu, the driver of the jeep, and myself.

Beersheba

We spent the first night in Beersheba, the southernmost city in biblical times. Before bunking in, we toured the mean, narrow streets, completely deserted by its Arab inhabitants, who had fled when the town was taken from the Egyptians in the operation "Ten Plagues". I asked myself who would come to this godforsaken spot, with its non-descript houses, covered with a patina

of layers of desert dust. And if new immigrants would be dumped there against their will, where would they find work?. Lacking imagination, and with no pretensions of being a visionary, I could not anticipate that the small town, within a relatively short time, would become a proud city, the fourth largest in Israel, the "Capital of the Negev", the center of administrative, cultural, commercial and industrial activities of southern Israel. It would eventually have more than 100,000 inhabitants with its own University, Medical Center, Institute for Desert Research, theater, museum, arts center and sports stadium. How distant from my gloomy thoughts!

As for its past, it was known as the City of the Patriarchs, where Abimelech, King of Gerar, made covenants with Abraham and Isaac. During the Roman Period, it was the center of Limes Palaestina (a line of fortresses built between Rafah and the Dead Sea). It was abandoned during the Arab period and rebuilt by the Turks in the 1880's, to serve as an administrative center for the Bedouin of the Negev.

Beersheba- Ein Kusub

We left Beersheba early in the morning. A few kilometers south of the town, we passed near the ruins of Bet Eshel, one of the first three "observation points" set up in the early 1940's by the Jewish Agency, to study the agricultural potentials of the Negev, in anticipation of large-scale settlement in the area. I had been a frequent visitor there, and knew the settlers well. After five years of devoted work they had collected a huge amount of information on climate, soils and the response of cultivated plants to the desert environment.

At the time of the Egyptian invasion in May, 1948, 45 civilians, men and women, and 16 Palmach soldiers held out for five months, under constant bombardment by cannon, and held the Egyptian army at bay. They were able to supply Army headquarters with valuable information on Egyptian troop movements.

There was at the time no choice of roads to the Arava. We first traveled south on the road to Asluj, and turned eastward at the junction of the "Petroleum Road" which had been laid shortly after the end of WWII by a subsidiary of the Iraqi Petroleum Company in order to reach the location of the oil-drill set up in the "Machtesh Hagadol" (the Big Canyon). The "road" was actually a beaten track, easy to travel in dry weather, treacherous and dangerous when wet.

The whole area was desolate and barren. There were occasional Bedouin encampments, and herds of sheep and goats grazed the sparse vegetation.

After passing through a stretch of sands, the road starts to descend to the Machtesh Hagadol (Wadi Hadira - the Big Canyon). After a short drive, the road passes through a narrow gorge and we found ourselves at the bottom of an enormous, crater-like, oblong depression. There we had a breath-taking view of the floor of the depression: an expanse of badlands in an amazing crazy-quilt pattern of colors and hues.

We soon reached the end of the Petroleum Road, and from there on a track covered with rocks, and criss-crossed with wadis, which no longer merited being called a road. After crossing about 6 km of badlands we exited through another gorge in the crater's wall.

A leisurely drive, winding among rocky hills, brought us to the rim of the Negev plateau and an almost vertical drop of 400 m to the Arava. We got out of the car and were rewarded by the most amazing view: Looking down what appeared a sheer drop, we saw the fear-inspiring track on which we were to descend to the foot of the mountain: the historical Scorpion's Pass. Seemingly cut out of the cliff-face were narrow, sloping zig-zag steps of which we could see the first ones at our feet. In the distance was our objective, the Arava, and in the background, the Mountains of Moab in Jordan. To the south, in the middle of the plain, rose a table mountain, assumed to be Hor Hahar, where Aron the Priest died.

After feasting on the view, and with fear in our hearts which we tried to conceal from each other, we started the descent in low gear and maneuvered the heavily laden cars down the breathtaking steep zig-zag windings of the "Scorpions Pass". The sight of wrecked cars on the slopes was not very reassuring (a few months later a unit of the army's Engineering Corps was to widen the road and to safeguard some of the bends with oil-drums filled with stones).

There was also the fear that we might meet another car coming up the road. I counted 35 frightening bends of the road, whilst the odometer showed 3.6 km. Finally we reached the foot of the pass without mishap.

From there we traveled a short distance and crossed Wadi Fukara which drains the Wilderness of Zin.

Shortly afterwards, we met a command car with some soldiers and Moshe Dayan, covered with dust, whose eye-patch was as gray as his face. He had just returned from Um el Rashrash, our ultimate destination. He inquired what we were doing in the area, and after having satisfied himself that we were on a bona fide duty tour and not just sightseers, he gave us some instructions and permission to continue on our way.

Ein Husub

We reached Ein Husub in the afternoon and camped overnight under its reputedly 2000-year old jujube tree (*Zizyphus spina-christi*).

The next day we explored the oasis. First a good look at the tree under which we had past a restful night. The circumference of the jujube's trunk, at 40 cm above ground level, measured 6 m; its trunk was 12 m high and its large canopy reached a height of 12m. The tree had survived many generations of Bedouins whose habit of merciless harvesting of wood always ended in crippling or killing the trees. The jujube had survived because of its reputed holiness. The Bedouin believe that a "Jin" (spirit) lives in its canopy. The tree's heavy branches were weighed down, and one arm, the largest, formed an arch whose end appeared to be resting on the ground.

Near one of the sources, was another tree, of more recent vintage: a giant Eucalyptus probably planted by the British and which had thrived far from its native habitat in Australia. Groups of Acacia (*A. tortilis*) and Tamarix (*T. deserti*) surrounded by green, lush vegetation producing plentiful grazing.

Nearby, the former British Police station, built on the ruins of a Roman-Byzantine fortress, attested to the enduring importance of this strategic site, which, throughout history, had been a major junction of roads to the to the Gulf of Aqaba and to Transjordan.

Ein Husub - Elat

We started our trek down the Arava. My procedure was as follows: We would leave the station wagon with Eliyahu, the mechanic, on the main track, and I would use the jeep to explore the area, alternating between the left and the right side of the track, examining every well and every water source marked on the map.

One day, just before I had decided to turn back after having traveled to the East, the engine spluttered and then stopped. Evening was fast approaching, and I was not sure on which side of the Jordanian border we were standing. The driver sat passively, and when I told him to do something to get the jeep moving again, he answered: "I am a driver and not a mechanic". When I told him to take out his tool-kit and give me a screw-driver, he informed me that it was forbidden for him to tamper with the engine, and that therefore he was not given a tool-kit. I asked what he was supposed to do in our predicament and he answered that he had been told to phone to his chief, who would then send help. Fine, I said, with what I supposed to be biting sarcasm, "go and phone your chief".

Assuming from the last choking sounds emitted by the engine, before it stopped breathing, that the fuel-line might be clogged with the all-pervading desert dust, I fished out my Swiss army knife which comes equipped with a garageful of tools. I unfastened the fuel hose, took the end in my mouth, first blew hard and then took a deep breath which rewarded me with a mouthful of fuel. Choking and spitting, I replaced the fuel line and after a few attempts the motor sprang to life.

The area South of Ein Husub was criss-crossed with numerous riverbeds or wadis, large and small, covered with a savannah-type vegetation: many trees interspersed with a variety of shrubs. The areas between the wadis were mostly covered with a desert pavement (hamada) and devoid of vegetation.

Ein Yahav

We reached Ein Yahav, another water-rich oasis (21 km from Ein Husub) where the ancient Sultan's Road from the East joined the Arava Road. The swampy area was covered with reeds. Any attempt at farming would require drainage and reclamation of the salt-laden soil.

Shortly after passing Beer Menuchah, another water-rich oasis, about 40 km from Ein Yahav,

we crossed the watershed of the Arava: the dividing line between the northern and the southern Arava. The plain, at this point, is 600 m above the level of the Dead Sea and 200 m above the Aqaba Gulf.

Ein Yotbetah is a large oasis with a very high groundwater-level which in many places appeared at soil level. The dominant feature was the tall palm-trees "with their feet in water and their heads in a furnace" - ideal conditions for this tree that can subsist in very saline areas. This is the only place in the Arava in which we saw evidence of cultivation: young palm trees planted by Bedouin in basins formed above soil-level.

Small patches of salt-encrusted soil were in evidence. Most of the area was covered with a dense, typical "sabcha" (marsh) vegetation: Acacias (mainly *A. tortilis*), a variety of shrubs and reeds (*Phragmites communis*) provided abundant grazing for camels.

Moving south, we passed the site indicated on the map as the location of King Solomon's copper mines.

The last 50 kilometers of track had a corrugated surface; the hard ripples of which rattled the cars and shook our teeth loose. Finally, the coast of the Gulf of Aqaba came into view.

When we arrived at Um el Rashrash (present day Elat), there was nothing but a small mud-brick police station, empty but not forlorn, because the blue-and white flag of Israel was fluttering from its rooftop. This was all that remained of King Salomon's port city and industrial center at the junction of the borders of Israel, Jordan, Arabia, and Egypt.

Not a soldier in sight, it was as if an explorer had reached the North Pole, hoisted his country's flag to say "I have been here first" and then left thankfully for home.

So we passed the night sleeping on the beach in the balmy warmth. During the night I reflected on how the State of Israel was going to hold on to this isolated spot, hemmed in on all sides by enemy states - Jordan, Saudia and Egypt and separated from the population centers by hundreds of kilometers of awful tracks, much of which were impassable after it had rained. Who would want to live in this god-forsaken place, scorched by the furnace-like winds which swept down the funnel-like Arava?

It would have needed a biblical prophet to envision the thousands of tourists arriving at the airport from Scandinavia, in giant planes, to buy sunshine (a commodity we Israelis seek to shun as much as possible) and to find accommodation in the numerous 5-star hotels lining the beach; to visualize the giant trucks, carrying tons of potash and other minerals to be loaded on ocean-going boats in the bustling port, rolling at high speed down a highway that had obliterated the dusty bone-rattling track on which we had traveled. Still more difficult to visualize was the town itself, with about 20,000 inhabitants living in air-conditioned dwellings.

I may be excused for my gloomy thoughts on that night, and for not being a visionary capable of visualizing the new Elat that would spring to life after a few years.

On our way back, we still had to explore the northern Arava, from Ein Husub to Sdom. We retraced our steps northward till Ein Husub and from there to Sdom.

A few months earlier, the workers at the southern site of the Potash works were unable to evacuate Sdom through their normal route: sailing the length of the Dead Sea in the Company's cargo boats, and then by road to Beersheba. Under siege by the Transjordan Legion, a small unit of the Palmach pierced a track from Ein Huseba to Sdom through the Amatsia Gorge, and evacuated the workers.

It was this track that we followed. The first few kilometers were savannah-type country, until we entered Wadi Amatsia, a rock-strewn track about 20 km long which gradually becomes a canyon bordered by steep cliffs.

On leaving the pass, one sees in the distance the Dead Sea Works, which we reached after passing several kilometers of salty marshland covered with lush vegetation.

At the Dead Sea Works we found a lone guard, an old man who was holding this enormously important piece of real estate against the Jordanian Army! . A platoon of Jordanians could have taken the place without firing a shot.

Before we left we asked our host whether we could do something for him. All he wanted was a sip of the wonderful water from the North. Being on the last lap of our journey home, we left him our last Jerry can of sweet water.

I hate to repeat myself, but feel justified in so doing. The whole episode as I have described it, beginning with Um el Rafrash, held with nothing but a flag on the rooftop of a lone hut; the Arava road that runs its entire length of some 200 km within spitting distance from the Jordan border and finally the Works at Sdom, held by a lone elderly guard, again "defies all logic, occurred against all statistical probabilities and was contrary to what an average person would expect". In short, another miracle.

The remainder of our trip on the way home was uneventful.

Debriefing

When Gvati asked for my answer to his question: "is large-scale farming possible in the Arava" my answer was negative and unequivocal.

I tried to explain the reasoning behind my negative assessment. With the exception of the relatively small and isolated oases, there are vast expanses of desert pavement ("hamada") on which even a blade of grass cannot establish itself. Water resources, are mostly unfit for irrigation, and appear to be extremely limited. Without soil and without water any possibility of farming is precluded. If water was brought in from the North, or if local water resources were discovered and developed, some limited and isolated oases (mostly "sabchas"- salty marshes) might be made fit for crop production by a costly process of desalination.

However, the difficulties faced by farmers would be daunting. The only suitable method of irrigation available at the time was sprinkler irrigation, which entailed an enormous loss of water by evaporation and drift, in the scorching hot and dry climate of the Arava. The geographic isolation of the settlements and the lack of a local market for their produce would make transport costs prohibitive. The final argument that bolstered my negative assessment was that whilst remains attest to a highly sophisticated and successful agriculture that had been developed in the Negev, there was no sign indicating that a single agricultural settlement had existed in the Arava.

I am not blessed with a rich imagination and am not adept at visualizing future developments, but am used to basing my judgments on common sense, logic and knowledge of available technology.

Hence, my considered opinion, based on faultless logic, was in brief: "Not a hope"! This was going to be one of those "Famous last Words".

The Solution

For geopolitical reasons outlined above, our Government decided that it was essential to settle the long Jordan - Israel border, whatever the cost, the technical difficulties and the resultant economic constraints. The first agricultural settlements were established in the Arava without a technical solution to the problems outlined above.

The settlers first solved the soil problem by mobilizing their bulldozers and moving the sand dunes (possibly from across the border), spreading a layer of sand of about one meter depth over the desert pavement, to serve as a rooting zone for plants.

Their attempt to irrigate was less successful: overhead irrigation proved to be inefficient and caused more problems than it solved. Besides the considerable losses due to evaporation in the dry desert atmosphere and drift caused by the strong hot winds, the high-salinity water scorched the leaves. The combination of moist leaves and high temperatures was also conducive to the rapid spread and intensity of many plant diseases.

Drip irrigation

Some years previously, an irrigation engineer, S. Blass, had come to my office asking for financial aid to test an idea of his. He was concerned about the huge losses of water due to evaporation by overhead irrigation, the dominant system in Israel. He reasoned that these losses could be curtailed by placing underground small-diameter pipes with regularly spaced orifices for water discharge.

The idea was sound, but its implementation in the field was impossible. It was soon found that the orifices were soon clogged by the roots of the irrigated plants. And the matter remained temporarily adjourned.

That "necessity is the father of invention" is a well-worn cliche, I do not deny, but it is the most apt description of what followed. One of the settlers, whose name I unfortunately do not remember, recalled the Blass experiments, and decided to lay the Blass pipes on the ground instead of underground and thereby avoid the clogging of the orifices. This "Columbus Egg" type of solution proved to be not only sound, but also practical. Experience showed that losses by evaporation were minimal. However, this was not all. Inadvertently, an entirely new concept of irrigation had emerged. In all the previously known methods of irrigation, levels of soil moisture between irrigations passed through alternating cycles of wetting and drying and it was impossible to maintain the moisture at a constant optimum level. This inevitably resulted in periods of excess water for the crop alternating with periods of water stress.

In drip irrigation, irrigation water is applied drop by drop and an optimum moisture level can be maintained throughout the growing period of the crop, resulting in greater water-use efficiency and higher yields. Because of the constant high moisture level brackish water can be used with little damage to crops, a very significant advantage in the Arava. It was further found possible to add fertilizers, in carefully calibrated amounts, to the irrigation water, thereby significantly increasing yields. The dry foliage reduced risks of infection by foliar diseases. And an unexpected benefit: the relatively high salinity of the water proved to be a blessing in disguise crops irrigated with saline water proved to be sweeter and of higher quality. Finally, the system can be fully automated and requires a minimum of manpower, and could be operated 24 hours a day, even when strong winds are blowing. It are these advantages that have made drip irrigation a major factor in making agricultural production feasible in the Arava.

And thus "drip irrigation" was born and has since been adopted all over the world. Naturally, problems were encountered, but with investments in research and development, the technology now known world-wide as drip irrigation gradually evolved. All other production problems, specific to the Arava, have been gradually resolved at three experimental observation stations, manned by local farmers under the guidance of research workers from the Agricultural Research Service.

The Arava is now a major supplier of out-of-season field-grown high-value crops for export, mainly to West European markets. In field trials in the Arava, winter tomatoes produced 58.3 tons/ha under drip irrigation, compared to 35.8 tons/ha with sprinkler irrigation, an increase of 63%. Salt-sensitive cucumbers, that formerly could not be grown in the Arava, now produce significant yields. The problems of marketing have been overcome by the fantastic growth of the town Elat, a major market for agricultural in its own right, and the establishment of the airport to serve the city has made export of out-of-season crops to Europe feasible. A string of agricultural settlements have been established in the Arava from Sdom to Elat along the border with Jordan: Neot Hakikar, Ein Hazava, Ein Yahav, Beer Zofar, Grofit, Yotbetha, Sherafon (where both my granddaughters did part of their military service as members of the youth organization - (Nachal) and Eilot.

I confess that I am very happy that my assessment turned out to be the major professional "fashla" of my career, and that a prosperous agriculture was developed in the Arava despite my dire predictions.

Fatherhood

Qiryat Haim

With a regular job and salary assured, we felt the time had come to stop family planning and start planning a family. First, we decided, like most of our colleagues had already done, to buy a home in Kiriath Chaim, a workers' suburb of Haifa, situated about half-way between Haifa and Acre.

This was part of a Histadrut enterprise to enable workers to become owners of their homes at an affordable cost. The construction was handled by Solel Boneh, whose mission was to keep building costs at a minimum, and not make maximum profits, as became the norm in Israel.

The settlement was built on land owned by the Keren Kayemet which charged a nominal yearly rent. The mandatory government did not extract taxes for building homes, and was in this respect socially far more correct than the future Government of Israel. It was relatively easy to obtain a mortgage from the Workers Bank, and to repay the loan in monthly payments about equal to what would have been paid in rent for a similar home.

The aim was to build small houses, with flat roofs which could be built on at a later stages, each one in its own plot of one dunam, later reduced to two/thirds of a dunam; the objective being that each family would have a lawn and flower beds, and would grow its own vegetables and fruits, raise chickens. In brief, an admirable socialist enterprise.

We contracted for a two-room house, with enclosed terrace, which was practically an additional room, a small hall, kitchen and facilities, all for the sum of 450 Palestine Pounds, which included infrastructure, such as water supply, electricity and roads lined with trees, each road with its distinctive tree species.

The only apparent drawback was that the settlement was built on shifting sand dunes, excellent for building purposes, but very problematic for growing vegetables and other crops.

When it became clear that our baby was expected end of August or early September, we started negotiations for buying a house. When we announced the two future events to my parents, they immediately offered us a loan to be repaid at our convenience.

On August 31, I took my wife to Molada, a nursing home on the Carmel. The same day, I received the keys to my house. There was an enormous amount of work to do to make the home ready in the four, five days that mother and child would stay in the nursing home, and I took a week's vacation.

General cleaning up and moving the furniture were the first steps. The house was built on pure sand, which the builders used for mixing cement, thereby creating a deep ditch all around the house. This would have made a wonderful moat if the house had been a castle. I spent a full days work on filling the ditch, with sand carted in a wheelbarrow from the dune at the edge of our plot.

The next step was preparing the garden. First, the plot had to be leveled and the sterile sand, which had none of the characteristics of a normal soil, such as structure and stability, fertility, an active microbial life, an ability to retain water, etc. had to be transformed into a soil on which plants could grow and thrive. Two truckloads of manure from the animal quarantine station in Haifa were a first step for achieving this purpose.

A lawn was planted, a ficus tree to commemorate the birth of our firstborn was planted, and a strawberry patch prepared.

Our First -Born

At intervals, I drove to Haifa to visit my wife. Several cases in which babies had gotten mixed up at birth had been reported in the press, and the possibility of this happening to us worried me considerably. When I found that my wife was sharing her room with a neighbor from Qiryat Haim, named Levinson and that both had started labor within minutes of each other, and both having boys, my fears increased.

When I was shown my new-born son, I was shocked how ugly he looked with his face covered with a large red birthmark. A glimpse at the neighbor's baby showed him to be a beautiful boy, without a mark on his body. I then looked at the ribbon around my son's wrist: it said Aronson, and my worst fears were confirmed.

My wife did not share my apprehensions. When the doctor announced "Mazel Tov, a boy" she said "what a pity" as she had wanted a girl. But she quickly related to the baby as her own after it was put in her arms for its first meal. My doubts also dissipated as the birth-mark gradually faded and familiar family features began to emerge.

Shopping Spree

One day was devoted to buying all the paraphernalia required for a baby. Hilda dictated a list to me and I went on a shopping expedition. We had sold Hilda's diamond brooch, received as a wedding present from my parents to raise capital for these purchases. At the end of the day I lugged everything to the bus station and loaded the whole package on the top of the bus. Climbing down and entering the bus, I noticed that my pocket book, with several pounds still left, had fallen from my pocket. On the assumption that I would find my purse somewhere near the bus, I jumped off to look for it; and the bus driver took off whilst my back was turned. I did not find my pocket book, and with some loose change in my pocket, I took the next bus to Qiriat Haim to retrieve my purchases. When I arrived, the bus was still there, but of our baby's equipment, not a sign. So there I was, no money, no brooch and no equipment. There was no choice but to borrow money and start all over again.

The "Brit-Mila" (circumcision)

After I had taken mother and baby home, I fetched a poultry farmer from Naharia to do the circumcision. Incidentally, the farmer, like most farmers in Naharia, had an MD diploma and many years of medical practice in his native Germany.

I had prepared a glass of cognac for the doctor. I held the baby, and the doctor wielded the scalpel. He then looked up at me, handed me the cognac and said: "drink, you need it more than me!"

I have never been able to reconcile myself to this archaic and barbarous practice to which helpless babies were subjected, but I felt compelled to conform, so that the child should not be considered a stranger among his peers.

The girls with whom Hilda worked on a seasonal job in an entomological laboratory put their heads together and decided that the baby's name would be Dan. I liked the name - it was short, had a nice sound and was biblical, without any of the unpleasant connotations associated with many biblical figures.

Small-scale Farming

Starting all over

The night before we were to move into our new home, a gale wind blew. When we arrived to settle in, I was shocked to see that the ditch around the house had been resurrected and the sand I had dragged to fill it in had been deposited in my neighbor's garden. The strawberry plants had been buried, with only the tips of their leaves visible. The struggle to turn a sand dune into a fertile garden had begun.

In due course an overhead (sprinkler) irrigation system was installed, so that it was possible to irrigate the garden by opening two taps, one for the front half, with its lawn and flowers, and one for the back and sides of the plot, devoted to vegetables and fruit trees.

The advantages of sand

The sand had several advantages, besides the drawbacks already mentioned: it was easy to cultivate, and at first, it had no weeds, plant viruses or other pathogens, no nematodes or insect pests. All this changed, as the soil became more "normal" and plant pests discovered a new home.



Danny - Growing up on a small farm

During the war, this small garden provided many of our family's needs. We had oranges, grapefruit, clementines, lemons, strawberries, potatoes, tomatoes, squashes, lettuce, radishes, etc. all in excess of a small family's needs. We had no success with apples, pears, and some vegetables. We raised chickens, ducks, geese, turkeys, and rabbits which provided eggs and meat. We even tried a Saanen goat for milk, but the kid had "imprinted" Danny as its mother, and followed him around in the house. Danny's parents did not agree, however, to share their home with a goat.

Backyard wildlife

As the little farmstead grew, it attracted many visitors. Jackals would howl at night under our windows protesting at their inability to get at the chickens. Once, just in time, I saw a snake, curled up on the doorstep, as I stepped out of the house in the evening to turn off the sprinklers. Another time, I spotted a 2-meter viper as it slithered across the garden and found shelter under the bougainvillea, a thorny, impenetrable bush. I could not possibly allow this danger to remain alive, especially with a child such as Danny around.

The problem was how to get at the snake in its refuge without getting bitten or allowing it to escape. First I had to prune the bougainvillea to get near the snake, at the same time getting within the snake's striking distance.

When I finally could see the snake, coiled up and hissing defiantly, I dispatched it with a hoe whilst my heart beat wildly and my knees wobbled.

Neighbors

A fence around the garden was installed, to be removed shortly thereafter as Hilda and Elka Stavsky became firm friends, visiting each other throughout the day. The fence forced them to pass into the street and enter their respective homes through the front door. By removing the fence, it was possible to move directly from kitchen to kitchen, a big advantage when consulting on a recipe or borrowing some salt.

Danny - A model baby

Danny was a model baby. When he was six months old, his grandmother arrived on a visit, laden with gifts. I went to fetch her from the port, where she had been caught smuggling some cloth for a coat for Hilda.

On the way home, I told her proudly that Danny, unlike other babies, slept soundly at night and never disturbed our sleep, as do all other babies. Famous last words. That night, and all the nights that followed, Danny would wake us several times, quieting down only when I took him in my arms. If I tried to lean against a wall, or worse still sit on a chair, my model baby would howl like a banshee.

When I consulted the family doctor, she said "let him cry; we will see who is the stronger" I told her that I already knew the answer.

The child

Danny grew to be an inquisitive and mischievous youngster, very much interested in the world around him. He had a love for plants and especially animals. He had no fear of snakes or scorpions. He could identify plants and identify trees by their Latin names.

He was not what one would call a model pupil. His notebooks were a mess, relieved by the sketches and cartoons for which he had a special gift. Yet he absorbed knowledge like a sponge.

He was the terror of his teachers, of one in particular whom he scorned. I had given a lift to this particular teacher. When I answered his question whether I was Danny's father in the affirmative, he requested me to stop and got off the car. Danny was not afraid to embarrass a teacher by pointing out that the cereal ear shown in a display of cereals and labeled as wheat was actually barley.

He would bring home all kind of snakes, and when Hilda entered his room, there would often be a small snake on the table, rearing its head and menacing the intruder.

When we visited my grandparents who had settled in Israel and bought a home in Ramat



Gan, Danny would go for a walk and come back with a snake in his pocket. When he showed his trophy, I asked him how he knew it was not poisonous. He said he identified it from a description by Margolin, a well-known zoologist who had written a text book on the subject. When I insisted he might have made a mistake of identification, he said not to worry, he knew the snake was not poisonous - it had already bitten him.

Once, when he was still a 5-year old toddler, I found him sitting glumly on the front steps of our home. To my query "what's wrong" he replied "I have promised to marry Hadassah". When I asked him what was wrong with that, he said: "I have also promised to marry Leah." After a few minutes his face lighted up and to my question without words he said: "I know what to do. I am going to be a farmer, and will keep Hadassah in the village; I will also be going to town to buy supplies. and there I will keep Leah".

How could I convince him that this was not a good solution, when a future Minister of Agriculture, member of a kibbutz, adopted the same formula some years later with apparent success ?

Adolescence

When Danny was about twelve years old, he insisted I should teach him to drive the car. His legs could not reach the clutch or brake pedals, but this was not an obstacle as the car had a fluid drive and Danny would sit on my knees, steering the car.

As an adolescent, Danny never consulted us, but simply informed us of his decisions. One day, we received a letter from one of his teachers, addressed to "The parents of Dan Arnon". Fortunately, I liked the name and decided to adopt it, thereby narrowly avoiding having a family name different to that of my son.

Leaving home

When he was about seventeen, he announced that he was enrolling at the Kadoorie School on Mount Tabor, an agricultural school for interns, famous for having trained many of the political and military leaders of the future State.

He drew our attention to the fact that this actually meant that he was leaving home for good, as after Kadoorie he intended joining a kibbutz and thereafter do his military service. It was also post factum that I learnt that he had joined the paratroopers and in later years that he had decided to leave the kibbutz and enroll at the Faculty of Agriculture.

Only once did I decide to interfere in a decision that he had made. A few months before graduating, he announced that he was not going to be an agricultural economist, and that there was no point in completing his master's thesis and taking his exams as he would not be needing a diploma as a free-lance graphic artist, the profession he had chosen.

I explained to him that it would be an irresponsible act towards his instructor who had invested much work of his own in his research work.

I doubt whether I would have been able to assert my authority if Danny would not have recognized the justice of my request. Incidentally, I received my Ph.D. degree, at the same ceremony as Danny received his Master diploma as Agricultural Economist.

A few days after graduation, I received a phone call from the National Bank of Israel, asking me to influence my son to take up their offer of appointing him as agricultural economist to the Bank. I knew this would be futile, and was therefore not surprised, when I told him of the offer, that he replied "I have no intention of being a "frier" (dumbbell) like my father, working fixed hours for a pittance.

From what I heard from him in later years, Danny was not happy with me as a father. He felt I was too wrapped up in my work to pay him sufficient attention. I had thought that I was a liberal and loving father, but if that was his perception, I must have been unwittingly wrong in my role as a father.

Part Four: An Agricultural Researcher in Israel

Neve- Yaar

Waldheim

Immediately after independence, we took over some land and abandoned houses in Waldheim, a German Templar village from which the inhabitants had been expelled and transferred to Australia.

This was the beginning of the Neve Yaar Experiment Station, which is still flourishing to this day as the regional experiment station for the North of the country.

Gently undulating fields made experimentation easy to plan and implement. The location was ideally situated in the heart of the Emek, the major agricultural region of the country. Large areas of woodland and natural pastures were available enabling research on pasture improvement, beef cattle and sheep breeding and management

Competition for land

Competition for available land was fierce. Besides ourselves, two moshavim and two kibbutzim squatted in the village. Each of them had strong backing to press their respective claims, exerting inordinate pressure on the Jewish Authorities.

Most of the infighting occurred in the Agricultural Center and Gvati, at the time Secretary General of the Center would shout at me: "Arnon stop pestering me". My answer was: "You should be pestering me to set up an experiment station and not the other way around".

One day I received a summons to appear at the Jewish National Fund's main office in Jerusalem. The whole board of Directors was assembled to confront Arnon.

Joseph Weitz went straight to the point: "There is no place in Waldheim for four settlement bodies and an experiment station. We want you to leave Waldheim and we will give you land elsewhere. Do our bidding and we will inscribe your name in the Golden Book".

I answered: "I have not expected to be inscribed in the Golden Book for establishing experiment stations; the last thing I want is to be honored for dismantling an experiment station". Weitz banged his fist on the table and shouted: "YOU WILL LEAVE" and my reply: "since when is banging on the table and shouting a valid argument. I will not leave willingly, maybe you can throw me out".

The board members, not accustomed to seeing resistance to Weitz, were dumbfounded and no one intervened on my behalf.

Dividing the spoils

The final result was that one kibbutz, Lochame Gettaot, went to a location near the Acre experiment Station, and another kibbutz, Hagoshrim settled in the Hule Valley.

The land available was divided between the Moshav Hamaavak, which remained in Waldheim, another moshav moved to nearby Bethlehem, and the Neveh-Yaar Experiment Station.

We moved to a new location near the main road after I discovered: the abandoned farmstead of the Stock family

Interdepartmental strife for turf.

The manner in which land was allocated and settlements set up was not the only example of the confusion that reigned in the early days of the state, when every government department and every non-government body was fighting to establish and protect its turf and its prerogatives. Laws had not yet been passed or regulations defined.

Unorthodox Solving of Problems

One example of what this situation implied for a young director of an experiment station who had to manage without clear indications of what was permitted and what was forbidden, and worse still, often had to solve problems in a way he knew were illegal.

One day in early December, I received a cable from Asael Ben David, the Assistant Director General, informing me that my budget was exhausted and that I could expect no further funding.

except for the salaries of the permanent staff.

I immediately took off for Tel-Aviv, requested a meeting with the Director General, C. Gvati, showed him the cable sent by his deputy, and asked what I was supposed to do. Gvati's answer: "You have always fought to be independent, so don't ask me what to do. "Tistader! (find a way)".

"Find a way" signified finding a way of paying the salaries of some thirty people and paying for essential supplies needed to run a farm of over 2000 dunams for the next three months. There was no way this could be done legally.

