A LEGACY OF THOUGHTS

by Bernard C. Sherman

PREFACE

Serengeti, Tanzania, December 27, 1996.

I admit to being a workaholic.

This is day eight of my two week vacation with my wife, Honey, and four children, Lauren, Jonathon, Alexandra and Kaelen.

Usually when going on vacation, I take business files along and am in frequent contact with my office. This time, however, I took no files and have been incommunicado.

It occurred to me today that there is no better time then now to put pen to paper and begin to write a text that has been forming in my mind for some time.

I have always been very conscious of my personal mortality.

I have enjoyed considerable success in building the Apotex group of companies, which probably will survive me.

However, memories are brief, and even should there survive some physical manifestation of my existence, my thoughts will be forever lost unless I commit them to

paper.

I thus set out to write this text in the perhaps arrogant belief that what I have to say may be of use or interest to my progeny and others.

CHAPTER 1 - THE MEANING OF LIFE

From my earliest years, I have been an atheist.

I find it incomprehensible that countless persons, including some of apparent intelligence, believe not only in existence of a "Supreme Being", but in very specific and seemingly preposterous mythologies.

Having debated with numerous theists, I have come to realize that the best way to bring debate to a brief conclusion is to explain that one cannot have meaningful dialogue without a mutual understanding of what is meant by words to be used. I thus ask that, before the conversation proceeds, the theist define exactly what he means by the word "God". Is it an intelligent three-headed monster who created the universe and who intercedes in our lives at its whim? Is it an evil being that creates suffering for its sadistic gratification? Where did this creature come from? If our universe needed a creator to explain its existence, then why did this creature not also need a creator?

There follow invariably an inability to answer my questions as a prerequisite to debate.

What seems clear is that most if not all theists cannot define that in which they purport to believe, and any attempt at explanation leads to absurdities.

It thus appears that theistic beliefs are not a result of observation and logical deduction, but are either a thoughtless continuing acceptance of what has been "learned" in naive youth or, in the alternative, a state of mind founded in fear rather than reason, in an attempt to give meaning to life and ease the apprehension of death.

Clearly a desire for something to be true does not make it so. A truthful answer to whether or not a "God", however defined, exists can only be grounded in observation and logical deduction.

It is clear that numerous questions can be asked for which we have no answers and may never have answers. Did time have a beginning? How could the universe have had a beginning without there being something present to cause the beginning? Is the universe finite? Are there other universes? The fact that there are imponderables does not, however, prevent intelligent beings from coming to some conclusions with a high degree of confidence in their correctness, based on observation and logical deduction.

As stated by Descartes; "Cogito ergo sum (I think therefore I am)". The fact that we think leads to the inescapable conclusion that we do exist.

Based on the anthropological evidence, no thinking mind can doubt that we and all other species are here as a result of evolution, through countless individual episodes of mutation and natural selection.

Another inescapable conclusion from endless observation is that mass and energy consistently behave in space and time according to laws of physics which have been largely, although not yet entirely, elucidated.

The foregoing statement, accepting it to be true, leads to the corollary that there is no "God" that interferes in the operation of the universe. Moreover, the postulation of a "God" to explain creation does not serve that purpose, as there would follow an even more imponderable question as to the origin of that "God". The only plausible conclusion is thus that there is no "God", however reasonably defined.

Another corollary of the laws of physics is that we have no "free will". Each of us has a physical existence analogous to the hardware and software of a computer. Just as the response of a computer to any input follows from how it is built and programmed, our response does likewise.

If an automatons were built with human appearance and adequately programmed to simulate human behaviour, how could an objective observer conclude that the human has free will but the automaton does not? There is undoubtedly a subjective "feeling" within each of us that we are "free" to make certain choices. However, the fact that we consist of mass-energy, albeit of very complex structure, and the fact that mass-energy believes according to laws of physics must mean that every event of the future, including our every future thought and action, is predetermined by the present. Free

will is an illusion.

"Meaning" and "purpose" are, by definition, dependent on an intelligent being having an intent in mind. A corollary of the nonexistence of a "God" is that we are here with no "meaning" or "purpose" to our lives.

In summary, I hold the following to be self-evident truths:

1. There is no "God".

2. There is a universe and we do exist.

3. We and all other species are here as a result of evolution.

4. Mass and energy behave in space and time according to laws of physics that have been largely, but not yet entirely, elucidated.

5. Free will is an illusion.

6. Life has no meaning or purpose.

CHAPTER 2 - THE PURSUIT OF HAPPINESS

I find no inconsistency in holding intellectually that life has no meaning, while at the same time being highly motivated to survive and to achieve.

We are all driven by instincts that are genetically encoded and integral to genetic survival and evolution.

I cannot see that human behaviour differs in any fundamental way from that of numerous species on the savannahs of Serengeti. We are all driven by our instincts to eat, drink, copulate, protect ourselves and our young, and cooperate with others, particularly those most closely related to us, if and when it is to our mutual advantage. Happiness is, I believe, best defined as satisfaction of these drives, and it is that which we all pursue.

Humans are distinguished by superior intelligence, which gives us greater self-awareness and ability for philosophical thought. We also have unique manual dexterity, which together with our intelligence has given us unparalleled control over our environment. These distinctions are, however, not fundamental, but only a matter of degree.

In pursuit of happiness, as aforesaid, we cooperate with others. We do so both in direct

personal dealings and by establishment of and submission to governmental authorities.

Although we all share the same drives, it is clear that individuals exhibit these drives in different proportions, be it as a result of genetic differences, differing environmental influences, and differing opportunities.

