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MEXICO CITY: POLYTECNICO YEARS
1938 to 1940

[1] The story of the Polytecnico was later written up and published, in the 1970's, in a book by Adolfo Perez Miravete. Although, by that time, José had already long been away from Mexico and was living in the United States, his name appears in the book. It had been submitted to the author by Eva De Soto Figeroa, a student and research scientist in the field of tuberculosis. José had met Eva at the college in 1952, and she turned out to be a cousin of the book's author. When she heard that her cousin was writing the book, Eva immediately passed along to him information about José's current whereabouts and his academic activities to date. Although the name "Rabinowitz" is misspelled in the printing (it appears there as "Ravinovitch"), the book nevertheless does refer to José as "egreso" (having been enrolled) in the Polytecnico, and now doing "distinguished work in the United States." In the same volume, there also appear the names of many of José's classmates and friends, along with accounts of their scientific accomplishments.

José graduated from high school in 1938 and immediately began his college training at the Instituto Polytecnico Nacional (IPN) in Mexico City. At that time, the Civil War was raging in Spain. José recalls, in particular, two students from his own high school whom he knew by sight only, who had become personally involved. They left by boat with a group of about one hundred others to fight for the Loyalist cause in Spain. By this time, most of the Spanish navy had switched its allegiance to the side of Franco and the Falangists (Fascists), who now controlled the coastline of Spain. The boat which carried the Mexicans was captured by a Spanish ship while still en route to Europe. All of the hundred on board were shot before ever reaching their destination. José clearly remembers the memorial ceremonies held to honor these students.

In Mexico, sentiment for the Spanish Loyalists ran very high. José was one of hundreds in Mexico who collected clothing and other items during a drive to send help to Loyalist Spain. Mexico was the only nation in the world that was openly sympathetic to the Loyalist cause, donating goods and arms without exacting any payment in return. (Neither the United States, nor France, nor England, nor any other nation ever officially committed themselves to the Spanish Loyalist movement. The Soviet Union, although it did send *chatos* – snub-nosed planes with flat fronts – to the Loyalists, received full payment for these; they never, apparently, donated anything outright, even though they continued to vehemently express solidarity with the Loyalist cause.) Among the items that the Mexican government sent over was a boatload of baby chick peas (it turned out that this was the first time many Spaniards had ever eaten this food). Even after the Spanish Civil War ended, with Franco victorious, Mexico still remained the only nation in the world refusing to recognize Spain.

Early in the war, the Spanish government had sent two yachts, each filled with bars of gold, out of the country in an attempt to save them from the Falangists. One yacht went to the Soviet Union; the other came to Mexico. When the Civil war ended in 1939, the Russians, under Stalin, returned this gold to Spain where, of course, it immediately fell into the hands of the Fascists. The Mexicans, on the other hand, told Franco that, yes, Mexico did indeed now have this gold, but if Franco wanted it, he would have to come and get it himself. The President of Mexico then assigned this gold to a fund for Spanish refugees at "La Casa de España" in Mexico City. Here, any Spanish refugee could come, appeal his case, and apply for a loan of this money from the fund for his own use. In this way the gold was kept out of Falangists' hands, yet it was still being placed at the

disposal of the Spaniards.

After thousands upon thousands of refugees had crossed the border from Spain into France to escape from the advancing Falangist armies, the French government placed most of them into internment camps. What the Mexican government now did was to negotiate with the French to bring boatloads of these people into Mexico. The arrangement stipulated that none of the refugees could go into business in Mexico. Instead, they would have to work specifically in either agriculture or in teaching. The Mexicans contracted several boats, each of which could hold up to one or two thousand refugees and, in this way, it was said that they brought more than fifty thousand Spanish refugees into Mexico during the late 1930's.

This would directly affect the Polytecnico Institute itself. Among the refugees who arrived in this way were many of Spain's greatest scholars. The Mexican government was quick to recognize their worth, and many of them were immediately given teaching positions at the Polytecnico.

At that time in Mexico City, the Polytecnico and the Autonomous University of Mexico (UNAM) were competitive institutions. UNAM had been founded during colonial days as Real Pontificia Universidad de Mexico. As such, it remained completely removed from government jurisdiction. However, the government, which was then extremely anti-clerical (and had been so ever since the 1920's) wanted to have its own system, one which it could control. With this in mind, it somewhat later established the Polytecnico Institute, founded, among other reasons, to compete with UNAM.[1]

José immediately felt at home as a student of the Polytecnico, and he soon developed a deep loyalty to his school. The place enjoyed a prestigious reputation, thanks to the outstanding faculty already present even before the Spaniards arrived.

During its early years, the Polytecnico had helped to open a series of schools and medical colleges throughout the country. (These were intended to compete with the private medical schools and with the local state universities.) Eventually, however, the Polytecnico closed down its Mexico City branch of the rural medical school. José had a friend, Nabor Hurtado, who had been enrolled in this branch of the Medical School. Hurtado was forced, when the school suddenly closed midway during his studies, to transfer to the medical school at UNAM. This move cost him tremendously in terms of scholastic effort, credit make-up, and time, but eventually Hurtado did graduate from there as a physician.

The divisions of anthropology and archeology were both removed from the Polytecnico early on, and became independent entities. Then, much later, both UNAM and the entire Polytecnico began to cooperate with each other and, from the late 1960's on, José would begin to have scientific dealings with them both. However, at the time that he was enrolled as a student at the Polytecnico and, for the couple of decades that followed, both places were operating as competing institutions. Because of its political philosophy and the set-up there in the 1930's, it was the Polytecnico, and not UNAM, that succeeded in winning over numerous outstanding Spanish refugees as members of its faculty.