I had 300 kg of seed of a new variety of sweet sorghum - Leoti- that had been found capable of producing over three tons of silage per dunam, under rainfed conditions. This variety had the unique characteristic of producing ripe seed whilst the stalks were still sweet and succulent. The major disadvantage was that the height of the crop precluded harvesting the seed mechanically and manual harvesting was both arduous and expensive. Fortunately, less than one kilogram of seed was needed for sowing one dunam.

I then went to the Acre Station, for which I was nominally responsible, but which was headed de facto by Z. Ben Adam, a good friend of many years. I told him I had a plan, which required his cooperation.

The dairy herd was still located at Acre, and forage supply was a major headache for Ben-Adam, who was a poultry expert. I told him that I would provide him with 1000 tons of silage: and for this he would have to sow 300 dunams with seed that I would supply. When the crop was ready for harvest, he would also have to provide 30-50 relief workers (whose work was paid for by Government) who would cut the seed heads prior to harvesting the crop for silage.

I estimated this would give me about 100 tons of seed, enough to sow 100,000 dunams. Ben-Adam was delighted with the proposal, and my next step was a meeting with Mendel Reisner, Director of the Seed Cooperative "Hazera". I told him of my problem, sold him my future crop of Leoti seed at one Israeli pound per kilogram giving me a fund of 100,000 pounds.

I stipulated that not one agura was to be transferred to Neveh-Yaar, but that once a month I would send my workers to Hazera to collect their wages, to be paid from my fund. A highly illegal procedure, but an elegant solution to my dilemma.

When some time later, Dr. Moses, at the time State Comptroller, visited Neveh-Yaar, he said he could not understand the discrepancy between my approved budget and the extent of activities at the station. I asked him whether he had come as State Comptroller, or as a visitor interested in agricultural research.

After he denied he was visiting in his official capacity, I told him my story (one example among many). He shook his head but made no comment. Today, the same "solution" would have landed me in court.

And here is an example of the ferocity with which each Government department fought for its turf.

I had found out that at a depot of discarded military vehicles one was allowed, after paying 10 Israeli Pounds, to cannibalize as many jeeps as one needed to build one jeep that could work, that could leave the depot under its own steam.

Whilst we were still stationed at the former Waldheim, I was faced with the need to transport my workers from Shaar Haamakim on the main road, to the Station on a winding trail through the hills.

I sent my mechanic with a team of helpers to get us a working jeep. In the evening they returned triumphant with a live jeep, and even a trailer thrown in for good measure.

Then started the real problem. A recently established unit in one of the Ministries was invested with the authority to approve (or not) purchases of vehicles by government departments.

There was no argument that the vehicle was essential for our work and could not have been purchased at a more favorable price. By the time authority to purchase the jeep would have been forthcoming, there would be no jeep, as I was not the only one who had heard of the bonanza. The official in charge was obdurate, even after he heard the circumstances which made the unauthorized purchase necessary. "A horn will grow from the palm of my hand before you get your permit", was his final answer after weeks of arguments.

I asked him what he suggested I should do. He said: "very simple, sell or keep the Jeep, return

10 pounds to government and then ask for permission to buy a jeep". I said that I was sure that my Minister would be interested in hearing his proposal, which came down to my selling a jeep worth at least 100 Pounds, repaying government 10 Pounds, pocketing the difference and then buying a "kosher" Jeep for over 100 pounds.

I left his office with the permit. If I had followed his advice, I would have been richer by 90 ponds, and Neveh Yaar would have been poorer by the same sum, but I would have acted legally, instead of arm twisting an official who was after all doing his duty.

New staff

In the meanwhile the number of researchers at Neveh Yaar was growing . With no clear regulations for appointing staff, I could appoint any candidate for a post if I thought him suitable. There was no shortage of topics that required attention. After appointing someone to the temporary staff, I would endeavor to get an additional slot to accommodate my new worker and to make him part of the permanent staff. Usually, in those first years of the State, it was not difficult to convince retroactively the Administrative Director of the Ministry that the new worker was really indispensable.

Shlomi

The first newcomer to join the staff of Neve Yaar was Avraham Shlomi. An ex-kibbutz member and autodidact, one of the founders of Mishmar Haemek, he had been on a training course in the USA studying the techniques of hybrid maize production On his return, the kibbutz found it could not afford to finance his enthusiasm for maize breeding, and was happy to release him to the experiment station, which was to become his natural habitat.

Shlomi left the kibbutz and his wife of many years and became immersed in maize breeding to the exclusion of everything else.

He worked from early morning to dusk, thinking, talking and doing maize. It was impossible to refuse him anything. After once or twice refusing one of his many requests for materials or workers, I found that his persistence was far stronger than my resistance. When the other workers complained that I gave Shlomi what I refused to give them, I told them that an experiment station of our size, and a director of my stature, could manage only a single Shlomi. A duplicate would cause the breakdown of the system and its director. This appeared to be a persuasive argument, as I did not need to repeat it.

Unbelievably, he found time to fall in love with a young woman. One evening at dusk, driving through the fields, I saw Shlomi courting his future bride by explaining to her the intricacies of hybridizing maize, and introducing her to the major male and female parents that he manipulated in his breeding program.

Pinthus

The next to appear was Moshe Pinthus. A fresh graduate from the Rehovot Faculty of Agriculture, Moshe appeared to be a pleasant, unassuming and eager young man. I took him on without hesitation, and was pleased that his first request was to be allowed to learn to drive a tractor. I told him: "not only a tractor but all farm implements," to which he readily agreed.

Moshe was the only researcher to wear a skull-cap. When he came to me, some time later to state that he did not agree that the mules work on Saturday, I felt that I would have to make things clear to him once and for all. I said "Moshe, I respect your beliefs, but you must realize that we do not share them. Whilst I will never call on you to do anything against your traditions, the others are free to do what they consider needs doing, and I will accept no interference from you. Frequently, seasonal work is urgent, and we all work on Saturdays when we feel it is necessary. As to the mules, they and their drivers are Moslems. Like us, they sometimes forego their days of rest, which they always get compensated for by an extended vacation.

There were no further complaints.

Dovrat - Hiring by Proxy

One day I received a letter from Wales, from a young man named Amos Hammelburg,

requesting a job as researcher. Amos was a graduate of the prestigious Agricultural University in Wageningen, and was training at The Aberystwith Plant Breeding Station, the same institution where I had spent six months of my sabbatical. It was on the recommendation of my good friend Dr. R. Whyte that he was writing to me.

I needed an assistant for work on improving natural pastures, and thought that this might be a suitable candidate. I answered his letter immediately, responding in the affirmative, namely that a job might be available, but that I was not in the habit of appointing people sight unseen. I suggested he should come to Israel, and if I found him suitable, his appointment would be assured. A few days later, my secretary told me that a young man named Hammelburg asked to see me. Surprised at the ultra-quick response to my letter, I told her to let him in, and was still more surprised to see a typical Israeli standing in front of me.

He explained that he was an identical twin of Amos. When the latter had enrolled at the University, his brother had come to Israel and settled in a moshav nearby. He concluded his story with "You wanted to see Amos, here you see an authentic replica".

I liked what I saw and decided that there was a good probability that the candidate would not be too different from his twin brother. I told him that Amos could come on a 6-month trial. Several months later I met Hammelburg in the street in Waldheim, I said "Hello, Amos". He answered "Hello, but I am not Amos". That was the first and only time that I hired somebody by proxy, and have had no cause for regret.

Berkovitch

Yaakov Berkovitch was someone entirely different from the others. About 50 years old, the Hungarian agronomist took over the management of the experiments in the regional stations. An indefatigable worker, he would appear in Nirim at 7a.m. after having traveled 200 km from his home in Tivon, and would be waiting for the station workers from the kibutz to appear.

He was absolutely trustworthy in implementing the experimental plans I prepared. He had no desire to be involved in the analysis or presentation of the results, which he left entirely to me, and was content to see his signature next to mine on the final reports.

In due course, he became director of Neve-Yaar.

The Ministry of Agriculture

Politics

In the first weeks after the establishment of the State, the Ministry of Agriculture was being organized. I received a cable from Chaim Halperin, the newly appointed Director General of the Ministry, asking me to come to Tel-Aviv.

Halperin, whom I knew well from his former role as Secretary General of the Agricultural Center, informed me that I was being considered for the post of Director of the Field Crops Division, but that the Minister first wished to know to which political party I belonged. Actually, I did not belong to any political party, because I could not identify fully with any of them; the party with which I had the most affinity sentimentally was Mapam, whose blind support of Communism in general and of Stalin's Soviet Russia in particular, I could not stomach. Even if I had found a party fully to my liking, I was too absorbed in my work to engage in politics.

But Halperin's question angered me; I told him that if the Minister was so interested in my political views, he could invite me to a cup of coffee for a private conversation and I would then gladly reveal my political convictions. But in the office, under the circumstances in which I found myself, I refused to answer his query.

I heard no more about becoming the first Director of the Field Crop Department, to which post Amir, with impeccable political credentials, was appointed.

This incident was for me the first hint that the medinah (state) in making, for which we had fought, was not exactly what we had dreamt about and hoped for.

I was reminded of my encounter with Halperin a couple of years later, at a theater show in Yidish: when Shumacher told how on his arrival as a new immigrant, his first step was to register with the Mapai representative. When asked by the clerk whether he was joining the party out of conviction or to be favored in business, he replied: "Both, because I am convinced that joining is the only way to be favored in business!".

Incidentally, I did have the opportunity of a cup of coffee with the Mapam Minister of Agriculture, A. Zisling, a few weeks later and told him the story of my aborted appointment. He firmly denied ever having requested information on my political affiliation, and was not even aware that I had been proposed for the post.

In all fairness, I must state that the absence of political affiliation did not hinder, in any way, my professional advancement, and that I reached the highest rung in the professional ladder without ever having joined a party.

Coordinating Agricultural Research

A dual Framework

After independence, the state inherited the dual framework of agricultural research and experimentation from the Jewish Agency and the Mandatory Government.

In 1948 four separate research services were functioning in the country: the Rehovot Experiment Station, which was officially transferred from the Jewish Agency to the Ministry of Agriculture; the Faculty of Agriculture of the Hebrew University; the research branches of the different departments of the Ministry, which had inherited the research infrastructure established by the Mandatory government, and the Neve Yaar Experiment Station, with its network of experimental substations from Ayelet Hashachar to Nirim, which enjoyed complete autonomy.

The Department of Agricultural Research, Education and Extension.

The declared government policy was to invest responsibility for all agricultural research, education (excluding Universities) and extension in a single Department in the Ministry of Agriculture.

The first Director of the Department of Agricultural Research, Education and Extension to be appointed was Dr. Carmin, who subsequently proved to be completely unqualified for the job.

Formally, the Department took over authority for the Agricultural Research Station at Rehovot, and all the Experiment Stations established by the Mandatory government.

In practice, the following situation developed: Rehovot, to all intents and purposes retained its autonomy, the same was true in regards to Neveh Yaar Agricultural Experiment Station which was incorporated into the new Department of Agriculture. All the other experiment stations inherited from the Mandatory Government (Horticulture, Animal husbandry, Poultry, Fisheries), remained under the authority of the respective departments of the Ministry.

Unable to implement its mandate of uniting all the parties involved, the new department set up some research units of its own, such as Ecological research, a Dew research station, a Fisheries experiment station, etc. and thereby effectively became a fifth, if minor, player in the Israeli research service.

For many years, all attempts to integrate all these elements into a single organizational structure, according to declared government policy, failed in the face of the difficulties in overcoming vested interests and personal problems.

Only many years after the establishment of the State was it possible, progressively and piecemeal, to achieve a rational structure for agricultural research, with a few anachronistic special interests remaining intact.

The Department for Agricultural Research, Education and Extension in the Ministry of Agriculture was abolished and agricultural education was transferred as a special department to the Ministry of Education. Extension became a separate service, and the responsibility for all agricultural research (excepting that of the Universities) was vested in a national central research institute- the Institute of Agricultural Research (subsequently renamed first the Volcani Institute of Agricultural Research and subsequently the Agricultural Research Service), to which all the experiment stations and research units were gradually transferred.

It took several years, before the Ministry was able to unite all these activities into a single service.

Integration with Rehovot

During the period of the Mandate and in Neveh Yaar, I had been involved in research in all aspects of crop production in a semi-arid environment, both rainfed and irrigated, in particular the breeding and agronomy of wheat, barley and sorghum, the agronomy of cotton and sugar beets, forage production and pasture utilization.

Under the pressure of a multitude of urgent problems requiring practical solutions, I felt it was premature and a luxury to invest time in investigating the "why" aspect of problems and concentrated on the "how", e.g. working on applied research and not on basic research.

Nor did I feel any urgency in seeing my name in print, provided the results of my work reached the farmers rapidly and were effectively adopted by them. This was done by reporting the results of our experiments at the end of each growing season to a meeting of leading farmers and extension workers. This verbal communication was backed by a written report.

Consequently, during the first 17 years of my work, I had not published anything, excepting a few articles in Hassadeh, a monthly devoted to the practical problems of farming.

In 1958, I wrote my first book, in Hebrew, *Crop Production: Principles and Practice*, in which I detailed the results of my work and critically reviewed the work of others in the same field, in the light of my own experience.

I recently leafed through the two volumes of this work, and was surprised to see how much of what was written 35 years ago still remained relevant, notwithstanding the dynamic nature of agriculture in Israel.

First attempt at integration

In 1956, I was invited by Prof.Ravikovitch, the then Acting Director of Rehovot Experiment Station, to his office, to discuss the integration of the Neveh-Yaar group into the new framework.

Two major points of this conversation stand out in my memory: Ravikovitch stressed the importance attached to publications and to a Ph.degree as well as the unequivocal rejection of any form of consultation with farmers on the nature and contents of research programs.

The first requirement could hardly be implemented retroactively; I had no objection to the

second demand, and two years later, I presented my Ph.D. thesis to the Hebrew University.

But I had no intention of implementing the third demand - to stop consulting with farmers, so for the time being, I went underground when convening my research committee, consisting of farmers who represented the field crop and vegetable growers associations.

As to my position in the unified framework, Ravikovitch's proposal was for me to share with Kostrinsky the responsibility for research on a minor crop, sesame. This was entirely unacceptable, and the situation remained unchanged for quite some time.

A decision is made

Finally, I decided to bring matters to a head. I requested an interview with the Director-General of the Ministry of Agriculture, Chaim Gvati. I pointed out to him that duplication and competition might be acceptable or even desirable between units belonging to different frameworks, such as experiment station and faculty, but when they existed between units of the same organization, they were an indication of mismanagement and a source of frustration and competition for scarce resources.

Gvati did not need a lot of convincing; he said he would speak to the Minister of Agriculture, Levi Eshkol, and demand that matters be brought to a head. Within a week he handed me a letter from the Minister, appointing me Assistant Head of the Field and Vegetable Crop Department of the Central Experiment Station, until the incumbent Head, Prof. Plaut, retired on pension. Though he was well past retirement age, he continued nominally on the job, because legislation on a Pension Law was still being debated in the Knesset.

I had no intention of taking over my new post by force, waiving the Minister's letter. Once a week, I would come to Rehovot, visit the Department of Field and Vegetable Crops to get a feel of the situation, and then sit out the rest of the day in the library, doing paperwork I had brought with me, and awaiting developments.

These were not long in coming. A new administrative director had been appointed, Arieh Lak, who knew nothing of Rehovot-Neve Yaar conflicts. His first task was to establish a regional experiment station in the Negev, so he cast around for advice on what equipment was required for this purpose.

There was nobody on the Rehovot staff competent to give a complete and definitive answer to his problem, until somebody mentioned that once a week the Director of Neve Yaar, who had experience in establishing experiment stations, would turn up and that he would probably know what was required.

When I next arrived in Rehovot, there was a message awaiting me asking me to come to Lak's office. After he explained his problem, I spent the rest of the day compiling a complete list of what was required; which I handed to Lak before leaving for home.

The Bet Dagan Experimental Farm

From then on, there was no more sitting in the library. A large tract of land had become available at Bet Dagan which was to become the site of a Central Experiment Farm.

At Ministry Headquarters it was decided that all activities in Rehovot were to be transferred to the new site at Bet Dagan, near the Experimental Farm.

First and foremost in line were the existing facilities, or rather non-facilities, at Kubeiba, the current experiment site used by Rehovot researchers. A more unsuitable site for experimental work could hardly have been designed. A small area of swampy land, unsuitable and insufficient for experimental work was all that was available there. Access from Rehovot was difficult and few, if any, of the researchers had a car or even a motorcycle.

I addressed myself with enthusiasm to setting up the Station in Bet Dagon, an ideal site for a central agricultural research institute.

Centrally located, on the road from Tel-Aviv to Rehovot, 4000 dunams of land were available, in two blocks - one of sandy-loam soil suitable for orchard and out-of-season vegetable crops, the other a loam soil suitable for all field crops. The topography was excellent for the lay-out of experiments.

I was also actively involved in establishing the new regional station at Gilat. More and more research workers, in need of plots for their work, turned to me and found me a ready helper and

advisor, so that I became more and more involved in the work of the different departments. I soon found myself acting as Director of the Department of Field and Vegetable Crops whilst the incumbent Director, Professor Plaut, was already well past pensionable age, and completely inactive, but could not be pensioned off, because there was still no pension law.

In due course, the Pension Law was passed in the Knesset and I became officially the Head of the Field and Vegetable Crops department, the post I was already fulfilling de facto for a long time.

Competition for researchers

The Faculty of Agriculture continued its policy of enticing the best workers of the Agricultural Research Institute. They could offer many inducements with which we could not compete. The posts at the faculty were more prestigious, salaries more favorable, and the academic staff enjoyed full academic freedom.

The first to leave was Moshe Pinthus. When I asked him why he gave me such short notice, he told me that he was afraid I would attempt to dissuade him from leaving. I hid my dismay as well as I could, because we were in the middle of a busy season and his work load would fall on me. I told him I had no intention of trying to persuade him against what he considered to be his best interests.

Our relations became very cool for a couple of years after he left, until we sat next to each other by chance at a meeting of the faculty. When I asked him for the reason for his coolness, he told me he was deeply offended by my apparent indifference to his leaving. After explaining to him why I had hidden my dismay at his leaving me, our good relationship was restored.

This did not prevent him, and Amos Dovrat who followed him to Rehovot, from voting against a proposal by Professor Even-Ari that I should be appointed to the Faculty staff as successor to Professor Hurwitz, who had retired.. At the time, I was in a difficult position after having resigned as Director of the Volcani Institute and working under my successor, and therefore welcomed Even-Ari's proposal. The reason for this unfriendly act of my two former assistants is unclear to me to this day.

Director of Agricultural Research

A Misunderstanding

Dr. Peleg was appointed Director of the Agricultural Research Institute in 1958. Some time thereafter both he and I and our respective wives, were invited to dinner by the Australian Ambassador. I do not remember why we were invited, but we spent a nice evening together and I had a better opportunity to get to know my new Director, than anytime during working hours. We left for home at midnight in good spirits.

The next day I was early at my office at the farm, as a Farmers' Field Day was to take place. Shortly after 8 o'clock the secretary of the Minister of Agriculture rang to tell me that my application for a study tour to the USA in connection with sorghum research and production had been turned down on the grounds that this would favor Israel in competition with the USA.

"Better luck next time" were her concluding words. I had hardly closed the line, when the phone rang again. This time it was Dr. Peleg's secretary. "Have you heard the news?" "Yes," I answered, fully convinced that she had in mind the message I had received a few minutes earlier. I added with some bravado: "I couldn't care less". I heard a gasp at the other end and the sound of the phone being banged down.

I left my office to inspect the preparations for the Farmers' Day. In the field. I met one of my colleagues who asked about Dr. Peleg, who had been reported to be ill. I told him that I had been with Dr. Peleg at midnight and that he had been in good health and spirits. I however returned to my office and rang up the Director's secretary, and asked about the rumor that he was ill. She answered angrily: "But you said you already knew. Dr. Peleg died at night following a heart attack! and your response was inexcusable". Shocked as I was, it took me some time to explain the misunderstanding.

I reflected that I had once again violated my principle of "never take anything for granted". I was shocked to realize that, but for the chance meeting in the field, the secretary would have told everyone that my response to Dr. Peleg's death was a coarse "I could not care less". I realized that there may have been many occasions on which such misunderstandings had occurred and remained undetected, possibly with dire consequences, and my resolve "Never to take things for granted" was strengthened.

Appointment as Director

At the meeting of the Scientific Council to which all the senior research workers of the Experiment Station belonged, it was decided to propose to the Minister of Agriculture that he appoint as Director a member of the Scientific Council chosen by a majority of his peers. Hitherto it had been the prerogative of the Minister to appoint a man of his choice; to his credit it must be said, he agreed to consider the proposed candidate, without however being obligated to accept whoever was nominated..

A ballot was prepared and three candidates were nominated. To my great surprise, I - the former enemy nr. 1 - was one of the three chosen, the other two being Prof. Samish and Prof. K. Mendel, both veteran horticulturists of the Rehovot Experiment Station. I was still more surprised when I won the majority to become the candidate for Director proposed to the Minister.

I was in very good standing in the Ministry of Agriculture and had no reason to believe that I would be rejected. However, I later found out that the Minister had hesitated to appoint me because of the long-standing feud with Hurwitz, who was at the time Dean of the Faculty of Agriculture. The idea of a merger between Faculty and Experiment Station was at the time being considered by the Ministry and the University, and to have two rivals at the head of the two institutions involved was considered to be a certain recipe for failure of the project. However, I was appointed Director of the Experiment Station, in spite of this consideration.

In due course, it became evident that the Minister's hesitation proved to be unfounded; Hurwitz was one of the very few faculty members to be in favor of the merger, and instead of being adversaries, we became close collaborators in the establishment of the merger.

My suggestion that the Center be renamed the "Volcani Institute of Agricultural Research" was approved by the Minister of Agriculture, providing me with a sweet revenge for the incessant war waged against me by Volcani during the Mandate.

Choosing a secretary

The first privilege I was to request as Director was the right to choose my secretary. The first person the Workers' Committee sent me was an unpleasant, unkempt individual who left her fingerprints on the documents she handed me for signature. They sent me several candidates from whom I chose Ziva, a nice-looking girl with a pleasant personality. I chose well, for we worked together for many years without problems and I grew very fond of her. She left the service after the birth of her first baby.

Many years later, at a meeting of pensioners of the Volcani Institute, a former secretary told my wife how I had reputedly chosen my secretary.

According to her version the chairman of the workers' committee had asked me what were my requirements for a secretary and I had reputedly said: "a: knowledge of Hebrew and English; b: acceptable speed of typing; and c: basic mathematics adequate for learning statistical analysis."

When I told the chairman that of the several candidates he had sent I had chosen Ziva, he had responded: "but she doesn't know English", to which I reputedly answered "She will learn"; When he mentioned that she typed very slowly - I reputedly said "she will gain with practice" and when he finally pointed out that she had no idea of mathematics, I had answered "I will teach her". Who knows what other stories were told behind my back?

Consulting Farmers

Soon after my appointment, I was summoned to the office of the Director General of the Ministry, Yizchak Levy. He told me that a delegation of several Farmers' Associations had complained to him that the researchers were not investigating problems of relevance to farmers but were occupied with topics of personal interest to them. I asked him whether the Field Crop Growers Association was among the complainants. When he admitted that they were not part of the delegation, I told him about my custom of consulting with them on my research program, and that because of the opposition of the former directors to any involvement of farmers in programming research, I had been obliged to hold my committee meetings secret.

Whilst I was certain that the complaints were exaggerated, I said, paraphrasing a well-known proverb: "research should not only be relevant to the farmers problems, it must also be seen to be relevant." I told him that my first action as Director would therefore be the establishment of public research committees, one for each research department, with the authority to determine research policy and priorities in accordance with the most pressing needs of each agricultural sector.

In this undertaking, which ran counter to the tradition of the Institution, I expected to encounter considerable opposition from the senior staff. I needed not only the full support of the Director-General but also his help. My proposal was that the Farmers' Associations should participate in the financing of the research projects they requested and that the Director-General should match each shekel contributed by farmers with an equal sum from his development budget.

Yizchak Levy accepted my proposal with enthusiasm, and after a short time, the researchers found that much of the work they were doing was endorsed by the committees and that significant funds for additional research projects were forthcoming.

Pandora Box

Whereas previously the Director had absolute control of all activities, even the most trivial, I decided to give the research units freedom in the implementation of their research projects, without interference from above. Several committees were nominated, to discuss in their respective fields, the intentions of the Director and to initiate proposals of their own. I must admit that this democratization process opened a Pandora box of problems hitherto suppressed, and which made the life of the incumbent Director far more difficult than that experienced by his predecessors.

The Research organization as a Social System

I soon realized that a research organization is a complex and dynamic structure, and the job

of director is therefore bound to be complex and difficult. The research organization is not only a technological system, but is also a social system, in which a number of disparate groups of people are working: scientists, technicians, administrators and blue collar workers.

Each group has its characteristic attitudes, traditions, values and forms of behavior. These are the source of the many strains and stresses which exist within the research organization.

Learning to be a Director of Research.

The director of a research organization is normally a veteran research worker, who by training and inclination is generally conditioned to aversion to administration in all its manifestations. The change-over from an activity in which he was highly competent to one for which he does not have even the rudiments of essential know-how is generally a traumatic experience. There are no experienced predecessors to guide him, and no literature on the subject of organization and administration of agricultural research was available at the time.

I decided to treat the subject as a research project and I undertook a review of the considerable amount of literature on organization and administration in general, and of industrial research in particular.

This was followed by a study tour of agricultural research organizations in the United States and in Europe. After garnering sufficient experience directing the Volcani Institute, in 1968 I wrote my first book to be published abroad: "Organization and Administration of Agricultural Research", subsequently translated into Spanish.

The organization of Agricultural research

The book appeared to have answered a pressing need; I was asked by FAO to serve as Chairman of a panel of experts on agricultural research, with the task of defining basic guidelines for organizing national agricultural research systems.

At our first meeting, in order to break the ice, I suggested that each of the members of the panel, coming from countries with different levels of development and different ecological, cultural and economic environments, should briefly describe the type of organization of agricultural research his country had adopted.

One and all prefaced their expose with the comment that his country had adapted its research organization to its particular circumstances and needs.

I had recently returned from a study tour of agricultural research organization in Europe and the USA and had come to the conclusion that whilst the national agricultural research system must reflect each country's needs and characteristics such as its size, the kind of agriculture practiced, its human and financial resources, its ecological diversity, etc. I had not found a single indication that there actually was any relation between these factors and the type of organization that had been adopted by each country.

I came to the conclusion that very rarely, if ever, had a national agricultural research organization developed according to a planned blue print, that took into account the economic, cultural and ecological factors prevailing in each country.

In most cases, clashes of interests between Ministries, Departments, Institutions and personalities engaged in fief building, or group and sectarian pressures, have had more influence in shaping the organization, than the perceived needs of the country.

How can one explain otherwise the fact that countries in close proximity to each other, with similar political, social and economic systems, such as Holland and Belgium or England and France, have developed widely different forms of organization, that cannot be related to differences in their objective requirements? How can one explain the fragmentation, duplication, and overlapping of research programs apparent in many countries?

I also came to the conclusion that it is possible to design a prototype of research organization, that can, with minor modifications, serve as a normative model, applicable to most countries.

A model organization

As a desirable model, I proposed to the Panel a National Institute of Agricultural Research (or National Agricultural Research Service) that would be a semi-autonomous body, independent in the implementation of its programs, but under the authority of the Ministry of Agriculture,

in matters of policy, planning and control of its program.. This model was accepted by consensus and adopted by FAO.

I have since been appointed as a Consultant on agricultural research and development and sent on a number of advisory missions to countries in Europe, Asia, Africa and Latin America.

This was the model I found suitable, with minor adaptations, in all the different situations that I encountered, and it has been adopted by many countries.

The National and University Institute of Agriculture (NUIA)

As I have already indicated, the Agricultural Experiment Station of the Jewish Agency and the Faculty of Agriculture had started within a single framework, but had subsequently grown completely apart, competing for funds and human resources and with much duplication in research projects.

One of my first discussions with the Minister of Agriculture related to this seemingly undesirable situation.

The Minister fully concurred with my view that the present set-up was irrational, not in the best interests of the farming community or of the students, and that the best research workers were being prevented from participating in the education of those who had chosen agriculture as their vocation.

Apparently, the Minister had no difficulty in convincing the President of the Hebrew University of the desirability of joining the two institutions, as had been the original intention.

In 1960 it was decided to merge the two institutions into a single "National and University Institute of Agriculture", integrating all research and teaching functions in agriculture at University level. A Board of Trustees was appointed, the President of the University and the Minister of Agriculture serving as alternate Chairmen. Responsibility for activating the policies decided on by the board was vested in a Directorate of five members, of which the Dean of the Faculty and the Director of Research were ex-officio members.

The first steps taken were to merge all the parallel departments of the two original bodies and establish a single unified administration.

End of the NUIA

Notwithstanding the high hopes placed in the merger and the inherent rationality and advantages of the concept itself, its implementation was not successful and was eventually abandoned after several years of tension and frustration.

The reasons for the failure were mainly personal antagonisms and vested interests. Most of the faculty staff, with the exception of the Dean, at the time Professor Hurwitz, were violently opposed to the merger whilst the staff of the research institute were mildly in favor. In some cases the opposition was so rabid, that it occasionally transmuted into something akin to hatred. A case in point was Professor Z. Avidov. The following incident will demonstrate how deep was the personal animosity of those opposing the merger.

That summer, my wife and I were on vacation in Paris. One morning, during a visit to the Zoo, a sudden rainstorm, accompanied by peals of thunder and flashes of lightning, forced us to seek shelter. Fortunately, nearby was the zoo restaurant, in which we found refuge. Many others, fleeing the storm had preceded us, so that we were fortunate in finding a table with places set for four, still unoccupied. I was sitting facing the entrance, when suddenly who appeared in the doorway? None other than Avidov and his wife. They had just finished furling their umbrellas, when Avidov looked around searching for two vacant places. Suddenly, his startled glance met mine and at the same time discerned the two only vacant places in the restaurant. A few words to his wife, and the couple, unfurling their umbrellas, retreated into the pelting rain.

Never have I enjoyed a course in a restaurant more than this aperitif.

There were, however, also objective shortcomings and difficulties. The most important was the inherent difficulty of uniting in a single framework, researchers who had the privilege of



The National and University Institute of Agriculture

Front Seated:
Executive Council -
From left to right:
A. Amiram, I. Arnon, R. Weitz, Z. Avidod, M. Reisne.

Standing: Y. Levi, K. Luz, L. Eshkol, M. Dayan, ? Amir.

academic freedom and others who were committed to mission-oriented research. The former were not prepared to forego their privilege, whilst the Ministry could not forego its right to direct research into those channels which it considered essential. There were also considerable differences in salaries and criteria for advancement.

In order to prevent a complete divorce between the Faculty and the Research Institute, a new agreement was signed whereby Faculty members who were prepared to assume the necessary responsibilities and obligations would be assigned research functions within the Research Institute. Members of the research staff of the Institute, who had the necessary qualifications, would be entitled to serve as instructors for graduate students of the Faculty, using the facilities of the Experiment Sations, and would also have priority in any teaching assignments that would become vacant in the Faculty.

The Agricultural Research Service

Very soon after becoming Director of the Volcani Research Institute, I started lobbying for a more independent status for the Institute. I argued that rules and regulations, forms of hierarchy, criteria for promotion of personnel and many other organizational and administrative aspects that were suitable for a Government bureaucracy, were not appropriate for a research institute.

I proposed a model in which the Ministry would have full control over research policy, programs and priorities, but which would give the Institute independence in the implementation of agreed upon policies.