Individuals who help others to an unusual extent, are considered to be "kind", "moral" or "generous", although, if my thesis that everything is done in pursuit of happiness is correct, then there can be no such thing as attruistic, kindness, generosity or morality.

I have always felt disdain for organized religion and for the foolishness or hypocrisy of clergymen who sell religion as a source of morality or everlasting life. Undoubtedly, there are many persons who are both committed to religion and generous, but I see no general correlation. Indeed, countless clergymen and others who espouse religion live in relative opulence while much of humanity languishes in squalor. If anything, from my experience in fundraising for charitable organizations, I have sensed a reverse correlation. Atheists often are enormously more generous than persons obsessively committed to seemingly absurd religious rituals. It may be that persons who believe that they get salvation from observance of rituals feel less need to derive happiness from helping others.

Voltaire said that; "Nobless oblige"; with power and wealth comes obligation. I do not

see any rational basis for that pronouncement. There is no objective basis to hold that anyone is obligated to do anything not required by law. Each person can be expected only to pursue personal happiness in whatever manner he sees best from his own perspective.

Power and wealth bring no obligation, but they do bring opportunity.

Given that our instincts give us a desire to help others, particularly those close to us, power and wealth bring an opportunity to derive an extra measure of happiness by acting to help others, be it family, friends, members of our community, our country, or mankind at large.

CHAPTER 3 - MY EARLY YEARS 1942-1967

I was born in Toronto on February 25, 1942 to Herbert Sherman and Sara Winter Sherman. My sister, Sandra, had been born eighteen months earlier.

My parents had both also been born in Toronto, my father in 1906 and my mother in 1910. Their parents had arrived in Canada at the turn of the century as a result of antisemitic pogroms in Eastern Europe, my father's parents from Russia, and my mother's parents from Poland.

My legal given names were "Bernard Charles", but I have always been called "Barry. My mother later told me that she preferred the name "Barry", but thought that "Bernard" sounded more distinguished and would serve in me better as a legal name in later life.

My first ten years were unremarkable. My father earned his income as president and senior of two partners in American Trimming Company, a small manufacturer of zippers in downtown Toronto.

On Monday, November 17, 1952 my father went to work but did not return. He suffered a massive heart attack at work, and died immediately. We subsequently learned that he had suffered from a congenital heart defect, but had never informed my mother, perhaps because he did not believe the prognosis and did not wish to burden her with

concern. Obviously, he should have told her.

I do not have strong recollections of my father. One episode remains clear. On a Saturday morning some weeks before his death, he took me with him to work. I asked what I could do to help while he worked in his office. He sat me at a table where zippers where ready to be counted into boxes of twenty. In order to please him, I worked quickly. When he finished his work and came to get me, he exhibited surprise at the number of boxes I had filled, apparently more than would have been done in the same time by any of his paid staff. However, he then proceeded to select a few boxes at random to check the counts. I was extremely offended that he doubted that my counts would be accurate.

Notwithstanding this specific memory, I'm sure that my father was a loving parent, as was my mother.

I do not recall feeling any great sense of loss upon my father's death. However, some weeks later I was at school in a class being taught by a specialty teacher, and the teacher began to scold me for daydreaming and being inattentive. Coincidentally, at that moment, by homeroom teacher entered the room, and on hearing what was happening, said aloud to the specialty teacher that I had suffered a "recent family tragedy" and should be excused for inattentiveness.

I recall being surprised that my teacher would know about my father's death, and also recall wondering whether or not she was correct in attributing my inattentiveness to my father's death.

Although I do not know to what extent, if any, I was affected by my father's early death, a psychologist would likely suggest that the drive to achieve which I later exhibited was caused, at least in part, by a resulting insecurity.

A year earlier, when I was nine years of age and in grade 5, I had been nicknamed "grandpa" by my teacher, as a result of my apparent lethargy. From that early age to the present, I have been continuously aware of chronic lethargy and fatigue, which has made it all the more difficult for me to fulfill that drive to achieve.

Before her marriage, my mother had been an occupational therapist. Upon my father's death, my mother received little from the sale of my father's interest in his business. She thus resumed work as an occupational therapist in order to support herself, my sister, and me.

I did not excel as a student either in primary school or in the earlier years of high school. However, as time went on, not only did I become more motivated and competitive, but I discovered that I had unusually strong skills in mathematics and the sciences. When in grade 13, I won first place in a national physics contest for high

school students, and I graduated from high school with thirteen "firsts" (i.e. subjects with an "A" grade), more than any other student in the province of Ontario. My marks were not necessarily the highest, so that the number of "firsts" may have been more an indication of motivation than of intelligence.

Throughout high school, in addition to being lethargic, I was physically awkward and introverted. I had few friends, but did develop a strong friendship with Joel Ulster, who subsequently became a business partner for several years, and who has remained a lifelong close friend.

In September 1960, I began undergraduate studies in Engineering Physics (now Engineering Science) at the University of Toronto. I specifically chose Engineering Physics because it was reputed to be the most difficult of programs related to mathematics and the physical sciences.

Grade averages of all students were published annually by the University. Among all students in the Faculty of Engineering, I ranked fourth in first year, third in second year, second in third year, and first in the fourth and final year. Upon graduation, I was thus awarded the Wilson Medal for standing first in Engineering Physics and the Gold Medal of the Association of Professional Engineers for standing first in the entire Faculty. It seems that the tougher the going got, the better I did.

Before the death of my father in 1952, my mother, sister and I had spent our summers at our cottage near Barrie, Ontario. In early 1953, my mother sold the cottage, and I was sent to summer camp in the summers of 1953 to 1957. Perhaps needless to say, I did not enjoy camp. I felt imprisoned rather than on vacation.