At the time that José was studying at the Polytecnico, he was enrolled in the Division called Escuela Nacional de Ciencias Biologicas (ENCB). He was to remain there for almost three years, until 1940, at which time he and his family would move to the United States. It would be in Philadelphia where José would eventually complete his undergraduate and, later, his graduate studies.

The faculty at the Polytecnico in the 1930's included an amazing group of professors. A few of them, who had been there already, even before the influx of the refugees from Spain, also had international reputations in their own respective fields. Now, with the arrival of the Spaniards, many of whom ranked among the world's greatest scholars, the Polytecnico became a university of exceptional prestige. Because of this, it offered a unique opportunity for its students, although they were still in their undergraduate years, to work with some of the world's greatest scientific and academic minds.

In Spain, the established academic system decreed that only one person, the individual who placed at the uppermost peak of his profession, could be awarded the title of *profesor catedra* (chair). This was the man's academic rank, and the title was to last for his entire lifetime. Thus, in the entire country of Spain, there was only one full professor in any given field. Many of the Spanish refugees brought to Mexico in the late 1930's were Full Professors, most of them holding the national title of *profesor catedra*. (The Spanish universities, under Franco, could not deprive their colleagues in Mexico of their Spanish titles. Instead, they had to establish modified titles for their new faculty back in Spain. Since, for example, the Spanish professor of astronomy and mathematics was Pedro Carrasco, now living in Mexico, his replacement in Spain had to be given a different title, that of professor of specialized astronomy or professor of modern astronomy.)

These refugee professors from Spain were now appointed to teach at the Polytecnico. They joined what was already an outstanding faculty: among other

notables, a Russian in the field of parasitology (Dmitri Sokoloff from St. Petersburg), and a German named Alfonso Dampf in the field of lepidoptera. Both were names that were internationally famous in the scientific community.

In the early 1940's, well after José had already left for the United States, he heard news relating to these two professors. The daughter of Dmitri Sokoloff had become a respected and well-known ballerina, now heading a school of dance in Mexico City. But it was about the other, Dr. Dampf, that the tidings were more startling.

For many years at UNAM, there had been a Basque professor named Isaac Ochoterrena on the faculty. (José was, one day in the 1980's, to accept an invitation as visiting professor at UNAM to occupy the Ochoterrena Chair.) Isaac Ochoterrena was renowned in the field of Bacteriology. He had written the first Mexican textbook on microbiology (or bacteriology, as the field was called in those days). Ochoterrena and Dampf had long hated each other; they had tremen-

José and Mario on Lake Chapultepec.

dous political differences, and were involved in an ever- accelerating personal vendetta. Ochoterrena was a leftist while Dampf, on the other hand, was a suspected Nazi (he had repeatedly been accused of operating a short-wave radio set to keep in touch with Germany and also, especially, with German submarines positioned in the Atlantic). Eventually, José was to learn that the feud, which had long been festering between the two men, had finally erupted.

In 1941, a year after José left Mexico, Ochoterrena would be appointed as adviser to the chief of education of Secretaria de Educacion Publica (SEP) for all of Mexico. Angry at the indifference, and at what he considered the negligence and apathy of the Mexican government regarding Dampf's alleged Nazi activities, Ochoterrena now took matters into his own hands. As an adviser in science for the entire country, he demanded that Dampf be fired as an investigator. By the time that he heard this, José was already serving in the US army in Burma. One day, in 1944, he would suddenly be called in by a group of American officers from the "information desk" and questioned regarding what he knew about Professor Dampf. (José had once happened to mention Dampf's name to his immediate superior in Burma, Captain Rhem, a well-known entomologist who specialized in the research of grasshoppers. Rhem had previously met Dampf at several scientific meetings, and he was curious to hear more about this man who was suspected of being a Nazi.) To José's knowledge, nothing that he was able to discover afterwards would ever come of the matter. Yet, he always found it curious that his own personal acquaintance with Dampf, which dated far back to his school days in Mexico, would be something to be traced all the way to Asia a decade after he had last seen the professor.

Among the finest and most prestigious scientists emigrating from Spain to the Polytecnico in the late 1930's were such notables as Dionisio Pelaez (professor of parasitology and entomology), Manuel Castañeda Agullo (professor of botany), José Giral (one of the world's first pharmacologists), Candido Bolivar (professor of entomology and parasitology), and Manuel Maldonado Koerdell (professor of anatomy). Later, in 1940, it would be Professor Koerdell who would recommend that José, about to leave Mexico to settle in the United States, should apply for admission to the Philadelphia College of Pharmacy and Science in Philadelphia.

Another Spanish refugee who arrived at the Polytecnico in the 1930's was Pedro Carrasco, a respected mathematician and astronomer. Carrasco had been chief mathematician for the observatory of Madrid, and it was he who had

designed the first cylindrical slide-rule. Even though his students at the Polytecnico were only undergraduates, Carrasco discussed, in some detail with them, Einstein's theory of relativity. Carrasco once described how he, himself, had spent three full days on calculations in order to determine exactly at which time, and in which position in the heavens, a particular star would appear.