I further proposed a new method of grading for research workers, similar to that in use at the Universities for their teaching and research staff. The position of the researcher was to be based on competence and professional achievements. His upwards mobility would not be limited or defined by administrative duties or seniority.. It would be perfectly admissible, for example, for the head of a research department to be a relatively young research worker, with drive and leadership, while one or more members of his department might have reached a higher grade as the result of their research achievements

The Minister of Agriculture nominated a public committee to study these proposals. I prepared a document of several hundred pages detailing the proposed structure of the future organization.

After several months of deliberations, the committee recommended the establishment of an Agricultural Research Service, along the lines of my proposals, with minor modifications.

A six-tier grading system was adopted, promotions to be evaluated by professional committees of peers, excepting for the two highest grades, which were equivalent to Associate and Full Professor. For these two grades, a special inter-institutional committee, made up of University professors, was nominated. Special criteria for judging and promoting research workers were formulated and published in the Official Gazette.

These criteria were based as far as possible on the contributions made by the researcher to progress in agriculture and included achievements in basic and applied research, as evidenced by publications, reports, patents, or any other document that describes his contribution; providing leadership in teamwork, training of young researchers, ability to draw valid conclusions from his work and apply them in practice.

The proposals of the committee were accepted by Government, and the Agricultural Research Service, as a semi-autonomous body was born. By this time I was however no longer part of the scheme.

Resignation

The grading system was put into practice and was very successful as far as the four lower grades were concerned. All the proposals of the ad-hoc professional committees were accepted. It was at the level of the two highest grades that the difficulties began, mainly because the committee members ignored the basic criteria as defined in the Official Gazette and based their decisions on the criteria they used for grading or promoting University academic staff.

One particular case proved to be my downfall. The grading committee, headed by Professor Bergman, had refused to promote Gad Loewenstein, one of our most prominent researchers to grade 5 equivalent to Associate Professor.

I came to Jerusalem to contest their decision, armed with an additional article on virus research

by Loewenstein, approved for publication by a prestigious American journal. When Prof. Bergman saw the photographs made by electronic microscope his eyes lighted up, and he said "that is more like it"

I exploded: "Do you mean to say that if an agricultural researcher does not need an electronic microscope for his work, he cannot be promoted?" There was some more heated exchanges and I left the meeting in frustration.

I immediately requested a meeting with the Minister, and explained that the present situation was untenable, as it would skew the whole research work in an undesirable direction, and penalize researchers who were doing good, if unglamorous work.

The Minister asked what were my proposals; I answered: "a: obligate the committee to abide by the official criteria, and b: add a representative of the institution whose worker was being evaluated to the committee." The Minister found my requests to be reasonable and promised that things would change.

After a few days he called me to announce that he had not been able to effect any changes, as the members of the committee had threatened to resign if further pressed on the subject. I immediately offered my resignation, saying I could not head an institution in which I would have to oblige the researchers to engage in essential work that hindered their chances for promotion. The Director General of the Ministry invited me to lunch, and on behalf of the Minister, asked me to rescind my resignation. He promised me that all my demands would be met. I answered that I could not continue to work under a Minister who had acceded to my requests under pressure of resignation and not on the merits of what I was asking for.

In retrospect, my resignation may have been understandable, but not wise. I opted out, just as all I had fought for was soon to be realized. Maybe I was tired after ten years of heading a bunch of prima donnas.

The Minister never forgave me for my refusal to retract my resignation at his request, even after he had promised to meet all my demands. From then on, all positions in the Ministry were closed to me, even those for which I felt I was the most qualified - such as Scientific Advisor to the Minister or Director of the Department of Foreign Relations of the Ministry.

I also underestimated the difficulties I was to encounter in continuing to work under a new Director, who was intent on blocking every move of mine. For example, the FAO had proposed my name as a member of the prestigious Consultative Group on International Agricultural Research; this was strenuously opposed by my successor, who wished the nomination for himself.

After a time, I reached retirement age and took the opportunity to go on pension. Ironically, I was the only one not to make use of an arrangement I had instigated several years previously, whereby researchers who arrived at retirement age could continue to work. They had to give up any administrative leadership functions they may have held, but could serve as advisors to their respective successors. They also had the opportunity to complete any research they may have been working on and to publish the results. The researchers would receive as financial incentive for continuing to work the difference between their former salary and their pension. I hoped thereby to make the transition to a life of a pensioner more easy - professionally, psychologically and financially.

When word of these "arrangements" came to the ears of the Civil Service Commissioner, he informed me that these unilateral actions of mine were illegal and completely unacceptable and that I would personally be responsible for the financial costs of my project. Followed a period of argument, which ended when my proposals were formalized and became official policy, enjoyed by senior researchers to this day.

Footnote

A final note on the connection between Avidov and myself. In 1971, I learnt through the grapevine that I had been nominated for the prestigious Israel Prize for Agriculture. This put me in a very difficult situation, as I had myself, together with Hurwitz, nominated Joseph Weitz for the Prize. To compete with my own nominee was embarrassing, and furthermore I felt he was the more deserving and at his age his chances of being nominated at a later date were very slim.

An Agricultural Researcher in Israel

I finally found someone who was in touch with one of the referees, explained to him my predicament, and asked him to request, in my name, to retire my name as a candidate.

The next day he phoned that, by process of elimination, Weitz was no longer in the running, and the final choice had been thinned down to two candidates. "You are one of them, and Avidov is the other. Do you still want me to pass your message"? Some time later I was informed that I had been chosen the 1971 Laureate of the Israel Prize of Agriculture.

The contribution of agricultural research to rural development In Israel

Background Information

Israel has been described in the Bible as a land flowing with milk and honey. A brief description of the physical, economic and political conditions in Israel, will dispel any notion that agriculture in this country operates under particularly favorable conditions.

The Mediterranean region as a whole is characterized by a limited and erratic rainfall, a long and dry hot season, an eroded soil exhausted by centuries of cropping. Though rainfall is generally low and erratic, it is still capable of causing floods and creating swamps. A large proportion of the region is desert or mountainous, or covered with rocks and stones or very shallow soils. In addition to these handicaps, common to all Mediterranean countries, Israel has had a few problems of her own. The political isolation, surrounded as Israel was by hostile countries, had economic implications: - communication lines were lengthened and therefore far more expensive and export markets were far away. An enormous proportion of the gross national product had to be devoted to defense. Though advanced in relation to its Arab neighbors, productivity of Jewish agriculture was still low.

At the time of the establishment of Israel, the country faced a severe shortage of practically all foodstuffs and fibers. We produced only 10% of our grain requirements, very little meat and oil, no sugar or fibers. The arable land and water available were restricted, experienced farmers were few, and agricultural machinery limited.

Shortly after the establishment of the State, the famous Dr. Lowdermilk was invited to visit the country as a consultant. After touring the country and seeing the problems we faced, he summed up his impressions by telling us the story of a New Yorker who got lost in the backwoods of the Appalachian mountains, one of the poorest and most backward areas in the United States. After wandering around, he finally came upon an old man in front of a ramshackle hut. When he asked the native whether he could tell him how to get to Blythville, the old man removed the corn cob pipe from his mouth and said "Sure I can tell you how to get to Blythville, but if I were you, stranger, I sure wouldn't start from here"! We felt much the same, but truly had no choice excepting "to start from here".

Research Planning

Increasing Yields

For the first time, agricultural research in Israel was planned on a national scale and in accordance with the objectives and goals of the first Five Year Plan. At first, the main objective of agricultural research was to increase yields. To this aim, the entire research establishment devoted itself.

Research programs were established in consultation with planners, extension workers and the farmers' organizations. New crops were introduced and their problems investigated. Plant breeding for high yields was expanded. Research on tillage, crop rotation, weed control and crop protection from insects and diseases was intensified. New results were quickly translated into field practice by farmers who needed no prompting but received help in the form of extension, credits and subsidies.

Cropping became more diverse: industrial crops - such as cotton and sugar-beets - were sown in large areas, fruit and livestock increased rapidly.

A dramatic increase in yields in most commodities was achieved. In the five years, from 1948 to 1953, the average rate of growth of agricultural production was nearly 20%, doubling in five years.

Water Use Efficiency

With a view to further expanding agricultural production, high priority was given to the rapid expansion of water resources. Settlements were established in the drier areas of the country. Water was a scarce resource and the costs of development, pumping and transportation extremely expensive. Therefore a major research effort was devoted to increasing the efficiency in water use, mainly by improving techniques of irrigation, by reducing the amounts of water required per unit of land without reducing yields, and increasing yields by improved agronomic practices.

In the course of five years of research and application, the water requirements per hectare on a country-wide scale were reduced by 15%, whilst yields increased. In the Huleh valley alone, research on the water requirements of two crops - cotton and alfalfa, made it possible to release enough water for the irrigation of an additional 10,000 hectares.

Efficiency of Production

As long as the main priority was an assured supply of essential commodities to a rapidly increasing population, the costs of production were not of prime order of importance.

However, the point was eventually reached where economic considerations became a major concern. Costs of production in Israel were generally high by international standards, because of the small size of the average holding, relatively high labor costs due to the Government's policy of not discriminating in the wage levels of rural labor and the high cost of water already mentioned.

Labor was not only costly but output, especially in operations requiring large inputs of manual labor, was very low due to the fact that many of the newcomers were not accustomed to farm work and their physical condition was poor.

The rapid expansion of industry, construction and services which was taking place resulted in a shortage of labor available to agriculture. Thus, the next important objective of research became the reduction of the labor component of production by mechanization and increased efficiency in production. A special institute of agricultural engineering was established for this purpose.

Between 1950 and 1965, labor efficiency increased at an average annual rate of approximately 11%. Biological methods, such as chemical weed control, the breeding of suitable varieties and the adoption of agricultural practices requiring less manual labor supplemented mechanization in increasing labor efficiency.

For example, in ten years, the number of work days involved in the production of peanuts decreased from 80 to 10 per hectare, in sugar beets from 60 to 20 per hectare and in cotton from 120 to 17 per hectare.

Producing for Export

By 1970, the stage was reached at which we were producing most of the food and fibers needed locally, excepting for a few low-cost commodities. With the factors of production available to them, Israel's farmers found themselves capable of producing far in excess of local demand. Further agricultural expansion predicated export-oriented production.

Producing for the export market requires a high degree of professional skill and sophistication, large investments and a highly organized system of processing, transport, marketing and quality control. Quality requirements are very stringent, and competition from countries with low labor costs is fierce.

Therefore, growing exotic crops, production of out-of-season crops under protection, post-harvest physiology became the new research priorities. In the period between 1950 and 1972, production for export increased almost ten-fold and by 1980, exports accounted for about half of agricultural production.

Conclusion

It would be presumptuous indeed to present this success story as the result of the efforts of the agricultural research establishment alone. Without the concerted efforts of planners, researchers, extension workers and farmers these achievements would not have been possible.

Grandfatherhood

A vow disavowed

When I heard that I was going to be a grandfather, I vowed that I would not be one of the many who cannot resist doting on their grandchild, who think that their grandchild is extraordinary and unique, who never miss an opportunity to recount its latest manifestations of precocious wisdom and cannot withstand flouting the latest photos of the small wonder.

Now that I have been a grandfather four times, I must defiantly admit that I did not once uphold my solemn vow. How could I? I could not resist doting on them, when I was certain that they were extraordinary and unique and that they said precocious gems of wisdom.

I did however resist showing their photos, unless provoked. I always took a pocket book album of photos on my travels, but that was strictly for my own benefit. When I woke up in a Roman clinic after a 48-hour coma, the first thing I asked for was my little album.

Understanding grandfatherhood

Now much older, and with the advantage of the perspective of a great-grandfather, I think that I understand the really unique and wonderful experience of grandfatherhood and why it is shared by so many.

The stock explanation that grandparents can enjoy the wonderful experience of babyhood without all the chores, worries and efforts that parents have to invest, may be a factor, but it is certainly not, to my mind, the basic reason.

I think that it is the additional maturity that gives one the ability to appreciate the full wonder that is a baby, the beauty of a toddler's first uncertain steps, the excitement as it becomes a thinking human being, and the pride one feels as it develops its own personality (and especially when one discovers manifestations of one's own genes). These feelings are universal, and therefore every grandparent is justified in the feeling that his or her grandchild is unique.

My first grandchild was Orna, I cannot describe the warmth that I engulfed me when I first held the blue-eyed, curly-haired little beauty in my arms. How can I explain that she stole my heart at the first glimpse, the love that gripped me when the tiny fingers curled with a strong grip around my suddenly enormous forefinger. How can I describe the feelings of anxiety when there was danger that she might have caught meningitis. How I felt that life would end for me if anything happened to her.

The intensity of these feelings tapered off as she reached school age, when she started developing her own interests and no longer had time for grandparents. The doting was replaced by permanent and stable love and warmth that continued throughout my lifetime.. Also a new wonderful grandchild had arrived, Tamar. Tami was followed by Yoram, and Yoram by Amir and each time the whole exhilarating process started all over again. Each experience had some elements in common with the others, but in addition it was fascinating to compare how each one, even as a baby, developed its own personality and idiosyncrasies. Maybe the intensity of the drama was greatest with the first grandchild, but remained exciting and exhilarating with each new arrival. When I was told by phone of Tami's arrival with "Mazel Tov, a baby girl", I was so confused with excitement that I asked "How old is she?".

I have no intention of writing the life story of each of my grandchildren, that I leave to my son or daughter-in-law Naomi or to the grandchildren themselves. But my reaction to my grandchildren, however stereotypique it may have been, has been an important element of my life and only I can recount it. I cannot however resist sharing with the reader a few typical incidents for each one of them, which I have treasured.

First Orna. She never tired of teasing me, in the full knowledge that she could twist me around



The First Grandchild

I vowed that I would not be one of those who think their Grandchild is Extraordinary and Unique.

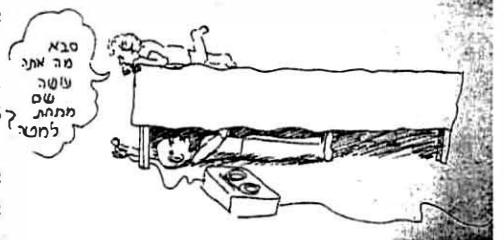


her little finger. When asked (the admittedly silly but irresistible question) whom she loved, she would first mention her parents, then six of the seven grandparents and grand-grandparents who were still alive at the time, then the various uncles and aunts, then the neighbors and when she had run out of neighbors, the dog and the cat - all the time glancing at me to see how I took the calculated omission of my name. One day, Naomi told me that after Orna was put to bed, she would talk to herself for a long time till she fell asleep. If anybody entered the room, she immediately fell silent. I decided to find out the subject of those monologues. The next day, whilst Orna was being bathed, I crawled under her bed, armed with tape recorder and microphone. Orna was put to bed and a long silence ensued. After what seemed to me hours, Orna piped: "Saba, how long are you going to stay under the bed?" We never found out what was the subject of her talks to herself and she never told me how she knew I was under the bed. But she did know how to keep me there in suspense for a long time.



Pretending to help Grandfather cross the Road

One day, Naomi told me that when all the plums from Orna's favorite variety had been picked off the tree in the garden, she cried and all efforts to console her failed. That day her grandfather bought that particular variety of plums in the market, and at night tied each individual plum to the branches of the tree. The wonder and joy of the little girl when she glimpsed the tree full of her plums was ample recompense for the trouble I had taken.



**"Saba, how long
are you going to
stay under the
bed?"**

If Orna was the princess of her class, Tami was the prime

Li Chia was the "princess" of her class; Fann was the prime organizer and doer. Of all four grandchildren, she was the most sensitive and easily hurt, and like all the others she had a mind of her own.

If Orna was the princess of her class, Tami was the prime organizer and doer. Of all four grandchildren, she was the most sensitive and easily hurt, and like all the others she had a mind of her own and was fiercely independent. One day, when she was staying with us, she took a paper from my desk, and when I told her she could not tear it as I needed it, she put it back, feeling cheated. She started circling the room looking for some piece of mischief she could get away with; when her back was turned I put another piece of paper, similar to the first on the desk. When she arrived again at the desk, her eyes lighted up at the sight of the paper, and she tentatively reached out for it, testing my reaction. When I quietly told her that she could tear that piece of paper, she burst into frenzied crying - I had spoilt her fun. The louder she cried the more I laughed, increasing her frustration.



"I want My Bathwater back!"

Once, both girls came on visit together. Orna was to go to a friend nearby, and when I asked her whether it would not embarrass her if I accompanied her, she hesitated in answering; not so Tami: "Silly, pretend you are helping an old man to cross the road!"

Her favorite grandparent was her maternal grandmother, and in her case, mutual sentiment between us became stronger and stronger as she grew up.

Yoram was a dreamer. This was recognized early on by his schoolmates who called him the astronaut. He expressed his individualism by refusing to build with the Erector or Lego sets according to models provided by the manufacturers but would create unworldly models only in accordance with his own creativity. In a family comprising several obstinate individuals, including his grandfather and his father, he was in a class of his own. Naomi recounts how, during his evening bath he would play with various toys floating in the water. One evening, he refused to leave the bath, and Naomi, frustrated, pulled the plug. As the water vanished, Yoram started howling and when Naomi capitulated, opening the taps again, the howling only intensified. When Naomi asked "what do you want now?" he responded: "I want my bath water back!".

Amir inherited the male gene for animal loving from his father and grandfather. He was always collecting birds that had fallen out of the parental nests, birds with broken wings or legs, raising them till they had grown or recovered and then freeing them. He also allowed his phantasy

An Agricultural Researcher in Israel

free rein, as when he proudly told his fellow members of the kindergarten that he kept a camel in his backyard.

Amir was the antithesis of his brother, both in appearance and character. Amir, who represented the Moroccan strain in the family, was dark-skinned and brown-eyed, whilst Yoram the Ashkenazi was pale-skinned and blue-eyed. Where Yoram was passive, Amir was aggressive. If I handed Yoram something, it would be snatched by the baby Amir before Yoram had even extended his hand. This trait caused me a lot of anxiety; however, as a grownup he is the quietest, most helpful and unselfish person imaginable. He is also the best handyman of the family.

All four grandchildren have grown into attractive, talented individuals, as different from each other as possible within the limitations of their common genes. My greatest hope has been realized; in all four, the nomadic instincts inherent in our people, have been expressed in love of travel combined with deep roots in the country of their birth. All together, notwithstanding their diversity, together with their parents, form a strong, warm and mutually supportive family that warms the cockles of a grandfather's heart.



Orna



Tamar



Yoram



Amir

The Sinai War

The Situation prior to 1956

After the Arab debacle in 1948/49, Egypt, Syria and Jordan did not dare to use the military option against Israel once more, and adopted instead a system of continuous harassment by bands of infiltrators recruited from the refugee camps in Gaza, Syria and Jordan. The most persistent were the "fedayeen" (who sacrifice their souls) operating from the Gaza strip occupied by the Egyptians. They caused casualties, disrupted communications and engaged in sabotage. The systematic bloodletting by the guerrilla bands and the economic damage they caused could not be tolerated by the Israelis. As a counter-measure, the Israelis organized an elite unit of volunteers ("Unit 102") under the command of Major Arik Sharon, which undertook reprisal raids across the border.

In October 1953, two days after a band of fedayeen from Jordan had murdered a mother and her two children in Yahud, a new immigrant's village, a punitive action was undertaken by Unit 102. They occupied the Arab village "Kibye" from which the Arab soldiers had fled, and in the belief that the villagers too had fled, the Israelis blew up several score houses. It was later learned that in the process 69 civilians - men, women and children - were killed. Israel was condemned by the Security Council and pilloried by the international World press, though this atrocity had not been deliberate. Israel decided that henceforth, reprisals would not be undertaken against civilians, but only against military objectives. This self-inflicted limitation made reprisal raids more dangerous and more costly in terms of casualties, but did little to improve Israel's standing in the eyes of the world. Each reprisal was followed by the inevitable condemnation by the Security Council, branding Israel as the aggressor. Many countries, including the USA, enforced an embargo on arms sales to Israel. Each successful incursion also increased the Arab resolve to strengthen their armed forces and enormous amounts of armaments are purchased from Czechoslovakia and the URRS.

In Egypt, a military junta called "the Free Officers" had overthrown the monarchy in 1952, and two years later was headed by Colonel Abdel Nasser, who was still smarting from his personal defeat during the 1948 invasion of Israel. Completely encircled, he had been forced to capitulate to the Israelis. Nasser closed an arms deal with Czechoslovakia and recognized communist China, thereby raising the ire of the Americans and the British, who withdrew their offer to finance the projected Aswan dam. Nasser responded by striking a deal with the Soviets. In September 1955 he closed the Tiran Straits to Israeli shipping, which amounted to a blockade of the port of Elat.

The Israeli army, tired of the endless bloodletting by the unrestricted Fedayeen attacks, the losses of its best fighters in reprisal raids that did not solve the problem and resulted in a vicious circle of endlessly recurring terrorist attacks followed by reprisals. Moshe Dayan had been named Minister of Defense. He decided that only an all-out preventive war, before the Egyptians are able to absorb the huge amounts of armaments they have received, can stop the incursions and break the blockade. The Prime Minister, David Ben Gurion, refused to sanction an escalation to open war, without the backing of at least one major power.

Of the four major outside players in the Middle East: Britain, France, the USA and URRS, none was a declared supporter of Israel. The British, for whom the Middle East with its vast oil supplies was still crucial, avoided any act that the Arabs might consider unfriendly, and even had pacts with Jordan and Egypt according to which the British pledged to come to their help in case of an Israeli attack. The French were engaged in repressing a revolt in Algeria, which, with its million white settlers, was considered an integral part of France. The USA had become disenchanted with Nasser because he had opened the door to the Middle East to the Soviets, who in turn became increasingly pro-Arab and anti-Israeli.



One of the many Expressions of Hatred towards Israel
Caricature on the walls of the officers Club in el Arish

Preemptive war

Finally, in 1956, a constellation of factors and events made an all-out attack on Egypt a feasible proposition. The French, who had nothing to lose thereby, removed all constraints on weapon supplies to Israel. In July, Nasser nationalizes the Suez Canal. The British and the French, co-owners of the Canal franchise and smarting from their loss of the strategic and financially important asset, are anxious to regain control of the Canal. The British also wish to strengthen their hold on Egypt. The interests of the British, French and Israelis converge and the three countries conspire to attack Egypt.

It could not be a simple straightforward alliance. The French and the British were traditionally rivals and adversaries in the Middle East, where their interests have always clashed; the British were obligated by treaty to help the Egyptians to repel any Israeli attack and did not want any open involvement with Israel; neither of the two great powers cared about Israel's problems and interests.

In order to save appearances, the following plan was concocted, all in the greatest secrecy: Israel would attack Egypt in order to free the Tiran Straits and would pretend to advance towards the Suez Canal; the British would then intervene and issue an ultimatum to Israel and Egypt to stop hostilities. Under the guise of protecting the French provide Tel Aviv with an air-umbrella.

Every war needs a pretext and the Israelis had suffered many casualties in a recent reprisal raid and the illegal blockade gave it a very good reason to open hostilities; but Ben Gurion refused to consent to any action in which Israel would be branded as aggressor. Every war also involves collusion and secrecy, deceit and deception. In these aspects, the Sinai campaign was in a class by itself. From mid-October the country was rife with rumors. Everybody felt a war was inevitable but the collusion with the French and British was a well guarded secret, kept even from the top echelons of the army.

In the third week of October, the reserves were called to arms and with them my eldest son, Danny. In view of the army's shortage of vehicles - civilian buses, trucks and cars were mobilized. I volunteered to serve with my car, a 1948 Dodge in good shape and a sturdy workhorse. To my joy, I was assigned to the air-base at Tel-Nof, where my son's paratroopers unit was also stationed. I was assigned as driver to a high-ranking officer, who kindly took me with him every evening to briefing sessions in the operations room, so that I was able to see on the huge map that covered the wall all troop movements, and most important for me, where Danny would be at a given moment.

The Sinai Campaign

On Sunday night, 29 October 1956, lorries packed with paratroopers started to leave the camp. As I watched the singing soldiers, packed upright like sardines in the vehicles I could not catch sight of Danny so I waved to all. The boys were singing lustily and I could not refrain from asking myself how many of the singing youngsters would not return, and I could not restrain the tears that rolled down my face.

My officer was engaged in a conference, so I had a short respite to walk around the grounds of the base. Suddenly, a big unmarked transport airplane, appeared low over the base, and was allowed to land. A little while later, I passed the open door of a barrack room where a group of officers is conferring. To my astonishment I hear that they are talking in French. It was however only two days later that the French and British air forces attacked and destroyed the Egyptian air fleet.

Then back to the operations room for briefing. A regiment of paratroopers from the 202th Division, commanded by Arik Sharon was advancing on the southern axis of Wadi Faran and had captured in quick succession Kuntilla, el-Thamad and el-Nakhl in central Sinai.

That same evening, there was an air-alert. As the Tel Nof airfield is a prime target for bombing, we took cover in an open trench. The tension was broken when suddenly, through the open door of a nearby shed where parachutes were folded and stored, we heard a loud wail as a woman soldier cries "I am scared alone in the dark". We all burst into laughter.

The whole next day, I ferried my officer around the huge camp. On the tarmac of the airfield I was surprised to see a large number of Piper Cubs, parked in a straight row, one next to the

other, as if on parade. A single enemy plane flying along the formation, could wipe out the whole fleet in seconds. I remarked to my officer, that a Belgian cavalry commandant who exposed his horses in such a way would be immediately court-martialed. There was no response.

On October 30 another regiment was dropped by parachute and established a defense post in the Mitla region. The 4th and 10th Infantry Divisions and the 7th Tank Division attacked the fortifications of El-Quseima and Abu-Agheila. The commander of these operations, Brigadier General Asaf Simchoni, unaware of the secret agreement with the British and French according to which Israeli forces are to stop their advance on October 30, decided to take advantage of Egyptian confusion and disarray and to advance rapidly beyond the designated objectives, thereby destroying the pretense of a large-scale reprisal raid. Dayan, aghast that the well-laid plans with his "allies" were being nullified, and that the Egyptians would become aware that this is no reprisal raid but a full-scale war, attempted in vain to halt the advance. He therefore had no choice but to advance all the other strikes along the axis planned for the third phase of the attack.

Dayan ordered the armored unit that was to have halted at Um Katef, to by-pass the fortification without attacking it and to continue the penetration of Sinai in the direction of A-Rika, Abu Agheila, Bir el Hasne, Jebel Livne, Bir Gafga (Refidim) and reach the Suez Canal opposite to Ismailia. By November 2 this operation was completed.

Dayan further ordered the 10th Division to advance its plans by 24 hours, and immediately attack the Egyptian positions in the Nizana region (Um Katef, Um Shichan). The 27th Tank Division was ordered to take Rafiah and encircle the Gaza strip.

On October 29, England and France delivered their ultimatum to both sides to cease hostilities and to retreat to 10 miles from the Suez canal. Israel agreed to comply, but the Egyptians refused.

On October 31 a regimental fighting unit, under the command of Mote Gur was ordered by Arik Sharon to patrol the Mitla pass. The Egyptians, entrenched on the flanks of the mountains opened fire on the Israeli patrol from both sides of the pass, causing many casualties. Egyptian airplanes destroyed supply lorries and ammunition. The patrol remained stuck in the middle of the pass. At night a force from Paratroopers Division 202 was sent to extricate the patrol, by-passed the Egyptian positions, attacked them from above and silenced them. 260 Egyptians were killed and the paratroopers lost 38 dead and 120 wounded. By November 2 the Division reached the Suez Canal, opposite Ismailia.

The reason orders from Headquarters were consistently disregarded by commanding officers are due to the Dayan doctrine, which he elaborated when he himself was a commander in the field. According to this doctrine, the officer commanding in the field has a better overview of what is going on in his area than faraway Headquarters, and should know how to pursue any unexpected openings that occur in the course of action. All his commanding officers in the Sinai War, Simchoni, Sharon, Gur and others, had been indoctrinated by Dayan himself, when he was a field commander, to take desirable initiatives, even in contradiction to orders.

Now that Dayan was Commander in Chief, he was furious at being disobeyed but could not discipline the officers who disregarded orders, even if they had jeopardized the plans hatched in collusion with the French and British, of which his field commanders were unaware.

In the meanwhile, I had been transferred to another base and had lost touch with Danny. I heard a rumor that his unit has returned to base to recuperate but had no way of knowing whether Danny is amongst them. Suddenly I spotted my officer from Tel Nof. He confirmed that Danny's unit has returned, and promised me to let me know by phone whether Danny is amongst the returnees. I waited the whole day in suspense for a call from the officer, but none was forthcoming. The next day I spotted the officer again. He did not apologize for not having kept his promise, but said "incidentally, your son is not among those who returned to camp". I was by now quite ill with anxiety and helpless to do anything to gain reliable information.

Around noon, I was told to take a sergeant to another camp to deliver some documents. On the way, I explained to him my predicament and begged him to help me. Without a word, he took out his orders, erased with one end of his pencil his destination and with the other end wrote "Tel Nof" saying "what are you waiting for"?

Arrived at Tel Nof, I rushed straight to the barrack where the paratroopers were housed. No Danny to be seen. I was told that many soldiers were watching a film. I ran to the hall which

was in darkness and begged the officer in charge to find out whether Danny was in the hall. He stopped the show and a sign appeared: "Arnon is looking for his son". Within minutes I was holding Danny in my arms. Even now, 42 years later, sitting in front of the computer and writing these lines, my heart contracts and my eyes moisten.

Back to the car and to my sergeant. He corrected the misinformation on his orders and we were off to his legitimate destination. I still had one problem: how to let Hilda know that our son is safe. The rest of the day I fretted, while running errands that did not bring me near to home. At midnight, exhausted from the mental tension and physical exertions, I was fast asleep on the back seat of my car, when I was awakened by an officer who apologized saying that he knew what a hard day it had been for me, but would I please take Minister Carmel, who has just come from the front, to an urgent Government meeting in Tel Aviv. I was so happy that I hardly refrained from kissing the officer, who was surprised at my joyous reaction to his request.

On the way to Tel-Aviv, the Minister kept looking at me sideways and finally asked: "driver, what is your name". I knew what was bothering him so I decided to tease him and said "Arnon". No response, as expected. I then asked: "does my former name - Aronovitch- mean anything to you"? "Aronovitch he shouted, my boss at Acre when I was a prisoner!. We will never forget what you did for us". In later years, I could not help but contrast his warmth with the cold-fish attitude of Moshe Dayan, who, as Minister of Agriculture, never acknowledged that we had ever met in a previous incarnation. After I brought Carmel to his destination, I hastened to Ramat Gan where I gave Hilda the good news and then returned to camp.

On November 2 the Egyptians evacuated El-Arish.

The Anglo-French attack on Port Said and Port Fuad was delayed by 5 days and started on November 5th with an enormous force. However, the Security Council, the USA and the USSR intervened and obliged the Franco-British forces to halt their operations before they had taken full control of the canal. By November 5, two Israeli forces, the 202nd Division advancing along the Gulf of Suez, and the 9th Division, along the Gulf of Akaba, invested Sharm el Sheich. The Egyptian blockade of the Tiran straits was broken.

On November 6, all operations were halted. Sinai and the Gaza strip were in Israeli hands, but not for long. The Russians, wishing to save their proteges, the Egyptians, from complete disaster, demanded an immediate withdrawal of all forces from Sinai and the Suez Canal area, threatening to bombard Israel's cities with long-range missiles. The USA, fearful that any action to protect Israeli, French and British interests might result in a confrontation with the Russians and might start World War III, supported the Russian demand.