Beginning in 1958 when I was 16 years of age, I spent my summers in Toronto working at various jobs.

In the summer of 1958, for lack of another possibility, I joined the student militia of the First Locaing Regiment, Royal Canadian Artillery. I did not enjoy that summer either, as the drills were physically gruelling for me and, moreover, I was, and always have been, reluctant to submit to any authority. Most memorable were the several sessions with the Regiment's Chaplain, who preached Christianity, and whom I engaged persistently in aggressive and disrespectful debate, much to the amazement of my fellow recruits.

During the summer of 1959, I worked for the Ontario Government processing useless information in an obscure office in the basement of Queen's Park.

The summers of 1960, 1961 and 1962 were spent working for my mother's younger brother, Louis Winter. Uncle Lou was a biochemist. He had, some years earlier, founded Winter Laboratories which was a medical testing laboratory, located on Barton

Street in Toronto, the bulk of its work being pregnancy tests done on urine samples picked up from drug stores. He had also more recently started Empire Laboratories, which was a small distributor of generic prescription drugs. Empire Laboratories operated out of a converted house on Ossington Avenue. The operations at that location consisted of the repackaging of tablets and capsules purchased in bulk from American generic manufacturers.

I spent the summers of 1960 and 1961 as a driver, picking up urine samples from and delivering pharmaceuticals to pharmacies.

In 1962, Lou established his first pharmaceutical manufacturing operation at 77 Florence St. That summer, I worked at the plant helping set up operations.

Earlier that year Lou's wife, Beverly, had been diagnosed as having leukemia, and he decided to take off several weeks for a vacation with her in Bermuda. The staff was small and Lou left no one in particular in charge. He was also unreachable by telephone. Before he left, Empire had been awarded a contract to supply ASA tablets under the private label of the recently established Towers Department Stores. Lou had arranged the production of what he though was ample inventory, but, a few days after he left, the Towers office phoned to advise that sales were larger than expected to ask us to supply much larger quantities.

I took it upon myself to phone Mrs. Pani Relle, at Atlantic Chemicals, who was the supplier of bulk ASA, and negotiated with her purchase a substantially increased quantity at a substantially lower price. I also organized around-the-clock production to fill the orders. Upon his return, Uncle Lou was very pleased with what I had done.

Although I did not know it the time, these summers at Empire Laboratories would later prove to be of critical importance to my future career.

In 1963, while in my third year of Engineering Physics, I was one of two Canadian students selected by the U.S. National Aeronautics and Space Administration (NASA) for its summer program for promising undergraduates. I spent several weeks in classes at Columbia University in New York City, followed by a several week tour of major NASA installations throughout the U.S., including the launch facility at Cape Canaveral.

After completing the fourth and final year of Engineering Physics in May 1964?, I went to work for the summer at the Spar Aerospace Division of DeHavilland Aircraft in Toronto. My assignment related to analysis of the vibrational dynamics of the ISIS satellite, which was then being designed.

My first choice of a university for graduate work was M.I.T. (The Massachusetts Institute of Technology). I was accepted into the graduate program in M.I.T.'s Department of Aeronautics of Astronautics and was awarded a fellowship which covered both tuition

and living costs. I thus set out for Boston and M.I.T. in September 1964.

I had expected that graduate work at M.I.T. would be much more challenging than undergraduate studies at the U. of T., and that competition would be much tougher. I was surprised to find otherwise.

I was awarded a Master of Science degree in Aeronautics and Astronautics in June 1965, and Doctor of Philosophy in Systems Engineering in January 1965, thus earning both a Masters and a Doctorate in a little over two years. My gradepoint average on leaving M.I.T. was a perfect 5.0.

My Ph.D. thesis was entitled Precision Gravity Gradient Satellite Altitude Control.

It consisted of about two hundred pages of mathematical analysis of the dynamics of a system for controlling the orientation of a satellite in earth orbit, a system which I had invented and on which I subsequently obtained a U.S. patent.

In the first week of November 1965, during my second year at M.I.T., I received a phone call in the middle of the night. On hearing the phone ring, I expected that it would be a call to tell me that Beverly Winter, my Uncle Lou's wife, had died, as she was then terminally ill with leukemia. I was astounded to be told by my sister, Sandra, not that Beverly had died, but that Lou, who was then forty-one years of age had died.

He had suffered a heart attack (aneurism) at his office and been taken to St. Joseph's Hospital where he died soon after arrival. St. Joseph's was the very hospital in which his wife, Beverly, lay terminally ill. I went to Toronto for Lou's funeral, and I visited Beverly at St. Joseph's Hospital. I recall that, when I was in her room, all the lights when (went) out in the Great Blackout which caused power losses in much of the eastern United States and in Canada. Three weeks later, I had to return to Toronto again for Beverly's funeral.

Lou and Beverley Winter left behind four sons, all of whom were subsequently adopted by Dr. Martin Barkin and his wife, Carole.

In their wills Lou and Beverly had appointed as executors and trustees of their estates the Royal Trust Company and ~~two~~ 3 lawyers, David Ward and Martin O'Brien. By the time I obtained my Ph.D. in January 1967, I had decided that I did not want to seek employment as an astronautical engineer. I was interested in both science and business, and I also wanted to return to Toronto to live. Thus, in January 1967, I returned to Toronto to seek out an opportunity in a scientific business.

one accountant and Sol Layton

CHAPTER 4 - EMPIRE YEARS 1967-1973

When I returned to Toronto in early 1967, Joel Ulster was working toward Certification as a Chartered Accountant and was employed at a firm of accountants. We had an understanding that, if we could arrange and finance a suitable acquisition, he would leave accounting and join me as my partner.