Still another Spanish refugee, one of considerable renown, who came to the Polytecnico at this time was Bibiano Osorio-Tafall, professor of genetics. At that period, in 1936, Osorio-Tafall was one of the very first in the world ever to have worked in this field. He taught José and his classmates some genetics, even at this very early date. In the basement of one of the Polytecnico's laboratories, Osorio-Tafall would keep nests for some of his large grasshoppers and other insects. José remembers how these creatures would sometimes fly from their nests out into the open fields, play there in the grass, and then, after a while, wing their way back to the nests inside the laboratory. (During the 1970's, Osorio-Tafall would become an ambassador of the United Nations Organization, and be assigned to Africa, and then to Cyprus. Here, he would be instrumental in helping to establish a peace-line separating the Greeks from the Turks.)

Osorio-Tafall would marry one of José's classmates. This was a girl who, soon after arriving at the Polytecnico, was rumored to be carefully evaluating all of the boys in her class, one by one, as potential "husband material." She would finally marry the professor instead. Her name was Lucia but, because of her occasionally argumentative ways, she soon became known as "Mucha Lucha" (much fighting.) Nicknames were popular among José's classmates. Clemencia T. G. Alvarez, later to become a dear friend of José's, was known as Coca. (The term derived from Coquito, the name of a bull in a song that was popular at the time.) Pepe Alvarez de Villar, José's closest friend of all, and one whom he continued to revere enormously, was called Poca Lucha (little fight.) This nickname came about when, on a class expedition to trap Monarch butterflies, Pepe inadvertently stepped with both feet into a deep puddle, soaking the bottoms of his trousers. Rather than change his trousers or, at least, roll up the cuffs until they dried, Pepe pulled out his Swiss army knife and calmly, with deliberate unconcern, snipped off about eight inches from the bottom of each trouser leg. His nonchalance, and his calm acceptance of the "inevitable," then and there earned for him the nickname Poca Lucha (little struggle) or "Poca" for short.

As to José, his friends often referred to him as "El Rabano" (the radish). (Once, years later, José's classmate, Carlos Del Rio, would address the envelope

of a letter posted to José in the following way. At the top of the envelope he would draw the picture of a radish. This he would follow with the suffix "witz." Then, on the next two lines, he would write the words "University of Pennsylvania" and "United States." Amazingly, the letter would reach José in a matter of some two or three weeks!)

Yet another professor from Spain, who came to the Polytecnico in the 1930's, was the entomologist Federico Bonnet. His specialty was the study of insects and their relationship to the presence of petroleum in a given area. Bonnet married a Mexican woman, and eventually he became a scientist for Petromex, the chief oil company of Mexico. He later hired one of his former students to become his assistant after she had graduated from the Polytecnico. This was Clemencia T. G. Alvarez (Coca), José's classmate and close friend. Clemencia eventually took over Bonnet's job at Petroleos when he left Mexico to visit Spain and see his former wife, who had never followed him to Mexico.

Each of these Spanish professors, all of whom had ranked at the top of their professions in their home country, now became José's teachers. José felt privileged to find himself in their classes. He immediately recognized what a unique and wonderful opportunity this was, to be able to receive training from world-renowned authorities and scholars. José continues to marvel at the results of this tremendous infusion of Spanish blood and culture into Mexican society, particularly into its academic circles, and how this all presented a rare, enriching and invaluable experience for Polytecnico students during such an interesting period of Mexican history.

The head of the Polytecnico at that time was Ingeniero Massieu, who taught advanced mathematics. (His son also taught at the school; he was José's professor of anatomical drawing.) The elder Massieu, the director, always carried a .45 automatic pistol in a small holster on the right side of his belt, and a reload cartridge with bullets in a small holster on the left. He was always accompanied by one or two bodyguards. Usually they would stand at the door outside the classroom during the lesson. (Years later, during the 1994 presidential elections in Mexico, the director's grandson, who would then be one of the heads of the P.R.I political party and slated to become attorney general, would be shot and killed on the streets of Mexico City by a competing political faction.)

When José entered the Polytecnico in 1938, he was registered as Number 83. This was to remain his student matriculation number throughout his stay at the school. On examination papers, students were never permitted to write their

names, but only their student numbers. This was to ensure that the faculty would remain uninfluenced while judging their papers since, in this way, they would continue to be unaware of whose papers they were marking.

Among the special training which José received at the Polytecnico, and something which he particularly valued, was the great number of field trips that he took with his professors and classmates. They would travel by bus into remote regions of Mexico, studying and collecting specimens of various plants, insects, and parasites. The Polytecnico had no museums of its own for teaching purposes. The staff, after discussing this problem, concluded that they had two choices in handling a small amount of money that they had available for obtaining teaching specimens. One choice would have been to buy these specimens outright directly from a commercial outfit such as the U.S. Edmonds Company. The other choice, which was finally selected, was to outfit a bus as a small portable laboratory. They would then spend the money on gasoline, food, and formalin (for mounting whatever specimens they could collect). Thus equipped, they would take students out into the countryside on field trips and collecting expeditions to gather these specimens themselves.

On the first of these field trips, José was the youngest to go along. Although he was only about fifteen years old at the time, his parents encouraged him to participate. The job that José was given on the first trip was the most menial of all, that of lab-boy. He was assigned to run errands, wash glassware, carry formaldehyde, and make the preparations for fixings. This latter task involved dissolving formaldehyde in water and, then, adding other chemicals, like picric acid, to the mixture. All materials collected, when immersed in these solutions, would remain preserved, fixed and, thus, prevented from spoiling. Even though these tasks were menial, José felt that they were important in several ways. They trained him to use laboratory techniques, acquainted him with conditions and life in the field, and prepared him for more advanced laboratory activities that he would encounter later. He felt extremely proud, honored, and excited to be allowed to accompany the group.