On November 14 the Knesset authorized the retreat to the October 29 lines. The blockade of the Tiran Straits, that the Americans had pledged to keep open, has been broken, but at a high cost. Israel had lost 161 soldiers. The Egyptian losses were 1,500 dead and thousands of prisoners in our hands.

Part Five:

LIFE AS A CONSULTANT

Sierra Leone

FAO Bureaucracy

Invitation

In 1965, I received a phone call from Rome, from an old colleague - a Welshman named Kenneth Jones. We had met at several conferences, found that we had similar views on most topics and enjoyed mutual empathy. Jones, who had become Assistant Director of the Department of the IBRD Cooperative Program at the Food and Agriculture Organization of the United Nations (FAO), invited me to serve in Sierra Leone as a consultant on agricultural research and development, for a period of one month.

I readily agreed, and this was to be the beginning of a long series of visits to developing countries in various parts of the World

My first term as a consultant gave me ample opportunity to become acquainted with the bureaucracy of an international organization. A week after I agreed to Jones' offer, I received a questionnaire listing the usual questions; one of which asked for details of "present salary"

I answered with the word "irrelevant".

A few days later I received a phone call from Rome asking why I had not stated my present salary; that without this information they could not decide on my honorarium, as this was based on what I received in my present position.

I replied that whilst I was prepared to work for my Government for a pittance, I was not prepared to do so for an international organization and felt that I should receive the same honorarium as that received by colleagues from developed countries in the same position and of the same professional level. The voice answered : "in that case we cannot appoint you", to which I replied O.K.

A few hours later the phone rang again, and the voice said "you win".

Arrival in Rome

A dubious welcome

In due course I left for Rome. Awaiting me at the entrance of the airport was Zimmerman, an irrigation engineer serving with FAO and a friend of long standing.

He told me that he had intercepted me at the airport, before I had spoken to anybody from FAO, in order to inform me that Jones had got into trouble because of his having appointed me as a consultant. "I don't want any bloody professors", his chief - Ergaz - had shouted at him. And here I was, a first-time consultant, already obligated not to let down my sponsor!

I took a room in a small pension in the Via Caviar, a rather seedy place but run by a large matronly "mama mia" who bid me a warm welcome. A further advantage, apart from its being much cheaper than a 3-star hotel at which FAO consultants usually stayed, was its very convenient location: at walking distance from FAO and near the most important historical sites of Rome.

It was also a short distance from the Central Railway station, the Metro and buses that led to Trastevere, (the other bank of the Tiber) and to the famous flea market.

The next day, I left the pension early to report to Jones. A short distance down the road brought me to the rim of the Forum Romanum. Turning left, I walked along the Forum, passing on the way a huge depiction, on marble slabs, of the rise (but not of the decline) of the Roman Empire. Some steps further on, turning right, one passed through a triumph arch and within view of the Coliseum. And then, with a shock I recognized the Titus Arch, commemorating the fall of Jerusalem and the second destruction of the Temple.

After a five minutes leisurely walk, I reached a confluence of five wide roads. In later years traffic lights were installed, making crossing relatively safe for pedestrians, but at the time of my first visit one had to cross five roads at a high level of risk.

When there appeared to be a lull in the traffic I hesitantly took a few steps, only to jump back in fright as an avalanche of cars appeared from nowhere. A policeman standing on the opposite

side of the road simply smiled at my efforts to cross the roads, but nary a move to help me.

Marked pedestrian crossings provided little safety; no driver stopped but instead swerved aside at the last moment after driving straight at you. Somehow, driven by the thought that I would be late for my first interview, I managed to cross my five Rubicons and reached the FAO headquarters.

Getting a Visa

The official in charge of arranging travel of the consultants informed me that my visa would be ready on Friday, so I had a few days to read up on Sierra Leone and oil-palm production, in particular the potential economic value of palm-oil in the international market.

On Friday, I was told it would take another few days to get the visa and there was no alternative to waiting. Dismayed at losing a week (flights to Sierra Leone from London were once a week, on Sundays), I went to a Travel Agency where I was told that The High Commissioner's office for Sierra Leone in London could issue a visa on the spot.

Back to the FAO official with a suggestion that he get me on the first flight to London so that I could try my luck there. It was not the first flight he got me, and it was afternoon when I got on the plane to London.

On board I asked a flight attendant when we were due to arrive in London and was told that the scheduled landing was at 16.45. There was no way I could reach the High Commissioner's office before closing time at 17.00, so I resigned myself to a week's stay in London. I reflected on the enormous waste of time and money, not only in regards to myself, but also of my teammate, whom I was due to meet in Freetown on Sunday.

Whilst letting my thoughts wander, I suddenly recalled "Around the World in 80 days", and asked the flight attendant whether there was a time difference between London and Rome, and she answered yes, it is an hour earlier in London.

I left the airport without reclaiming my luggage and took a taxi to the High Commissioner's office. I arrived at 16.50 and left 10 minutes later with the visa.

(P.S.: When I submitted my travel claim on finishing my assignment, I was surprised to find that my travel by taxi from airport to London was marked "unjustified" so that I had to pay out of my own pocket for having saved FAO a large sum of money).

Arrival in Sierra Leone

My plane was to leave at around 4.00 a.m. It was bitterly cold, so that I bundled myself up in as many layers of clothing as possible. I made the mistake of not removing several layers before leaving the plane on the assumption that this could wait until I reached my hotel.

I took my seat in a small, crowded and smelly bus. The heat was stifling, but I consoled myself that we would soon reach the hotel.

What a hope! I did not know that we had to be ferried across a wide river. As we approached the river bank, apparently a few minutes late, the ferry had just left and we could still see the mocking faces and gestures of those on board.

The heat increased and I had difficulty breathing; I thought of returning to the plane and leaving this cauldron of a country. I decided to try and hold out, and finally, after an eternity of waiting the ferry returned and in due course I arrived at the hotel to be told that no reservation had been made for me by FAO and that the place was full.

I told the Manageress that I was not moving from the hotel and that if she did not find accommodation for me I would die on the spot. Apparently, I looked the part, and somehow a room was found and after a long rest, I recovered.

Partners

I met my colleague, an economist, a friendly Englishman named R.A. Crofts. Very soon we were on good terms and worked throughout the mission in full coordination with each other.

Our instructions were: To outline the general policy of the current agricultural development program of Sierra Leone; to identify and make a preliminary review of high-priority agricultural projects which might be suitable for Bank/IDA financing; to give special attention to prospects for development of oil-palm and rubber, the establishment of cooperatives and credit organizations as well as the marketing system; to select economically viable projects and to outline the specific

studies necessary to bring these projects to the point of preparation.

Crafts and I agreed that he would concentrate on the economic aspects and I would cover the agro-technical aspects; we would then compare notes and discuss the subjects under review.

The first days were devoted to briefings with the various officials of the Ministry of Agriculture, the Ministry of Trade and Industry, the Ministry of Finance, the Bank of Sierra Leone, and the Produce Marketing Board. Saturday and Sunday we spent reading all available documents on Sierra Leone so as to be prepared for the field trips planned for the weeks that followed.

Background Information

Geography

Sierra Leone is a republic in western Africa, bordered by Guinea on the north and east, Liberia on the southeast, and the Atlantic Ocean on the southwest.

The country's name derives from Serra Lyoa, or Lion Mountains, the name the 15th-century Portuguese explorer Pedro de Cintra gave to the hills surrounding the harbor at present-day Freetown, now the nation's capital.

The country's three major regions form a topographical continuum beginning with a swamp about 50 km wide along the coast. In the interior this marsh gives way to a plain covered by tall grasses and sparse forests. Further east is a third region of plateaus and mountains, which reach a height of 1,948 m. The mountainous Sierra Leone Peninsula, along the western coast, juts into the ocean, constituting a smaller, fourth zone sheltering Freetown and forming its magnificent harbor - the third largest in the world.

Most of the major rivers of Sierra Leone rise in the Guinea highlands to the east and flow southwest through Sierra Leone to the Atlantic.

Climate

The climate is tropical, with a rainy season from May to October. Temperatures average 20 - 30 degrees Centigrade, but variation is slightly greater in the highlands. Annual precipitation ranges from 2,030 mm in the northeast to more than 3,810 mm on the peninsula.

History

Creole history begins in 1787 when British opponents of the slave trade founded a colony for freed slaves on the West Coast of Africa, that ultimately became Freetown. In the first consignment, males outnumbered females considerably; to redress the balance a razzia was carried out hijacking all streetwalkers found plying their trade, till the right number was attained. By 1850 more than 50,000 former slaves, originally from many parts of Africa, had been resettled.

To the credit of the organizers of this African version of "return to Zion", it must be stated that they did not simply dump the freed slaves and leave them to fend for themselves, but undertook a follow-up program to ensure the success of the enterprise.

They provided funds and know-how to build the necessary infrastructure. The provision of churches and schools helped mold a common culture for people of diverse tribes and cultures whose only link was the slavery from which they had been freed. The most gifted youngsters were sent back to England with scholarships to learn the various professions.

The descendants of the freed black slaves, known as Creoles were concentrated in Freetown and the west. They speak Krio, a hybrid derived from English and varied African languages, which has become the country's trade language; English remains the official language.

These immigrants soon dominated coastal affairs. The British recruited most of the professional and clerical staff needed to run the colony from among the Creoles.

In 1896 the hinterland became a British protectorate, although the coastal area remained a colony, a division that emphasized differences between the Creoles and indigenous peoples, and that hindered the emergence of a common national identity after the country gained its independence in 1961.

Economy

Sierra Leone possesses a dual economy whose sectors are not well integrated. It is predominantly

agricultural, in that 80% of the population depend on agriculture.

The main food crops are for domestic consumption and consist of rice, cassava, sorghum, and millet; onto this subsistence farming has been grafted a relatively small proportion of cash crops which include coffee, cocoa, palm kernels, groundnuts, ginger, and fruits and vegetables, either for export or local sales.

The export economy is however dominated by extractive industries that employ few people but account for 80% of foreign trade earnings, supplying world markets with diamonds, bauxite, and titanium dioxide (rutile).

A boom in mineral exports, mainly diamonds and bauxite, failed to stimulate agricultural growth but instead fueled a seven-fold increase in food imports.

The main reasons for the lack of impact of overall economic developments on agriculture are: a social attitude derogatory to agriculture; a land tenure system giving no real security of tenure or incentives to improvement by the farmer, the virtual absence of a commercial marketing system for the internal market and the lack of credit facilities.

In the years that followed I was to find that these conditions were endemic to most, if not all, African countries south of the Sahara.

The country's soil is largely iron-bearing and thus is not very fertile. Most of the original forest cover has been cleared for agriculture; sizable oil palm forests now constitute a secondary growth. Animal life included monkeys, lions, leopards, hippopotamuses, and many species of insects, birds, and fish, but all, except the insects, have been considerably depleted. Most prominent in Freetown are the vultures resting on housetops and hordes of rats.

By Monday we were equipped with all the information we could glean from reports and books and started our field trips, each according to his area of interest.

Field trips

My major apprehension was that I, the expert consultant, would not recognize an oil-palm plantation when I would see one, but my fears were laid to rest when I realized that all that was needed to make recommendations was common sense.

Livestock Development Scheme

A case in point was a development program for cattle, the adoption of which was being considered by the Government of Sierra Leone, FAO and the World Bank. and which we were requested to evaluate.

The principal livestock development scheme aimed at improving the natural herd, mainly by encouraging the Fuli cattle owners to abandon the traditional migratory way of life and live in settlements, on which it was intended to improve the water supply and the pastures themselves.

However, no development scheme could succeed unless the herdsmen are made to realize that cattle are a marketable commodity and not just a status symbol. This could only be achieved by making the marketing efficient, so as to ensure a decent living for the herdsmen.

At the time, the estimated number of heads of cattle in the country was 150,000 to 200,000 Consumption stood at 10,000 to 15,000 heads per annum, so marketing 10% would cover the requirements of the country. Yet, the equivalent of 5,000 to 10,000 head of cattle were imported every year, indicating that only a small proportion of the native herd is slaughtered and most are allowed to die a natural death.

And no wonder. Whatever animals are marketed, they are sold on the hoof. After marching to market, the animals arrive emaciated, and the little meat left on their bones is of poor quality.

I pointed out, in my part of the report, the absurdity of increasing the herd before improving the marketing and establishing processing facilities, such as a central abattoir, located in the production area, cold storage and transport facilities, as well as the establishment of a Meat Marketing board to ensure efficient marketing..

These measures could provide the necessary inducements to cattle owners to sell a proportion of their stock at a suitable age, and increase turnover without increasing the total number of cattle raised

Debriefing

We completed our facts finding mission and returned to Rome to write our report. Each one of us wrote what he had on his mind, and when we compared notes, the two parts fitted together perfectly in a single report of 65 pages, the result of excellent cooperation in two distinct fields of competence.

After we submitted our joint report, I was warned by various experienced colleagues that Ergaz usually tore the reports of his consultants to pieces with his biting sarcasm, so that I could expect the same.

After two days of nail-biting I was summoned to Ergaz's office and to my great surprise was complimented on the report. All he wanted, was that I change my assessment of the cattle development program, which I had defined as a ridiculous proposal, as both his department and the World Bank were most interested in implementing the program.

I replied that the report was in his hands, he could make any changes he liked, but if he did, he and not I, would have to sign the document.

It was pleasant to see how he was taken aback by this show of independence; after reflection he asked me whether I would agree to change my assessment if the FAO expert on cattle gave his considered opinion.

To that I agreed readily, provided the expert was able to convince me that I was wrong in my assessment. The expert was duly summoned, heard my version and the objections raised by Ergaz and concluded "Arnon is right". With that the issue was settled.

An Offer I had to Refuse

The next day I was invited to lunch by Jones at the posh restaurant for senior FAO staff. He said that on behalf of Ergaz, he was proposing that I accept to work for FAO on a permanent basis. Jones was still unaware that I knew how he had climbed out on a limb by offering me to be a consultant and I had to hide my satisfaction that not only had I not let him down but that Ergaz was eating crow. Of course I said that it was out of question that I would leave Israel and settle in Rome.

The next day, Ergaz himself invited me to lunch. After hearing straight from the horse's mouth that I had no intention of coming to live in Rome, he suggested that I agree to come on missions of longer duration than the one just completed. When I explained to him that I could not absent myself from work for more than a month at a time, he exploded "Do you think that you are that indispensable"! I answered, tongue in cheek, that was exactly the problem. If I came for longer assignments, and work at home progressed satisfactorily without me, people would find out that I was really dispensable.

Reasons for Stagnation in Developing Countries in Africa

The lack of agricultural development in Sierra Leone is duplicated in many, if not most, developing countries. At first, I thought that the main reason for this lack of progress was the corruption that permeated the entire system. By the time each bureaucrat, from heads of government to the smallest clerk had taken his "bite", little was left for development.

However, in later years, the phenomenal success stories of the so-called East-Asian "Tigers": South Korea, Taiwan, Singapore and others, in which endemic corruption was certainly not unknown, made it necessary for me to re-evaluate the reasons why many countries rich in natural resources remain poor.

Many reasons have been proposed for the differences in rates of development and the blatant differences between African countries and the "tigers" of East Asia, whose per capita incomes grew about 11 times faster than those of sub-Saharan Africa.

Among the factors involved mentioned by economists are: a. environment - a climate-induced lethargy, endemic health problems; b. economic policies and politics; c. human characteristics; d. the nature of corruption.

To be more explicit: the inhabitants of the successful East-Asian countries were more healthy and literate than those in Africa, they also experienced a marked drop in birth rates; the "tigers" adopted relatively open, market-oriented economies contrasting with the Marxist influenced

policies of the African countries.

These contrasting economic policies led to soaring inflation and over-valued currencies in the African countries, whilst the "tigers" economic strategy emphasized the avoidance of inflation, undervalued currency, and vigorous promotion of exports.

The nature of the economies was also basically different: the African countries were essentially rural economies with more than half the work-force dependent on agriculture, whilst the "tigers" promoted rapid industrialization.

The agriculture in the African countries was mostly subsistence agriculture, which, by definition, produces food and fibers at a level that is just sufficient to feed the food-producers and their families and leaves little or no surplus, generally absorbed by taxes.

Such a system makes it impossible for the subsistence farmer to invest in yield-increasing factors, such as fertilizers and improved seeds. Without an appropriate Government intervention the economy remains stagnant and such a pro-development policy was mostly non-existent.

Finally whilst corruption was widespread in both East-Asian and African countries, in the former, graft served mainly to get things done and was considered simply as another cost of doing business, whilst in the latter, it often prevented business from being done.

A joke heard in development circles illustrates the difference: An African government official visited an Asian friend, also a government official, and admired the latter's opulent home and life-style. The Asian explained his wealth by pointing out of the window "You see that highway? Fifteen per cent"!.

Then the Asian visited his African colleague, and found that his lifestyle was just as opulent as his own. Asked how he had prospered, the African pointed outside and said: "You see that highway out there"? "No", the Asian said, "what highway"? That's the reason - One hundred percent!.

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Spain

Invitation

In March 1970, I received a call from FAO asking me to serve on a mission to Spain. I wondered whether there would not be a problem with the reputedly proud Spaniards at bringing a consultant from tiny, new, inexperienced Israel.

To my surprise, I was told not to worry, it was the Spanish Ministry of Agriculture that had specifically requested my inclusion in the mission. As a matter of fact, most of my later missions came as the result of the initiative of the countries involved and not of FAO.

I assume that this was the result of an ongoing bias against Israeli participation in FAO missions. How explain otherwise that a United Nations Organization agreed to set up a regional international research center in Syria, a country which openly declared that its neighbor, Israel, would not be allowed to visit, or participate in the work of this "international" body. However, it might also be personal bias against myself, following my propensity to undiplomatic statements in my reports and my negative assessment of the administrative efficiency of FAO.

Briefing

These were my speculations as I finally left for Rome, for a briefing session. The mission to Spain started on the left foot. The members of the team were supposed to meet on a Thursday. As usual, the air-ticket arrived too late for me to participate in the briefing, and I arrived in Rome on Friday afternoon.

The Devreds

My colleague and friend, Rene Devred, a graduate from the same alma mater as myself, was waiting for me and proposed that I spend the weekend with him and his wife, during which time he could report on the briefing and make me familiar with the assignment that awaited us. To this suggestion I agreed willingly and we set off for a village about 50 km from Rome, where the Devreds owned a cottage at which they spent their weekends.

There I met Christiane. Devred, the daughter of the famed Belgian artist Andre Hallet. She had lived in the African jungle alone, with a few Negro servants, for months on end, whilst Rene was on botanical missions, on behalf of the Agricultural Experiment Station at Yangambe, Congo, where he served after graduating and until Congo was declared independent. As a result, Christiane was a resourceful woman, undismayed by unexpected developments - characteristics that I was to recognize and appreciate in the near future.

The cottage was an old-fashioned building, built in the traditional rural style, but with a bathroom and shower added to the original design. We spent the evening at the open wood-burning fire-place, discussing not only the present mission but also FAO bureaucracy and the difficulties encountered in working for this organization. I noticed an old-fashioned bellows hanging above the fire-place, which was going to play an important role in my life.

I spent an uneventful night, soundly asleep, and woke the next morning feeling on top of the world. My hostess called from the kitchen how I wanted my eggs for breakfast and whether one or two. I answered: "two, I'm very hungry".

A fateful bath

It was a cold wintry morning, so before stepping into the bath, I closed the window. A gaz burner heated the bathroom, and I noticed that it was no longer burning, and assumed that it had been turned off by a thermostat. I was still standing upright in the bath, when I felt faint and the room started spinning around me. My last thought was "I must turn the key"; with one foot outside the bath I crashed unconscious against the door that I had desperately tried to reach, my head causing a bang that resounded around the cottage.

Christiane came running; not being able to open the door, she sent Rene to fetch the fire brigade,

whilst she pumped air with the bellows with all her force through the slit under the door, against which my head was resting. This undoubtedly saved my life, as my syncope was due to asphyxiation and, fortunately, not to carbon monoxide poisoning.

I remained unconscious throughout the day and had the most curious experience. I saw myself floating in the air and looking down at my body lying prone on the bed with several people standing around and finding myself unable to join in their conversation. I thought "I'm dead!". And immediately thereafter: "Fool, if you were dead, you wouldn't be thinking".

I regained consciousness as strange noises of a farmstead reached my ears: a cock crowing, a hen cackling, a cow mooing, a horse winnying and even a dog barking. Convinced that I had gone out of my mind, I slowly opened my eyes, and saw a stranger sitting next to me, who held my hand and who said reassuringly in Italian that I was in the village hospital and that "everything will be all right".

I turned my head, and saw that the source of the barnyard noises was the father of a sick child making noisy attempts to amuse the small patient.

The Rome clinic

I drifted off again to wake the next day in a clinic in Rome. This time Rene was sitting at the bedside. He told me that they had thought I had a heart attack, and brought a cardiologist from Rome who had me transported by ambulance to the clinic.

After I explained the circumstances under which I had fainted, it was clear to both of us that this was no heart attack. Rene also told me that throughout my unconsciousness I had repeated: "j'ai tout de même raison", a story I liked to tell against myself whenever an argument failed to be settled.

My troubles were not over. I noticed a throbbing pain in my left leg, and was told that in falling, my foot had landed on the red-hot filament of a small electric stove. Christiane, with her usual presence of mind, had turned off the electricity at the first sound of trouble, and had thereby saved my foot, but not before I had suffered a third degree burn, right to the bone.

My next visitor was a representative of FAO, who had come to tell me that FAO was releasing me from my contract, and I could return home. I told him that I had come to do a job, and that I was perfectly fit to continue on my mission. I may have exaggerated, for the next few weeks would be the most pain-filled of my life.

Arrival in Spain

Once dismissed from the clinic, with orders to change the bandages on my foot every four days, we left for Spain. At the first meeting with the Director General of the Ministry of Agriculture, we discussed our mission and prepared an initial program of visits to agricultural research institutions.

We were told that the Ministry of Agriculture had already prepared plans for the reorganization of its agricultural research service along the lines proposed in my book on the subject. It was then that I learned that the above-mentioned book was the reason for the request to have me included in the mission. Basically, this meant consolidation of all Government resources in one single Institute under the Ministry of Agriculture, operating through a decentralized regional network of research units.

The mission's purpose was to suggest strategy and tactics in implementing this reorganization, against the determined opposition of many vested interests and to ensure financial backing for the plan by the World Bank.

The program would involve the construction of six new regional centers in the North, Duero, Catuna, Centro, Levante and Canarias Regions, as well as the expansion of existing facilities in Ebro, Zaragoza, Extremadura and Andalucia regions.

The magnitude of the problem is illustrated by the dispersion of agricultural research activities between a large number of institutions - governmental and non-governmental - between which there was no coordination whatever.

Changing bandages

The next day the mission was expected to embark on the first leg of its survey of existing institutions and facilities. It was also the day on which my bandage was to be changed. A colleague

took me in the Ministry car to a huge building with a helicopter landing pad on the roof. Large letters proclaimed that the building was owned by Seguridad Social. I assured my companion that I was not a basket case in need of social assistance and could pay for a private doctor's services. He told me that he was following instructions, that I was not to worry and everything would be fine. Not convinced, I followed him, and was in for the surprise of my life.

At the reception desk sat an elderly nun, to whom my colleague explained my problem. Without requesting any identification papers, without fixing a date for treatment in some distant future as was the wont in our Sick Fund, we were directed to the clinic for burns. There a masked nurse unwound the bandage, and after a first look, immediately sent for the Director. He too donned a mask and after a careful examination, said "I cannot allow you to travel around the country in your situation and at your age (I was sixty-one!) and cannot be responsible for the consequences if you disregard my instructions".

I explained to him that I was on a mission of my own free will, that I did not want to give it up, and - whilst highly appreciating the treatment I was receiving and the concern he was expressing on my behalf, nobody had the right to hold him responsible for any foolishness on my part.

I had heard that the next week was "Semana Santa" when no government business takes place, and therefore I suggested as a compromise that for the duration of the festivities, I would remain in bed in the hotel.

I did not accept his counterproposal to enter his hospital for treatment and plastic surgery. He warned me that otherwise I would suffer from the wound for the rest of my life. I subsequently found out how right he was.

Hardly an hour passed after my return to the hotel, when a messenger arrived, carrying a letter from the doctor insisting that I remain in bed until further notice.

Immediately after the Semana Santa, I insisted we start on the first leg of our projected tour. First I was taken to the clinic for a change of bandages. This time I came armed with a box of chocolates for the nurses and an illustrated book on Jerusalem by Teddy Kollek for the doctor. Whilst the nurse was changing the bandage, I noticed that the doctor was conferring with my colleague.

After we returned to the Ministry, I was asked to wait in the car, whilst he went into the building. After a few minutes the Director General in person came out to the car, and said there was a change in plans. At the order of the doctor, I was to remain in bed whilst the rest of the team went on tour for a week. To ensure that I should not feel left out of the team's activities, all the personalities that the team would interview in the course of their tour, would be brought to my hotel room for orientation and discussion. I could not oppose such a gracious proposal without appearing boorish, so I acceded to his request.

The first person to visit me was the President of the National Council for Scientific Research. We spent two hours in pleasant conversation, during which I was able to convince him that it was more important and prestigious to have a say in overall planning of the national agricultural research effort, which was the prerogative of the Minister of Agriculture, rather than maintaining a limited sectorial effort, duplicating the work done by the Ministry.

At the end of our meeting, he expressed his agreement to handing over all the agricultural research activities and facilities of the Council to the future National Institute for Agricultural Research, in exchange for a voice on the Board of Directors of the Institute. Much the same argument was used with my other visitors.

In the meanwhile, I had spent two weeks on my back in the hotel bedroom. Pain was always with me, it was bearable as long as my foot was stretched out in front of me, but became excruciating when I put my foot down for a minute, something that could not be avoided when going to the bathroom, for example.

Touring Spain

The wound was healing, and I decided I would not agree to any further delay in joining the team on their reconnaissance tours.

A car was obtained, the front seat of which could be folded, allowing me to sit in the back seat with my leg stretched out, resting on the front seat, and a collapsible wheelchair was bought

or rented which could be stored in the trunk and taken out whenever we reached our destination.

I try to avoid generalizations, but I cannot refrain from mentioning the unfailing friendliness and willingness to help, shown by all the people I met in Spain, from a waitress to a Minister.

The first time we sat down to lunch, all my team-mates ordered gazpacho. The cold soup, in which pieces of bread were floating, did not appeal to me, and I contented myself with ordering an antipasta as first course. To my surprise, the waitress brought me a small bowl of gazpacho, and literally begged me just to taste a little. How could I refuse? From then on I always had gazpacho at lunch-time, enjoying a different version in every region we visited. At night, we stayed in 5-star hotels. One evening, we arrived at a hotel, to find that it had been overbooked, so we went to a "parador" (inn, hostelry) instead.

The paradors constituted a chain of government-owned hotels, that had been converted from former castles, monasteries, churches and other historic buildings that had become redundant. The paradors were reconsidered by our hosts to be unsuitable for people of our standing and had therefore not been included in our list of stopovers.

The parador into which we landed by chance, was a renovated monastery, in which former monk cells were transformed into tourist lodgings. The corridors, lounge and dining hall were full of relics of the former use of the building.

There was a small wooden shutter in my room, that must have served some religious purpose in bygone days. Curious as to what was beyond the shutter, I opened it with some difficulty, to look straight into the eyes of a stork, sitting on its nest on a clutch of eggs, less than a meter away.

I was so charmed with my parador, that I insisted that henceforth these would be our preferred places for staying overnight during our travels.

In all the agricultural institutions we visited, I was surprised to see that that by 10 am, the places were devoid of research workers. It was explained to me that they had to moonlight in order to feed themselves and their families.

During the tour, I had to change my bandage twice. I no longer objected to being a ward of the Seguridad Social. The first time was in Valencia, where a young female doctor, her face covered by a mask, checked the wound and changed the bandages. All I could see was a pair of the blackest, most beautiful eyes I had ever encountered. Intrigued and fascinated, I very much wanted to see the rest of her face, but this was not to be. I was followed by the next patient, with the lady doctor's mask still in place.

The next time the bandage had to be replaced was on a Sunday, when all Government facilities were closed. Not having a choice, we went to a private doctor. I do not know whether he washed his hands, but he certainly did not wear a mask. He charged me \$50 and in exchange left me with an infection, the first time this had happened.

On return to Madrid, after the bandage was removed, the extent of the infection became clear and all the infected flesh had to be removed - an awfully painful if minor operation. My friend, the Director, tried to divert my attention from the painful procedure by telling me that he had spent an entire night reading the book on Jerusalem I had given him and discussed its contents with me. He again reiterated his proposal to have me hospitalized in order to perform a plastic operation. Again I demurred.

When he heard that I had been in Seville, he asked me whether I had seen the lady doctor with the wonderful eyes, showing that I was not the only one to be stricken by the mysterious lady.

Reporting to the Minister

On the next day, back to the Ministry. The Director-General told me that the Minister wished to hear what were my first impressions from my tour. I countered that these impressions were very negative, and that maybe it would be better to reserve them for my report? The D-G said he must consult the personal Secretary of the Minister. He returned, asking me whether I could not



Travel in Spain As seen by a Colleague



Travel in Spain As seen by the camera lens

formulate what I had to say in a diplomatic way. I replied that I had been trained as an agronomist, and not as a diplomat. Back he went for consultation, and returned saying: the Minister insists on hearing your impressions.

I was surprised to see how young the Minister was, in the early fourties, and still more surprised at the equanimity with which he heard my harsh remarks.

I started out by saying how very impressed I was with the development of industry, construction, tourism and services visible in all parts of Spain, and all the more shocked by the backwardness of its agriculture.

In almost all countries, the development of the industrial and other economic sectors is the engine that propels agriculture forward. The draining away of labor from labor-intensive traditional agriculture imposes the need for mechanization; which in turn, can only be economically justified if efficiency and productivity of agriculture are considerably increased. For some reason or reasons, this process had not happened in Spain.

A major contributing factor to the backwardness of agriculture in Spain was undoubtedly the lack of an efficient mission-oriented research system and an extension service able to help farmers adopt improved technologies.

The existing structure of agricultural research was woefully inadequate for the role it is required to perform; there is no overall national program for research, and whatever research effort there is, is splintered into many small, separate research units with little or no coordination between them. The choice of research projects is mostly dictated by the inclinations of the researchers, rather than by economic priorities.

This situation meant that there is little information of value to be transmitted to the extension workers. This impels the extension workers to search for solutions to pressing problems by themselves, an undertaking for which they are not trained.

In brief, I concluded, basic research of significance to agriculture is undertaken by the Consejo Superior de Investigaciones Cientificas; applied research of practical significance is carried out by the Extension Service, so that only a narrow, undefined field remained for the service which has the responsibility for the national agricultural research effort.

Whilst it was our mission to propose an efficient research organization, motivated to and capable of responding to the real needs of agricultural development in Spain, I stressed that the best planned research organization would be ineffective without researchers who are wholeheartedly devoted to their work.

Almost every research institution we visited, was empty of research workers after 10-11 a.m. How could Government expect researchers to be dedicated to full-time work when the pitiful salaries they receive forces them to moonlight; we were shocked to learn that it is commonplace for research workers to hold down two or more jobs, as otherwise they cannot provide their families with a decent standard of living.

Any reorganization of the presently splintered and uncoordinated research system would be futile, unless, first of all, a basic wage sufficient for living modestly, and reasonable prospects for promotion based on research performance and contributions to the advancement of agriculture were provided. This first step is an essential prerequisite for any basic change in organizational structure we can devise.

The Minister was somewhat taken aback by my outburst, but continued to ply me with questions. His reaction on the whole was very understanding and friendly, none of the Castilian pride I had expected was evidenced.