The obvious target was Empire Laboratories, the generic pharmaceutical firm which had been founded by my Uncle Lou. Not only was it a scientific business, but I had knowledge of it, having worked for Lou in the summers of 1960, 1961 and 1962.

I phoned the Royal Trust Company, which was one of the executors and had been allowed by the other two executors, David Ward and Martin O'Brien, a free hand in managing the estate. They told me that they were not yet interested in selling.

Because the acquisition appeared ideal, I did not back off. I went to visit the offices of Empire Laboratories to talk to some of the staff. The operations were now located in a five storey building, at 301 Lansdowne Ave. in Toronto, to which the company had moved before Lou Winter's death in 1965. I learned that the Royal Trust Company had appointed as president on a part-time basis Dr. George Wright, who was a Professor of Chemistry at the University of Toronto and had previously been a consultant to Lou Winter. I learned from the staff that they considered Dr. Wright to be incompetent to

manage the business, that sales had declined from over a million dollars per year in 1965 to about eight hundred thousand dollars per year, and that the company would likely soon be insolvent.

I phoned David Ward and Martin O'Brien to tell them what I had learned, to suggest that the trust company might be more interested in continuing to manage Empire Laboratories to earn fees than in a prudent sale, and to point out that, if the company went insolvent, Lou's children might some day hold them liable for negligence as executors and trustees.

Within days I received a phone call from the Royal Trust Company advising that they were ready to negotiate a sale. We were given full access to the books and records, as a result of which our suspicions of imminent insolvency were confirmed. We offered to purchase the assets at net book value, which would require payment of about two hundred and fifty thousand dollars after deduction of the liabilities to be assumed.

Royal Trust was reluctant to accept. There had been eager buyers at much higher prices upon Lou's death in 1965, and Royal Trust thus now franticly sought out other potential buyers.

While awaiting an answer from Royal Trust, I received a phone call from Jules Gilbert. Jules was the founder and owner of Jules R. Gilbert Limited, another generic

went bankrupt after purchasing "Starkman"

manufacturer that he had founded in the mid 1950's. Jules is considered to be one of the fathers, if not the father, of the Canadian generic drug industry. Jules asked that I visit with him at his offices and factory on Dundas Street in West Toronto, and I obliged.

He gave me a tour of the premises and introduced me to his son-in-law, Fred Klapp, who was then endeavouring to expand sales through telemarketing.

Jules told me that he had heard that Joel and I were negotiating to buy Empire Laboratories, and he wanted to warn me that the purchase would be a great mistake. He said that he had just completed formulating a new plan that would make his company very successful and would put Empire Laboratories out of business within months. He told me that he required some further funding for his new plan and thought it would be best for both of us if I were to purchase a minority position in his company instead of buying Empire Laboratories. He said; "If you do so, I will be the king, but you will be the crown prince."

I told him that I could not give proper consideration to such a proposition without knowing what the plan was that would put Empire Laboratories out of business. He responded that the plan was of such great value that he did not wish to tell me, but on being pressed he relented. He told me that the plan was to be known as the "7P Program" which was an acronym for "Prorated Prescription Pricing Plan for Physicians, Pharmacists, and Patients". Instead of being packaged in bottles of 500 or 1000 for

dispensing by the pharmacist, each product would be packaged in the usual prescription quantity, be it 7, 10, 30, or whatever.

The pharmacist would then only have to place his dispensing label on the package. Such "unit of use" packaging was already prevalent in Europe, but not North America. He further stated that the price for each package would be exactly the same regardless of cost of production. I told him that uniform pricing sounded impractical and would undoubtedly result in small sales of products priced too high and large sales of products priced too low.

He responded that physicians would appreciate the uniform pricing and would insist on use of his product for all prescriptions.

It appeared to me that Jules Gilbert, although a very nice gentleman and very knowledgeable, could not distinguish between what was practical and what was not.

Within days after that meeting, Ben Ulster, Joel's father, told us that his friend Lou Craig wanted to have lunch with Ben, Joe and me, to also try to talk us out of proceeding with the purchase.

Lou Craig was a brother-in-law of Jules Gilbert. They had originally been in business together but had parted company some years earlier. At lunch, Lou Craig explained

that he had recently sold his generic drug company, which he had operated under the name Bell-Craig, to an American Company, Denver Laboratories. He said that the generic drug business was a commodity business that was and always would be highly competitive. He said he was glad to be out and that if we proceeded to buy Empire Laboratories we would inevitably fail and lose our investment.

He also advised us against investing with Jules Gilbert, and stated that we should entirely refrain from investing in this industry.

Despite the warnings of Jules Gilbert and Lou Craig, Joel Ulster and I decided to proceed to try to complete the purchase, although not without substantial trepidation.

Royal Trust kept putting us off day after day, apparently being reluctant to accept our offer, notwithstanding that there appeared to be no other buyer in sight.

NOT TRUE

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I phoned David Ward and Martin O'Brien again. I told them that we were about to pursue another opportunity, and that if our offer to purchase Empire were not accepted within two days it would be withdrawn. Within the two days Royal Trust advised that they would accept our offer, and our solicitors began to draw up the formal documents.

It remained to arrange the financing. We required about two hundred and fifty thousand dollars to complete the purchase, plus an operating line of credit.

At that time, my mother had investments totalling about one hundred thousand dollars. She offered to put up all of her assets as security for a bank loan. The Bank of Montreal, at which my mother and I both banked, agreed to lend me one hundred thousand dollars against my mother's assets, which was the full face value. It still seems surprising that both my mother and the Bank were prepared to take that risk, as we easily could have failed. Fortunately, we did not fail.