The field trips sometimes lasted as long as a week away from home. Everyone usually slept outdoors on the ground, on top of "petates" (knitted mats made from either straw, bamboo, or sugar-cane fiber). On later trips, José was allowed to accompany the others when they entered the caves that were being explored. Each person was given a bag containing his own color of confetti. He would sprinkle the confetti on the ground as he walked (or sometimes crawled)

deeper and deeper into the caves. In this way, the confetti, differently colored for each participant, remained along the trail, and it could be used later as an indicator to help trace the whereabouts of an individual who failed to return on time. José saw many wonders in the caves: strange varieties of bats, fish that were totally blind (having never been exposed to sunlight), and unusual creatures that he had never before observed or even known existed.

On one of these trips, Professor Dampf sent José from the field back to the bus, with instructions to find and bring additional equipment to the group. They were then collecting specimens in the field just outside the village of San Miguel de los Ciegos (Saint Michael of the Blind). Many inhabitants of this village were actually blind, a condition caused by tabanidos. (These insects lay their eggs in the back of the human ear. The larvae, when formed from the eggs, then travel under the skin to the eyes, where they sever the optical nerve, thus causing blindness in the individual.)

José made his way back to the bus (a distance of about half a mile), gathered the laboratory equipment together and, loaded down with these various articles, set out to rejoin the group. When he reached a fork in the road leading to the village, however, he suddenly grew confused. No signs were posted anywhere to help him decide which branch to follow. Then, he noticed a lone Indian working in the field near the crossroads. José hailed the man and, pointing to the left fork in the road, inquired, "Is this the way to San Miguel de los Ciegos?"

"Si, Patron, si!" responded the farmer with a bow.

José thanked the man and turning, followed the left fork of the road. After walking for about a mile, he finally realized that he was completely lost. He retraced his steps and finally, again, reached the crossroads. The Indian was gone by now, and José decided to follow the other branch of the road. Sure enough, about a quarter of a mile further along, he found Professor Dampf and his group. The Professor was quite upset.

"What kept you so long?" Dampf cried out.

José explained that he had gotten lost, and how the Indian had misguided him.

"Tell me exactly what happened," the professor demanded.

José recounted the episode in detail. When he finished, Professor Dampf raised his voice in exasperation.

"Fool! Idiot!" he cried out. "Don't you realize how you looked? Dressed in a white lab coat, appearing like a professional! Carrying all that glassware! That

peon saw you as a figure of authority! How could he contradict you? He would never dare! " As José stood, dumbfounded, the professor continued, "When you said, 'Is this the road to San Miguel?' how could he disagree with you, such a respectable person? Of course he said 'yes' to you!"

"But, Sir, what *should* I have said, then?" stammered José, perplexed.

"You should have put your equipment down on the ground," replied the professor, "folded your arms across your chest like this" (demonstrating) "and, only *then*, asked him, '*Which one* is the road to San Miguel de los Ciegos?' In that way, you would have gotten the correct answer!"

On another field trip, this one led by Professor Bonet, José was working inside one of the caves with Pepe Alvarez, when Bonet came running into the cave, waving a butterfly net over his head. Bonet had been chasing a particular butterfly for over half a mile, he told them, panting breathlessly, and he had followed it all the way into this cave. "Where is it?" he shouted. "Where is it?"

José, having seen that type of butterfly fluttering out of the cave only a minute before, exclaimed, "You just missed it, Sir! It flew out that way, outside!"

The professor gave a snort of disgust and, with a disappointed shrug of his shoulders, he sadly lowered his net. At that very instant, the butterfly that he had been chasing, which must have remained entangled in the folds of his net (all the

José (far right) with some of his classmates and the school mascot (a donkey). Notice especially Edmundo Azcarate (2nd from left), René Nuñez (4th from left), Lucia, Rosas Belese, and Amalia Macedo.

while unknown to Bonet) suddenly flew out of the folds of the mesh fabric and fluttered away. The butterfly which José had seen swirling around and then drift out of the cave, had been an entirely different one which appeared identical to the first. Professor Bonet, enraged, turned, cursed and, vehemently, lifted his net, shaking it wildly at José (whether to strike him with it or not, José never would be quite sure). Pepe Alvarez, with tremendous presence of mind, immediately launched into a loud discussion about another topic, seeking to divert the professor's attention. Bonet slowly lowered his net and put it down on the ground. Later, Pepe would often tease José about the incident, reminding him with a grin, "Remember how I once saved your life, that time Bonet was going to hit you with his net when you let his butterfly escape?"

Sometimes, on these field trips, the students would play pranks on one another. Once, instead of sleeping in tents, they were given a building to use as a dormitory. Here, everyone used a wooden cot with canvas slats supporting a thin mattress. These cots all had wooden posts, both at the head and the foot of each bed. One night, when most of the students were asleep, a group of five, led by a rascally older classmate, made its way stealthily to the cot of one of their sleeping friends. Silently, they lifted the cot and, taking care not to waken the sleeper, carried it outside, student and all. Noiselessly, they transported it down a small hill to a stream of water, where they gently placed the cot in midstream. Then, lighting candles and placing one on top of each of the four bedposts, they began to pray loudly, chanting songs of the dead. With a start, the sleeper suddenly awoke. Seeing what was going on around him, he stared in confusion and disbelief. Then, slowly, with a resigned sigh, he closed his eyes and, submissively, crossed both arms over his chest like a dead man, while the praying and chanting continued.