But one reaction puzzled me: when I replied to his question what I thought of Spanish agriculture, apart from research, I mentioned among other things that I had been impressed by the enormous effort invested in developing an irrigation infrastructure in one of the dry regions of Spain, but could not figure out why the methods adopted were the most expensive and had been obsolete for over 50 years. The Minister positively beamed on hearing my comment. When I asked the D-G what, in my harsh comments, had made the Minister so happy, he said: "Very simple, irrigation infrastructure is the responsibility of the Minister of Public Works"!.

Sightseeing

Spain is an ideal country for sightseeing and for the sight-seers. It has wonderful and diverse scenery, an abundance of historic sites relating to Moslems, Christians and Jews, beautiful museums full of wonders from Spain's rich cultural past and a most hospitable and friendly people (things may have changed since my visit). But in my condition, I was unable to play the tourist. However, there was one place I was determined to see, whatever the cost in pain: the Juderia in Cordoba.

After we reached the walled city of Cordoba, out came the wheelchair from the trunk of the car, and I was wheeled along the narrow streets of what had once been the Ghetto, evacuated in 1492 and since occupied by working-class families. If the present quarter in any way resembles the former Ghetto, the Jews of Cordoba must have lived in very beautiful surroundings. The streets were spotlessly clean; peeping into the courtyards, which were part of every habitation, one met an amazing colorful display of flowers.

Our first destination was the ancient synagogue. This was opened for us by the caretaker, a buxom woman with a large cross hanging from around her neck. The place was perfectly maintained; the Hebrew texts on the walls were still easy to read and my team-mates were duly impressed when I translated for them the ancient texts.

We continued on our walk until we reached a small square, the Plaza Moises de Maimon, with a statue surrounded by flowers of *"the sitting figure of a man wearing the robes and twisted turban of the desert. In his lap he holds a book held open by his right thumb, his face and bearing are those of a philosopher who is resting here in the quiet, prior to a meeting with his students. It is Cordoba's memorial to a brilliant Jew - Moses Maimonides (1135-1204)"*. (James A. Michener: Iberia, 1968).

At the end of the street, the house owned by Maimonides is preserved as a museum - not of former Jewish life in the Juderia, but (if my memory is correct) devoted to bull-fighting!

We spent the evening in a small cafe in the Juderia, watching a performance by Flamenco dancers. We were most impressed by the vivacious display by a young Gypsy girl. Seeing our admiration, a much older dancer hissed: that is not real Flamenco, wait till you see me perform. And right she was. When her turn came, even the uninitiated could appreciate the difference between youthful exuberance and mature, sophisticated technique.

This was the sum total of my sightseeing in Spain, but I promised myself that I would one day return to explore the country on my two feet.

Taking leave

After having completed my review of the state of agricultural research in Spain, I returned to Madrid to write my share of the report (the other sections were concerned with agricultural education and extension, each topic being represented on the team by an expert).

I finished writing my part after a few days and then asked to be excused from the final work of the Mission, namely a detailed analysis of the financial costs of implementing the projects we were proposing, for funding by the World bank. This request was granted.

Before leaving, the Minister held a farewell party in my honor in a posh hotel. I attended the reception with my bandaged left foot encased in an enormous slipper - the largest that someone from the Ministry had managed to find in the shops of Madrid.

At the reception, I was seated in an armchair, with my left foot resting on another chair, the Minister standing next to me, greeting the guests. There, my stereotype of haughty, cold Spaniards disappeared for ever.

My troubles were not over. At Ben Gurion airport a stewardess waited with a wheelchair. Just before we reached the terminal, I asked my driver to let me walk the last few steps. I explained that my wife would be waiting for me, and would probably faint at the sight of my arrival in a wheel-chair. To the surprise of my fellow passengers, the invalid suddenly stood up and hobbled into the terminal.

I need not have bothered, neither my wife or anybody else was awaiting me. I waited in my wheelchair for my suitcase to appear. After an hour, I decided to leave without my luggage. When the taxi deposited me at home, nobody answered my ring. I sat down on the front steps, my foot

throbbing, wondering what else could go wrong on this fateful trip.

My wife returned home an hour later, not having received my cable and unaware that a disabled husband was waiting in pain on the doorstep of our home.

Two days later the phone rang. It was a clerk from the post-office informing me that a cable had arrived from Madrid and whether he should read it to me. I told him "no, not to bother. I can read it to you."

The prognosis of the Spanish doctor that without plastic surgery I would suffer from the wound till the end of my days was fully confirmed. Scar tissue appears regularly, to fall and be replaced, causing discomfort when walking.

In retrospect, with all the pain and setbacks involved, I would not have wished to miss the unique experience that was my mission to Spain.

Postscriptum

One day, I received a hefty bill for my stay in the clinic in Rome. This I sent to FAO asking them to have it honored by the insurance they had taken out for me and the cost of which had been deducted from my honorarium. I received the most amazing reply - adding insult to injury in typical FAO fashion: the accident had occurred in a bathroom and was therefore not work-related and not covered by insurance! I refused to accept this absurd decision, and asked whether a consultant was supposed to remain unwashed for the duration of his mission.

I was promised the matter would be investigated, in the meanwhile the clinic remained unpaid and my honorarium was retained by FAO till the matter would be adjudicated. A year later, when I arrived in Rome for another mission, the problem was still unresolved. I suggested that at least the Clinic should be paid from the sum due to me, until a decision was finally taken. This proposal was accepted but not implemented. It took another visit to Rome, before it was at last decided that taking a daily bath was part of a consultant's assignment and the matter was finally settled.

Congo (Zaire)

The Mission

In 1971 I received a proposal to serve on a mission to Congo (as it was known then), on behalf of the United Nations Development Fund (UNDP) and to come first to New York for briefing. When I met the official who had invited me, I was immediately made aware of the difference in style when UNDP was compared with FAO. My interlocutor asked me whether an honorarium of \$100 a day was satisfactory and I answered in the affirmative.

He then apologized for having sent me a tourist class air-ticket; he said a man of my position and age should travel first class. Remembering the cramped conditions of my flight to New York, and how my bones ached after a night's non-sleep I accepted his offer with pleasure. At the time, it did not occur to me that this would cause ill-feeling with my team-mate from FAO.

The mission itself was a challenge. Mobutu had signed an agreement about two years before with FAO, whereby the latter undertook to rehabilitate the agricultural research system in Congo. Recently, on the occasion of a visit by the King of Belgium, Mobutu "sold" the project a second time to the Belgians. Needless to say, this created a problem for FAO and the Belgian Government, though not for Mobutu, a specialist in playing off one side against another.

I was to be head of a team with two additional members, and our objective was to meet with a Belgian delegation and - together with the Congolese- propose a solution acceptable to all the sides involved.

In case it was impossible to reach consensus in writing our report to FAO, I was to write a personal report directly to the UNDP in New York

Congo

I had no need to read up on Congo, a subject we had learnt thoroughly both at school and as part of our professional formation; I was very pleased at the thought of seeing the country on which I had spent so much time during my studies.

Background Information

The Congo, an enormous tract of 2,345,409 square kilometers straddling the equator, (80 times the size of Israel, with only double the population), is a potentially enormously wealthy country - rich in gold, diamonds, copper and other minerals, but with one of the most destitute populations and richest potentate in Africa

Though agriculture is the mainstay of two thirds of the population, it is a subsistence agriculture producing very little above the most basic needs of the producers. It therefore contributes little to economic development, which is entirely dependent on mineral extraction and export.

The major crops grown on the small family farms are cassava, maize, sorghum and bananas. Some plantation crops are also grown for export.

Leopold II, King of Belgium, financed the exploration of the Congo basin by Stanley, and laid claim to the land. His claim was finally recognized by the Conference of Berlin in 1884/85 and Leopold declared the Independent State of Congo, with himself as self-appointed king.

At first, the Belgian government refused to be involved in what was viewed as a private enterprise of the King, but on his death, agreed to become one of the colonial powers. The regime was brutal and exploitative; the population revolted and after much repression and bloodshed, the country was granted independence in 1960.

Though the population is 80% Bantu, 5 official languages and 400 dialects are spoken.

Arrival in Congo

First to Rome for a second briefing, and to meet the two other members of my team whose names I have forgotten: one - the FAO representative in Congo, and the other - an official from the FAO headquarters in Rome. The latter was an artist by inclination and talent, but had been forced to become an official, a fact of life he rebelled against, as was apparent in his bearing

and conversation. He was antagonistic to me from the start.

On the plane from Brussels, we were the only white passengers. After disembarkation, all the other passengers were handed their luggage, whilst we were left standing empty-handed. The handler stated that our luggage could not be found, and belatedly we remembered that we were in a newly independent African State. A hastily produced 5-dollar bill helped the handler find our luggage.

We were put up at a hotel that had been taken over by the UN to house the numerous UN personnel engaged on various missions in the country. There were kitchen facilities making it easy for each one to prepare his own meals, if so inclined. In view of the many stomach ailments of which many of the expatriates complained, I was only too glad to prepare my own meals.

A neighbor of mine was a Spaniard, and I asked him whether our mission to Spain a year ago had changed anything on the ground. He smiled, went to his room and returned with some newspapers he had received the same day from Spain. In one of them was an article stating that the Government had approved new regulations regarding salaries to be paid to Government research workers and criteria for promotion, which were to be on par with those in force for University personnel. Better late than never.

Mobutu

The first problem we encountered was that our counterpart, the Director of the Yangambe Agricultural Research Center, was in prison and had to be released, in order to take part in our discussions. Of course I was curious what particular crime had landed such an eminent government official in prison. I learnt the reason when we visited the Agricultural Research complex in Yangambe, to which I will refer later.

Among the numerous corrupt dictators in Africa, Mobutu was a giant among pygmies as far as brutality, corruption, cupidity, superstition and murderous intent were concerned.

A former postal clerk, Joseph Desire Mobutu joined the independence movement in 1956. He joined the army of the newly independent Congo, and rose rapidly through the ranks.

His rapid promotion came as a result of his brutal suppression of an attempt by the Katanga Province to secede from the Republic, thereby, incidentally, protecting the interests of foreign investments in mining industries and gaining the full support of the Western powers.

He was rewarded by being appointed Secretary for Defense under Patricia Lumumba. In his first military coup in 1960, he ousted the extremely popular and democratically elected Lumumba, as well as President Kasavubu.

In one of his games of intrigue, he returned Kasavubu to power and was himself named commander in chief. From this position of power, he made his second coup in 1965, nominating himself Prime Minister and then President, to begin a brutal regime which ended with his exile and death in 1997.

Mobutu was linked to the murder of Lumumba, who simply disappeared without trace. Followed a rapid succession of murders of potential rivals without Mobutu attempting to hide his involvement, creating a regime of fear and repression.

Mobutu was a professed Catholic, but was dominated by the superstitions of a fetish culture. He lived in constant fear of the curses placed on him by his supposed and real enemies and used all manner of fetishist and practical countermeasures to negate the curses heaped on him, the most effective of which was murder.

His rapacity knew no bounds. He built or purchased mansions and palaces all over Europe and his native land. One day I read a lead article in a Congolese francophone journal, in which the editor branded the criticisms against Mobutu's lavish style in the foreign press, as racist and prejudiced, and proclaimed that Mobutu was only doing what his people wanted him to do: namely, that after years of servitude they should be adequately and honorably represented on the international scene by their leader. A not very convincing argument.

At a reception at the Israeli Embassy, the Ambassador told us how a few days previously, the diplomatic corps had been invited to a reception by Mobutu. The ambassadors arrived at the appointed time, to find the doors closed. After kicking their heels for a quarter of an hour, a messenger arrived, informing them that Mobutu did not feel like coming to a reception. An example of the arrogance that appeared to be endemic in the newly independent African states,

as a kind of reparation for the indignities they suffered under their colonial masters. Corruption and rapacity were evident at every level. At the same reception, Tamar Golan, a roving journalist assigned to Africa south of the Sahara on behalf of an Israeli newspaper, described to us the following incident: "I was waiting on the runway of the airport awaiting the arrival of the Presidents to a meeting of the Organization for African Unity, when a police officer, Colonel Mika, Head of the Secret Services, approached me. He was a giant, round-faced man, reminding me of Idi Amin of Uganda. He was well-known to the journalists and had the reputation of murdering suspects or enemies at the slightest pretext. He took an interest in my miniature camera, a Minetola, and after having asked me on how it worked, pocketed it without further ado". I was to be reminded of this story some time afterwards.

Yangambe

Problems

After a week of briefing and collecting information, we left by road for the Agricultural Research Center at Yangambe, a legacy of the Belgian colonial administration. The roads were dirt tracks running through the jungle. Occasionally, one passed a village, a string of huts on both sides of the road, with men stretched out in hammocks slung between two trees and women occupied at the myriad tasks performed by them.

At Kinsagani (formerly - Stanleyville) the Manager of the Research Center was waiting in a jeep convoy to take us to our destination. On the way, after a lot of prompting, overcoming his fear that somehow his words were being recorded, he reluctantly told me why his Director had been thrown into prison.

A few weeks previously, Mobutu had visited the research center, and had ordered all villagers in a radius of several miles to come and hear a speech he intended to give that evening. He had a captured as well as captive audience in the full sense of these terms..

He was in the middle of his speech, when the electric generator, a relic of bygone days, decided to take a rest, and complete darkness ensued. Mobutu, a coward who was perpetually scared of being assassinated (with good reason) hid amongst his bodyguards. After a short rest, the generator resumed its duties, and the light restored Mobutu's courage.

He called for the man responsible for the Center, and hence, without doubt for the life-threatening darkness.

The Director appeared before him. Before throwing him into prison, Mobutu obliged him, on his knees, to cut the grass around the speaker's platform, as a humiliation and sign of submission, a typical act for this corrupt bully.

The Manager further confided that this incident had taken him off the hook. On arrival, Mobutu had requested a basket of avocados, to take home with him. The Manager replied that he could not comply, because the avocados at the center were far from ripe. Mobutu countered "impossible, last week I received a basket of the fruit at another station", and would not accept the Manager's explanation that there are differences in the time fruits ripen in different ecological zones.

The Manager was expecting some form of reprisal from Mobutu for his having failed to comply with the President's wish. Fortunately for him, the scare Mobutu had experienced the same day and the punishment he had already meted out had taken his mind off the Manager's misdeed.

The Research Center

The Yangambe Research Center is an enormous complex, modeled on the Beltsville Research Center of the Federal Government of the USA. Its territory, consisting of forests, plains, and plantations, covered several square kilometers. Besides the usual research complex of laboratories, library, workshops of all kinds, there were seven villages providing workers for the huge estate, a settlement for expatriate white workers, a hospital, a church and an airdrome on its grounds.

Neglect was apparent everywhere. The runways of the airdrome were covered with a thick carpet of Mimosa pudica. I had known this plant, that recoils at the lightest touch, as a plant-nursery curiosity. To see a whole plain covered by this sensitive plant was impressive. Our march

through the field left a wide swath of apparently wilted plants. Just as surprising was the rapidity with which the plants recovered after our passage.

We could have spent weeks touring the grounds, without having seen all. We visited the research facilities, one of the villages that provided labor that was no different to other native villages.

We were really shocked at the conditions we found at the hospital, a filthy place where healthy people could contract any number of diseases. The sick lay on bare, stained mattresses. Outside the hospital, camped the families of the patients, who provided food and elementary care for their sick relatives.

The Director of the hospital was an Italian doctor, who appeared to accept cheerfully the conditions under which he was obliged to work. He had trained a native worker as an assistant at the operating table, and when the doctor was not available, his assistant performed the operations himself!

We stayed at a guest-house and had our meals together with the remnants of the former staff. Before cooking the meat, the cook would bring the joint to the doctor, who would give one sniff, and proclaim "can still be eaten" or alternatively "too far gone" I could not bring myself to rely on the doctor's diagnosis and became a vegetarian for the duration of the visit.

I very much wanted to see some wildlife in the jungle, so the Manager took me out in his jeep, late one evening, to a clearance in the jungle, where we waited and waited. All the wildlife we saw would not have filled a small cage in a zoo, and I never repeated the attempt.

In respect to the real needs of Congolese agriculture, Yangambe Research Center was indeed a white elephant, inherited from the former regime, when the huge complex absorbed all the alumni of the Belgian agricultural institutes who wished to serve in Congo. The salaries were adequate, the facilities lavish and work was available for all.

The Belgians made no effort to prepare an alternate cadre of Congolese researchers and almost all the expatriates had returned home. As a result, the whole work program had broken down.

The project of rehabilitation of agricultural research had been signed almost two years previously, and with the exception of the nomination of a Project Manager, an Italian agronomist whose qualifications for the job were not visible to the naked eye, nothing had as yet been done, giving Mobutu his excuse for selling the project a second time.

The Belgian Delegation

Having gained a feel of the place, and of some of the problems involved in rehabilitating the Center, we returned to Kinshasa for our meeting with the Belgian delegation.

We met the next day. The head of the opposing team was an graduate of the same alma mater as myself. By tradition we were obligated to address each other with the familiar "tu" instead of the more formal "vous".

This familiarity immediately broke the ice, and instead of fighting over who was the legal "owner" of the project, we decided to adopt the Solomonian solution of dividing the responsibility for different aspects of the project between the two agencies. We agreed that the rehabilitation of the Yangambe center would remain the responsibility of FAO, and the reorganization of the research system for the country as a whole would devolve on the Belgian government.

Burundi and Ruanda

In the meanwhile, a cable had come from Rome asking us to fly to Ruanda and Burundi, to assess an FAO project that had run into difficulties. We arrived at the airport the next morning, to find that our departure would be delayed for a couple of hours.

After waiting for some time, I felt the need to visit a toilette, which I found at the other end of the airport.

When I came out, a policeman was waiting for me who asked me what I was doing in there. I asked him whether I had to describe what usually took place under the circumstances. He was not amused, and told me that it was illegal to cross a certain line in the airport after having been cleared for departure.

I still couldn't figure out what was the wrongdoing I had committed, but had no choice but to follow him, as commanded.

He took me outside the terminal, whilst I wondered what would my team-mates make of my sudden disappearance. We arrived at a little dark hut. Inside, behind a desk, sat a huge figure of a man, resplendent in gold-braided uniform. He introduced himself as Colonel Mika, in charge of preventing the smuggling of gold and diamonds, and told me I had been arrested under very suspicious circumstances. He very politely told me that I could avoid a body search, if I told him if and where I had any gold or diamonds in any of my body orifices.

I said yes, and pointed with my finger at the single gold-capped tooth in my mouth. The fellow exploded into a huge roar of laughter, and after he had calmed down said : "Anybody who can joke under these circumstances is no longer suspect". And with good wishes for a successful trip he sent me on my way.

In Burundi-Ruanda, we visited an FAO agricultural development project, as well as those of a few other agencies. The development concerned a huge plain, rich in water resources, practically empty of people, with gently undulating topography and good soil. The whole area appeared ideally suited for development, starting with a clean slate,. We found a frustrated team who had encountered the usual problems resulting from delays in implementation due to lack of synchronization between efforts on the ground and back-up by FAO Headquarters in Rome. Also typical, was the lack of cooperation, or even contact, between the various agencies involved in developing the area.

Return to Kinshasa

Back in Kinshasa, we started writing our report. Immediately, the considerable difference between my approach and that of my colleagues became apparent. They tended to put the blame for the inertia of the project on the Project Manager. This I absolutely refused to endorse.

Though the Manager did not appear particularly qualified for his job, a genius could not have done better, given the lack of support from headquarters. None of the steps needed had yet been taken and none of the items required for implementation had been provided.

In the draft report that I prepared, I wrote that FAO had proven, both here and in the Burundi-Rwanda project, to be incapable of implementing and administrating projects. I proposed that FAO should limit itself to planning and supervision, and find a suitable contractor for implementation. I pointed to the work of a Chinese (Taiwanese) team, who were implementing a project sponsored by their Government, with speed and efficiency and who could serve as a model of the kind of contractor required.

When I showed the draft to my colleagues, they told me point blank that they would never sign such a report, not because they disagreed with its contents, but because it would cost both of them their jobs.

We agreed that we would sign a report on which we could all agree, whilst the basic statements presenting my views would be committed to a private report to UNDP. I did however add a copy of the latter to our joint report to FAO.

I would like to mention one example of the many cases of serendipity I was to encounter on my missions. Among the requirements to get the project moving was the appointment of an electrical engineer, to activate all the electrical equipment at Yangambe that had become inoperative due to neglect. The trouble was that no candidate for the job had been found in the country (probably because of inefficiency or slackness in the search), issuing an international tender and appointing a suitable candidate would have been time-consuming.

One morning, the Italian manager had taken me to one of the suburbs to buy some provisions. On our return he lost his way and I suggested he stop to ask the way from an African waiting at a bus stop. The man said that his destination coincided with ours and offered to guide us.

Always desirous of hearing the opinions of local people, I engaged him in conversation, and learnt that he was an electrical engineer, who could not find work in his native land and was leaving the next day for Canada.. Somewhat taken aback at the coincidence, I asked him if he



"This is where I keep my contraband!"

would like to stay in Congo if he was offered a job in his profession. After he replied that he would be delighted, we took him with us to the meeting of the committee and there he was immediately signed to a contract to work at Yangambe.

Shopping

The last two days were allotted to buying mementos. I went to the market, an enormous show where wares of all descriptions were on sale. I was most interested in authentic African art. I had been most impressed, not only by the sense of beauty evident in most artifacts made by local artisans, but how well they satisfied our own sense of aesthetics.

For example, there were numerous oil paintings depicting typical African scenes, which were beautiful and meaningful in my eyes, and yet were authentic African art. I bought a dozen of these wonderful works, to find that on the back of the "canvas" were printed the words "Sucre de Tirlemont". The empty sugar bags had ended up as works of art. What better form of recycling could be desired?

The Africans are masters at wood carving. The objects prepared for the tourist trade were pretty, but standardized, mass-produced ware that did not attract me. There was also a lot of used artifacts from the villages. What amazed me was the amount of work involved in beautifying the most mundane articles of daily use, such as hoe handles, wooden combs, kitchen utensils, weights and measures, etc.

Of these I bought as many as I could carry. Beautiful, though frightening masks, heads of typical women of different tribes, carved in ebony-hard wood, small copper figurines depicting Africans at work, and stylized animals completed my purchases.

When I tried to cram all these objects into my suit-case, I found I had a problem. After rearranging everything several times I finally managed to close my bulging suitcase, using a lot of force.

Departure

The next day we left. I stood the last in line, and watched with dismay how the custom officials dumped all the contents of each suitcase on the counter, and meticulously searched each object carefully looking for diamonds or gold.

I wondered how on earth I would get the jumble caused by the officials back into the suitcase without missing my plane. My turn had come, I had just turned the key in the lock of the suitcase when a roar from the other end of the customs shed made us all look up: there was my giant, gold-braided Colonel Mika, rushing up and shouting: "Not him, he carries his contraband in his mouth". Everybody joined in the laughter, and I was saved from having to repack my purchases.

Erosion

I had decided that I would return to New York for debriefing by first flying East, and making a stopover at home. This entailed zig-zagging across the whole width of Africa, landing at every national airport. This made for a lot of low-altitude flying. Looking from the plane, I was shocked to see the vast expanses of mountains denuded not only of their primeval forest cover but also of their soil cover as the result of erosion.

This devastation was due to the system of "shifting cultivation", which is the most widespread system of land utilization in most parts of the tropical regions of Africa.

Shifting cultivation in the humid tropics consists of clearing by fire patches of primeval or second-growth forest and planting annual and semi-perennial crops for a few years, until yields have declined beyond an acceptable level and the land has become weed-infested, making it unsuitable for further cultivation. The land is then abandoned, and after a number of years, the original forest cover establishes itself again.

Shifting cultivation (also called "slash and burn") has proven to be a relatively safe and rational method for conserving soil, vegetation and fauna, whilst providing subsistence to the population, as long as population density remains below a critical level.

When, as a result of increasing population, the intervals between successive cultivations becomes shorter - soil fertility declines, gradually at first, and the process soon becomes a vicious spiral. As yields fall, more land must be cultivated, and the intervals between cultivations become still shorter. Finally, the soil is no longer capable of producing even the low yield considered a

bare minimum. The bare soil is exposed to the destructive forces of rain and wind and is washed away, leaving bare rock.

The system of shifting cultivation, which has proved to be a self-sustaining system for untold generations, becomes self-destructive once the critical population density is exceeded. On steeper slopes, the process is practically irreversible.

Postscriptum.

When I returned to Israel, the Israeli delegation to the annual conference of Ministers of Agriculture held by FAO had just returned from Rome. The secretary of the delegation phoned me asking : "What have you done to FAO; they want to hang you"!

Mission to Liberia

The assignment

In March 1972, I was asked to undertake a one-man mission to Liberia, as Research Consultant of the Rural Institutions Division of FAO. A recent report, by a Review Mission, had made certain recommendations on the organization of agricultural education that I was required to review. The initiative for inviting me for this purpose came from the Head of a large Chinese (Taiwanese) on assignment to aid and advise the Department of Agriculture.

The procedure I adopted, and which was to become standard routine on all my later missions, was to meet with all the relevant personalities, visit the country and all the relevant institutions, prepare the outline of a draft proposal, discuss the proposal with the people concerned, write a final draft which I then took to Rome, knowing that it was already tacitly approved by the Liberian authorities.

The usual procedure adopted by FAO teams was to return to Rome, after talking to the people involved and visiting the country and then leisurely formulating their proposals which were then submitted, through official channels to the national authorities, who either accepted, or rejected the report, or more frequently demanded certain revisions. My system of getting feedback before finalizing the report made for a far shorter and more efficient mission.

Background information

Historical

In an initiative similar to that undertaken by the British Society which I described in my report on Sierra Leone, the American Colonization Society organized the voluntary return of freed black slaves to Africa. In 1822, the first colonists arrived and established Monrovia (named after the American President J. Monrovia). Additional waves of colonists established more settlements.

In 1847, all these settlements amalgamated to form the Republic of Liberia, the first independent republic in black Africa and the only one that was never under foreign rule. Continuous attempts at encroachment by the British, French and Germans were held in check by the firm support of the USA of the integrity of Liberia's territory.

Much of the political, economic and cultural development of the country was due to the influence of William S. Tubman, who was named President in 1944 and ruled the country until his death in 1971. He was a liberal who championed the cause of the native tribes against the established oligarchy. He insisted that traditional tribal laws be upheld "insofar as they are humane and reasonable". He encouraged tribespeople to participate in government and administration, granted rights to women, promoted the immigration of educated black people from the USA, the West Indies and British West Africa. He built public schools; education was free and compulsory. He actively encouraged capital investment.

As was the case in Sierra Leone, the immigrants, who accounted for only 5% of the population, held most of the political power, but encountered the resistance of the native tribes, consisting of sixteen ethnic groups. The efforts of President Tubman mentioned above, had little effect in redressing the balance. Almost a decade after my mission to Liberia, these pent-up pressures exploded, and a military coup toppled the Tubman-dominated regime, plunging the country into a bloody three-way civil war and the resulting chaos from which it had not recovered at the time of writing.

Geographical and economic factors

Liberia is bordered on the North by Guinea, in the East by Ivory Coast, on the South by the Atlantic Ocean and on the West by Sierra Leone. The climate is humid tropical.

Agricultural products are: livestock, rice, cassava, sweet potatoes, coffee, cocoa, sugarcane,

bananas, palm-oil and rubber. However, most of the production is derived from subsistence agriculture, with the exception of rubber, which gives occupation to half the wage earners.

Sixty per cent of the country is tropical forest and timber is one of its major resources. Liberia is also rich in mineral resources - diamonds, gold and iron ore.

Recommendations

The one point made by the Review Mission I mentioned above, with which I fully concurred was " that as a matter of urgency, measures be taken to develop a national system of agriculture and forest research, which provides for combining the resources of the Department of Agriculture and of the College of Agriculture, in the preparation and implementation of one national research program. It were the concrete proposals on how to implement this objective to which I objected.

At the time of my visit, the two main institutions involved in agricultural research were the Suakoko Agricultural Experiment Station of the Ministry of Agriculture, and the Agricultural College of the Ministry of Education, with its Farm at Johnsville. No system was in place that could ensure cooperation between the two bodies in the programming and implementation of research.

The review mission had recommended that each of the two bodies concerned should continue to make its own contribution to the research program, and coordination between the two to be entrusted to an Agricultural Research Council.

The proposed Council could be effective as an agency for determining general research policy and assigning priorities within the research program. From my experience, I knew that such a body could not be effective in the task of coordinating the actual implementation of the program between two institutions which are administratively independent of each other, belong to two different Ministries and have different major objectives and concepts.

To be successful, coordination would require a framework capable of ensuring effective coordination and integration of all available resources in implementing a common program. I suggested that this framework could be provided by establishing an Institute of Agriculture, jointly staffed and financed by the Department of Agriculture and the Faculty of Agriculture, independent in the implementation of the research program to be determined and supervised by the Research Council. Both institutions would be equally represented on the Council. I then described detailed proposals on the implementation of the project..

The solution proposed was far from being ideal, but from experience I knew that a consultant should not propose an ideal solution, but one that is politically feasible and that takes into account the facts on the ground. In the case of Liberia for example, research on rubber production, by far the most important crop grown in the country, and which accounted for half the total exports, was not included in the national research program. This was the exclusive domain of the Firestone Company. They were doing excellent research, but if they had pooled their resources with those of government, a much more effective overall national research program could have resulted. Such a proposal would have been beneficial but unrealistic, as there was no way that Firestone would agree to pool resources.

Liberian vignettes

Monrovia, the capital of Liberia, is a dreary town that is attracting ever increasing numbers of villagers in search for a better life. What is actually happening, like in most other African countries, is that under- and unemployment is being transferred from the rural areas to an urban center.

When I rang up the Israeli embassy to inform them of my arrival, I was asked to come to the Embassy. When I asked for directions, I was told that the Embassy was a few hundred meters from the hotel where I was staying, but that I should take a taxi as it was not befitting for a European to come on foot. This instruction I overlooked, and who knows what harm was thereby caused to the prestige of the white man.

Traveling the countryside was very much a repetition of the Sierra Leone experience. The same dirt tracks through primeval forest and savannahs; not a glimpse of wild life; here and their villages strung along the roadside and patches of "slash and burn farming " not easily

distinguished from the surrounding forest.

At one village, an old man offered a mask for sale, not one of the artifacts made and sold in town for the tourist trade, but the real thing, stained on the inside by years of perspiration. The man asked for fifteen dollars for the mask, I offered him ten, as is expected, and he accepted, also as expected. After he had wrapped up my purchase in a newspaper he said wistfully: " You know, I would have been happier if you had paid fifteen dollars". Who could withstand this form of retroactive bargaining? I handed him another five-dollar bill, and was rewarded by his smile.

On a Sunday, I went to visit the local museum. This was full of bric-a-brac from the residence of the newly deceased President, including a spittoon. Also on show, a small, broken stone statue found in the forest.

One evening, I was invited to a reception at the Israeli Embassy. I was seated next to the Minister of Culture and Tourism. After he had inquired about what I was doing in Monrovia, I asked him what were the attractions he had to offer tourists. He answered "antiquities and wildlife". Flouting tact and diplomacy, I told him that the only wildlife I had seen were the vultures on the roofs of the houses in Monrovia and the rats scurrying in the streets. As to archeology, he told me to go to the Museum and see a stone statue they had discovered in the forest. I told him I had already been to the museum, but how did he know that the piece was an antiquity. To this he answered triumphantly: we sent a chip of stone to the British Museum for carbon dating. I mentioned that in this case carbon dating could at best give a clue to the age of the stone and not of the statue. Then followed a period of silence, after which he turned to me and offered me the post of Advisor to the Minister of Culture and Tourism. Fortunately I declined, for many of the Ministers and their advisors were killed during a coup several years later.