The remaining one hundred and fifty thousand dollars was advanced by Ben Ulster, Joel's father. Ben also arranged for an operating line of credit at Toronto-Dominion Bank.

We completed the asset purchase in September 1967. For that purpose, we incorporated Sherman and Ulster Ltd., so that the business became Empire Laboratories, a division of Sherman and Ulster Limited.

Joel and I had decided that I would be president, and he vice-president. Given that I was the scientist, I was to be responsible for production, quality control, and product development. Joel was to be responsible for sales, accounting, personnel, and administration.

The very day we took control, we terminated the services of Dr. George Wright.] NOT TRUE

Jim Church, the sales manager, informed us that Novopharm Limited, another generic firm founded a few years earlier by Leslie Dan was now a serious competitive threat. Jim explained that for those several years, Empire Laboratories had been supplying products to Novopharm in bulk, and Novopharm had been packaging the products and undercutting Empire's prices at Empires' pharmacy accounts. Jim had repeatedly asked Dr. Wright to cease supplying Novopharm, but Dr. Wright had nevertheless continued the sales. Jim stated that the selling prices to Novopharm had been too low and that he had suspected improprieties but could not prove it.

NOT TRUE

We immediately ceased all sales to Novopharm, but the horse was already out of the barn. By then Novopharm had manufacturing capability of its own, and was no longer dependent on Empire.

We recognized that, if we were to succeed, we would have to operate efficiently, provide good quality and service, and develop new products as quickly as possible.

At that time I knew little about pharmaceutical manufacturing, and virtually nothing about how to formulate a tablet or capsule.

Within the first few days on the job, I asked Jim Church to provide a list of all products with quality problems, in order of priority. Number one on the list was ascorbic acid (Vitamin C) tablets. Jim told me that the tablets were so soft that they were breaking in

the bottles, and much of what was sold was being returned by the customers.

The production department was on the third floor of 301 Lansdowne Avenue, and the production manager was Rehmat Sheikh, who was a pharmacist trained in India.

I went up to Rehmat's office and I asked him to explain to me what the problem was with our ascorbic acid tablets. He responded that there was nothing wrong with the tablets. He said that he had designed the formulation himself, and that every product formulated by him was the best that could be made.

I then went to the second floor to talk to the packaging supervisor. He told me that Rehmat was wrong, that the tablets were very soft and that they broke even if handled very carefully.

I obtained samples of ascorbic acid tablets of other manufacturers to compare to ours. Ours were much easier to break than the others, and were clearly too soft. It was thus clear to me that Rehmat Sheikh was both incompetent and arrogant, which is a potent combination.

Coincidentally and fortunately, a few days later, when I was still trying to figure out how to handle the problem, Rehmat told me that he had been offered a job as vice-president of manufacturing at another firm and at a higher salary, and he would have to resign

unless we gave him a title of vice-president and a substantial raise in salary. I immediately told him that I would accept his resignation and I asked him to leave that day. He then told me that he expected that, in addition to paying him up to date, we would give him a substantial bonus for his past efforts. I responded that any past efforts were for Empire Laboratories Limited, and not for Sherman and Ulster Limited. Moreover, any available bonus money had to be reserved as incentives for employees who were staying and not paid to a man who had resigned to go elsewhere.

The only other person in the production department with any professional training was Chris Retchford, a young man who has studied pharmacy for two years at a university in Australia, had left and come to Canada without having earned a degree in pharmacy, and had recently joined Empire as production supervisor.

I told Chris that I did not want to hire a replacement for Rehmat, and would make Chris Acting Production Manager reporting directly to me, with the possibility of appointment as permanent Production Manager, depending on how things went.

Neither Chris nor I had any significant knowledge relating to the formulation of pharmaceutical products; that is to say, the selection of inactive ingredients and design of processes.

I asked Chris to bring me a copy of the formulation for our ascorbic acid tablets. In

addition to ascorbic acid as active ingredient, the tablets contained as excipients (inactive ingredients) lactose, microcrystalline cellulose, starch, sodium carboxymethylcellulose, magnesium stearate, stearic acid, talc, and colloidal silicon dioxide. We did not know the purpose of each of these ingredients.

I asked Chris to run a series of small trials, leaving out each of the excipients, one at a time, and to compare the resulting tablets for hardness, and other relevant properties. We found that removal of each ingredient except for microcrystalline cellulose and magnesium stearate resulted in a better tablet. Microcrystalline cellulose was an excellent binder and enabled hard tablets. Magnesium stearate was a lubricant needed to prevent sticking of the tablets to the punches upon compression on the tablet press. The microcrystalline cellulose also served as a disintegrant, causing the tablets to erode within 30 minutes in the standard disintegration test, as needed to ensure that the tablets would disintegrate in the stomach after ingestion.

Within hours we thus had a much improved product consisting of only ascorbic acid, microcrystalline cellulose and magnesium stearate.

It appears that Rehmat Sheikh's approach had been to include a little bit of everything, without doing experiments to determine what was needed and what was not.

From that day forward, I personally made all decisions relating to product formulation,

based on review of the results of one or more series of comparative experiments.

To increase sales, we were urgently in need of new products. However, virtually all products not already in our line, and having sales large enough to be worth developing, were covered by patents held by the brandname manufacturers. At that time, Section 41 of the Canadian Patent Act had a provision called compulsory licensing, which related to medicines, pursuant to which one could obtain from the Commissioner of Patents for a license under any relevant patents. Licences were available only for synthesis of chemicals in Canada and not for importation, and it was necessary to pay to the patentee a royalty as set by the Commissioner of Patents.