On later field trips, José was gradually given more and more responsibility. He remembers his messiest job, how he once had to open up the five hundred bats which the team had captured and then brought to him from a cave. José had to examine the creatures, collecting the worms inside the bats so that these parasites could later be studied. He wore no protective gloves during this operation. He was considerably frightened, knowing that some of the bats probably had rabies. For this reason, he worked with excessive caution throughout the entire procedure.

In 1938, Professor Aguirre Pequeño received a grant from the Rockefeller Foundation. This had been designated for the study of the disease *mal de pinto* (or "pinta," as it was sometimes called.) Pinto is a malady similar to another ailment

called "yaws." Years later, researchers would discover that both of these conditions gave rise to symptoms similar to those seen in mild cases of syphilis. They would then conclude that all three diseases (pinto, yaws, and syphilis) were each caused by a different, but similar corkscrew-shaped micro-organism of the *tre - ponema* family. In 1938, however, the cause of pinto was still completely unknown. It was then believed that the disease was passed along either by a bedbug, or else by a beetle, just as malaria was transmitted by a mosquito. It never occurred to anybody, at the time, that a human being could pass the disease directly along to another by skin contact.

Professor Aguirre Pequeño's Rockefeller Grant was awarded to him for research he was to undertake in determining the cause of pinto. This research would be done, first, by collecting bedbugs and beetles from the huts of the population in infected areas and, then, by examining these creatures for any micro-organisms which might cause the disease. Actually, the solution to identifying the cause of pinto would eventually be discovered by another research team, one headed by a scientist named Morgan, in Cuba, who also would work under a Rockefeller Grant. His approach would be to examine, not insects, but instead, scrapings from the sores of infected patients. Here, Morgan and his team would find a corkscrew-shaped micro-organism, which would lead them to suspect that pinto bore a relationship to syphilis and that it might, therefore, be transmitted through human contact. (To be sure, even had this approach been tried by Professor Aguirre Pequeño and his team in 1938, it would have failed to yield the desired results because, at that time, the microscopes that he used lacked the dark field necessary to display the crucial micro-organisms.)

Professor Pequeño, along with a few other faculty members (Sokoloff and Dampf among them), took a sub-group of about twenty students out into the countryside, to the area near Chilpancingo, in the state of Guerrero, to collect specimens for this study. José was one of this group. It turned out to be a somewhat lengthier and more exhausting expedition than they had expected.

On the return trip, when everyone was tired, both from the week's work and the several hours of riding on that final day, an unusual incident occurred.

They were heading towards Mexico City, still many miles away, when, late in the afternoon, the bus driver made a mistake. Passing through a small village, he suddenly took a wrong turn and drove his vehicle in the wrong direction up a one-way street. In doing so, he side-swiped a car that was parked facing in the opposite direction. The bus came to a screeching stop and, then, everyone got out

to examine the damage. In the meantime, a curious and increasingly vocal crowd of villagers began to converge on the spot. They soon started yelling, raising their fists and, after a few moments, began to jostle the visitors. Then the police arrived, and now it was discovered that the car which had been hit belonged to none other than the *alcalde* or mayor of the town.

Immediately, the police took everyone from the bus, and carted them directly off to the town jail. Throughout the noise and clamor, Professor Dampf remained unfazed. No sooner had they arrived at the jail, than he signaled to the others to let him do all the talking. Calmly, he reached into his shirt pocket and produced a letter, which he quietly, and with great dignity, handed to the chief of police. As the man read it, he suddenly blanched. The letter, written on official government stationery, had been signed by none other than the president of Mexico. In ceremonious terms, it declared that Professor Dampf, and his team from the Polytecnico of Mexico City, were engaged in scientific research of international importance. It also specified that this was the first time ever that a group in Mexico had been officially sponsored by the Rockefeller Foundation of the United States of America. He, the president, the letter continued, would deem it a special courtesy if this particular group were awarded every consideration possible. He specifically recommended that they be treated with the utmost respect, in light of the extreme importance of the project and the special international relationships which were involved.

A hurried consultation among the town's officials was immediately called. In a matter of minutes, the town's council reached a decision. The visitors were offered an abject apology. It was decided that, to amend matters, the direction of the one-way street involved in the accident would be reversed and, what is more, that it would be reversed *retroactive* to the preceding day. In this manner, the council declared, it could not possibly have been the bus driver who was at fault but, rather, the mayor of the town himself, for parking his car in the wrong direction! The officials then organized a meal to fete the visitors, with a party that lasted well into the night. When the bus finally departed the next morning, both Dr. Dampf and Professor Aguirre were presented with several gifts to take back to the president of Mexico, as tributes of respect from the entire village.

On an earlier trip, José had been one of eight students who left the larger group to go walking with Professor Aguirre Pequeño. It was late at night, and they roamed a small hill to collect insects. Pequeño, a tall, stout man, was also the professor of human anatomy. Often, his manner could be somewhat uncouth. In

class, for example, he would occasionally pick up the organs from dissected corpses and, suddenly, throw them – brains, testicles, penises and all – at the students, yelling, "Here! Weigh these!"