I also received an invitation to a party held by the Chinese team, working on several projects for the Ministry of Agriculture. There I learnt once more how important it is to know the customs of the people with whom you meet and to avoid preconceived ideas.

The food was excellent, and the conversation, in English, was lively as I was plied for information on Israel. I in turn, learnt a lot about Taiwan. But as the evening wore on, I became increasingly tired. I did not want to be the first to get up, as this is not considered polite in Israeli society. Finally, in desperation, I whispered to the man next to me asking when the reception was supposed to end. He whispered back: "not before the guest of honor - that is you - gets up to leave.

One day we visited the Firestone Company's estate, or rather one small corner of the vast holdings of this company, which had received a 99-year concession in exchange for a large loan from the USA.

This was a state within a State, with its villages, set up by the Company, its schools, hospitals and other services, including a research station concentrating on all facets of rubber production.

This form of concession has been decried as economic neo-colonialism. Personally, I believe this to be the most effective development aid to a developing country, supplying a source of labor, know-how and foreign exchange and acting as a facilitator in the essential process of replacing subsistence agriculture by commercial farming.

Mexico

The Assignment

In 1973, I was asked, on behalf of the Israeli Scientific Council, to head an Israeli seven-member team of experts to participate in a joint Israel-Mexico Symposium on desert agriculture. This was the first Latin American country I was to visit after having learnt Spanish, and the papers I had prepared I presented in Spanish. This enabled me to establish a very friendly relationship with our hosts.

As befits the topic of the symposium, it was held in the three driest provinces of Mexico: Coahula, N.C. and Zac.

Security measures taken by the organizers were very stringent, though we were not told what kind of danger threatened us. We traveled by bus, seven people in all, preceded by two policemen on motorcycle, blaring their sirens all the way and going through red traffic lights as if they did not exist. At night, a policeman stood guard in front of every room. Either nobody had the intention to attack us, or the precautions taken were very efficient, but we were neither threatened or even bothered by anyone throughout our stay.

The symposium

Meetings were held in different locations, as we traveled through different parts of the desert region of Mexico. Experts from both sides read their respective papers which were followed by very lively discussions.

One major difference between the two delegations was on the question of land use. The Mexicans proposed various ways of utilizing the desert vegetation, whilst we stressed the methods for increasing water supply as an essential feature of desert agriculture.

Economic use of desert plants

For example, one project in which a major effort was being invested was industrial production of rubber from guayule (*Parthenium argentatum*). During the discussion, it became apparent that the economics of the process were based on gathering guayule plants growing wild.

We pointed out that gathering desert plants resulted in a very low output, which combined with the present low level of wages would only perpetuate a situation which all agreed was intolerable. Even in the case of an abundant supply, experience with gathering another desert plant in Mexico - candelilla (*Euphorbia antisyphilitica*) for wax, had shown that harvesting had led to a rapid depletion of the natural stands.

Pastoralism and Ranching

The Mexicans also attached much importance to animal production in the dry lands. Undoubtedly, the best use that can be made of desert lands when no water is available, is extensive grazing by suitable livestock. This is an ancient natural adaptation to the sparse vegetation, and is the traditional form of land-use of enormous desert tracts, worldwide.

However, pastoralism can provide, at best, a very low standard of living. Pastoralists have traditionally sought supplementary sources of income, such as transportation over the traditional desert routes, levies exacted from travelers and merchants, and plunder from raids. All these sources are no longer relevant, leaving the pastoralists to live a hard life with a low level of income.

Ranching, e.g. improved management and utilization of the range, requires considerable capital investment, very large areas per farming unit and a very high level of management. Therefore, in most cases, ranching is in the hands of large landowners and therefore it does not provide a solution for the small farmer.

Improved water supply

In the Israeli delegation were several experts on water-harvesting systems whereby insufficient rainfall is supplemented by run-off water from higher-lying areas. Even a relatively light rainfall

is capable of producing a significant water-crop. Under many circumstances, water-harvesting is the only method for producing crops in desert areas with no other available water resources.

We had been shown some efforts at water-harvesting, but we pointed out that there existed more efficient methods and a session was devoted to this topic.

One such variant of water-harvesting is the creation of micro-watersheds. Instead of conveying water from barren hillsides to adjacent relatively level land, this approach aims at creating a micro-relief within a relatively level field. Another method, called catchment basins, collects run-off at the lowermost corner of each plot in a planting basin. This method is most suitable for orchard trees.

Kofish

I would like to record here one personal incident that was to affect me very deeply.

One member of the Israeli team was N.H Kaufman, affectionately nicknamed Kofish (ape-man). He was an ecologist by training, had served in the Negev as a scout in the army in the Six Day War and knew practically every inch of the desert. I doubt there was anybody else present at the symposium who had such an intimate knowledge of desert ecology, plants and animals and water-harvesting as he did.

He also had an insatiable curiosity for people and in particular for any exotic foods they might consume. When we walked as a group through town, he would suddenly leave the group, to the consternation of the police guarding us, stop at a stand he had spotted that was selling some food unknown to us, which he unfailingly purchased and the taste of which he described to us with an enthusiasm we failed to share.

One evening, as we sat down to dinner, I spotted on the menu an item that I thought would stop even Kofish: fried cactus caterpillars. How wrong I was. He immediately ordered a platter, which arrived, with enormous white caterpillars with red heads, standing erect in a circle. He fell to with gusto, smacking his lips, and was visibly relieved when I refused to share his delicacy.

At the symposium, he was by far the most active participant. Apart from the papers he presented, he participated in every discussion, overstepping the time allocated to the speakers without regard to the chairman's exhortations. He had a group of Mexican admirers, and organized for them mini-symposia at night. Whilst his contribution was considerable, his lack of understanding of the need to leave time for other speakers was disturbing. Finally, my Mexican counterpart asked me to do something about his behavior. I called Kofish, and gave him a serious dressing down, and when that did not help, I threatened to have him recalled, and he quieted down somewhat.

Three weeks later, I attended his funeral. He had been suffering for some time from an incurable cancer and only his wife knew of his condition. I belatedly understood that his hyperactivity at the symposium was an expression of his intense desire to share with others as much as possible of his rich fund of knowledge before it was too late.

Though I could not have acted otherwise, not knowing how sick he was, I could not forgive myself for the harsh words I had said to him at what was to be the end of a relationship of many years.

The Dual Economy of Mexico

One subject not discussed at the symposium, but in which I was personally most interested, was the social impact of the agricultural research system.

I had read a lot about the ejidos and was interested in seeing with my own eyes how these cooperative farms, resulting from the Mexican revolution, were faring.

I told my Mexican counterpart of my wish to meet Mexican farmers and learn from them what were their problems. In order not to interfere with the program of the symposia. I suggested we could do this on a weekend. He promised me that this would be done.

After having put me off several times, each time with a new excuse, as the last weekend approached he told me: "tomorrow is a field day at the local experiment station, and farmers will come from all over the region, and you will be able to talk to farmers to your heart's content".

The next morning, on our way to the experiment station, I could not help noticing that the two young Mexicans, who had been assigned to us to take care of our needs, were very pale and distraught. When I asked one of them: "Juan, what is the matter"? he answered: "the General

Secretary of the Scientific Council has resigned". Not understanding why the resignation of the highest official in the organization in which they were such minor players should affect them so much, I continued to probe. Apparently, when the head official goes, all the cronies he has appointed during his tenure go with him, to be replaced by the coterie of the next head.

On arrival at the field day, we were able to observe that the experiment station did really good work, of relevance to Mexican agriculture. And farmers did arrive in numbers from all over the region: the majority came in luxury American automobiles and a few in private planes. It was clear to me that members of the ejidos were not amongst them and I decided I would have to take matters into my own hands if I wished to see an ejido before my departure.

I asked one of the Mexican colleagues, with whom I had become friendly, whether he could take me on the next day, Sunday, to an ejido. He responded that he would do so with pleasure. We left early in the morning, without telling anyone of our destination, and without our ubiquitous guards.

When we arrived at our first ejido, there was a group of people sitting in a small square in the village. When I asked them how often extension workers visited them one of them answered - and I remember his answer verbatim. "Jamás. Somos la gente mas olvidada en Mexico" (Never. We are the most forgotten people in Mexico). He added: "You are the first people to show an interest in our lot". And from what I saw in the other ejidos, his words reflected a very pitiful and widespread situation, and it became clear to me why our hosts had done their best to avoid my meeting these people.

Though Mexico was the first Latin American country to institute agrarian reform, millions of villagers still subsist at sub-standard levels, even when they are owners of the land on which they live. A clear indication that land reform, important though it may be, is not, in itself, capable of solving the problems of the rural population.

Not even an echo of the benefits resulting from the enormous research efforts made by the International Maize and Wheat Improvement Center (CIMMYT) in Mexico, which resulted in the "Green Revolution", had reached these people.

Mexico, the birthplace of the Green Revolution, had made spectacular progress in agricultural development in recent years. However, this progress was entirely confined to a small, favored segment of the rural population. It are representatives of this segment that we met at the field day, and the only ones our hosts would have liked us to meet.

The agricultural growth of Mexico has been achieved by concentrating investment and extension services in the more favorable areas and on the better established farmers. Those were the farmers who attended field days. They were not absentee landlords leaving the work to tenant farmers, but were personally involved in production, and keen to exploit every technological innovation.

In fact, these farmers constituted only 3% of the rural workforce but produced at the time of the symposium 50% of the crop sales, mainly on large commercial farms. The remainder of the rural population, comprising some 50% of the population of the country, remained entirely unaffected by this progress. To these belonged the members of the ejidos. In this subsistence sector, technology remained primitive, yields and income remained pitifully low.

I must add that this situation is not unique to Mexico, it was simply here that I felt the full impact of this kind of situation in its most extreme form.

One is accustomed to thinking of the enormous gap between developed and under-developed countries. There exists however an equally disquieting imbalance within the rural population of underdeveloped countries, a so-called dual economy consisting of an advanced commercialized and prosperous farming sector on the one hand, and of a peasant traditional and impoverished sector on the other.

Most governments in the developing countries are faced with an embarrassing problem: the need to make a choice between two conflicting strategies - investing in the leading sectors e.g. in the most promising regions and most advanced farmers and thereby rapidly achieving maximum economic returns; (called economic efficiency strategy) or - concentrating all available resources on the improvement of the most backward regions and of subsistence farmers ("social efficiency strategy").

Clearly, the Mexican government had adopted the first option, thereby increasing the already considerable economic and technological gap between the two rural sectors.

Whilst there may be short term justification for investing in those sectors with promise of quick success in the early stages of development, in order to enable "take-off" of the agricultural sector, there can be no justification for the continuation of this policy.

The only acceptable premise is that the objective of agricultural development should be not be to increase only overall agricultural production, but also to ensure employment opportunities and improving the standard of living of the entire rural population.

A policy that continues to discriminate against the backward sector, will in the long run accentuate existing trends towards interregional inequality and sectoral problems

Overall national development cannot be sustained without a more equitable distribution of income, which makes possible a wider and more effective market, especially in a country like Mexico, where the poor form a majority of the rural population.

Part SIX:

LIFE AS A PENSIONER

The modernization of Arab Agriculture in Israel

Shortly after leaving the Agricultural Research Service, I was offered the post of Director of Research at the Settlement Study Center. In addition to research on the many problems of rural development in Israel and in the developing countries, the Center organized courses on rural development planning for practitioners from Asia, Africa and Latin America. At 65, after a life-time devoted to the problems of crops, I changed direction and became involved in studies concerned with the crop producers.

When I worked as Superintendent of the Agricultural Experiment Station at Acre, most of my workers were Arabs from the surrounding villages. I got to know these people very well, to like and respect them.

There is a common and prejudiced belief that the Arab villager is lazy, backward and incapable of accepting new ideas. This is entirely unfounded. To understand how this stereotype originated, one must know the nature of farming in a Mediterranean environment, in which periods of peak labor requirements alternate with periods of waiting imposed by the climate, the system of land use and the technology available..

Using the traditional so-called nail-plow, the same plow pictured in Assyrian and Egyptian monuments, the fellah cannot till the sun-baked soil, before it has been softened by the rains. Most of the time between harvesting his main crop - wheat - and sowing next year's crop he has to spend in enforced idleness. Villagers sitting in the shade and playing bakshesh during this period create an impression of laziness. But when the season arrives for preparing the land for sowing, plodding from dawn to night back and forth over the fields behind a team of oxen, or at back-breaking work during harvest, the fellah has ample occasion to prove how really industrious he is. He also possesses considerable native intelligence, on a par with that of any European farmer, and a great deal of traditional knowledge on farming under very difficult conditions.

Like most peasants, the fellah is very conservative. The land tenure system was such that it provided barely sufficient income to prevent their families from starving. Improved practices always involve cash expenditures for improved seeds, fertilizers, plant protection chemicals, etc. How can a farmer be expected to adopt new practices or replace subsistence crops by cash crops when he has no control over prices and faces the risk that the new practices will not give the desired results. He would be putting himself still more at the mercy of landowners, middlemen and moneylenders, in whose power he already is. Not to take risks that might endanger his very survival is therefore not stubborn conservatism but an intelligent response to the circumstances in which he finds himself..

In mandatory Palestine, and even during the early days of the State of Israel, Arab farmers engaged in a form of agriculture similar in all respects to that described in the Bible, whilst their Jewish neighbors were using modern equipment and production methods.

Even insects could distinguish between Arab and Jewish fields of wheat: the former were usually infested with the wheat moth (*Syrrhopygia temperatella*), called by the fellahs "el doodeh" (THE worm) because of its ravages. The pest would ruin a field of Arab wheat, without touching a neighboring Jewish crop! The straight line separating the yellow, stunted crop of the Arabs from the green luxuriant growth of the Jewish crop, was as reliable an indicator of the borders between the fields as the one shown on official cadastral maps.

No political or ethnic bias was involved! The larvae of el doodeh over-summer in the surface soil, to appear after the first rains and attack the young wheat plants, stunting growth and causing them to become a sickly yellow. The steel tractor-drawn plow used by the Jewish farmer buries the larvae so deep underground that they are unable to reach the soil surface when conditions become favorable, whilst the Arab nail-plow that barely scratches the soil surface does not hinder their emergence and the destructive attack that follows.

In all the years that I worked at the Agricultural Experiment Station at Acre, my Arab workers, born and bred in the surrounding villages, assisted me in carrying out fertilizer and weed control experiments, sowing improved varieties of the crops familiar to them as well as new crops. It

did not occur to them that the results of these activities in which they had actively participated could be applied to their own family farms, which continued to practice the traditional subsistence farming as described in the Bible. At the site of the ancient city of Gezer, a tablet was excavated giving the dates of the seasonal planting of field crops and other agricultural practices. These were found to be identical to those of the Arab farmers of Palestine.

It may be that practices at an experiment station did not appear relevant to small-scale farmers, but I always wondered why the example of their Jewish neighbors had absolutely no impact on their own practices. It took me many years to understand the reasons for this resistance to change.

Matters did not change perceptibly during the first decade after the establishment of the State of Israel.

I would often drive past Arab villages on my way to one or other regional station and would observe the Arab farmers preparing their fields with the primitive nail-plows drawn by oxen, broadcasting seed by hand; harvesting the ripe crop laboriously by sickle and separating the grain from the straw by using a stone -studded wooden board, drawn by blind-folded oxen plodding around in circles. The mixture grain-chaff was then winnowed in the wind - all as described in the Bible.

Change in Arab villages

At some time in the early 1960's, a dramatic, and apparently sudden change occurred in the Arab villages in Israel. The traditional rain-fed crops - wheat and barley, sesame and durra - had either lost their pre-eminence or disappeared completely, to be replaced by industrial crops, such as sugar-beets, tomatoes for processing and onion seed for export. Where irrigation could be introduced or expanded, most Arab farmers no longer produced run-of-the mill vegetables, but grew high-value out-of -season crops, such as strawberries, winter tomatoes, cucumbers etc. under plastic covers.

In all the crops, rain-fed and irrigated alike, the most sophisticated modern methods were being systematically applied

The villages themselves had changed beyond recognition. The traditional mud-huts had been replaced by modern housing, mostly of a type that would be called "villas" in an urban context.

Renewed contacts with Arabs.

Following seventeen years of daily contacts with Arabs, for a number of years after the establishment of the State of Israel, I had little or no occasion to meet Arabs. The first task I undertook in my new position was a research project aimed at elucidating the factors involved in the sudden and unprecedented change from traditional agriculture to modern and sophisticated production methods that I have mentioned.

The investigation, which took place immediately after the Six-Day War, and which I will describe below, took me to many villages in Israel proper and in the West Bank and Gaza, and gave me the opportunity to meet again, on a friendly footing, with Arabs in all walks of life, and to ascertain at first hand how deep had been the cultural and social change undergone by rural Arab society in Israel, with no corresponding change in the West Bank.

After a hiatus of so many years, my Arabic had become inadequate to conduct a meaningful conversation, but most Arabs in Israel with whom I had contact spoke fluent Hebrew, so that communication was not a problem.

An Arab farmer told me with great pride of the reactions of relatives from the recently annexed West Bank. They had been separated in 1948, he to become an Israeli citizen, they Palestinian refugees settled in the West Bank. After the six-day war, the latter took the first opportunity to visit their Israeli cousin. With great pride he showed them his comfortable home with its kitchen equipped with all modern appliances; his pick-up truck and tractor, and told them that all his children, girls and boys alike, went to school.

Their first reaction was one of incredulity. Then they wondered how much effort he must be expending to obtain such results. His reply: "All the benefits I enjoy require investmenting a lot of work. I think this investment is worth while". (It should be pointed out. that at the time of writing, differences in agricultural technology between West Bank villages and those in Israel

proper, no longer exist, excepting in some small pockets in remote areas).

Not only technology had changed, but many social customs had been abandoned. For example, in the past, when an Arab acquaintance invited me to his home for a cup of coffee, he would go ahead of me to warn the womenfolk that a male stranger was on his way. Never did I even glimpse the lady of the house or any other female more than ten years old.

One day, when I was in Tireh, a former Arab village, recently accorded town status, my Arab colleague (a Muslim) invited me to his home. When we entered the house, he introduced his wife, who, after serving coffee, sat down with us at the table and joined the conversation. And this is now the norm, and not an isolated incident.

In the course of the day, I had the opportunity to talk with a young woman who was harvesting strawberries. She turned out to be in charge of the little farm. To my question as to how often the extension officer visited her farm, she answered: "What for, I know better than he does!" No woman in traditional Arab rural society would have spoken in this way of a man, especially about a Government official, and still less to a stranger.

Ali abd el Raziq

Later in the day, I recounted this incident to an Arab colleague, an extension worker named Ali abd el Raziq, who was helping me with the investigation. I told him: "Ali, when more of your farmers will say 'I know better than he does' you will be in deep trouble". He responded by asking what he could do about it. Ali was a graduate of an agricultural school and I answered: "You must always be a jump ahead of your farmers, and to do so you must enroll at the Faculty of Agriculture".

He told me that he was 40 years old, and had a family with five children to support. How would he provide for his family if he became a student? Furthermore, to gain entry to the Faculty, he would have to pass four exams (a special privilege accorded to graduates of agricultural schools) namely: mathematics, physics, Hebrew literature and Bible. He said he would be prepared to make the effort in regards to the first two disciplines, but he saw no logic or reason that he, an Arab Muslim, should be required to pass exams in Hebrew literature and Bible.

I felt he had a point; I went to see the Dean of the Faculty, Professor S. Hurwitz. He promised to raise the matter with the Academic Committee of the Hebrew University. He was told: "no possibility of compromise in academic rules for anyone".

I then turned to the Minister of Agriculture who requested the President of the University to intervene. The Academic Council still refused to compromise but at the insistence of the President came up with a solution: they would accept the holder of a certificate issued by the British Council confirming acceptance by a British University.

Ali in due course, passed the exams requested by the British Council and was accepted as a student at the Faculty of Agriculture. The Minister had in the meanwhile given instructions to allow Ali to absent himself from his regular work, on condition that he continued to advise farmers on Fridays and Saturdays.

Ali did so well in his studies, that the Ministry decided to allow two Arab extension workers yearly to enroll at the Faculty of Agriculture and even provided each with an assistant as replacement for the days they studied.

As a result, in the course on Agronomy I gave at the time, of 40 students, five were Arabs. Among the six top students of the class, there were always three to four Arabs. On comparing notes with my colleague Professor Hurwitz, he had found the same results.

This reminded me that when I was a pupil at the Athenee in Antwerp, of the thirty pupils in the upper classes, five or six were Jews. Amongst the six top pupils there were always three or more Jews. This shows how the status of being a minority strengthens the motivation to excel in a majority environment.

After a few years, all the Arab extension workers were graduates of the Faculty of Agriculture,



An Arab Farmer
growing Out-of
Season Strawberries

like their Jewish counterparts. I feel justifiably proud of my share in having made this possible.

One last note on my visit to Tireh. When I was ready to leave for home, I found that I had left the keys inside the locked car. A small crowd gathered, and when a youth passed by, he was asked to help. He looked around for a minute, found a piece of baling wire, gave it a few twists, and within minutes I was on my way home. This was the only time I had reason to be grateful for the fact that some Arab youths had become proficient in a new economic activity: stealing cars from the Jews and selling them in the West Bank.

From Fellah to Farmer

It is well known that transforming traditional agriculture requires a complex of simultaneous activities and interacting factors to be operative in order to enable this process to take-off and then to proceed at a reasonable pace. Technology that is appropriate to the ecological, economic and human resources of the region has to be developed; then it has to be effectively transmitted to farmers. Distrust of innovations and cultural blocks have to be overcome; economic incentives and services have to be provided. It is because of these complex requirements that attempts to modernize agriculture encounters so many obstacles in developing countries.

In the Arab rural sector in Israel, all these requirements must, therefore have been met, and the rapidity with which change was achieved appeared almost miraculous, especially as there was no evidence that the process had been planned by the authorities.

The intriguing question that arose was therefore: what were the factors that enabled the sudden and dramatic change that had unarguably occurred in the Arab rural sector in general, and its agriculture in particular, after centuries of stagnation?

In my new framework, I was in the position to attempt to find an answer to this question. As it was justifiably assumed that the highly visible change in agricultural technology was probably accompanied by a concomitant social change in the villages, the project was undertaken by a research team consisting of a rural sociologist, Sarah Molcho, a young agronomist, M. Raviv, who assisted in the statistical analysis and myself.

The research yielded a wealth of data on the technological change that had occurred in Arab agriculture, the impact on social institutions and values in the villages, and on the attitudes of the villagers to change. It became possible to propose an outline of the process of change of the traditional Arab agriculture in Israel and to define the factors involved in this process.

This is not the place to detail the results of this research, which was published in a book under the title: "From Fellah to Farmer". Only a very brief outline follows:

Subsistence agriculture has two basic characteristics: underemployment and low productivity. These are mutually self-perpetuating as the farmers produce barely enough to provide for their families, no cash surplus is available for the purchase of inputs such as fertilizers, plant protection chemicals, improved seeds, etc. without which it is not possible to increase agricultural productivity. Hence a vicious circle exists which cannot be broken by the sole efforts of the subsistence farmer (Fig. on next page).

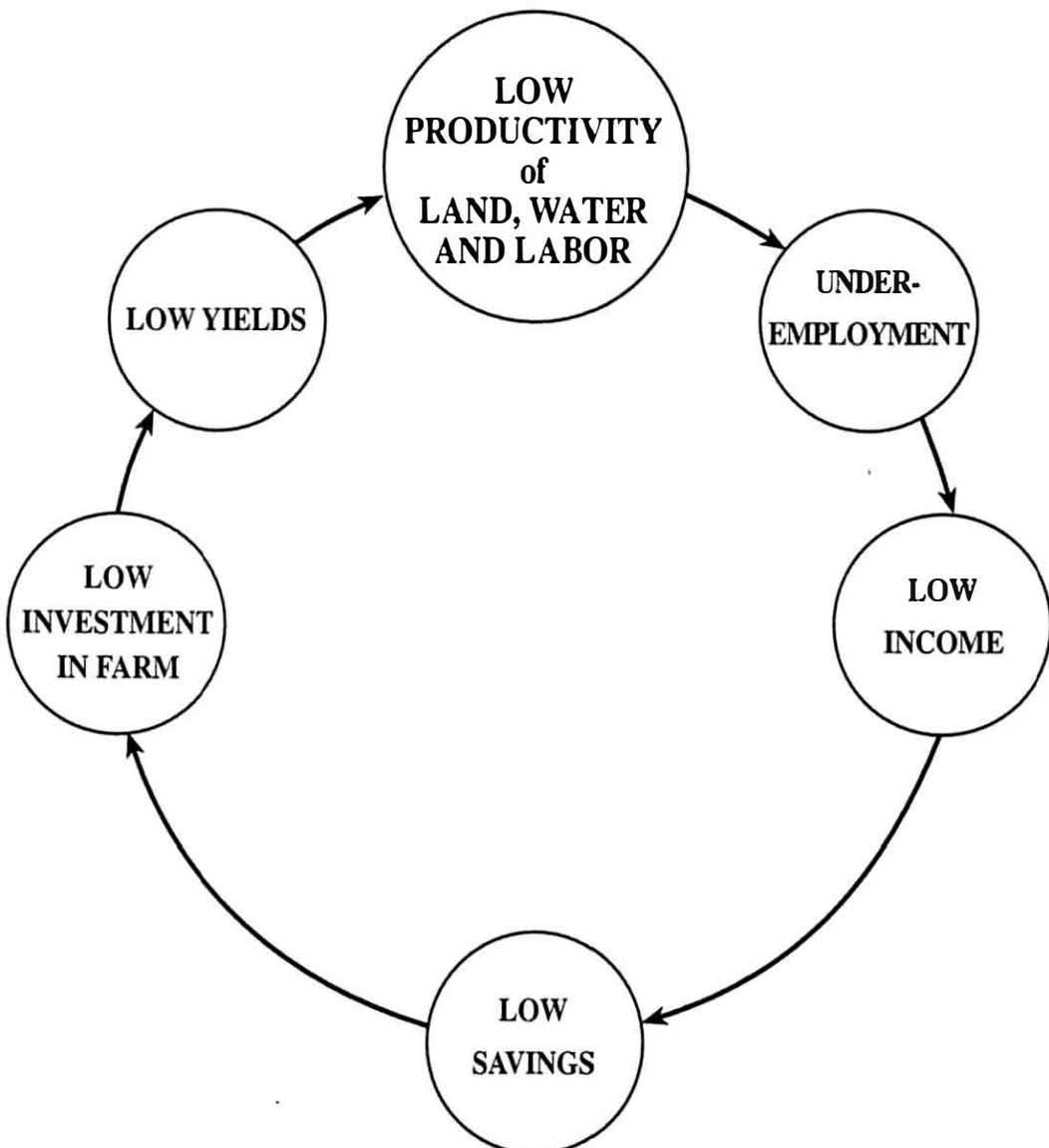
This situation explains the unchanging character, or rather state of stagnation, of subsistence agriculture, from which the farmer cannot free himself unless appropriate outside factors intervene.

The situation worsens progressively as the village population increases, with a concomitant decrease in area per capita available for cultivation.

In the case of Arab farming in Israel, the first step in breaking the vicious circle was the elimination of unemployment and underemployment in the villages. This became possible when all redundant rural Arab labor was absorbed by the rapidly expanding industry, building and services in the Jewish sector, which started in the late 1950's. Thus between 60-80% of the male adults (usually the youngest) of the work force in the Arab villages were absorbed in workplaces outside the villages.

Generally, a situation of this kind leads to mass migration from the rural to the urban areas. In Israel, this did not occur. The vast majority of the villagers continued to maintain their links with their villages and extended families, because of strong family and social ties. Also, town life, with its alien culture, is not attractive to the villagers.

But the main reason, for the villager who finds outside employment, is that the village and



Vicious Circle of Subsistence Agriculture

the family farm remain a sure refuge and guarantee of survival in the case of an economic or political crisis, always a potential threat in Israel's existence.

Continued residence in the village was an essential link in the chain of events that led to the modernization of Arab agriculture in Israel, as we shall now see.

The income from outside work was sufficiently remunerative to enable significant savings to be made. These were mainly invested in the family farm; this investment was facilitated by the traditional institution of a "family purse" managed by the head of the family. There was no conflict of interests between those members of the family who found employment outside the village and those who continued to work on the family farm. For the family as a whole, the farm was the one stable element in an unstable and changing world, subject to economic fluctuations which could endanger their very existence. Developing the family farm, so as to provide a haven in times of depression and unemployment, was therefore considered to be a sound investment by all those involved.

With assured employment for all, and savings on an unprecedented scale, the situation was now ripe for technological change to be adopted by the Arab farmer.

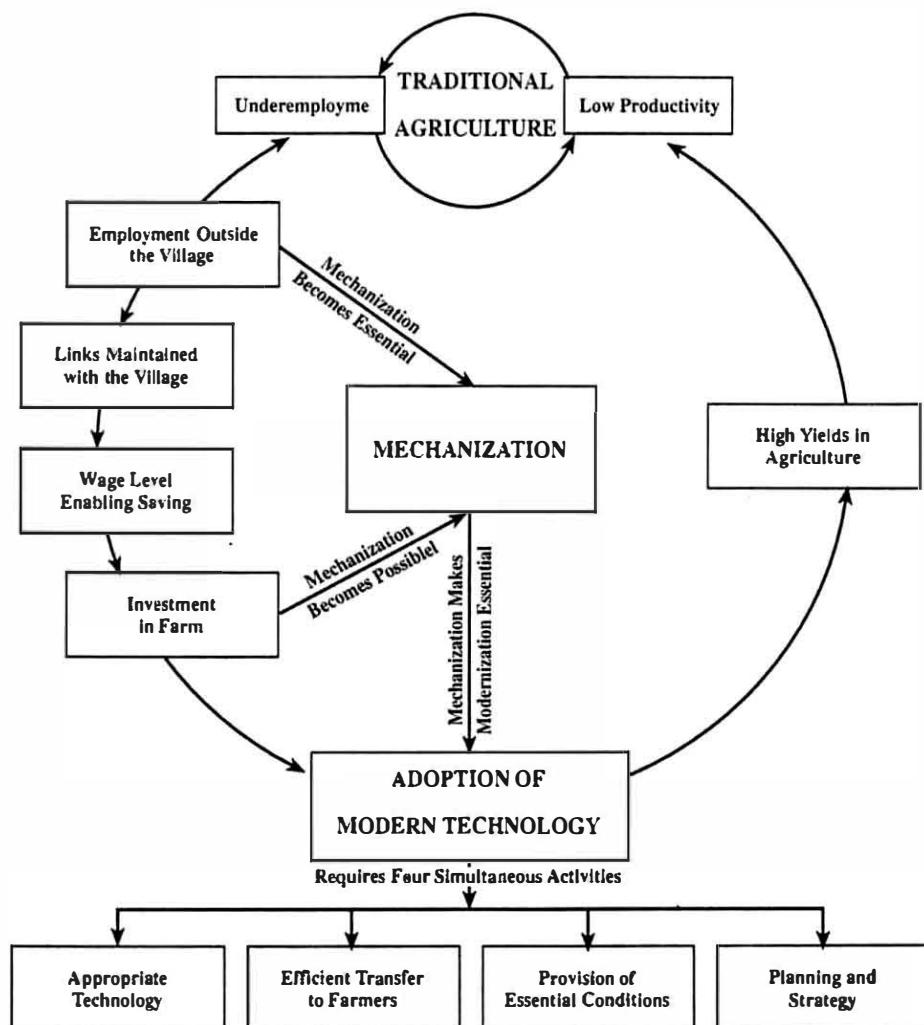
Conditions for modernization of agriculture

Even when the pre-conditions for take-off in agriculture exist, the modernization process itself is complex and to be successful requires three related functions : a) the existence of new technology appropriate to the specific conditions of the region and its resources; b) the effective transfer of the new technology to the farmers; and c) the provision of essential conditions such as credit, land reform, a complex infrastructure to service agriculture, provision of necessary inputs and facilities for production and marketing. Also needed are new skills and new social norms and structural changes in rural society to enable the farmer to cope with the new complexities with which he will be increasingly faced as he moves from traditional to modern agriculture.