Under the Section 41, three compulsory licences had been issued and were being worked. One was to Denver Laboratories (formerly Bell-Craig) for chlordiazepoxide hydrochloride, for which the equivalent brand name product was Librium of Hoffman LaRoche Limited. Denver had capacity to produce only very small quantities, which it used to make capsules for sale under the Denver label. The other two licences had been issued to Micro Chemicals Limited of Cooksville (now Mississauga), Ontario, one for chlordiazepoxide hydrochloride, and the other for trifluoperazine hydrochloride, for which the equivalent brandname product was Stelazine of Smith Kline and French Laboratories.

Micro Chemicals Limited was a member of a group of three related companies. Micro

operated the chemical synthesis plant, Gryphon Laboratories Limited was the manufacturer of pharmaceutical dosage forms (i.e. tablets, capsules, etc.), and Paul Maney Laboratories Limited was the marketing company, which packaged the dosage forms and sold them to pharmacies, hospitals and other customers. The companies were managed by John Cook, who was president of all three, and a shareholder, but the majority shareholders were passive investors.

Joel Ulster and I went to see John Cook. We proposed that he sell to us his licensed chlordiazepoxide hydrochloride and trifluoperazine hydrochloride in bulk chemical form so that we could make dosage forms and sell them through our Empire Laboratories sales force, in competition with the brandname manufacturers and with his Paul Maney division. Although Empire might take some sales from Paul Maney, the total sales of the two would be much larger than the sales of Paul Maney alone, and we were prepared to pay a relatively high price for the raw materials. John Cook agreed to our proposal.

Within a few months, we introduced both products under the Empire label. Total sales thereby increased substantially, and the company became profitable.

Fortunately for us, the potential for generic drugs continued to grow.

Prior to 1968, in every province except Alberta, when a prescription was written by a

physician using a brandname, a pharmacist was required by law to use only the brand as written, and could not substitute an equivalent generic product.

In 1968, Dr. Alan E. Dyer was an Assistant Deputy Minister in the Ontario Ministry of Health, and responsible for pharmaceutical policy. Dr. Dyer understood that drug prices of brandname products were excessive, and that, if they were to be reduced, it would be necessary to allow pharmacists to substitute generic products for brandname products.

However, there was substantial concern about whether or not all generic products were of good quality, as the regulations under the Federal Food and Drugs Act were weak, and did not include sufficient requirements to ensure good manufacturing practices.

Dr. Dyer designed a program entitled PARCOST, which was an acronym for Prescriptions At Reasonable Cost. The Ontario Ministry of Health would establish an expert committee, entitled the Drug Quality and Therapeutics Committee. The Committee would inspect all manufacturers, review production documents and test results, and decide which brandname and generic products were of satisfactory quality. The products meeting the requirements would be listed in a Parcost Formulary. Pharmacists would be entitled to use any product listed in the Formulary in place of an equivalent brandname product, unless the physician specified "no substitution".

The necessary amendments to the Pharmacy Act were passed by the Ontario Legislature in 1968.

Dr. Dyer and his Committee came to inspect Empire Laboratories. They indicated being very impressed with the extent and capabilities of our quality control laboratories (located on the fifth floor of 301 Lansdowne Avenue), and in particular were pleased that we were testing raw materials for impurities by thin layer chromatograph and gas chromatography.

During the discussions, Dr. Dyer asked me how we purchased our raw materials. I responded that we sent requests for quotation to all known suppliers and purchased at the lowest quoted price, knowing that we would ensure quality by fully testing every lot of raw material received.

Dr. Dyer did not like my answer. The politically correct answer, which I was expected to give, was that we scoured the world to find manufacturers with the best facilities and best quality control to ensure quality a priori, and that we bought only the best materials, regardless of price. I pointed out that the Ontario Ministry of Health purchased all medicines for the psychiatric hospitals exactly the way we bought our raw materials.

Despite my apparent gaffe, the first edition of the Parcost Formulary included most of

our products, as well as some from Novopharm, along with most brandname products. The products of several generic manufacturers, not deemed to have adequate quality controls, were excluded. Some brandname products were also excluded by reason of inadequate quality control.

Within the next few years, other provinces began to introduce interchangeable formularies as well, and all provinces began to pay for prescription drugs for senior citizens.

Another major step forward for the generic industry came in 1969. Prior to that time, Section 41 of the Canadian Patent Act provide for compulsory licensing under pharmaceutical patents, only if the licensee produced the chemical in Canada. Few licences had been issued, because the costs of setting up chemical synthesis were high and the potential generic sales in the Canadian market were relatively small.

In 1969, the Liberal Party was in power in Ottawa, and Pierre Trudeau was Prime Minister. Bill C-102 was introduced by John Turner as Minister of Consumer Affairs. When the Bill was passed and given royal assent, Ron Bassford was Minister of Consumer Affairs, and Turner has been moved to Justice. Pursuant to Bill C-102, Section 41 was amended to provide that compulsory licences could now be obtained for importation of pharmaceuticals.

We promptly incorporated S & U Chemicals Limited as a subsidiary of Sherman and Ulster Limited, and, through that subsidiary, we applied for and obtained numerous compulsory licences.

It turned out that getting the licences was the easy part.

Pursuant to the Regulations under the federal Food and Drugs Act, it was unlawful to sell a "new drug" without first filing a submission with the Food and Drugs Directorate ("FDD") to satisfy the Directorate as to safety and effectiveness. A "new drug" was defined as one that had not been sold in Canada for long enough and in sufficient quantity to be generally accepted as safe and effective.