That particular night, as Pequeño and his students were working, they suddenly ran into a group of armed *agraristas*. These Indians, all dressed in white, were part of the movement to form *ejidos* (small parcels of land which, in 1937 and 1938, were taken away, by government orders, from the huge plantations and redistributed to the Indians.) The agraristas throughout the country were generally resentful and, often, quite hostile. They were taking it very hard, at the time, that some of the land had not been properly divided and that, on many plantations, owners were still refusing to relinquish parts of their estates.

On this particular occasion, the two groups, Aguirre Pequeño with his students on the one side, and the agraristas, on the other, unexpectedly came face to face. One of the agraristas said something which Aguirre Pequeño, apparently, did not like. In no uncertain terms, the professor retorted in Spanish with a common Mexican insult, telling the agrarista what he could do to his mother. It was a foolhardy action. Without hesitation, all of the agraristas, as a unit, quickly lifted their rifle straps up over their heads and pointed their guns directly at Aguirre Pequeño and his group. The professor and his eight students swiftly took to their heels and, at breakneck speed, ran into the woods nearby, where they were to hide all night long. The agraristas, meanwhile, after laughing uproariously and referring to Pequeño as a big clown with no testicles, finally turned and left. The following morning, upon returning to camp, Aguirre Pequeño reported the incident to Professor Dampf. Dampf was astounded and, not knowing what else to do, finally threw up his hands and admonished Pequeño to be more tactful next time, especially with students around.

On the trip to study yaws, Aguirre Pequeño became somewhat of a hero, although he was nevertheless considered a foolhardy and reckless one. Suspecting now that yaws was really a disease of dermal contact without any insect intermediary, the professor deliberately set out to prove this point by using himself as the subject of an experiment. He scratched the blisters of a patient and then, he deliberately transmitted some of the material oozing from the wound into a freshly-made cut on his own skin. Sure enough, about ten days later, Pequeño came down with the gray spots characteristic of the disease. He proudly displayed these for everyone to see. Later, Aguirre Pequeño was awarded a cash prize for this research.

Although he was the teacher of human anatomy, Pequeño also gave a course in Greek roots. This course was one that José always considered among the most useful that he had ever taken. He long continued to appreciate intensely how much this material would later enable him to break down, into their separate components, numerous medical and scientific terms which would be new to him and, by doing this, to discover their specific meanings. Pequeño had originally come to the Polytecnico from his native city of Monterrey, and José heard, later, that the professor had once again returned to his home there after he left his teaching position at the Polytecnico. Often, during the many times that José returned to visit Mexico, he would ask about Aguirre Pequeño and his whereabouts, but to no avail. Several people even told him that the professor had died.

On one trip, however, in 1988 when José arrived to attend a meeting of the Mexican Society of Nuclear Medicine in Monterrey, he once more brought up the subject of Pequeño's whereabouts. This time, he finally succeeded in locating the professor. It turned out that Aguirre Pequeño was, indeed, still alive, and that he now lived in Monterrey only a few blocks away from where the Nuclear Medicine meetings were being held. José, accompanied by another scientist from Mexico City, at last managed to find the house. He knocked at the door, and it was Aguirre Pequeño himself who answered. He invited them both in and motioned them into chairs. Then, after staring at José for a few moments, he finally nodded and said, "Oh, yes, you were 'the foreigner' in those classes I gave in Mexico City many years ago!"

This was about fifty years after they had last seen each other. Now they spent a wonderful hour together, reminiscing. It remained a most satisfying and emotionally moving experience for José to be able, at last, to personally express to his teacher, even at this late date, his deep appreciation for the training he had received years earlier.

Field trips made from the Polytecnico helped enormously to form strong bonds of attachment among students. José still considers several of his classmates from the Polytecnico to be among his dearest friends. He remembers, especially, from those years people like Carlos Del Rio, Edmundo Azcarate, and Juan Tamayo. Carlos was a tall, thin fellow with Mayan features. Though very clever, he often displayed a somewhat skewed sense of humor. Carlos took delight in posing questions which could be extremely personal, particularly in terms of religious preference, but he would always justify this by adding, "Of course, we're such good friends that you know I don't mean any offense!" When he was a

young boy, Carlos' mother had died and, shortly thereafter, his father remarried. His stepmother was a woman with whom Carlos found he was unable to get along. He soon left home and went to live with the Zapatas, the family of one of his classmates. He even got this family to officially adopt him.

Edmundo Azcarate was another classmate who was extremely personable. He was warm and charming, yet a bit roguish at the same time. He had a quick and lively sense of humor, and he constantly kept his classmates (and sometimes even his professors, despite themselves) doubled over with laughter. Once, during a physics lesson, the teacher posed the following question: If you were to drop a stone from the top of the Leaning Tower of Pisa, how could you measure the force of its descent? Edmundo was quick to respond, shouting, "I'd run down to the bottom of the Tower with my watch and time it!"

Edmundo was the son of a prominent orthopedic surgeon, one of the first such physicians in Mexico. Like Carlos, he, too, had lost his mother early in life. (Edmundo's mother had died in childbirth). As the only child of his father, Edmundo continued to be pampered and given every imaginable luxury. Despite this, he grew up to be completely unspoiled, outgoing and warm in nature, and everyone loved him. He never lost his charm and his sense of humor. Both Carlos and Edmundo continued to stay in touch with José long after he had left Mexico. Each, in his turn, made several visits to Philadelphia, and each one came to José's home there many times.

There was also a girl in class named Zenaida. Every time she walked into a room, her classmates would tease her by singing, in her presence, the song "Zenaida Ingrata," which was popular at the time. To this very day, José can never hear that song without thinking of his classmate Zenaida.