The process as it occurred in Israel

At a certain stage, with an ever-increasing number of villagers finding employment outside the villages, the reduced work force available for farming made mechanization unavoidable. The capital needed for this purpose was also available.

However, the effects of mechanization go beyond simply reducing human labor. Mechanized farming is an expensive process and traditional farming methods cannot economically justify the cost involved. "Expenditure cannot become modern if income remains primitive". It therefore



Process of Modernization of Agriculture

Chain of events triggered by employment opportunities outside agriculture (Amon et al., 1975).

becomes imperative to increase income from agriculture by growing high-value crops and adopting modern agricultural techniques. Through the force of circumstances, Arab farmers had therefore become receptive to the example of their Jewish neighbors and the exhortations of the extension workers.

In the early 1960's, Arab graduates from the agricultural schools had joined the extension service and very soon became as motivated and devoted to their work as their Jewish colleagues. Backed by extension specialists, these newcomers were able to achieve spectacular results within a relatively short period.

The plans and strategy of the Ministry of Agriculture happened to be particularly well adapted to the Arab farming sector. According to the second 5-year plan, main development efforts were to be directed to the promotion of crops for export and industry, most of which are highly labor intensive, and require meticulous care at all stages of production. These requirements appear tailor-made for the Arab farmer, who has a large family and life-long experience of farming in a difficult environment. With modern technology available to him, his professional ability is second to none.

The Arab farmer had equal access to all government measures taken to facilitate agricultural production: a guaranteed minimum price policy for agricultural products; credit on easy terms to cover running costs of production until harvest; subsidies for the purchase of essential inputs and the cost of water for irrigation. Loans and subsidies were also available for water resource development, irrigation systems, farm buildings, farm machinery, planting of orchards and purchase of livestock.

A well-organized marketing system was equally available to Arab farmers, who are no longer dependent on money lenders or landowners, either for credit or for marketing.

As a result of all the above, progress in the Arab agricultural sector has been rapid and spectacular. Within a remarkably short time, a level of sophistication and productivity was achieved which is now the equal of that of their Jewish neighbors.

On a visit to an Arab farmer, he took me out to the field and said: on one side of this path is a field belonging to a kibbutz and on the other side is my field. You are an expert. Can you tell me which is which?

I looked and looked, and could find no difference, when previously even insects could distinguish between Jewish and Arab crops. And I felt happier and prouder than I had been when Jewish agriculture during the Mandate had been so much superior to that of our Arab neighbors.

The Effectiveness of Rural Planning

The Problem

As the major role of the Settlement Study Center was rural development planning, it was imperative to study the effectiveness of the planning authority and its methodology.

Immediately after the establishment of the State of Israel, the authorities responsible for land settlement were faced with an almost overwhelming problem: how to handle the influx of hundreds of thousands of immigrants, effectively doubling the population.

Roughly half the newcomers were from Europe, who had survived the Nazi concentration camps. After their horrifying and dehumanizing experience, most were embittered, passive, unable to help themselves and convinced that Society owed them a debt. They distrusted authorities and disliked being directed. After living in camps, any form of cooperative life was anathema to them. Most were town-bred, and the transition to village life was a traumatic experience in most cases. Work morale and output of manual labor were very low.

The other half of the immigrant population came from the underdeveloped countries of North Africa and Asia, fleeing the violence unleashed in Moslem countries against their Jewish minorities, in reaction to the humiliating defeat suffered by the Arab armies in 1948. Most of the richer and educated members of these communities had emigrated to France, whilst those who had lived in mullahs and ghettos came to Israel. Some were former cave-dwellers of the Atlas mountains. Many were ignorant of modern life, in general, and of farming in particular.

In order to weld the disparate elements of the population into a single nation as rapidly as possible, the so-called pressure-cooker policy was adopted. The more gradual melting-pot approach, which had been so successful in the United States, was deemed far to slow, in view of the difficult political, security and economic situation facing the new state.

It was therefore decided to set up mixed villages, on the assumption that this would make it easier for the individual settlers to shed their various cultural heritages and adapt to the Israeli culture within a short time. The settlements were carefully planned on a regional, village and individual farm basis. Buildings, equipment and easy credit were made available to the individual family, resident instructors were appointed to each village to guide the settlers in the administrative, economic and social spheres and give technical advice on farming methods.

The pressure-cooker approach resulted in complete failure. Entire villages were abandoned by their settlers, because of the mistaken appreciation of human needs and ignorance of the differences in social and cultural norms of the immigrants. In brief, the physical requirements of the new settlers were provided for, but social and cultural factors were completely overlooked.

Breaking up traditional social groups, and mixing people of different cultural levels created an explosive situation for which the most meticulous planning and lavish technical incentives were not a counterweight. Population turnover was considerable. In some villages, after a few years, not more than one out of three of the original families remained.

After the lesson had been learnt, villages based on homogenous populations were established and many were able to develop and generally flourish.

Planning of rural settlement was the responsibility of the Settlement Department of the Jewish agency, whose Director for many years was Raanan Weitz, the selfsame Raanan who had served as Chairman of the by now defunct National and University Institute of Agriculture. It was he who had established the Settlement Study Center and was its Director from its inception. He was also the main proponent of a new method of rural planning that he had devised which he called Integrated Rural Development.

As Director of research at the Center, I felt that twenty-five years after the settlements were planned and the planning implemented, the time had come to examine how well this planning concept had stood the test of time, to define the problems that had been encountered and to draw conclusions as to changes required in planning.

The topic interested me considerably, and I decided to undertake the research personally,

and chose as a team mate a rural sociologist named Julia Margolis.

The background

The area chosen for the study was the B'sor region of the Northern Negev. The main reason for settling as rapidly as possible this largely deserted and at first sight inhospitable area was geopolitical. The B'sor Valley has always been an ideal route for invasions from the South, supported from the sea to the West. The reason for establishing settlements in the area was to obstruct another invasion by the Egyptian army. The project therefore received high priority, notwithstanding its supposedly low agricultural potential and the high cost involved in developing water resources, without which settlement in this low-rainfall region would be impossible.

Ecology

Two major soil types are found in the region: loess soils suitable for field crops, and sandy soils, underlain by loess at varying depths. At first it was thought that the sterile sands would be useless for growing crops; considerable efforts were made and large sums spent on attempts to mix the sand and loess layers by very deep plowing. These efforts were unsuccessful.

Experiments at the local experiment station showed conclusively that with heavy fertilization and suitable irrigation techniques, the combination of sand overlying loess had inestimable advantages for potato and groundnut production. In winter there is little cloudiness, sunshine is abundant and temperatures are mild, and the potential for growing out-of-season vegetables is excellent. Fruit trees, and in particular mangoes were also successful, giving planners a wide selection of commodities to choose from.

Rainfall diminishes gradually from North to South, changing from semi-arid (annual average 300-350 mm) to arid (annual average 150 mm).

The Target Population

The region comprises two settlement blocks: "Merchavim", first settled in 1949 and "Mivtachim" where settlement began two years later. Though in close proximity to each other, the settlers came from different backgrounds and the settlement types planned for them were different.

Merchavim was settled under conditions of haste, resulting from the geopolitical pressures mentioned above; planning was characterized by improvisation and had to be started all over again. The settlers did not come of their own free will, but were simply brought to the place by the authorities.

By contrast, planning in Mivtachim was in accordance with basic principles developed following the experience gained in Mivtachim, and mistakes made in the past were not repeated. Most important was the fact that the settlers came of their own free will and most belonged to social and ethnic groups different to those in Merchavim.

Planning objectives

Settlement planning in general, and planning at farm level in particular, are based in Israel on a complex of ideological and economic principles that were adopted by the founders of the "moshav" movement in the 19-twenties. The "moshav" model was developed by former kibbutz members, imbued with the same ideology of creating a new, egalitarian society in the new homeland, but wishing to retain a more family-oriented life-style than the community-oriented kibbutz.

To ensure equal incomes for all families in a moshav, and wishing to maintain this situation in the long run, a number of basic principles were adopted: equal allocation of all resources, sufficient to maintain a frugal but acceptable standard of living, a workforce provided by the family and its corollaries: no hired labor was permitted and reciprocal help in time of need was the rule. A cooperative framework was used for all economic activities; and the original size of the farmstead was to be maintained by allowing only one son to inherit the undivided farm.

In order to facilitate the work of the cooperative and ensure equal incomes for all the families, one farm model served for all the settlers of a given village.

At first, this model was based on mixed farming, whereby production was aimed basically at self-supply of family food requirements. This model was later replaced by villages specializing

in the production of one or two commodities, such as dairy farms, vegetable farms, industrial crops, fruit producers, poultry farmers, etc. with production aimed mainly at local markets or for export.

At first, the farms were managed by a professional, and the settlers worked as hired laborers. As they gained experience, they became independent farmers. Progress was slow, because most of the settlers doubted whether the methods used and the results obtained at the local experiment station had any relevance to their own conditions. Change only started when a small group of former extension workers and planners from the Ministry of Agriculture and from the Settlement Department of the Jewish Agency decided to settle as a group in one of the villages and demonstrated that family farms could be successful and prosperous. By their personal example, and also through their connections with the authorities and their involvement in the social life of the village, they had a profound effect, first on their fellow villagers, and progressively on the region as a whole.

Research Methodology

In order to study the interaction between ideological concepts and types of farming on one hand and the personal characteristics of the settlers on the other hand, the farmers were grouped according to country of origin, time of immigration, age, educational level, and professional qualifications. There was no sampling, all the active farms (e.g. in which at least half the family income was derived from the farm) were included in the survey.

Findings

Over 80% of the settlers had immigrated from North Africa, Kurdistan and Yemen. Only 11% came from Europe and 5% were Israeli-born. Over one-third of the settlers from Yemen were more than 55 years old, and less than 3% were younger than 34. About half the European and Israeli settlers were in the age group 20-34. Over half the settlers had no formal education (70% for those over 55 years old) and only 20% had 8 years of schooling (99% for those younger than 34). Not more than 10% of the settlers had farming experience or other professional training.

In almost all the villages and in the majority of farmsteads we found no correlation whatever between the original planning and the actual situation.

The weakest section of the rural population (Yemeni origin, over 55 years old, no schooling) either abandoned their farms or did not deviate from the farming model imposed by the planners. The most extreme deviations from the original planned model were evident in the most advanced sector: European origin or native-born, less than 33 years old, had at least 8 years schooling, with training or experience in farming.

The breakdown in social ideology was general and complete. Only half the settlers in the moshavim of the B'sor region still worked on their farms, and of these only a third depended on their farms as their sole source of income. The absentee villagers leased their land and water rights to those who continued farming. This spelt the end of the principle of equal access to resources and equality of income for all village families. With the increased size of holdings, the rule against employment of hired labor could no longer be upheld, and hiring labor, with all its social implications, had now become the norm.

The cooperative framework in most villages was in deep trouble. Many settlers bought their inputs through the cooperative, enjoying the credit provided, and sold their produce to private merchants, thereby, in many cases, avoiding repayment of their debts to the cooperative.

There had emerged a considerable variety of types of farming, in the commodities produced and in the levels of production between farmers in the same village and there was generally no relation to the models that had been planned.

These changes reflected the predilections of the individual farmer, his cultural and professional background and also the possibilities provided by new technologies, such as production under sheltered and controlled conditions, unknown at the time of planning.

Villages in Merchavim had been planned as specialized dairy farms. Actually, only a quarter of the active farms produced milk, and the individual farmer had increased his herd manifold, as compared to the original plan. These changes resulted in considerable waste, as many of the buildings and much of the equipment were no longer of any use.

One unexpected finding was that only one percent of the settlers consulted regularly with the extension workers on changes in seasonal production patterns and only one third had adopted technological innovations under the guidance of the extension workers. The extension workers, when faced with these findings, admitted that they were the result of a deliberate policy of concentrating extension efforts on the most progressive farmers, the so-called innovators, in the expectation that the success achieved by the latter would encourage others to follow their example.

Discussion

It was clear that the basic reason for the discrepancy between planning and the actual situation was mainly due to the attempt to apply an ideology that had been highly successful more than half a century earlier, when it was devised and applied by highly motivated and fiercely ideological people, to the wave of immigrants who arrived in the 1950's and thereafter.

A second important factor was that personal characteristics, such as predilections, abilities and professional background were completely ignored when imposing a single farm model for all the farms in a village.

What was most disturbing to me was the failure of the settlement authorities and of the Moshav movement to recognize the changes that were taking place and which were a complete repudiation of the Moshav ideology by the new settlers.

Also disturbing was the fact that Israeli consultants working in developing countries continued to propose the moshav as a model for new, planned settlements there. If the Moshav ideology had proven to be such a failure with new immigrants in Israel, how could one expect it to be successful when applied to traditional farmers for whom the whole concept was alien?

Post scriptum

I have had a similar experience in which the ideology of the founders was even more strongly rejected by those who followed than in the case I have described in Israel.

Flying over the Paraguayan desert in a Piper Cub plane, I suddenly spotted, in the middle of nowhere, a large village of cottages with red-tiled roofs. I asked the pilot to land, and found myself in a village, identical in all respects to a typical village in Germany of the previous century.

Exploring, we came upon an elderly couple hoeing a patch of vegetables, and a few meters away, a huge courtyard bustling with tractors and workers. After meeting and talking with the people, the following picture emerged.

The village had been founded towards the end of the 19th century by a German sect known as the Mennonites, who had left their native land mainly in protest to the militaristic policies of their Government, but also had well-defined religious and social beliefs.

Their objective was to set up a society in which all would be equal. They established a village in the middle of the desert and to ensure their objective, all resources were to be equal for all the settlers.

Within three generations, one family was living from a small vegetable patch and a neighbor, whose grandfather had started as an equal, now operated a large farm with many hired workers, and even had a small factory extracting essential oils from desert plants.

How can one expect otherwise? People are born with different aptitudes, degrees of initiative and intelligence, that will not fail to make themselves felt, even in contradiction to the most meticulous planning.

(Incidentally, during World War II, most of the youths of the village, whose founders had fled the Germany of Bismarck, returned to Hitler's Germany as volunteers!).

The International Potassium Institute

The Scientific Council

In 1959 I was appointed as Israeli member of the Scientific Committee of the International Potassium Institute. The objective of the Institute was to promote the use of potassium as a fertilizer, an objective of considerable importance to Israel, one of the major producers of potassium in the world. Paradoxically, of the major fertilizers used in agriculture, potassium is generally the least effective on most of Israel's soils. The role of the Scientific Committee was to promote knowledge on the use of fertilizers in general, and of potassium in particular, by organizing international congresses and symposia on the subject, publishing books and literature reviews on the subject and encouraging young researchers to investigate relevant problems by providing research grants.

The headquarters of the Institute were in Bern, where the meetings of the Committee were generally held. Participation in the committee gave me the opportunity to visit Europe once or twice a year, besides attending the conferences in different countries and becoming familiar with their agriculture. The contact with leading specialists from most Western countries was also a source of personal friendships and professional advancement.

At the time of my appointment, the Belgian delegate was Professor Tilkin, who, in my student days in Gembloux was an Assistant in Field Crops. When I entered the room where the Council was being held, I was greeted by a cry: ARONOVITCH. After 28 years, the former assistant recognized the former student. He retired from the Council the following year, and was replaced by Professor Henri Laudelout, with whom a long-lasting personal friendship resulted.

One member of the Council who made an enormous impression on me was Sir John Russel, formerly Director of the famous Rothamsted Agricultural Experiment Station. Well over 90 at the time, and so feeble that he could not raise a cup to his lips but had to be helped by the person sitting next to him, his mind was as keen as that of a young man. Though a renowned soil scientist, his interests and knowledge were wide ranging. We had a talk on Nabatean agriculture, and Sir John was able to tell me that there was a book on the subject by an Arab author written several centuries ago (he knew the exact year, it is I who has forgotten), and in which libraries the two only existing copies could be found. It was with great sadness I learnt of his death sometime later.

Effectiveness of congresses, colloquia, etc.

Professional meetings are very popular with most research workers. They provide relief from daily routines, opportunities to visit foreign countries, to meet colleagues and discuss professional matters of common interest with them. They are also an opportunity to present new findings before they are ready for formal publication in the professional journals.

Personally, I doubt the utility of most international conferences, congresses, colloquia etc., but I doubt that many will accept my judgment on this topic. The lectures, when read from a written text that has been made available beforehand to the participants are a waste of time. If you have read the papers, as a conscientious participant should, you hear what you already know. If you have not read them, the truncated text presented orally in the 15-20 minutes allocated to each speaker, gives only part of the picture and can often be misleading.

Worst case scenarios are those when the lecturer drones on and on in Russian, or Hungarian etc. and you are dependent on the translation in real time. Sometimes, out of pure ennui and a touch of curiosity I would listen to translations from French or German into English or vice versa. It was shocking to hear the garbled versions of what was actually being said at the lectern.



The Scientific Council of the International Potassium Institute

This is not the fault of the interpreters, who are generally extremely adept in the knowledge of the languages they are using, but how can they keep up with a steady flow of sentences, replete with professional terms in an assortment of disciplines with which they are not familiar. If the interpreter hesitates for a split second to find the correct translation for a term which is unfamiliar to him, he will jump the gap to catch up with the next sentence already being voiced, and nobody will be any the wiser.

At a conference in Algiers, where I presented a paper in English to a small group of about 40 participants, the interpreter, who knew both languages very well, was translating passage by passage into French. At one point, he negated what I had said by omitting a single word. I could not afford interrupting him and said "Our interpreter is doing an excellent job, but this time what he translated was the opposite of what I had said". He translated: "Le Docteur Arnon dit que ma traduction est excellente mais complètement fausse".

Many people argue that the most important aspect of conferences is the discussions that follow the papers. That this can be a fallacious statement is exemplified by the fact that the organizers often plant an agent provocateur to get the discussion started. The "discussions" are frequently no more than questions.

Much depends on the chairman. If he is the lenient type, afraid of hurting anyone's feelings, he will let a bore drone on and on, in full disregard of allotted time. If he is the severe type, whose major aim is to finish the session on schedule in time for lunch, he will cut off the speaker in mid-sentence, even if what he is saying is of interest.

All said and done, I gladly admit that I enjoyed traveling to conferences and even to presenting papers, without pretending to myself that much had been gained thereby.

Behind the Iron curtain

It would be tedious to recount the numerous topics discussed at the different meetings, colloquia and congresses and their locations that were organized by the Scientific Council of the IPI, but on two occasions they were held behind the Iron Curtain, in countries to which Israelis were forbidden entry: Hungary and Poland.

All countries were eager to host the international meetings of the Institute, and countries in the Eastern block probably even more than others. Holding the congress in the two countries mentioned was made conditional on their allowing the Israeli delegates to participate. It was in this way that I was allowed two peeps behind the Iron Curtain.

Hungary

Before leaving for Hungary, my wife exhorted me not to leave the group for a moment and not to go wandering about on my own, as was my want. On arrival in the airport of Budapest we joined the line for passport control, and were soon made aware that our treatment would be different to that of the other passengers. The police officer did not stamp or return our passports, but signaled us to move aside and wait; we were naturally filled with trepidation.

After a long wait an official approached me with a passport in hand, and made as if she was explaining something to me. She whispered a single word into my ear "Shalom" and beat a hasty retreat.

We were lodged in an old sumptuous hotel built during the heyday of the Austro-Hungarian empire, and within whose walls the ancient Roman hot mineral water baths were still in use.

Every morning we boarded a bus that took us straight from the hotel to the location of the congress in another corner of the town, and straight back again in the evening. Aware that this daily procedure would not allow me a glimpse of Budapest, on the third morning I left the hotel at an early hour, to make my way to the meeting place on foot. I had noticed that the conference hall was located near a church that was being renovated and that a large building crane, that towered above the surrounding buildings could serve as a landmark to guide me to my destination.



Chairman,
Congress in
Israel

Walking with my nose in the air so as to keep my landmark in sight, I suddenly came to halt in front of a building that barred further progress. Looking around me to find a way out, I saw that the place was teeming with soldiers. Unaware, I had passed through the entrance of a military complex of buildings forming a large square in which I found myself trapped.

How would I explain, without knowing a word of Hungarian, what an Israeli was doing in the heart of a military complex. With my heart beating, and already anticipating my wife's "I told you" I made my way as nonchalantly as possible to the exit, which I reached without being challenged. From then on, I stayed with the others and that was all I saw of Budapest.

We did participate in a typical Hungarian village festival. There were demonstrations of horse riding, and I longed to wow my fellow congressmen with my unsuspected talents as an ex-cavalry officer. Fortunately, I realized that after a lapse of thirty years I might make a fool of myself, and resisted the temptation. Later there was folk dancing, and I was grasped by a buxom village lady who dragged me into the circle of dancers, so I did have a chance to show off.

Poland

In 1981 we organized a congress in Poland. To obtain a visa, we had to travel first to Vienna. The next day we presented ourselves at the Polish consulate, armed with a letter indicating that our attendance at the congress had been authorized by the Polish authorities. After a lot of deliberations, we were given a form to sign, and - instead of paying on the spot - were told to go to a nearby postal office to pay the costs of our visa. We wondered at this unusual procedure, and after some speculation, came to the conclusion that the Polish authorities did not trust their employees and had found a way to avoid temptation.

Warsaw

I took some time off to visit the town. The town center, that had been bombed out of existence, had been completely rebuilt. The extremely wide boulevards were bordered on both sides by rows of drab, uniformly gray identical apartment houses. Not a shop to be seen. At street corners, there were kiosks selling vegetables. I looked at the display: potatoes, cabbage - and plastic flowers.

After a long walk, I reached the area that had been the site of the former Ghetto - a huge cement-covered empty square, except for the impressive memorial to Ghetto victims and fighters. Also visible, the covered access to the sewers that had served the underground revolt for their last stand. The only Jew I was to meet in Warsaw was a pitiful old man who begged for alms.

Agriculture

We were taken by an official guide to visit a model family farm. On the way, looking out of the bus window, I was able to see a replica of the agriculture that was already extinct in Belgium half a century earlier. Horse-drawn carts with wooden iron-rimmed wheels crowded the roads. Everywhere, small patches of wheat or rye were being harvested by scythe.

On arrival at the model farm, we were first shown the house, which, for a little family farm, was really imposing. It was only later, when comparing notes, that we became aware that we had not seen a kitchen or a children's room, but there were three big living rooms. It was clear that this was a propaganda showcase and not the living quarters of a family. In the courtyard we were given a lecture by the local extension worker, I stood on the fringe of the crowd, and looking around, I saw a small wooden door which I opened. Inside, in foot-high muck stood a single cow, being milked by an old woman sitting on a three-legged stool. Model farm indeed.

On the way back, somebody asked why the agriculture we had seen was so primitive. The guide answered that because most of the family worked outside the farm in good paying jobs, the tendency was to neglect the farm. By contrast, on the collective farms agriculture was as modern as in Western countries.

I had sworn to myself that I would not open my mouth during our stay in Poland, in order not to risk having my exit from the country made even more difficult than the entry. But this piece of whitewash was more than I could take, and I told the guide that his explanation was unconvincing. In every country that I knew, the fact that members of the family worked outside the farm was a factor for progress and not for neglect. Off-farm work made it possible to buy all

the inputs needed to make agriculture productive. My contention was, that in a desperate attempt to prove how much more successful and efficient the Government-supported kholchozes were than family farms, all supplies of inputs, such as fertilizers, plant protection materials and equipment were reserved for the collective farms, with little or nothing being made available to family farms. My comments were greeted with stony silence, but no reprisals ensued.

Solidarity

We visited an agricultural college. After concluding his welcome address, the Director said that the students would explain to each of us individually the aims and objectives of the Solidarity movement which was, at the time, gaining momentum. Each of us was immediately surrounded by three or four students who eagerly updated us on the widely supported movement.

They spoke excellent English, without a trace of foreign accent; I was told that they had never left Poland and what they knew had been taught to them in school. When they heard I was from Israel, one of them mentioned that there was an article on Israel in the latest issue of their newsletter, and ran to his room to fetch a copy. The cover carried a drawing of a Russian Bear, fast asleep, with little men dancing around him. I surmised that the article was replete with the usual anti-Israeli drivel. He replied "Not so, you will be surprised". And surprised I was, after a bilingual colleague later translated the article to me, whose gist was that Israel and Poland had many characteristics in common: both are small countries who have had to fight for their existence against threatening neighbors, both had large diasporas who retain their love for, and links with their motherlands, etc,etc.

The author concludes that the only possible reason for dispute between Poland and Israel was the high cost of oranges. And this was written at a time when an Israeli could only enter Poland under exceptional circumstances!

Israel

To conclude this chapter, I would like to mention one memorable conference that was held in Israel. In 1966, I proposed to the Scientific Council as theme for the next conference "Transition from Extensive to Intensive Agriculture with Fertilizers", and suggested Israel as venue. I promised to show, within the confines of one small country, subsistence agriculture that uses no fertilizers, and commercial farming, that applies all available yield-increasing inputs.

At the time I made my proposal, I was not aware how appropriate the term transition would prove to be. My proposal was accepted with enthusiasm, and I was appointed Chairman of the Conference.

On my return home, I first decided on a basic change in the format of the conference. Instead of the usual formula of three days of listening to papers, and one day devoted to a technical excursion, I decided to allocate three days to travel, and the last day to summing up. At each location, papers on topics relevant to the place we were visiting would be presented. Because this was the Holy Land, visits to sites of historical and/or religious significance would be included in the itinerary.

I then set out, with my friend and colleague Theo Ganz, who was to be in charge of all the logistics of the conference, to travel the whole length of the prospective itinerary, in order to enable us to plan the details of the event.

Our first destination was the Little Triangle a concentration of Arab villages in the center of the country. Here I had intended to show subsistence agriculture, unchanged since the days of the Bible, as I had seen it a few years previously on my last passage through this region. (see chapter 29) To my surprise (and consternation) no sign was left of the traditional agriculture that had endured for centuries and disappeared as at the touch of a wand. Not a bullock or donkey was to be seen, tractors were omnipresent, fields of strawberries and out-of-season vegetables were covered with plastic. In the villages, almost all the hovels were replaced by handsome stone houses, in front of many of the homes pick-up trucks were parked.

The same picture greeted us in Galilee, where another concentration of Arab villages is found.



Bulletin, Students
Organization,
Poland

I had promised to show the contrast between subsistence agriculture and commercial agriculture, side by side in the same setting, and one of the two components had simply disappeared. That I was embarrassed, is an understatement.

On the 5th day of June, the "Six Day War" exploded, and one of its unintended consequences was to take me of the hook on which I had placed myself. When the time came for the conference, instead of showing the differences between Jewish and Arab agriculture in Israel, which no longer existed, we were able to show modern Arab commercial agriculture on the Israeli side of the border and traditional Arab subsistence agriculture on the Jordanian side (incidentally, these differences have since also disappeared).

It was usual to lodge the participants to the IPI conferences in five-star hotels. As visitors to the Holy Land, I intended to put them up, for a night at least, at a hospice for pilgrims. For this purpose, I chose a hospice in Nazareth, run by Dominican monks, and situated next to the recently rebuilt Church of the Annunciation, by an Italian architect. I told the Manager, a priest, that many of the participants were devout Catholics for whom participation in a Holy Mass would be the highlight of their visit. It was agreed that the Manager would ensure that this would indeed be arranged. All this was confirmed in writing after my return home.

The day finally arrived, and we reached the Hospice in Nazareth in the early evening. I had just taken a shower, when there was a knock on the door and an employee told me that the Manager had not found a priest who could conduct the ceremony and that there would be no Mass. I dressed hurriedly and confronted the Manager, reminding him that he had had a whole year to make the necessary arrangements to which he had committed himself. I told him that I simply would not take no for an answer. I pointed out how strange it was, that I, a Jew, should have to insist how important a Mass in the Holy Land, was for the Catholic participants. The Manager took up the phone, and dialled number after number, shaking his head sadly at each response. Suddenly his face lighted up, and he said: You are in luck, I have located a young American priest who is on a visit. Gather your participants, a Mass will be celebrated within a quarter hour. In the lobby, I was told that the participants had been informed that there would be no Mass and they had dispersed in the nearby Souk in search of souvenirs. In front of the hospice there was the usual crowd of urchins, to whom I promised one Pound a head for every participant they brought to the Church. I myself went to look for possible participants in the Hospice, and the first man I encountered was the Swiss member of the Directorate of IPI. When I told him he was going to Mass with me; he recoiled in horror exclaiming "Me, a Calvinist go to Mass, never". I grabbed hold of his sleeve to make sure he would not escape, and told him "If I, a Jew, can go to a Mass, you, a Calvinist can do the same". Not being able to free himself from my clutch, he kept lamenting "what will my family say".

In short, we went into the Church, and the conference members started to straggle in, one by one. We were all gathered on a platform, high above the cave that had served as home to the Holy Family for many years, and over which the church had been built.

The priest appeared, clad in festive vestments - a young man with a small pointed beard who looked like a replica of the Jesus depicted by Italian Renaissance artists. The ceremony itself, that I saw for the first time was most impressive; the Catholic participants joined the priest for the ritual of the Sacrament.

When the Mass was over, I felt obligated to thank the priest for having saved the situation at such short notice. I waited in front of the vestry; out came a young, bearded youth, clad in jeans and a polo shirt. When he saw how I was taken aback he asked "anything wrong?". I replied "no Father, but you are the most unfatherly Father I have ever met". After I had explained the circumstances that preceded the Mass and thanked him for his part, he said "You see, it is the hand of God that intervened". I answered "I honestly believed it was my hand that had intervened, but if you say so, who am I to compete with God"? I invited him to have dinner with us, but he could not accept as he had promised the Sisters in a nearby Convent to entertain them with a magician's tricks!

By all accounts, the conference in Israel was deemed by the participants to have been the most successful of the conferences organized by the IPI. In particular, my Calvinist friend often reminded me, in feigned horror, how I had forced him to participate in a Catholic Mass.

Archeology

The Beginnings

Numismatics

Like most Israelis, I was bitten early by the archeological bug, but I was too immersed in my work to do much about it. I started out by collecting the coins found by my irrigation workers, for whom the little pieces of earth-encrusted copper had no significance or value. I had no time to clean the coins, still less to identify them.

In the meanwhile, Danny had started a collection of his own. Waiting for the bus to take him to Naharia, he would scrape the soil with the toe of his sandal and usually find a coin. After a heavy rain, there was even no need to scrape the soil. Then one day he came to me with a proposal I could not refuse. He suggested I hand over my collection of coins for safe-keeping. His first initiative, unbeknown to me, was to clean the coins. To this purpose, he got some sulfuric acid in which he immersed the coins for the night. The result was that the next morning we had the most concentrated solution of ancient coins in the world. This setback put me off coin collecting for a long time.

Many years later, I was visiting Herodion, a tel near Betlehem, when a small shepherd approached and offered me an ancient oil lamp for which he asked 4 shekel. I gave him a five-shekel coin. He rummaged in his pocket and held out a fistful of coins and asked to take one as change. I picked out a coin from the reign of Yanai, King of Israel (75-103 B.C.). This episode so thrilled me - imagine accepting a coin minted by a Hasmonean king as legal tender in the 20th Century - that I started collecting all over again. Excepting that this time I no longer had the rich source that was available when I was Superintendent at Acre. All my attempts to find coins by myself were to no avail. I organized family picnics during which we all went coin-hunting; occasionally one of the youngsters would find a coin, but me - never.