The Directorate began to take the position, somewhat arbitrarily, that if a brandname product was on the market before 1963, a generic equivalent would not be considered to be a new drug, but, if the original brandname product had been introduced more recently, a generic product could not be sold unless the generic manufacturer filed and obtained approval of its own New Drug Submission.

The most significant patented product which was not then considered to be New Drug was ampicillin capsules, sold under the brandname Ampicin and Penbrittin by two brandname manufacturers pursuant to an agreement between them.

At Empire Laboratories we worked quickly to ensure that we could be the first to launch generic ampicillin capsules, and we succeeded to do so in 1970.

A few months later we received a visit by an inspector from the FDD. He advised us that one of the brandname manufacturers had purchased and tested several lots of our ampicillin capsules and found one to be subpotent, the minimum acceptable potency being ninety percent of the amount per capsule stated on the label. The FDD laboratory had confirmed the low potency. The inspector suggested that we recall the lot from all pharmacies to which it had been shipped. We asked the inspector to give us one day to retest the product ourselves. Our retesting indicated the potency to be within the required limits. We so advised the inspector, but he stated that, nevertheless, we would be well advised to recall this lot in view of the low result found by the FDD laboratory and the "politically sensitive" nature of this product, which was the first introduced under the new expanded compulsory licensing provisions.

The inspector assured us, although not in writing, that, if we did the recall, there would be no action against us by FDD. In any event, recalls were commonly done when some problem was detected after sale, and there had never been a prosecution in such a case so long as the manufacturer acted responsibly.

A few weeks later, an RCMP officer served us with a summons informing us that Sherman and Ulster Limited, operating as Empire Laboratories, had been charged with

a criminal offence under the Food and Drugs Act for having sold a subpotent product.

It became clear that, notwithstanding the passage of Bill C-102, the brandname companies still had strong influence over the workings of government.

To defend us, we retained Willard ("Bud") Estey, a prominent attorney who subsequently became a Justice of the Supreme Court of Canada. When the matter eventually came to court we were acquitted. The Crown had relied on a single test by a junior chemist, who was shown on cross-examination to have made several errors.

Our most significant crisis in the "the Empire Years" arose on January 25, 1971. On that date, we received a letter from Dr. G. Showalter, an employee of the federal Department of Supplies and Services, who purported to act as Chairman of a board which selected drug suppliers acceptable to his Department. Dr. Showalter's letter included a list of about fifteen complaints about Empire products that had been received by the Board, and stated that the Board had reviewed the complaints and found them to be valid, and that for this reason and "other reasons", the Board had removed Empire Laboratories from the list of approved suppliers. The letter further stated that notice of our delisting had already been sent to all users of the list.

It appeared that Dr. Showalter and his Board had never heard of the principles of natural justice with which, according to common law, all judicial and quasi-judicial

bodies must comply.

The decision of the Board was fatally flawed in the following respects:

1. The Board had failed to disclose the allegations to us and to give us a chance to defend ourselves before making its decision.

2. Most of the complaints cited related to products sold years earlier by Empire Laboratories Limited, and not by Empire Laboratories, a division of Sherman and Ulster Limited.

3. One of the complaints cited was the charge against us in relation to ampicillin, which had not yet gone to trial and in relation to which we were entitled to a presumption of innocence.

4. The "other reasons" were not even disclosed.

We immediately panicked. Listing by the Showalter's Board was a prerequisite for becoming and remaining listed in the Ontario Parcost Formulary, and was also a prerequisite to being a supplier to most hospitals and other major customers.

Dr. Showalter had already left his office for the day. I obtained his home phone number

from Ottawa Information and phoned him at home. I told him that the Board's decision and his letter were outrageously unfair and thus unlawful, and that, unless the decision were reversed forthwith, we would hold him personally responsible. He told me that the decision would not be changed by threats from me and he hung up the phone.

The next day we met with Willard Estey and instructed him to initiate legal action against Showalter of the Board. Within a few days, Estey filed in the appropriate Court an application for a Writ of Certiorari quashing the Board's decision and a Writ of Mandamus compelling relisting.

Estey also drafted for us a letter to Dr. Dyer at the Ontario Ministry of Health cautioning him not to delist our products on the basis of the Board's decision as the validity of that decision was before the Courts. Dr. Dyer agreed to refrain from any steps pending the outcome of our attack on the Board's decision.

Within two weeks, and before the matter could come to a hearing in the Court, Dr. Showalter and his Board backed down and relisted our company. Dr. Showalter and the Board did not bother us again thereafter.

This was the first time in my career that I found it necessary to initiate a legal action. It was to be the first of many.

In the years 1971 and 1972, the sales of Empire continued to grow, and by the end of 1972 sales had reached a level of a little under two million dollars a year.

In early 1973, we received a phone call from a young man name Gil LeVasseur. He was a Harvard MBA type who was working on acquisitions for ICN Pharmaceuticals Inc., a public U.S. company, of which the founder and chairman was Milan Panic.

ICN had recently purchased Winley-Morris, another small generic drug company located in Montreal, from Morris Goodman. Winley-Morris had been renamed ICN Canada Limited, and Morris Goodman had stayed on as president. LeVasseur told us that ICN wanted to buy Empire Laboratories (i.e. Sherman and Ulster Limited) and to merge it into ICN Canada Limited.

Joel Ulster and I were ambivalent about selling, but decided to let ICN evaluate our company and make an offer to us.

Although we had done reasonably well over the previous few years, we had concerns, some of which were as follows:

1. Our facilities, being located in a five storey building were antiquated and inefficient.

2. We produced numerous types of dosage forms, including compressed tablets, coated tablets, solutions, suspensions and ointments. This meant large operating costs for relatively small sales.