Another girl in the class was Dipna, a beauty who ignored all of the boys. (Even the older ones competed, in vain, for her attention.) She eventually dropped out of school, after falling in love with a married man. The only one in the school who ever pronounced her name correctly was Professor Sokoloff. When asked how he could remember it, he answered, "It's simple. It's a Russian name!"

Like many of the professors, a rather large group of Polytecnico students also were Spanish refugees. One of these students, Hector Martinez, became one of their leaders. It was he who led several parades for Partido Obrero de Unificacion Marxista (POUM), where the participants marched wearing uniforms of the Spanish army. Hector later married a charming and refined Mexican girl

named Bertha. Eventually, however, they divorced because she and Hector had no children. Bertha later remarried and had four children of her own. Hector never seemed to get over this episode in his life. Keeping the daughter that he and Bertha had adopted earlier, Hector moved to Cuernavaca, where he taught at the university. But now he would sometimes drink and, in this state, he could be a problem to his friends as well as his family.

During their days at the Polytecnico, Hector's sister was in the same class as José. Also in this class was Hector's cousin, a charming, but very skinny girl who hardly ate at all. (People constantly compared her to a toothpick.) She and Carlos Del Rio fell very much in love. Soon afterward, not very long after coming to Mexico, however, this girl died of a heart attack. It was not until he was in his forties that Carlos, who once said that he considered her the love of his life, would at last marry.

Federico Fernandez Gavarron was another Spanish refugee who was a student at the Polytecnico. Severely crippled from polio, Federico walked with the support of two canes, one in each hand. Despite this extreme handicap, he managed to lead a rather successful life in Mexico. He would eventually go to work at the biochemistry department of UNAM, first at the dental school, then at the medical faculty. After not having seen him for over forty years, José was to meet him again unexpectedly at a conference in Durango, Mexico in 1982. Then, at Federico's request, José would arrange for him to come, with his wife Soledad, to Philadelphia, where Federico would receive a year's further scientific training under José's tutelage. This would be at the Veterans Administration Hospital, at the Radioisotope Research Laboratory where José was then chief. José even managed to obtain, for Federico, the title of visiting professor of biochemistry from the University of Pennsylvania, and he also generously included Federico's name with his own in three of the research papers that José was writing at the time.

In the entire group, the dearest of José's classmates, and the one whom he loved and admired the most, was José Alvarez del Villar, also known by the nickname of Pepe (or "Poca," as many of his friends affectionately called him.) Pepe was about twenty years older than José. When he first came to the Polytecnico, Pepe was married to the sister of Chucho Solorzano, one of Mexico's most famous bullfighters. Pepe had one son, a boy named Tikul. Pepe had previously been sent by his father to study in the United States, at the University of Texas A & M. From this institution, Pepe had already received his bachelor's degree in biology. Now he enrolled at the Polytecnico to study for an advanced degree in ichthyology.

Pepe was a charming man, soft-spoken, a bit reserved, but quietly witty. His classmates immediately took a liking to him and, since he was about fifteen years older than most of them, he soon became both their leader and their respected role model. Pepe had great originality in his approach to life. He was also extremely talented in a variety of fields. In addition, he was the only student in class to own a car. In those days in Mexico, this constituted an unusual and enviable distinction. The car was a Ford, an elegant automobile complete with a rumble seat. Pepe enjoyed taking his classmates for rides in the car, something that he did frequently.

Pepe's quiet and refined manner, his maturity and wisdom, and his great personal kindness and generosity soon became legend. He was intelligent, gentle, and he spoke quietly, yet he also had a delightful sense of humor. He was a philosophical man and a deep thinker, possessing tremendous insight. After Pepe received his degree in ichthyology, he chose to specialize in the fish of Lake Michigan. Eventually, he came to be regarded as an authority in this field. Pepe's favorite riddle, which he never tired of putting to anyone who would listen, was, "Which two states, one in Mexico and the other in the United States, bear the same name?" The answer, it turned out, was Michoacan in Mexico and Michigan in the United States. Pepe even named his dog *Michi* (the word for "fish from a lake" in a dialect of the Nahua Indian language).

One of Pepe's special interests was charros (the cowboys of Mexico). He studied, wrote, and published several volumes on their way of life and their customs. For these works, he became renowned and highly respected. As his own personal hobby, Pepe collected horseman's spurs. He mounted his unique collection and prominently displayed it in the large second-floor study of his home. It occupied an entire wall, from floor to ceiling, and involved over a hundred pairs of assorted spurs from all over Latin America and Spain The collection was novel, and it was considered quite valuable.

Pepe also collected stamps but, because of the original way in which he chose to display them, his collection proved attractive even to those who had no particular interest in philately. Pepe grouped his stamps in an album according to subject matter, rather than by their nationality. All those stamps which illustrated a particular topic, he would place on the same page. Then, using either colored pencils or water-colors, Pepe would fill in a background, sketching a scene which coordinated and related all of the individual stamps to one another. Each stamp thus became an element of a single, overall drawing which, in itself, was a thing

of beauty, artistically interesting. One page, for example, displayed the sketch of a graceful tree, set against the background of a Mexican landscape. A single stamp was affixed to each branch of the tree and, some were attached to several well-placed shrubs and cacti in the background. Thus, every stamp represented a flower in bloom. The effect was arresting and unique, and it enormously enhanced the beauty and appeal of each individual stamp.