After a heavy rainfall, I scoured the beaches; even at Caesarea, where coins were found by almost every visitor, and nary a thing did I find. I even bought a coin-detector when on a visit to the USA. Even with the help of this sophisticated instrument, the only things I detected were pieces of baling wire, by then antiquities in their own right. After I sold the coin-detector, the new owner within a week, reported finding several valuable coins and some silver artifacts. So I had to acquire most of my collection in exchange for modern cash.

Pottery

A complimentary activity was the search for pottery. I am by nature and upbringing a square law-abiding person. Proof is that in 65 years of driving I received only two fines for offenses unwittingly committed. But one law-defying activity I have never been able to resist - searching for antiquities.

When traveling the country, I always kept a small hoe in the trunk of my car. Returning home in the evenings, whenever I spied a tel at some distance from the road, I would drive onto a side track leading to the tel, and armed with my hoe, engage in some digging on the side not visible from the road.

I never found a thing, until one memorable day I found a treasure trove right on my doorstep.. We were building the new administrative center of the Volcani Institute in Bet Dagan, and a bulldozer was preparing a parking lot in proximity to the building, and in the process was removing a small tel. The next morning the guard informed me excitedly that Moshe Dayan had appeared at dawn and had emptied the contents of an entire grave uncovered by the bulldozer. Dayan had an understanding with the tractor drivers that they would inform him whenever they uncovered antiquities and had, by appearing on various sites before the legitimate authorities, built up an impressive private collection. I was furious; even here, on my home ground, I had been deprived of a unique opportunity to unearth something myself. Not quite.

Taking a cue from Dayan, I called for the driver of the bulldozer and told him that if he found

omething promising, he should tell me first. If not, I would immediately inform the Antiquity Department, who would stop his work. As an hour's work of the giant bulldozer cost a fortune, my threat was very potent. He asked what was in it for him and told me the going price was a bottle of whisky. Without inquiring whether he had Johnny Walker in mind, I agreed.

Within an hour he was in my office and said "yesh" (bingo)! I went down with him to where the bulldozer had stopped. I saw nothing. The driver, more experienced in the matter, pointed out a rectangle of darker soil than that surrounding it, an indication that the spot had been excavated and refilled with darker surface soil. He left to continue work at another corner whilst I remained behind, scratching the soil and removing it carefully with a penknife. Lo and behold; An enormous jar slowly emerged. And inside a juglet which had served as a dipper. All without a scratch. To say I was thrilled is an understatement. After having carefully deposited the jar on a sack at the entrance to the building, I returned to my office. After another half-hour, the driver reappeared - Yesh! This time I needed no instructions and within an hour, a second beautiful jar emerged, which I reverently placed next to the first.

This was becoming too much for me to handle, so I returned to my office, rang up the Antiquities Department and declared my loot. The lady at the other end told me to order the tractor to stop work, to which I answered that I had no authority to do so. In that case, would I be so kind as to watch the tractor and try to avoid any damage he might cause. I promised to do everything in my power. She closed the conversation by saying that she would send an inspector to take over.

Returning to my "dig" in order to keep the bulldozer under surveillance, I found two young men examining "my" treasures. They introduced themselves as Inspectors of the Antiquity Department, and informed me that by digging up the jars I had engaged in an illegal activity. I countered by telling them that I had just informed the Antiquities Department of my finds, and that if saving the jars from the jaws of the bulldozer was illegal, than let them charge me.

Mollified, but not entirely convinced, they said they were confiscating my jars, and would be back the next morning. I said "over my dead body, besides having saved the jars from certain destruction, they had cost me a bottle of whiskey each". We compromised that the office would decide the fate of my jars.

The next day I received a letter from the Department thanking me for my efforts at saving antiquities and allowing me to keep my two jars "on loan". And then they played a dirty trick on me. Enclosed in the envelope was a card identifying me as Honorary Inspector of Archeology. Just as my appetite had become whetted by my extraordinary find, all future nefarious activities became impossible. How could an honorary inspector of antiquities engage in illegal digs? To avoid temptation, out went the hoe from the trunk of my car.

When I left the Volcani Institute, I left one of the two jars to my successor, and the other is the centerpiece of my collection at home. Incidentally, the grave and its contents date to the Hyksos period, about 4000 years ago, contemporary with the time Abraham crossed the region with his caravans.

Life as a Student of Archeology

After I went on pension in 1976 for the second time, I enrolled at the Tel-Aviv University as a student of archeology, so as to put my hobby on a sound footing. I also took a course in numismatics, and spent many days in the Numismatics museum identifying my coins under the guidance of the Director, Dr. Kindler, who also happened to be my teacher on the subject at the University.

I spent a happy two years as a student, enjoying sharing the studies with the young people who treated me as an equal. The only thing that bothered me was the flimsy evidence on which many of the archeologists based their theories. Not that they had much choice, Sometimes all the evidence they had to build on was a shard resembling something found at another site, from which they made deductions which were frequently refuted by other colleagues.



My first successful dig.

Once I was assigned to assess an article written by an eminent archeologist, who made some, to my mind mistaken, assumptions based on agricultural artifacts found at the site. When I, a first year student of archeology suggested that she was mistaken and explained why, my teacher's comment was "shows good understanding of the subject".

The Habiru

I particularly enjoyed preparing a seminar paper on the subject of the Habiru. My fellow students groaned if they had to rely on references in English, whilst here was a subject on which numerous papers had been written in English, French, German and Italian, and I was the only student in many years who could tackle these articles.

The subject fascinated me, and after spending days on end in the library, wading through stacks of volumes full of controversial material, I was able to present a paper which my tutor, my fellow students and myself enjoyed.

The first study on the Habiru was published in 1888. The name, Habiru (Hebrews), in its many variations, had appeared for the first time in the El Amarna tablets, to be followed by numerous discoveries, which by 1955 had led to over 200 publications.

The scholars soon divided into a number of warring camps in interpreting the significance of the term. Did "Habiru" refer to a category of people with a number of common characteristics, but without any ethnic identity, or was it the name of an ethnic entity? If the latter was the case, did it refer to the ancestors of the Jewish people or was some other group so designated? With each additional discovery, the scholars became more divided in their interpretations.

For almost 1000 years the presence of a people with distinctive characteristics is recorded in numerous places in Mesopotamia, Asia minor, Syria-Palestine and Egypt. Many scholars agree that the Habiru were outsiders and therefore not under the protection of the legal system of organized society.

In the Amarna tablets the Habiru are depicted as bandits who attack towns either on their own initiative or as mercenaries. Elsewhere the Habiru is a person without status but allowed to find a living within established society.

After the Exodus from Egypt the term Hebrew was used when Gentiles referred to Israelis or when an Israeli introduced himself to a Gentile.

The first individual to be called by the epithet Hebrew was Abraham. To underline his role as Father of the Nation, the term changes from epithet and achieves ethnic significance. The unique religious belief in a single God, which sets the Hebrews apart from all the others at the time, justified their feeling that they are not subjected to the law of the land or under obligations to the authorities in matters concerning religion, economy and society.

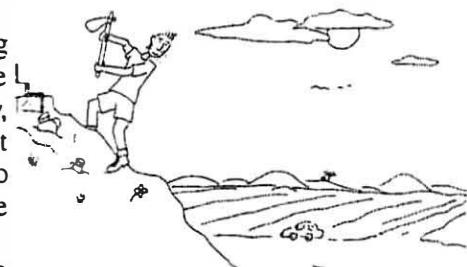
From the welter of sometimes conflicting information, a few points stand out : In every case, the Habiru appear as strangers within settled societies, who lived on the fringes of society, were not identified with a single stratum of society but appeared at all social levels and in all professions. They were also renowned as professional soldiers of fortune. Without any pretensions at being a scholar, I am convinced that the Habiru were our ancestors. To me this explains the historic dichotomy of the Jewish people which begins with Cain and Able, when the same gene pool gave rise to one segment that prefers a settled life, and another that yearns for a nomadic life.

For me, this explains why the Israelites after leaving Egypt, wandered in the desert for forty years, when they could easily have crossed Sinai in a month and only then decided to conquer a country for themselves in order to settle down.

Hardly had they accomplished this, and the offspring of the settlers began looking for new pastures elsewhere. Soon there were Jews to be found in all corners of the settled world.

Other peoples have migrated and conquered territories. This they did as armed groups, either annihilating the native population or colonizing it, in all cases imposing their own culture.

The Jews did this only once, when they conquered Canaan and imposed their culture and religion, declaring the land was theirs by the grace of God. But Jews are the only people in



Illegal Activity

antiquity to have penetrated foreign societies peacefully, forming communities "as strangers within settled societies, who live on the fringes of society, are not identified with a single stratum of society but appear at all social levels and in all professions".

It is a myth that the Diaspora was created by conquerors from Nabuchadenezer to Titus, who deported only a segment of the Jewish population that had no wish to leave but was forced to do so.

The Diaspora was founded by the Jews themselves, obeying instincts dictated by the genes inherited from the ancient Habiru. Early in history, Jews are found from one end of the known World to the other - from England to China, always keeping to themselves and maintaining their identity and their culture.

The process has repeated itself in our days. Hardly had the State of Israel been established when "Yerida", as emigration from Israel is called, started - not as an isolated phenomena but as a mass movement, with many of the children of the settlers involved.

The Habiru reputation as soldiers of fortune can also explain the sudden transformation of Jews known for their lack of military prowess into the heroes of the Palmach and the warriors of the War of Independence.

I am sure that I have not convinced scholars of history and of archeology, but compared with the flimsy evidence on which these scholars often have to base their history, I feel I have made quite a good case for my thesis!

Odds and Ends

In the course of writing, I have recalled various incidents, that do not fit into any of the chapters already written but that I think are worth recording.

A family visit

Sometime in 1938, I decided to take a vacation, for the first time since I had started work at the Experiment Station and to visit Belgium in order to show our first-born to his grandparents. Travel by sea was at the time the only option available. When I told my chief of my intention and asked for his formal permission, he said "if you have to choose for the date of your return between a boat that arrives two days before the 30 days you are entitled to and one that arrives two days later, take the latter". I followed his advice, and booked our return journey so as to arrive on the 32nd day of my vacation. (17 years later, when the Mandate ended, my pension was calculated on the basis of the time between beginning and end of my appointment - less two days and 10 hours! The many years that I had taken no vacation were not taken into consideration).

On the day of our departure, whilst still in port, I was observing the activities around me, when a man standing next to me at the railing introduced himself as a tourist from America who had just concluded his visit to Palestine. He remarked to me: "All my adult life I have been active for the Zionist cause, but after this visit I will just as actively oppose it". At my startled question "why?" he answered "because Jews eat pork in Palestine".

Some hours later, the purser asked if we wished to eat kosher, and I replied in the negative. And who shared the table with us? None other than the anti-pork tourist. When pork chops were served at lunch, he partook of the succulent dish with gusto. Finally I asked him how his eating pork jibed with the anti-pork crusade against the Zionists? His answer was very typical for the mind-set of many American Jews. He said in Yiddish "Ihr zed mechiyev, ich nisht" (you are obliged, I am not). I asked the purser for a change of table.

A Military Problem

In the early years, the Minister of Agriculture used to convene monthly meetings of the Heads of Departments. Each month, a representative of one of the Ministries would brief us on the structure, objectives and modus operandi of his Ministry. Once, it was the turn of the Ministry of Defense, and a high-ranking officer described, among other subjects, how the army, lacking experience of its own, and using a medley of equipment from different sources, was obliged to depend on sources of information that might have become irrelevant.

As an example, he mentioned the Hotchkiss machine-gun. According to the British Manual of Instructions, four soldiers were required to service the gun. The officer explained the dilemma: they figured that one soldier was needed to man the gun, one to load the ammunition, the third possibly as a reserve, but no way could they guess what was the function of the fourth man. As long as they were ignorant of what he was supposed to do, they had to allocate a fourth man to the gun without being able to instruct him on his duties. "It took us months to find the answer, and you will never guess what it was". I lifted my hand, and the officer, with an ironic smile said "Yes?". "The fourth man held the horses and led them behind the lines"!. No longer smiling he asked: "how do you know?" to which I answered "I held the horses".

As I have mentioned in a previous chapter, the Hotchkiss was the machine-gun of the cavalry, and was carried on a two-wheeled carriage hitched to a pair of horses. Once the army stopped advancing, the cavalry joined the infantry in the trenches, and the horses were led to relative safety behind the lines. Actually, I had never "held the horses" as I was in charge of a complement of four Hotchkiss machine guns but it seemed the most appropriate answer at the moment.

Consultant

My career as a Consultant started in the 1970's, but I had already twice served as a consultant when still a young and relatively inexperienced research worker.

An Asbestos Problem

Sometime in 1939, my Chief Agricultural Officer informed me that he had been asked by the lawyers of the Cyprus Asbestos Mines to recommend an agricultural expert who could determine whether asbestos residues carried by the river that passed the asbestos works caused any harm to the agriculture on riparian lands, as claimed by the farmers. They wanted someone from outside Cyprus, who had no preconceived ideas on the dispute.

Masson had recommended me for the job, and asked me whether I would like to accept the assignment. I was delighted at the prospect of visiting Cyprus but was somewhat dubious of my professional competence on this subject. As there was nobody else who was more competent, on a subject that had never been raised in the country, I accepted. A week later, after having read the limited literature available, I left by boat for Cyprus.

On arrival, a young man met me at the customs, introduced himself as a representative of the lawyers firm that had hired me, and told me that he was to be at my disposal for the duration of my visit. The customs official did not return my passport, and told me that I would get it back after they had finished checking it.

That evening, the young man appeared, and suggested we go to a cabaret. I don't think that anywhere in the world was a tamer cabaret to be found. At many tables, whole families were seated, parents and children, and the entertainment was appropriate to the clientele: folk songs delivered by buxom, fully clad ladies. At around 11 p.m appeared the customs official, with my passport in hand, which he returned to me. On my question how he knew where to find me, he said "where else than in our cabaret", an indication of the state of the tourist industry in Cyprus at the time.

The next day I started my work. I followed the river's course from the mines to the fields of the farmers, carefully examined the crops on both sides of the river for any sign of damage, compared the situation with that of crops further away from the river banks, and try as I might, could find no sign of any damage, I took numerous samples of water and soils, which would be analyzed in Palestine.

The next boat to Haifa was due in a week, so I spent the rest of the time sight-seeing in the whole - at the time undivided and fascinating island.

On my return home, I gave my samples to Dr. Ravikovitch, the soils expert of the Rehovot Station, who found nothing harmful in the soil. He said that he was not surprised, as asbestos is a completely inert material with no effect on the soil. This confirmed my visual impressions.

Though my heart was with the farmers, I could not honestly state that their interests had been harmed. Nothing was known then of the carcinogenic effects of asbestos, but this aspect was out of my domain and not relevant to the case.

When my Chief met me after my return, he asked how much had I been paid for my services. When I told him that I had refused to accept the fee that was offered me "because I had enjoyed a wonderful vacation" his one comment was "you bloody fool"! In retrospect, he was probably right, considering the shoe-string economy of the family.

Seed Purchasing Mission

In the 1950/51 season, occurred the worst drought in memory, nor has there been anything like it since that year. The drought hit not only Palestine, but the whole region. Even seed for the next year's crop had not been saved and it was necessary to go far afield to find a suitable source of supply.

The Hamashbir Hamercazi (the cooperative supply agent of the Socialist Party) was to be the purchasing agent. Schatz, a member of Kibbutz Afikim in the Jordan Valley and member of the Board of Directors of the cooperative was to be responsible for the commercial aspects of any deal to be made. I was nominated to accompany him as the expert deciding what varieties to purchase. I was very pleased with the assignment: First, because it showed a great deal of public confidence in the young agronomist. The only varieties of the main field crops that might be found available had never been tested in Israel and any mistake in their choice would result in a man-made crop failure which the country could not possibly afford after the climatic disaster

of the previous season. Secondly, this would give me the opportunity to meet with researchers in my field in countries with similar problems and to collect varieties and breeding material of field crops. And last and not least: travel abroad for the private citizen of limited means was practically unattainable and I was happy at the opportunity to visit Europe. This was the first time since Jamaica that I was to go by plane, a still new and thrilling experience at the time. We first left for London, to conclude an agreement with a reputed seed firm that would handle all the commercial and logistic aspects of any deals we would make. On the plane, Schatz explained to me that the major problem we would face was that the coffers of the Finance Ministry were completely empty, and the Europeans were well aware that we were paupers looking for credit..

The firm chosen for our mission was "Balint", a little known Jewish seed-firm from Hungary whose owner had fled the Communist regime and transferred his well-established seed business to their new home in England. As Zionists, they were prepared to undertake a risky business as everyone was aware that the new State was financially very shaky, to put it mildly. My colleague Schatz spoke only Hebrew and Russian, and therefore I had to conduct all the negotiations, with an occasional hint from Schatz and his final agreement to whatever was decided.

We left the next morning for Paris, to arrange for travel to Southern France, Sicily, Southern Italy and Algeria and returned to London the same evening for finalizing details with the Balints.. After a time, I stopped counting the air-trips which had in the meanwhile lost their novelty

In Sicily, I saw a farmer irrigating his tomato crop by cupping his hands, filling the resultant cavity by dipping his hands in a tiny trickle of water from a water tap and watering each individual tomato plant. And that in Europe of the 1940's! It was in Algeria that we found the most promising source of seeds for field crops, not only because of the similarities of climate but mainly because of the high level of research at the agricultural experiment station at Maison-Carre.

During the visit to Maison Carree, we were shown their work on methane production from stable manure which had been of great importance during the fuel-starved war years. I had experimented on this subject at Acre and had found no difficulty in producing the gaz. I was however not equipped to handle the technical aspects. Later, when the oil-crisis struck, I again took up the subject with two researchers from the Technion, who set up a pilot plant near the cattle sheds at Bet Dagan which was slated to provide all the energy required for running the dairy operations. The experiment was a success, but its sustained application never followed.

Back to our search for seeds. In talks with the Ministry of Agriculture, it was decided that we would travel the next day by train to Sidi-bel-Abes, which in addition to being famous as the locale of the famous story of the Foreign Legion "Beau Geste" was also the region in which seeds from varieties developed by the Experiment Station in Algiers were propagated. There, a group of senior officials of the Ministry and extension workers would await us.

On the morning of the departure, Schatz and I debated whether we should wear jackets and tie, or travel in open shirts with short sleeves as befitted Israelis. It was the kibbutznik Schatz who decided on jacket and tie, rationalizing how awkward it would be if our hosts appeared in formal dress and we tieless and jacketless. It was a stifling hot day, and we had good reason to regret our decision.

When the train steamed slowly into the station of our destination, there stood a group of four men, all formally dressed in jackets and ties. "You see," triumphed Schatz, "how would we have looked as rustic chalutzim!". After the usual greetings, we packed into the Ministry car. Climatizers in cars were still unknown in Europe and North Africa. After a quarter of an hour I felt on the verge of suffocating. Gasping for breath, I asked my hosts for permission to remove tie and jacket, and told them of the early morning debate with Schatz. To my surprise they burst out laughing and all tore off their ties and shed their jackets. Their leader explained: before leaving for the station to welcome us they had debated whether they should wear jackets and tie, or travel



"Hazera Award for Plant-breeding

of lectures on "Agricultural Factors in Development Planning", which eventually were published in a work entitled "Modernization of Agriculture in Developing Countries".

Learning Spanish

The courses were originally given in English, but it soon became clear that the Spanish speaking participants' knowledge of English was generally inadequate for them to understand the lectures or participate in the discussions. It was therefore decided to organize a special course in Spanish for rural planners from Latin America.

The problem of course was to find qualified Spanish-speaking lecturers. The Director of the courses, Professor S. Hurwitz, who had also joined the staff of the Settlement Study Center after leaving the Faculty of Agriculture as a pensioner, asked me to give my usual course, but in Spanish, of course. When I pointed out that the only word of Spanish I knew was "Ole", he countered "learn the language, you have six months", to which I answered: "learn a language just to give a course" - out of the question!

On my return home, I told my wife that I had been asked to learn Spanish. She burst into laughter and said: "at your age!". That settled the matter. The next day I told Hurwitz that in six months I would give the course in Spanish.

Followed evenings roaming the streets, with earphones on my head and a small tape-recorder in my hand, listening to sentences spoken in English and then endeavoring to translate into Spanish, finally checking my version with that of the tape-recorder. When the time came, I was able, with the help of my notes, to give the lectures in passable Spanish.

Problems

I had no problem with the presentation of my papers, which had been translated by a Spanish-speaking colleague and which I memorized. The problems began during the discussions that followed the lecture.

First, Latin Americans tend to speak rapidly, their staccato speech sounding like a machine-gun firing volley after volley (my favorite Spanish sentence was: "Despacio por favor" (Slowly, please)). Second, each country had its distinctive accent, and sometimes its vocabulary, making it difficult to switch from one to the other, and finally, I was frequently short of a word in Spanish. In this case, I used the "spanishized" word in French. I would look at the interlocutor, if his face showed comprehension, I knew I had guessed right; if what I said evoked a look of astonishment, I knew I was off the mark. Sometimes I was very much off the mark. Once, in a conversation with a lady, I wished to say "I am embarrassed" and assumed that "Estoy embarazado" would serve the purpose. I was really embarrassed when I learnt that *embarazado* signified pregnant in Latin America.

Unanticipated Advantages

An unanticipated benefit from my learning Spanish, became evident in the course of my work as a consultant in Latin America. People related to me in an entirely different way than when I spoke English, showing me how much they appreciated my effort in learning their language.

For example, on my way to Venezuela on behalf of FAO, I read the folder given to consultants instructing them on norms of behavior and other pertinent information on the country of destination. One of the items that caught my attention was that consultants in Latin American countries in general, and Venezuela in particular, as foreigners, should not expect to be invited into the homes of local officials. When they wished to extend hospitality, it was customary for the hosts to invite their foreign guests to a meal in a restaurant.

On the morning of my arrival, I met my counterpart, the Director General of Agricultural Research in his office, and we spent the day discussing in Spanish the problems faced by his organization. In the evening his wife phoned, inviting me to dinner in their home. The two children immediately accepted me in a grandfather role, that very much suited me. On Saturday, I was fetched from my hotel and spent the whole day with the family, and the next day, Sunday, we all went shopping. By evening, the wife was confiding in me her problems with a workaholic husband. Talk about Venezuelans not inviting foreigners in their homes!

What are Experiment Stations For?

In 19 [redacted], the Minister of Agriculture, P. Lavon, came on a visit to Neveh Yaar. After a perfunctory tour of the Station, we met in my office for a cup of coffee. Without beating about the bush, Lavon said: "In case Jerusalem is again under siege, can hydroponics on the roofs of private houses provide a solution to the problem of food supply"? I answered: "I don't know". Lavon exploded: "What do you mean with 'you don't know'; is that what I maintain an experiment station for?".

Controlling my temper I replied: "Mr. Minister, the number of questions you can ask by far outnumbers the number of answers I have ready - and that is precisely the reason for which you need an experiment station". Lavon calmed down and asked: "will you find the answer", to which I answered "willingly, if you give me the budget required". It took a year for the answer to be ready, but by then Lavon was no longer Minister. Incidentally, the answer was no.

One morning I arrived at the Station to find a cable waiting for me : COME IMMEDIATELY TO MY OFFICE HA KIRYA STOP URGENT. I immediately left for Tel Aviv wondering all the time what could be the urgency. On the outskirts of Tel Aviv I was stopped by a traffic policeman, who said he had chased me all the way from Nathania. "What do you think you are, a Spitfire pilot?" I showed him the cable from Lavon and told him "God knows what will happen because you are holding me up!" Duly impressed, he let me off with a warning to drive more slowly in the streets of Tel-Aviv.

Bursting with curiosity combined with anxiety, I was shown into Lavon's office. He handed me a letter written by a prominent lady from WIZO in which she informed the Minister that she had read in the Readers Digest an article of major importance to Israel. In the wake of the warring armies in the Western Desert of Egypt there had mysteriously appeared a plant that was spreading rapidly in the desert. The good lady was convinced that here was the solution Israel needed in order to green the Negev and implored the Minister to take immediate action. I can't recall the name of the lady or of the plant, though I am sure that I will suddenly remember the name of the latter when it will be too late for proof-reading. I told the Minister that the plant in question was already being tested by our Plant Introduction Service and that if it showed promise at Sde Boker, we would test it on several locations in the Negev. The Minister looked at me as if I did not understand the urgency of action and said NO! What I want is for you to hire a plane and load as much seed of this plant as possible and scatter it all over the Negev. I told the Minister that this would be a most irresponsible thing to do and cited chapter and verse on the dangers of uncontrolled introductions of flora (and fauna) to prevent which I had established a Plant Introduction Service. I do not know whether I convinced the Minister, or whether he asked somebody else to do his bidding. In any case, seeds of the plant in question was not available in commercial quantities.

P.S. The plant proved to be a non-starter.

Israeli-Grown Coffee

On the staff of every experiment station there are always one or two individuals who persist on a path that leads nowhere. Sometimes, the Director has to put his foot down, and say the equivalent of "put up or shut up", as was the case with Dr. Hugo Boyko. He had proclaimed loud and widely that he had developed a method to grow crops on sea water and sorely embarrassed me when I had to reply to a flood of queries on this fantastic and world-shattering breakthrough. When he further proclaimed that he was a member of an international committee of the "seven best brains in the world or yet to be born" I was very happy when he asked for a transfer to the Negev Desert Institute.

A completely different case was Dr. Gindel. He had made it his objective that coffee-growing should become an important branch of agriculture in Israel, and was even successful in raising a few trees. However, no amount of research could overcome the problem that coffee was a very labor-intensive crop, and there was no possibility for Israel to compete with the cheap-labor producers elsewhere, even if growing conditions were favorable. This had unfortunately proven true for a number of agriculturally very successful crops whose production

had to be stopped notwithstanding huge efforts in research, extension and infrastructure had been invested in their development. Gindel was not deterred, and continued his investigations on a shoe-string.

In 1961, Moshe Dayan, then Minister of Agriculture, visited the Station in Bet Dagan and I offered him a cup of aromatic coffee. As he enjoyed his first sips, I mentioned that he was drinking Israeli-grown coffee. When the usually cold Dayan reacted with enthusiasm, I added quickly "and you have hereby enjoyed this year's entire crop!".

Jew fights Jew

Dr. Marbach, the Director of the Health Clinic in Quiriat Haim, had often asked me to take him with me on one of my frequent tours on duty to different parts of the country. It should be remembered that private cars were a rarity and travel in the country was arduous. One day, when I was scheduled to visit an experiment in Kfar Vitkin, I invited him to join me. Also with me was Alfred Abraham, at the time Secretary of the Field Crop Growers Association. The date was June 23, 1948 and friction between Ben Gurion and Begin had been reported over the disposal of a load of armaments brought from Europe by Ezel. When no agreement was reached between the two equally obstinate leaders, two days fighting between the Irgun and the Israeli army resulted.

We had arrived in Kfar Vitkin and were quietly walking in the fields when suddenly bullets started whistling overhead. We jumped into a ditch and watched as a platoon of soldiers advanced towards us, guns at the ready. Alfred shouted "don't shoot - we are Jews!". I told Alfred to shut up, proclaiming that we were Jews was not a valid identification under the circumstances. It took a lot of explaining to the suspicious platoon leader, who happened to be from the Palmach, that we were innocent bystanders who had unintentionally landed right in the middle of the fighting. During the hour spent in the ditch I reflected sadly that it was not enough to be surrounded by Arab armies and to be fighting for our very existence, we also had to fight one another. That evening, when I learnt that the 5,500-ton landing ship Altalena had been sunk with its invaluable cargo of arms and that 12 soldiers on both sides had been killed and 40 wounded, I felt a helpless anger and depression at this tragic waste.

Open Heart Surgery

At the beginning of 1996, I was having trouble with breathing when walking up a slight incline and was diagnosed as suffering from angina pectoris. My cardiologist was confident that he could keep me active on medication alone, but this soon proved to be overoptimistic. In April, I was admitted to hospital for balloon angioplasty, but in the course of this intervention it was found that the blocked sections were too extensive and emergency coronary bypass surgery was essential. After my son had signed the necessary papers, my rib-case was opened with a circular saw to expose the heart. The heart was stopped, circulation and breathing were taken over by a heart-lung machine which provided my brain and other essential organs with oxygenated blood. My blocked arteries were by-passed by grafting veins taken from my legs.

When I was brought to the intensive-care unit, the doctor in charge callously told my family "this patient will not survive the night".

When I awoke, curiously I felt no pain whatsoever from the dramatic intrusions I had undergone, but as a result of the pneumonia I had contracted during the operation, I had great trouble breathing. I am convinced that the strong will to live helped me overcome all the post-operation traumas, and I had good reason for my strong desire to survive. I had remarried only a few months before the operation, and was very much in love. I felt very strongly how unjust it would be to lose my new-found happiness so quickly. And the fact that I am writing these notes, more than two years after the callous doctor's announcement, proves how wrong he was and how tenacious was my will to live.

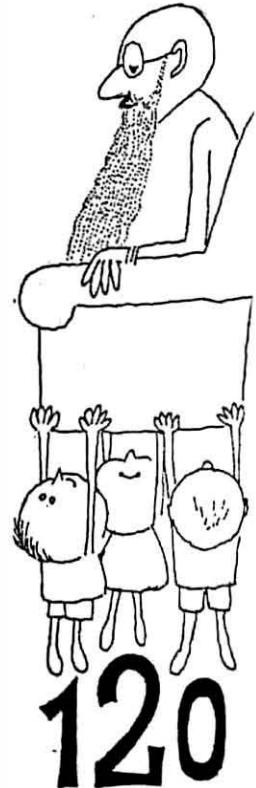
Bypass surgery is now so common, and recovery rate so high (more than 95%) that there would really be no justification to write about this routine operation unless I had something more to say. I do have a message to convey, mainly to the relatives and friends who give help

and support to the recuperating patient as well as to potential patients.

For several weeks after the operation, I was completely egocentric, and frequently obnoxious to those who were trying to help me. My son complained about my rudeness and told me that outside the ward my wife was often in tears because of my behavior. I felt awful at these accusations but also felt a lot of self-righteousness and justification for my lack of consideration.

I also had curious delusions, whilst convinced that I was highly rational and competent. I was awake most of the night because of difficulty in breathing and spent the time analyzing the situation and deciding what needed to be done. When the Head of the department with his coterie of young doctors made his daily rounds, I lectured them on the state of my health, and I explained clearly and logically the treatments I should be given. I must admit that they listened patiently and with serious minds at my drivel, maybe in deference to the sick professor's standing. I nearly drove my family nuts by insisting that my recovery was endangered because of a root infection of one tooth. I demanded this should be immediately extracted. When all their protestations were of no avail, and I insisted that their refusal to bring a dental surgeon would be the cause of my death, they managed to persuade a dental surgeon to come at the night, who was able to convince me that what I proposed was completely unacceptable and would endanger my life.

The reason I am recounting these oddities is that several months later I learnt that this type of behavior is common in bypass postoperative patients and even has a Latin name: "postcardiotomy psychosis" which is a form of delirium that is part of a whole range of psychological and emotional disorders that are specific effects of bypass surgery. It would have been a great comfort for me and for those giving me their love and support if we had known that my obnoxious behavior was an unavoidable after-effect of the operation. Understanding the underlying cause of his aberrant behavior helps the patient and those taking care of him to modify the tone and content of their mutual relations. Though well documented, nobody warned us of this psychosis and its harmful effect on relationships, which could have saved us many strains and heartaches...



Today, 21 June 1988,
I have completed
writing my memories.

It is my 89th birthday
and my grandchildren
are celebrating

by wishing me to
achieve the biblical
120.

I am happy to take
one day at a time.