3. The generic market was competitive and profit margins were small.

4. The federal Food and Drugs Directorate was treating new generic products as new drugs, thus requiring expensive development work for each new product.

We were able to negotiate a selling price of a little under two million dollars, which we decided to accept.

There were only two flies in the ointment (pun intended).

The first was that the contracts drafted by ICN required that the vending shareholders agree to not compete for five years. I wanted to be free to go back into the same business. Fortunately for me, I was not a shareholder directly, but only through my holding company, Bernard C. Sherman Limited. I hoped that, if we withheld the schedule of shareholders until the last minute, ICN would not pick up this technicality and I would thus not be personally bound not to compete. This worked out exactly as I hoped.

The second was that ICN was prepared to pay only with ICN share and not cash. Moreover, we would have to agree to hold the shares until they were registered, which would take up to six months, before we could sell them. We considered the ICN shares to be a hot potato. They were priced at about twenty U.S. dollars per share, having risen from only a few dollars per share a year or two earlier on the strength of a string of acquisitions all using shares. The net book value per share and earnings per share clearly did not justify the price of ICN's stock.

After much agonizing, we decided to take the risk and make the deal. The transaction closed in September 1973. In the following few months while we were holding the ICN shares, the share price continued to climb to about forty U.S. dollars per share, and we were, of course, ecstatic. However, the price then began to fall just as rapidly. By the time our shares were freed for sale, the price was down to U.S. twenty dollars per share again, and we quickly sold all our shares at about that price. The price then continued to tumble down to about U.S. two dollars per share. We were very fortunate, indeed, to have gotten out in time. After payment of relevant taxes and all of our debts, Joel and I each netted several hundred thousand dollars.

Some weeks after we completed the sale, Morris Goodman, president of ICN Canada Limited, came to see me in Toronto. I suspected in advance that the purpose of the trip was to terminate me as an employee of Sherman and Ulster Limited, which was now a subsidiary of ICN Canada Limited.

My suspicion was correct. Morris Goodman thus became the only person ever to fire me from a job.

He was, of course, right to do so, as he had to consolidate operations, and I was not needed. In any event, I had already decided that I was ready to leave to start another generic pharmaceutical company.

I invited Joel Ulster to join me in the new venture, but he declined. We have nevertheless remained very close friends.

During these "Empire years", in August 1970, I met Honey Reich. On July 2, 1971, we were married by a judge at York County Courthouse. We have four children; a daughter Lauren, Lauren born October 9, 1975; a son Jonathon, born January 28, 1983, and daughters, Alexandra and Kaelen, born April 22, 1986 and Nov. 17, 1990 respectively.

The fact that I make little mention of my wife and children should not be taken as suggesting, that they are not important to my life, as that would be anything but true. However, it seems to me that information about my family is likely to be of less interest to a reader than my observations relating to philosophy, Canadian politics, and the pharmaceutical industry.

CHAPTER 5 - APOTEX INC. - STARTING ANEW

When I set out in late 1973 to found a new generic pharmaceutical company, I was acutely aware of the possibility of failure.

It seems many new ventures fail for one or more of the following reasons:

i. The intended product or service is novel, and it turns out that the expected market is nonexistent or weaker than expected.

ii. The venture is not as efficient as competitors and thus cannot operate profitably while giving adequate value to customers.

iii. The venture is undercapitalized. The funds available are insufficient to finance the required assets and to cover operating losses until the break-even point is reached.

As the intended products were the very ones being sold by Empire Laboratories, Novopharm and others, there was no doubt that the market size was adequate to support a viable business.

As to efficiency, I was now, as a result of my experience at Empire, well qualified to

design and manage an efficient pharmaceutical manufacturing enterprise. It was thus clear that the key to survival and success lay in developing a plan that would get the business established and to the break-even point with the minimum possible investment in assets, and as quickly as possible in order to have minimum operating losses during the time to break-even.

Joel Ulster had declined to join me in the new venture. Unless I were to take in other partners, which I did not wish to do, the only available funds would be the several hundred thousand dollars of profit that I had made on the sale of Empire to ICN.

I needed to design a business that would get to break-even with minimum equipment, minimum floor space, minimum personnel, and in minimum time. The only plan that made sense was thus as follows:

1. The company would produce only one type of dosage form, which would be a tablets (both compressed and coated). All tablets would be made by dry mix processes only (i.e. no wet granulations). This would minimize the types of equipment needed.

2. The production capacity would be small and there would be no redundancy in equipment. We would thus acquire only one mixer, one oscillating granulator (for screening powders), one tablet press, one coating pan, and one electronic tablet

counter for packaging, the total cost of which would be under one hundred thousand dollars.

3. The products initially would be only "old drugs"; that is to say generic products which were not considered by the FDD to be "new drugs" and thus could be sold without filing New Drug Submissions and awaiting approval of same. There were about a dozen such products with sufficient market potential to be worth producing.

4. In-house testing of raw materials and finished products would be limited to the simple physical tests that did not require analytic equipment. All other testing would be contracted out.

5. Selling would be done initially only by mailings to pharmacies plus telemarketing to minimize selling costs.

6. The total staff would be a skeleton staff of not more than five persons.

I estimated that it would be possible to have the initial product line developed, the required stability studies done, and sales initiated within a year of start up.

Phase 2, would be initiated when and only when significant sales were achieved. In

phase 2, all revenues derived from sales as well as borrowed funds would be invested in expansion of capacity and development of the newer generic products requiring New Drug Submissions to FDD. The development of these new products would be done as aggressively as possible in order to build the company rapidly.

We followed this plan and it worked.

(A lot more to come.)