Pepe came from a very prominent and politically influential family. He was the son of a famous Mexican general. Pepe's father had headed the garrison which protected the Municipal Palace in the Zocalo of Mexico City under President Plutarco Elias Calles. Calles was the president who had supported the state in its war against the church. During this war, thousands of priests and nuns were murdered. Calles, a man of Syrian background, was eventually succeeded by Lazaro Cardenas. Once Cardenas came to power, he established and strongly supported the powerful anti-cleric movement in the country. Pepe's father became one of Cardena s' people. Pepe was the only legitimate son of the general and as such, he was also the general's favorite. Pepe had several half-brothers, among these, the first aviator to fly transports in Mexico. (This half-brother would eventually be killed, upon take-off, in the crash of an Aeromexico plane which he was flying to New York.)

From the very beginning of their friendship, Pepe took José, who was the youngest (and, often, affectionately regarded as the "baby" of the class), under his wing. Pepe would protect José from the bullies in the group, constantly guiding and advising him and, indeed, treating him almost as if he were Pepe's own son. In many ways, Pepe became José's mentor and inspiration. José continued to love, admire, and respect him deeply.

In the same class at the Polytecnico was Clemencia "Coca" Telles-Giron. She was distantly related to the ministerial head of foreign relations in Mexico. A couple of years older than José, Coca was an extremely spirited and clever girl. She sometimes behaved impishly, but her personality was sparkling. She was very bright, achieving highly in her studies. Coca eventually went on to specialize in a branch of entomology that pertained to the identification of chitin (outer shell) remains of insects found in fossil deposits. This was to become extremely important in the detection of oil, since the presence of large numbers of these insect-remnants could indicate the presence of oil in a particular area. Later, when oil was eventually discovered in the sea-bed beneath the Gulf of Mexico, it became essential to pinpoint its exact location, so that the company could deter-

mine precisely where to do the drilling. Later, after Coca would graduate from the Polytecnico, Dr. Federico Bonet, the Spanish professor of zoology, would advance her name to the heads of Mexico's largest oil company, Petroleos Mexicana. In this way, he would obtain for her an important position with the company. Coca would then become the one to make critical decisions for Petromex. These decisions were extremely crucial financially. Coca would continue in this responsible position for the rest of her working life.

Soon after they met at the Polytechnic, Coca and Pepe fell in love. After graduating at the Polytecnico, Pepe returned to the University of Michigan to obtain a doctorate. Coca eventually grew impatient, and she finally wrote him a letter advising Pepe that she did not intend to wait for him forever. Pepe and Coca then married each other, in 1948. A couple of years later, Coca suddenly became ill. She required surgery, and this, unfortunately, rendered her unable to bear children. Despite this disappointment, however, Coca's marriage to Pepe proved to be an extraordinarily happy one. It lasted for some thirty years, until he eventually died at the age of eighty.

It was at the home of Pepe and Coca that José, sometimes by himself, and sometimes with Josy, would stay when he later returned to visit Mexico. There was one room in the house which Coca always referred to as "José's room." It had its own private bathroom and, although small, it was beautifully furnished and tastefully decorated in varying shades of brown. Its style followed a Mexican Indian motif, with pottery displayed on the small table in the corner, and well-placed archeological relics hanging from the walls, enhancing this theme. The room had two couches, catercornered to each other, and, along one wall, a wide series of cabinets and closets. Some of these Coca always kept available for José's belongings whenever he would come to visit.

On his first trip back to Mexico, in 1955, after having been away for fifteen years, José registered at the Alameda Hotel in the center of town. This was close to the conference headquarters where he was due to present a paper and attend meetings. On his second day there, he returned to his hotel room from a session, to find that all of his belongings were gone. Rushing in disbelief down to the registration desk in the lobby, he was met by the clerk there who told him, "Señor, a distinguished gentleman, a Dr. Alvarez de Villar, came by earlier today. He took all of your belongings with him, and he said to tell you that, when you come to Mexico City, your place is at his home, not in some hotel room! He also said that if you want your things back, you'd better come to his house immediately. You

know, that's the beautiful old section of town where the pavements are cobblestone, and where all the houses are in the colonial style!" From that time on, and for years to come, it was at Pepe's and Coca's home where José came to stay when he visited Mexico City.

In 1971, Pepe had the first of a long series of strokes that would gradually weaken him. They would eventually leave him crippled and confined to a wheel chair. During the last ten or fifteen years of their marriage, Coca continued to remain ever more devoted to him, constantly encouraging him, and attending to him with the help of a male nurse named Mendieta who lived in the house twenty-four hours a day. He slept in the bed beside Pepe's, and became Pepe's companion, almost like a brother to him. Coca, despite her full-time and demanding job at Petroleos, continued to attend to Pepe's physical, spiritual, and intellectual needs as if he were her child. She saw to it that he was taken, in his wheelchair, to concerts, the ballet, lectures, and the theater. In this way, she helped to keep his spirits up, and his mind alert. Coca also made parties in their home, and she encouraged a constant stream of visitors to come to the house. She remained a devoted wife, and her ideas in enriching his life during these difficult times, were truly inspired. They spent an exemplary life of intense devotion to one another.

Through most of his life, Pepe had remained an atheist. However, when he was almost eighty years old, and shortly before he died of a stroke, Coca at last convinced him to take the vows of Catholicism. Those who knew Pepe well throughout his lifetime regarded this as a gesture to satisfy the feelings of Coca, who loved him deeply and who often referred to him as "a leader among men."

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